Grant Sawyer State Office Building

Programming and Feasibility Studies

Volume Three | Proposed Implementations

January 2, 2019

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Grant Sawyer State Office Building
Programming and Feasibility Studies
Volume Three

Prepared for the Nevada State Public Works Division
January 2, 2019

Project Team:

KGA
Architecture and Interior Design

NV5 Consulting Engineers + Bombard
Mechanical, Plumbing and Electrical Engineering

Lochsa Engineering
Civil Engineering

John A. Martin & Associates
Structural Engineering

HKA Elevator Consulting
Elevator Consultants

OCMI
Cost Estimating

The project team wishes to extend a special word of thanks to the members of the State Public Works Division and Buildings and Grounds Section, and to each of the twenty-three additional departments and agencies who participated in the property condition and program needs assessment surveys, interviews. and site visits. The access, support and information provided by the individuals involved have been invaluable to our team and have made the contents of this study possible.

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January 2, 2019

We are pleased to submit within these three volumes the Programming and Feasibility Studies prepared by KGA and its consultant team for the Grant Sawyer State Office Building. As home to a range of critical state agencies and departments, and as a touchpoint for the many citizens who visit these agencies each year, the Grant Sawyer State Office Building is an important facility for the operations of the state of Nevada.

In Volume One, the Program Needs Assessment, we provide a comprehensive overview of the current and projected future space needs of the twenty-three subject departments and agencies. Volume Two, the Property Condition Assessment, provides a detailed overview of the current condition and future needs of building systems and components.

In the third volume, Proposed Implementations, the project team proposes a series of potential courses of action for facility improvements. These six concepts are organized by the three 'R's – Repair, Reprogramming and Replacement - which represent a broad range of options which will address the needs of Grant Sawyer occupants looking forward to the year 2040.

As the vital service of the building's occupants to the citizens and economy of the state of Nevada will continue until 2040 and beyond, it is our hope and intent that in the contents of this study, the State will find the best way forward to supporting the physical space needs of the subject departments and agencies through the next two decades.

We thank the State for the opportunity to be involved in this important and exciting project. Please contact us at any time if we can be of further assistance in the process of interpretation and implementation of this study.

Sincerely,

James C. Lord II
Partner, CEO

Brian Henley
Partner, Director of Design

Scott Carter
Associate, Senior Project Manager

Kris Piyaachariya
Senior Designer

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Volume Three | Proposed Implementations

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Volume Three | Proposed Implementations

Executive Summary

In Volume Three of this report, six conceptual scenarios for implementation of the needs assessed in Volumes One and Two are presented for review and comparison.

These six scenarios are organized by the three 'R's - Repair, Reprogramming and Replacement - and vary from the conservative (a remodel of the existing Grant Sawyer building) to the extensive (a phased campus of buildings which ultimately results in the replacement of the existing facility). The basic strategy behind each of the three 'R's is outlined in the early sections of Volume Three, and further elaborated upon in the pages of each of the six concepts. The goal of this broad range of studies is to allow the State to consider all potential avenues of providing for future space needs.

Each concept includes a series of conceptual design drawings and systems narratives which together illustrate how the concept addresses the needs identified in Volumes One and Two of this report, including department and agency program adjacencies and functionality, and the upgrade, repair or replacement of building systems. A cost estimate for each scenario has been provided, so that the potential cost impact of each scenario may also be considered.

In selecting these six design options, which have been curated from an inital twenty-one concepts proposed for consideration, the design team offers for consideration a variety of conceptual spatial relationships between the various site and programmatic elements. This, combined with the concrete aspects of the systems narratives and cost estimates, will allow for the consideration of benefits both tangible and intangible, as the State considers its own vision for the future moving forward.

Finally, interior design concepts have been included which set the tone for not only an appropriate level of quality and durability, but also for a beneficially upbeat working environment and an aesthetic reflective of a sense of place unique to the state of Nevada. These interior design concepts are flexible enough to apply to all six of the programmatic concepts.

Volume Three | Contents Index

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The Three ‘R’s:

R1

Repair

R2

Reprogramming

R3

Replacement

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The Three ‘R’s:

R1 | Repair

In the Repair scenario, the existing Grant Sawyer Building is remodeled and upgraded to last through 2040. Because the building in this scenario remains at its current size without expansion, some of the departments currently located in the building will need to move elsewhere in order to fully accomodate all departments consistent with the results of the program needs assessment.

R2 | Reprogramming

In each of the three Reprogramming scenarios presented in this study, a more dramatic reimagining of the existing Grant Sawyer Building is accompanied by an expansion or adjacent building in order to accomodate the full projected programmatic need for all departments and agencies. In each of the R2 scenarios, major systems including vertical transportation and utilities are relocated to allow freer floor plates to more easily accomodate programmatic needs.

R3 | Replacement

In the two Replacement scenarios proposed by this study, a multi-phase project over time sees the Grant Sawyer building replaced with multiple buildings which together meet the total assessed programmatic need. Early phases will be built adjacent to the Sawyer building, and later phases occupy the footprint of the existing building after occupants have been relocated.

Program Blocks | Division by Vertical Position

Throughout each of the six design concepts which follow in this study, the programs of the twenty-three included departments and agencies and assorted shared spaces have been categorized into six conceptual blocks which organize the various programs by their desired vertical position.

Vertical position for each entity is proposed based on multiple factors, including stated preference by the department or agency, security needs, level of public visitation, and unique security needs.

The six categories of vertical positioning are as follows:

Top Level Mandatory: Office of the Governor and Associated Departments or Agencies

Upper Level Preferred: Departments or Agencies Associated with Elected Officials

Upper Level Preferred: Departments or Agencies Associated with the Legislative Branch

No Specific Level Requirement

Ground or Lower Level Preferred for Shared or Public Access

Ground Level Mandatory

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Program Blocks | Division by Vertical Position

Top Level Mandatory: Office of the Governor and Associated Departments or Agencies

Office of the Governor
Office of the Lieutenant Governor
Governor's Office of Economic Development (GOED)
Governor's Office of Workforce Innovation (OWINN)

Upper Level Preferred: Departments or Agencies Associated with Elected Officials

Attorney General
Nevada State Treasurer
Secretary of State (also compatible with ground/lower level due to stated public access needs)

Upper Level Preferred: Departments or Agencies Associated with the Legislative Branch

Legislative Counsel Bureau

No Specific Level Requirement

Colorado River Commission of Nevada
Commission on Ethics
Consumer Health Assistance Bureau
Controller's Office - Vendor Database Services
Department of Employment, Training and Rehabilitation
Department of Veterans Services
Gaming Control Board

Ground or Lower Level Preferred for Shared or Public Access

Capitol Police
Department of Taxation
Division of Human Resources Management
Shared Facility: Cafeteria (operated by the Department of Employment, Training and Rehabilitation)
Shared Facility: Proposed Break Room and Fitness Room
Shared Facility: Proposed Innovation Center

Ground Level Mandatory

Admin-NSLA-Mail Services (Mail Room)
Department of Public Safety - Investigation Division

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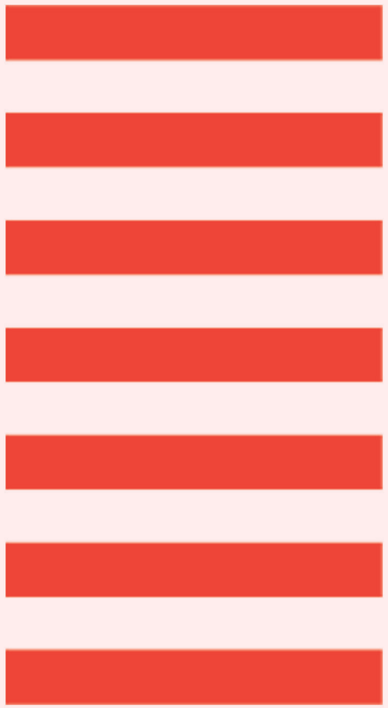
Cost Analysis Comparison



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INSIGHT

NSPWD Grant Sawyer State Office Building Feasibility Study

Las Vegas, NV

FEASIBILITY STUDY COST ESTIMATE REVISION4

OCMI JOB #: 18236.000 | 16 January 2019

COST ANALYSIS

ELEMENT	CONCEPT R1 (REPAIR GSB)	CONCEPT R2-A (REPROGRAM GSB)	CONCEPT R2-B (REPROGRAM GSB)	CONCEPT R2-C (REPROGRAM GSB)	CONCEPT R3-A (REPLACE GSB)	CONCEPT R3-B (REPLACE GSB)
01 FOUNDATIONS	$0	$794,493	$897,568	$916,314	$854,486	$1,287,056
02 SUBSTRUCTURE	$65,797	$1,933,356	$1,980,551	$2,220,856	$1,598,895	$3,037,452
03 SUPERSTRUCTURE	$329,841	$27,229,702	$28,294,342	$29,245,041	$39,518,029	$30,396,148
04 EXTERIOR CLOSURE	$129,256	$10,113,656	$14,233,849	$14,524,575	$28,505,386	$28,879,710
05 ROOFING	$669,362	$1,799,425	$1,956,851	$2,269,794	$1,589,364	$2,864,101
06 INTERIOR CONSTRUCTION	$10,944,357	$20,725,886	$21,823,148	$22,504,904	$24,048,782	$23,890,173
07 CONVEYING	$1,329,416	$2,534,184	$2,145,228	$2,145,228	$3,718,628	$2,075,434
08 MECHANICAL	$15,992,396	$32,091,305	$32,834,164	$34,105,831	$36,596,739	$36,518,122
09 ELECTRICAL	$6,690,670	$19,975,115	$20,524,708	$21,329,112	$27,511,516	$26,920,966
10 EQUIPMENT	$1,680,885	$2,454,246	$2,965,969	$5,557,100	$6,139,347	$5,748,387
11 SITEWORK	$3,262,214	$11,753,375	$15,110,774	$12,485,571	$13,452,842	$14,966,084
NET DIRECT COST	**$41,094,194**	**$131,404,743**	**$142,767,152**	**$147,304,326**	**$183,534,014**	**$176,583,633**
GENERAL MARKUPS - BASE BID						
DESIGN CONTINGENCY 15.00%	$6,164,129	15.00% $19,710,711	15.00% $21,415,073	15.00% $22,095,649	15.00% $27,530,102	15.00% $26,487,545
PHASING 5.00%	$2,362,916	1.50% $2,266,732	1.50% $2,462,733	1.50% $2,541,000	1.50% $3,165,962	1.50% $3,046,068
CMAR CONTINGENCY 4.00%	$1,984,850	4.00% $6,135,287	4.00% $6,665,798	4.00% $6,877,639	4.00% $8,569,203	4.00% $8,244,690
GENERAL CONDITIONS/REQUIREMENT 7.50%	$3,870,457	5.00% $7,975,874	5.00% $8,665,538	5.00% $8,940,931	4.75% $10,582,966	4.75% $10,182,192
CONTRACTOR OVERHEAD AND PROFIT 3.75%	$2,080,370	3.35% $5,611,027	3.35% $6,096,206	3.35% $6,289,945	3.00% $7,001,467	3.00% $6,736,324
INSURANCE 1.00%	$575,569	1.00% $1,731,044	1.00% $1,880,725	1.00% $1,940,495	1.00% $2,403,837	1.00% $2,312,805
BONDS: CONTRACTOR 1.00%	$581,325	1.00% $1,748,354	1.00% $1,899,532	1.00% $1,959,900	1.00% $2,427,876	1.00% $2,335,933
TOTAL COST - BASE BID	**$58,713,810**	**$176,583,772**	**$191,852,757**	**$197,949,884**	**$245,215,427**	**$235,929,188**
ADDITIVE ELEMENTS						
01. FF&E, ALLOWANCE	$6,369,712	$8,801,464	$11,252,530	$9,377,108	$7,785,213	$12,038,421
TOTAL COST INCLUDING ADDITIVE ELEMENTS	**$65,083,522**	**$185,385,236**	**$203,105,287**	**$207,326,992**	**$253,000,640**	**$247,967,610**
GFA - REPAIR EXISTING GRANT SAWYER BUILDING	236,981 SF	N/A	N/A	N/A	N/A	N/A
$/SF	$243	N/A	N/A	N/A	N/A	N/A
GFA - REPROGRAM EXISTING GRANT SAWYER BUILDI	N/A	236,981 SF	236,981 SF	236,981 SF	N/A	N/A
$/SF	N/A	$202	$202	$202	N/A	N/A
GFA - BUILDING (NEW)	N/A	180,000 SF	180,000 SF	192,000 SF	404,000 SF	404,000
$/SF*	N/A	$395	$396	$426	$400	$420
GFA - CORE ELEVATORS AND CIRCULATION	N/A	37,125 SF	66,825 SF	66,825 SF	87,120 SF	92,400
$/SF*	N/A	$253	$301	$257	$334	$227
GFA - CENTRAL PLANT AND EQUIPMENT	N/A	2,144 SF	2,144 SF	2,144 SF	2,144 SF	2,114
$/SF	N/A	$2,102	$2,102	$2,308	$3,744	$3,895
GFA - PARKING GARAGE	N/A	374,400 SF	374,400 SF	374,400 SF	374,400 SF	374,400
$/SF*	N/A	$82	$82	$82	$76	$47
GFA - SITEWORK	750,474 SF	823,163 SF	823,163 SF	823,163 SF	889,998 SF	861,247
$/SF*	$2	$9	$21	$17	$18	$21

*Average parametric cost

**Total construction cost is exclusive of escalation.

INSIGHT

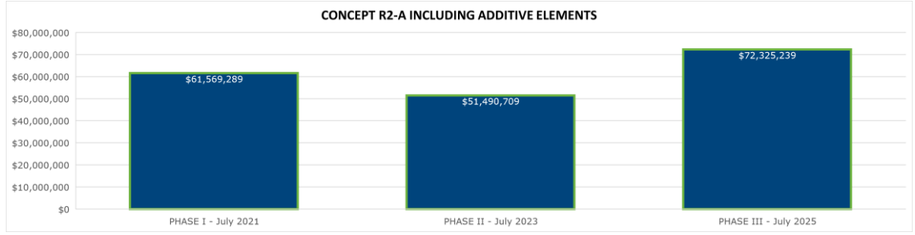
NSPWD Grant Sawyer State Office Building Feasibility Study

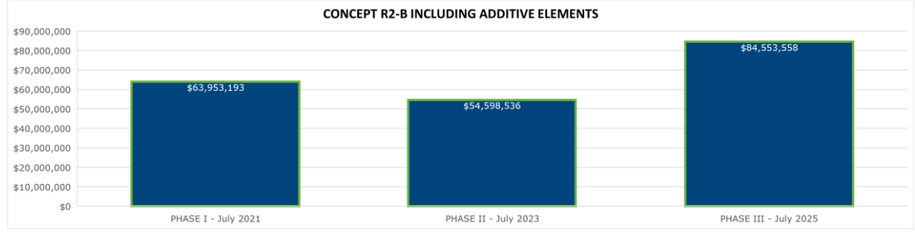
Las Vegas, NV

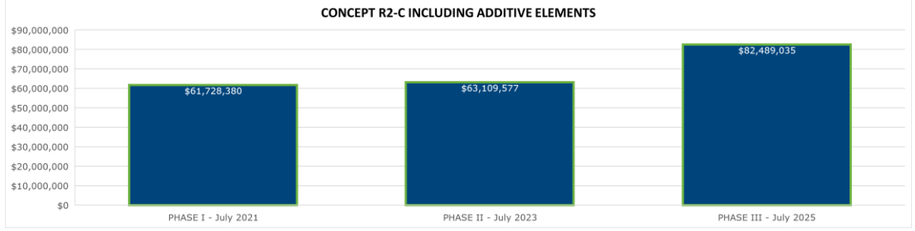
FEASIBILITY STUDY COST ESTIMATE REVISION4

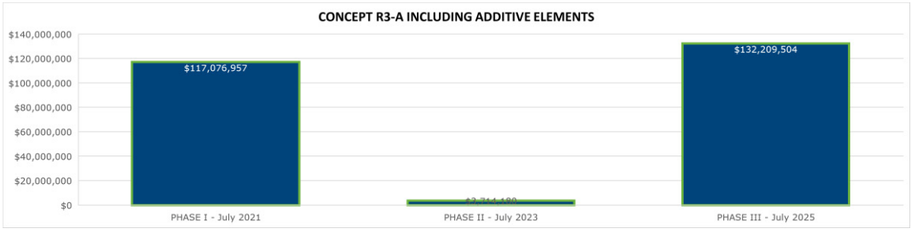
OCMI JOB #: 18236.000 | 16 January 2019

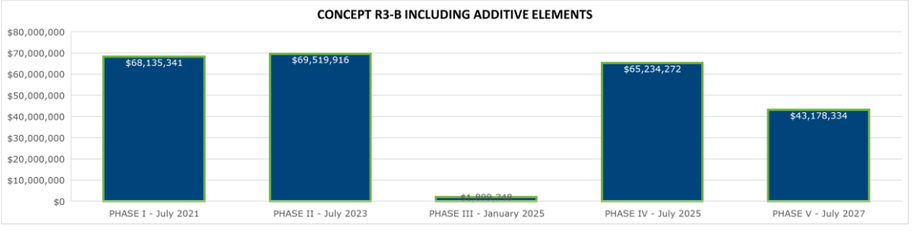
COST DISTRIBUTION





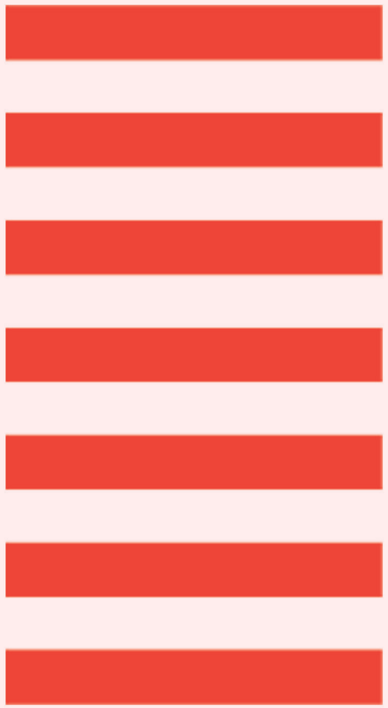






*Total construction cost is exclusive of escalation.

Design Team Conclusions



Letter of Design Team Conclusions

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January 2, 2019

In the sections of this report that follow, the design team has explored in depth six different potential scenarios for the future of the Grant Sawyer Building. Having considered these six concepts, which range in magnitude from a remodel of the existing facility to an all-new campus, it now falls on our shoulders to make a recommendation to the State as to what we, as design professionals, feel is the most prudent course of action moving forward.

The principal goal of this project is to provide the users of the Grant Sawyer Building with appropriate facilities to support the important work they do within their respective State departments and agencies. As this study has come to fruition, the scale of the need for additional usable area, both today and projected into the future, has become evident, as is documented in Volume One. Additionally, the property condition assessment in Volume Two has found that significant work is necessary in order to continue long-term use of the Grant Sawyer Building. Of the six concepts which follow, the R1 scenario addresses the need to upgrade and replace building systems but maintains the existing space constraints. The R2 and R3 schemes address the full need for additional usable area – a distinction which we find extremely critical.

It must naturally be acknowledged that alongside the growth in usable area, there is a correspondingly higher cost associated with the R2 and R3 options. In order to ensure that these costs can be managed during the complete life of the project, and to allow for the logistical execution of changes to the Grant Sawyer site while keeping departments on-site to the greatest extent possible, each of the R2 and R3 options allows for the implementation of improvements in phases.

The most ideal phased project is the most flexible to allow for changes in priorities that may occur over the years to come, for the managing of costs alongside the State's many capital priorities each legislative year, and for the more detailed consideration of construction logistics once the facility design process begins in earnest. With each of these considerations in mind, we believe that the most flexible scenario considered in this study, and therefore the most prudent to move forward with as the basis for a new design and construction project, is Concept R2-C.

Concept R2-C combines a remodeled 224,000 square foot Grant Sawyer building with 180,000 square feet of new construction, in order to provide upon completion a total area adequate to accommodate the projected 2040 programmatic need assessed within this study. The phasing sequence of concept R2-C begins with the construction of a new 4-story, 100,000 square foot office tower some distance to the south of the existing Grant Sawyer building, approaching the Washington Avenue-adjacent southern perimeter of the site.

(continued on next sheet)

(continued from previous sheet)

We believe that the location for the Phase I office building construction presents an advantage in flexibility. By placing a new building, a reasonable distance from the existing building, the site remains flexible in terms of its ability to accept changes in how the later phases are executed. The eventual connection between the first-phase new construction and the Grant Sawyer building may occur in the manner envisioned by this study, or it may be adjusted in a future design phase in order to accommodate the evolving needs of the State if they vary from what was forecasted by this study.

In contemplation of whether to recommend an R2 option – one which includes a remodeled Grant Sawyer Building alongside new construction – as opposed to the all-new construction of an R3 option, we gave due consideration to the cost analysis which is included within this study, and which informs us that even with the extensive remodel required by the Grant Sawyer Building, overall costs are less in an R2 scenario than in an R3 scenario. Cost is, naturally, a very important decision-making factor. However, there are other benefits which must be considered, including the life of this project even beyond the scope of this study. An additional benefit of Concept R2-C, due to the light physical connection between the new construction and the Grant Sawyer Building, is that this R2 scenario can effectively become an R3 scenario in the distant future, if it proves logical to replace the Grant Sawyer Building at a distant future date beyond the year 2040.

And finally, we believe that the R2-C scenario offers several intangible benefits befitting a facility so important to the State. The position of the first new construction on the site will stand prominently in the public eye, a clear signal of the State's focus on progress and innovation. The long-term buildout proposed in this concept will result in the feeling of a small campus, centered on the pavilion-like Innovation Center and Cafeteria building where employees come together – but as an additional benefit, the construction of that center in a later phase allows for its contents and configuration to be optimized at the time of its construction. And finally, the existing structure of the Grant Sawyer Building is utilized, but it is remodeled in a thorough enough manner that occupants will feel the psychological benefits of occupying an effectively new space, while the life cycle of building systems is renewed through 2040 and in some cases beyond.

The Grant Sawyer Building is, in its effective role as a "secondary Capitol" serving southern Nevada, is of great importance to the operations of the State. The goal of planning ahead for the future of the Grant Sawyer Building campus, while remedying the current challenges that the Grant Sawyer Building faces, is a complex but worthwhile effort. We believe that the outcome of this study provides several valid bases for moving forward. In our professional opinion, Concept R2-C is the scenario that presents the greatest advantages. We once again thank the State for involving us in this important effort, and we are excited to be of assistance however possible as the effort marches forward to evolve the State's conceptual scenario of choice into a detailed design and then a reality.

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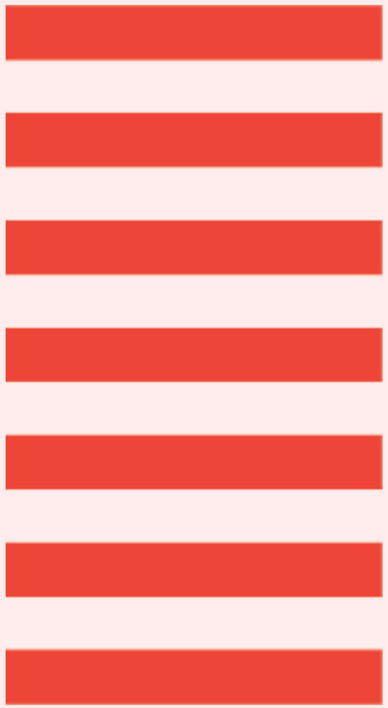
Repair | Concept R1



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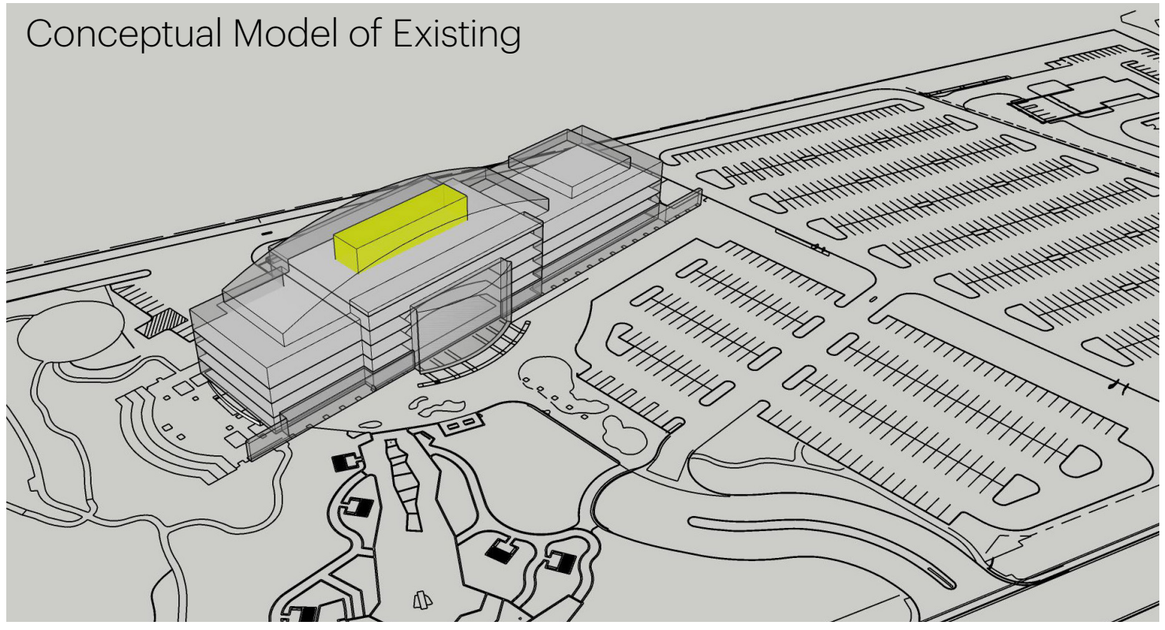
Repair | Concept R1

Modernizing the Grant Sawyer Building

Concept R1 provides for the repair and remodel of the Grant Sawyer building to last through the year 2040. Improvements to building systems and components are detailed in the engineering reports included in this study. Unlike the R2 and R3 options which follow, the repair option is not intended to provide for the increased square footage that is projected by the Program Needs Assessment as being required to house all subject departments and agencies through the 2040. The allocation of space within the remodeled building is flexible at the discretion of the State, and the narratives within do account for the possibility of reconfiguration of tenant spaces if desired. In this scenario, the design team anticipates a shutdown of the building for approximately two years to allow for this proposed extensive remodel (including a complete re-zoning of the mechanical system) to occur, necessitating at least a temporary relocation of all occupants.



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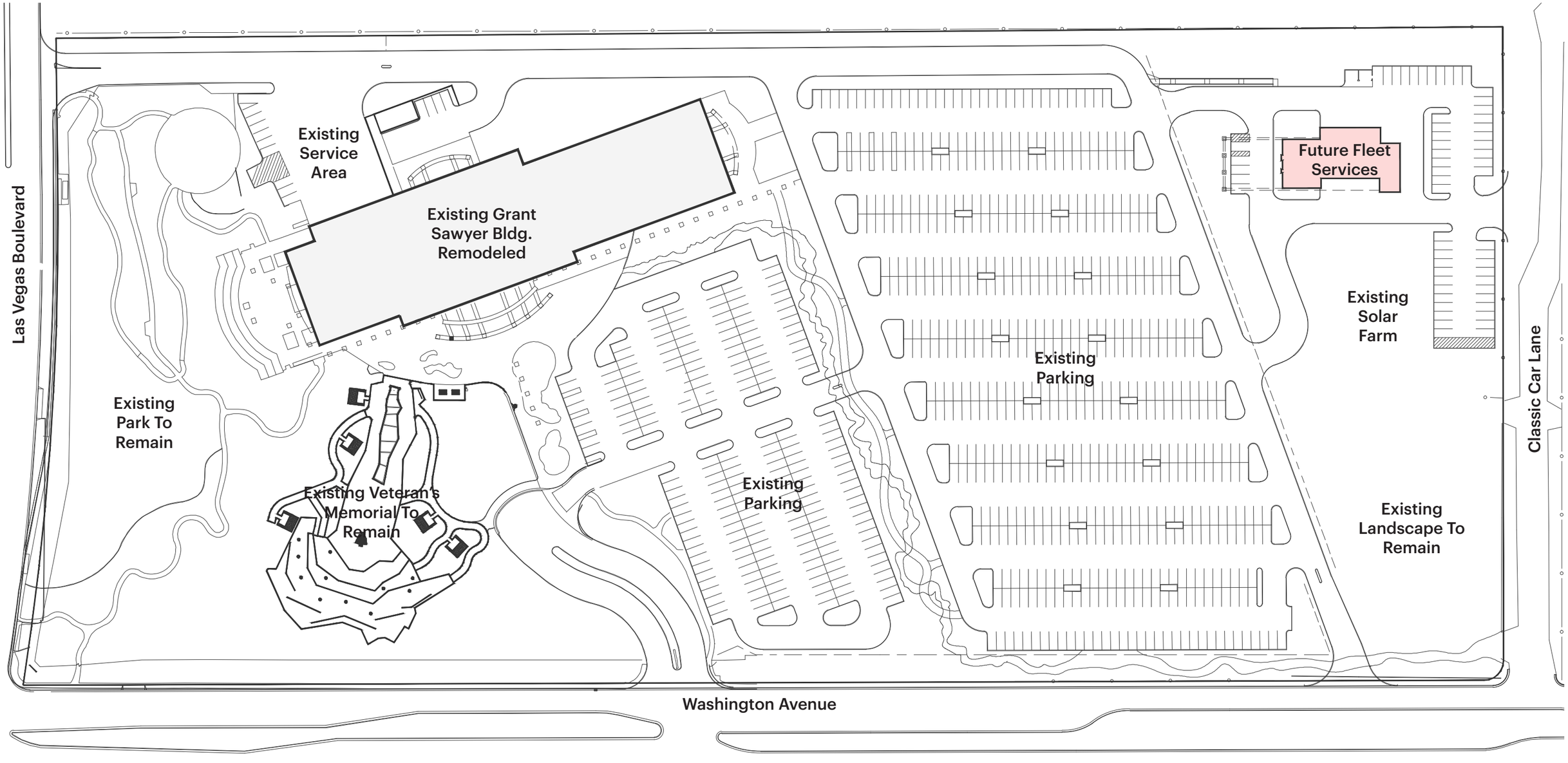
Concept R1 | Existing Site Plan



Surface Parking: 830 Spaces
Total Parking: 830 Spaces

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Las Vegas, NV 89118

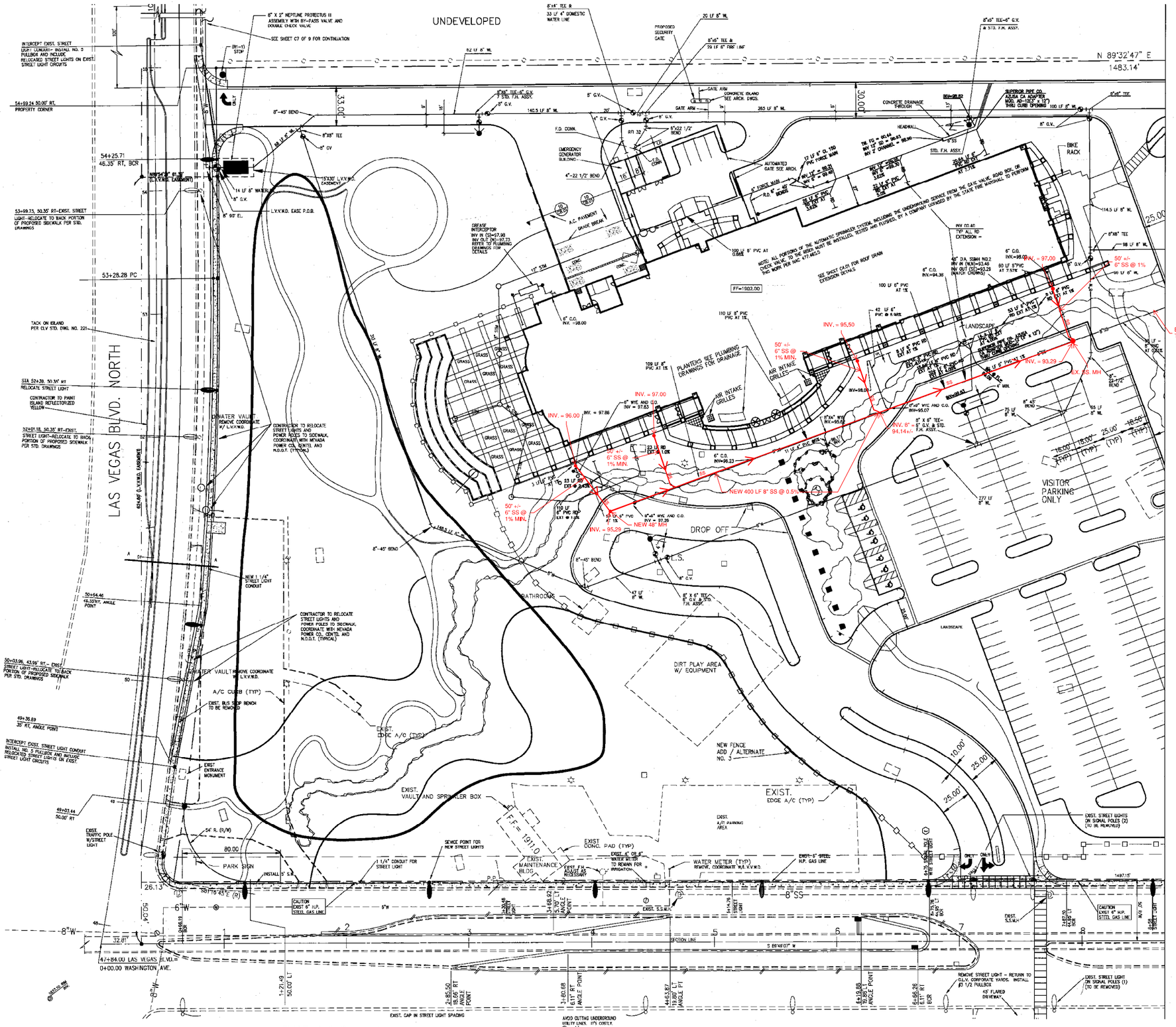
Lochsa engineering

REPAIR

CONCEPT R-1

1.0 Utilities

It has been recommended that the interior building ground floor sewer lines within the existing building be re-installed at a minimum slope of at least 2% or ¼" per foot. This creates the need to lower the existing on-site sewer main serving the building along its south side. To accomplish this, a new 8-inch site sewer main will need to be installed to replace the existing higher main. This will require installing approximately 400 feet of new exterior pipe at a minimum slope of 0.50% or 1/16" per foot. New 6-inch laterals to the new building point of connections will also be required to be installed at a minimum slope of 1% or 1/8" per foot. Hardscape and landscape areas will need to be removed and replaced to like conditions as a part of this work. See the attached drawing titled SEWER REPLACEMENT PLAN 01-02-2019 reflecting this repair. Note that the 8-inch main replacement should not be required east of the east existing building edge.



EXISTING CASHMANS FIELD

BENCHMARK

THE BENCHMARK FOR THIS PROJECT IS C.C.E.D. BENCHMARK NO. 7C0123SSW6; BEING AN ALUMINUM PLATE AND RIVET ON THE CURB, NORTHEAST QUADRANT OWENS AND LAS VEGAS BLVD. NORTH. ELEVATION = 1897.81
ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call before you Dig—
1-800-227-2600
UNDERGROUND SERVICE ALERT (U.S.A.)

MARTIN & MARTIN ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD, CONTRACTOR IS TO NOTIFY THE ARCHITECT OR ENGINEER IMMEDIATELY.

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

T-531

LUCCHESI
•GALATI•
ARCHITECTS

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MARYLAND PARKWAY
SUITE 510
LAS VEGAS, NEVADA
89109

(702) 733-7107

STATE OFFICE BUILDING

DEPARTMENT OF
GENERAL SERVICES

SPWB JOB # 91-C9

MARTIN & MARTIN
CIVIL ENGINEERS
1701 W. CHARLESTON BLVD.
SUITE 420
LAS VEGAS, NEVADA 89102
PHONE (702) 386-8005

Date: FEBRUARY 23, 1993
Project No.: 1096
Scale: 1"=30'
Drawn By: R. YOUNG / C.H.
Revisions:

2-23-95
RECORD DRAWINGS

Sheet Title:

ON-SITE UTILITY PLAN
(WEST)

SEWER REPLACEMENT
PLAN 01-02-2019

Sheet Number:

C5.01

Structural Design Narrative- Concept R1–

Review of existing building – 01/02/19

John A. Martin & Associates of Nevada
STRUCTURAL ENGINEERS

John A. Martin, Jr., S.E.
Steve Schiller, S.E.
Gregory L. Clapp, S.E.
Tammy Carter, P.E.
Gordon Kuang, P.E.
Pete Padilla, P.E.

Existing Property Condition Assessment

The building appears to be in good condition structurally and does not require any modification.

Mechanical Roof Framing over Existing Building

The roof over the mechanical equipment shall be supported on wide flange columns that extend through the roof level. The wide flange framing will support a perforated metal decking with frames to support the edges as required. Lateral support will be moment frames. This will enclose the existing mechanical ductwork and equipment but will not convert the existing roof to a habitable floor.

Existing Brace Removal

The building was constructed per the 1991 UBC, based upon the 2018 IBC the current seismic factor would be 1.9 x higher than the original code. Changing of the existing lateral system would require upgrading all braces, columns, footings and drag/chord systems. Therefore, removing or changing the lateral system is not recommended.

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GRANT SAWYER OFFICE BUILDING
555 E. WASHINGTON AVE., LAS VEGAS
REPAIR/REMODEL NARRATIVE R1

NV5 PROJECT NO. 018.0745.00

Prepared for:

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Issue Date:

January 2, 2019

Revision No.	Issue Date	Prepared By	Reviewed By	Remarks
1	12/11/2018	Alex Jankovic JJ Wisdom	KGA	Draft
2	1/02/2019	Alex Jankovic JJ Wisdom	KGA	Final R1 Narrative

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EXECUTIVE SUMMARY

NV5 Consulting Engineers and Bombard Mechanical Contractors have performed the field investigation at the Grant Sawyer Office Building to verify the existing conditions of mechanical HVAC systems, Plumbing systems and Electrical systems.

When pursing this investigation, we had in mind the three RRR = Repair & Remodel, Reprogram, Replace and the 20 years fix of the MEP systems as our final goal.

Based on our initial findings and assessment of the MEP systems, we are proposing the following upgrades within the existing Grant Sawyer Office Building:

Mechanical Systems and Ductwork
- All exterior ductwork to be replaced. Level 5 ductwork to be completely removed and replaced since loose internal fiberglass insulation and corroded field installed fittings have been discovered.
- Air Handling Units shall be replaced with new VAV air handlers, matching the new HVAC horizontal zoning of the entire building and corresponding to different agencies schedule of operation.

Server, Data Rooms Cooling
- Complete replacement of existing system with new cooling only fan-coil units with VRF back-up.

Hydronic Piping Exteriors
- Complete replacement of hydronic chilled water & hot water piping including the corresponding insulation.

Plumbing Systems -Waste & Vent above grade
- To be replaced or epoxy lined (CIPP)

Plumbing Systems–Underground Waste & Vent
- 100% replacement of underground with PVC piping and providing 2% slope.

Plumbing Systems–Roof, Storm Drainage
- Cleaning of clogged roof drains and overflow drains closer

Plumbing Systems–Domestic Booster Pumps
- At the end of its useful life and shall be replaced with a new triplex system.

Plumbing Systems–CW, HW Distribution
- No action required

Fire Protection -Fire Pump Room
- Existing diesel fire pump system to be replaced with electric fire pumps.

Life Safety – Smoke Removal Systems
- To be upgraded per 2018 IBC. 2018 UMC code requirements.

Electrical Systems
- Good conditions

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1. MECHANICAL SYSTEMS & DUCTWORK

Existing Central Plant and Controls:
Central Plant and DDC control system to remain and to be reused, since recently replaced.
VAV terminal units have been recently upgraded with new Alerton Controls + hose kits & isolation valves.

Existing Conditions:
Existing air handling units are 23 years old and may have been compromised during the original operation utilizing the evaporative cooling sections. The current vertical zoning of the HVAC systems is not corresponding to the agencies schedule of operation and can not meet the required flexibility in scheduled operations of various agencies.
Exterior ductwork on roof shows the signs of corrosion and may have been compromised during the use of evaporative cooling system.
Interior medium pressure ductwork compromised with openings & flex duct connections for additional cooling of server rooms will be fixed by disconnecting of flex ductwork and properly sealing the system.
All existing fire/smoke dampers that are no longer used as part of the 2012 upgrade, shall be removed.
Interior low-pressure ductwork downstream of the VAV terminal units can be reused if matching the new HVAC zoning plans.

Level 5 ductwork existing conditions:
Based on the field investigations and interior camera inspection, it has been discovered that many sections of the supply ductwork had visible signs of corrosion and had been lined with unfaced fiberglass insulation, exposing the particles to be entrained in the air supply system.
The round double wall spiral ductwork installed back in 1995 with field fabricated fittings was constructed with unfaced fiberglass insulation layer between the sheet metal layers, roll formed, continuous interlocked steel outer shell and corroded perforated inner wall.
Many sections of ductwork have the reducing fittings with mastic sealant and exposed fiberglass insulation, improper connection of duct sections due to poor craftmanship. The compromised ductwork was discovered at the points where the fittings penetrate the ducts and at each section attachments.
In many cases the inner core was missing for 5 ft section with exposed fiberglass insulation within the airflow stream serving the office space.

Proposed Remodel:
New HVAC zoning plan shall be implemented to match the agency served with corresponding air handling system.
All air handling units shall be replaced with new VAV air handling systems properly sized and corresponding to the new HVAC proposed zoning plan.
Exterior ductwork on roof shall be completely removed and replaced with a brand new properly sized ductwork utilizing the sheet metal medium pressure ductwork per SMACNA. The new ductwork will be internally lined and will be located within the proposed new roof enclosure.
Level 5 Ductwork shall be completely removed and replaced with new ductwork per SMACNA requirements.

Based on the proposed HVAC Zoning plan the following new air handling units will be provided:

AH-1	30,000 CFM	Level 1 - Main Lobby, Cafeteria
AH-2	38,000 CFM	Level 3 & 4 – Atrium & Offices - West
AH-3	35,000 CFM	Level 2 Gaming Control Board - West
AH-4	25,000 CFM	Level 2 Gaming Control Board - East
AH-5	20,000 CFM	Level 1 HR/Dept of Taxation - East
AH-6	32,000 CFM	Level 3 Attorney General Offices
AH-7	33,000 CFM	Level 4 AG, Legislative Council Bureau
AH-8	32,000 CFM	Level 5 Governor's Offices

2. SERVER/ DATA ROOMS COOLING

Existing Conditions:

- The compromised medium pressure ductwork with holes intended to cool the server, data, TR rooms has been identified.
- All server/ TR rooms and current cooling problems have been identified.
- The new CHS/CHR risers to serve the Data/TR rooms throughout the facility will be provided utilizing the same shaft.
- CHW fan-coil units + VRF back-up split system will be designed.
- Central plant plate/frame heat exchanger will be upsized to handle all cooling only fan-coil units.

Proposed Remodel:
Server/Data rooms cooling system shall be completely disconnected from the medium pressure ductwork. A dedicated chilled water - cooling system will be provided for server/data rooms utilizing the cooling only fan-coil units with emergency VRF system as a back-up cooling. The new chilled water risers will be installed within the same chase and routed from chiller room down to the first floor to serve these cooling only fan-coil units throughout the building. The existing plate/frame heat exchanger will be upsized to be capable of providing the cooling for all fan-coil units during the water economizer mode of operation.

Server, Data Rooms Cooling Capacities

1st Floor	
Gaming Server Room (300 SF)	3 tons
EITS South Wing (100 SF)	1.5 tons
South-East (150F)	1.5 tons
2nd Floor	
Gaming West Server (92 SF)	3.5 tons
Gamin Salon Viewing Room (122 SF)	2 tons
3rd Floor	
AG Server Room (150 SF)	3.5 tons
4th Floor	
LCB Server Room (150SF)	2.5 tons
LCB AV/TR room	3.5 tons
5th Floor	
Secretary of State Server Room (15 SF)	1 ton
Criminal Investigation Server (60 SF)	1 ton
6th Floor	
EITS Servers (150 SF)	3 tons

Total Projected Cooling Capacity = 26 tons (312 MBH).
Final cooling capacity will be verified including some spare capacity for future expansion.
Proposed Remodel: Add a dedicate 3" CHS/CHR riser to serve the server/data rooms on all floors.
New cooling only fan-coil units will be selected with VRF back-up cooling system.

3. HYDRONIC PIPING

Existing conditions:
Existing chilled water hydronic piping shows considerable exterior corrosion at the multiple fittings, take-offs and elbows, due to incorrect insulation type and compromised vapor barrier or damaged service jacket.
Hydronic piping through the wall/ through the slab penetrations are compromised and shall be replaced and properly insulated and protected with pipe sleeves.
Heating hot water piping system experienced multiple leak points in the building during the temperature variations from start/stop or low/high conditions.

Proposed Remodel:
Based on the all hydronic piping to be replaced entirely, throughout the building.

4. PLUMBING SYSTEMS – WASTE & VENT

- Cast Iron waste piping above ground doesn't show any significant deteriorations.
- Replace the existing grease interceptor with a new 2,000 gallon Jensen Precast grease interceptor.
- Kitchen are underground grease waste piping to be removed and replaced with PVC piping with heat trace.
- All underground waste piping shall be replaced with Schedule 80 PVC piping.
- Site waste lines shall be routed south of the building per Overall Plumbing plan P1.

Proposed Remodel:
Waste Piping above ground: All above ground piping to be replaced or epoxy lined utilizing the "NU Flow" non-pressurized epoxy linin (CIPP) – the cured in-place pipe restoration process.
Underground Waste Piping: All underground cast iron waste piping to be removed and replaced with Sch 80 PVC properly sloped with 2% slope waste piping.
All existing trap primers shall be replaced with new electronic prat primers.

5. PLUMBING SYSTEMS – ROOF, STORM DRAINS

- Investigate the status of existing roof /overflow drains. Investigate the status of storm water piping risers.
- Verify the status of storm water lift station at back of house in dock area.

Proposed Remodel:
All roof drain/ overflow drain piping system shall be thoroughly cleaned and inspected for any additional clogs.

6. PLUMBING SYSTEMS – DOMESTIC BOOSTER PUMPS

- Domestic water booster pumps are beyond the ASHRAE recommended life expectancy.

Proposed Remodel:
The booster pump set shall be replaced with new triplex system (3 x 50%).

7. PLUMBING SYSTEMS – COLD & HOT WATER DISTRIBUTION

- These is no RPBP – reduced pressure backflow preventer at the property. There will be a need to install a new RPBP.
- Kitchen area domestic hot water piping shall be provided with thermostatic mixing valves at the hand sink faucets to provide the tempering water at 110^0F.

Proposed Remodel:
Install the reduced pressure backflow preventer. Provide thermostatic mixing valves ate kitchen area hand sinks.

8. FIRE PROTECTION – FIRE PUMP ROOM

- The existing diesel fire pumps has only two years of remaining life per ASHRAE Life Expectancy table.

Proposed Remodel:
Replace the existing diesel fire pumps with electrically driven fire pumps.

9. LIFE SAFETY – SMOKE REMOVAL SYSTEMS

- Life Safety Systems shall be upgraded per 2018 IBC and 2018 UMC.

EQUIPMENT/MATERIALS LIFE EXPECTANCY

Critical Item	Description	HVAC Equipment			Age	ASHRAE Life Expectancy	Life Remaining
		Type	Recommendation	Location			
Air Handling Units	AH-1 to AH-8 236,000 cfm	VAV	**To be replaced**	Roof	23	30	+7
Hydronic Chilled Water Piping	Sch 40	Black steel	**To be replaced.**	Roof	23	30-50	7-27
Hydronic Heating Hot Water Piping	Sch 40	Black steel	**To be replaced**	Roof	23	30-50	7-27
1-1/2" and smaller HS/HR		Galvanized steel		Indoor	23	30-50	7-27
MP Ductwork Interior ductwork	Exposed on roof Level 5	Sheetmetal with internal lining	**Complete replacement**	Roof	23	40+	17+
Waste & Vent Piping	Risers above ground	Cast Iron	**Clogged vents**	Indoor	23	50	27
Waste & Vent Piping	Horizontal below grade	Cast Iron	**Complete replacement with PVC**	Underground	23	--	--
Domestic CW, HW Piping		Copper	**Good**	Interior	23	40-50	17-27
Domestic Booster Pumps	Base mounted Duplex		**To be replaced**	Pump room	23	20	-3
Fire Pumps	Diesel pumps		**To be replaced with electric-drive fire pumps**	Fire pump room	23	25	2
Smoke Removal System		**To be updated to 2018 IBC**			23	25	+2

10. ELECTRICAL

A. Electrical distribution

Electrical distribution was reviewed against the as-built drawings furnished. Generally, the installation matches the as-built drawings with a few exceptions.

1. Minor branch circuiting updates noted in panelboard directories as circuits were added for receptacles, copiers, small rack mounted UPS units, etc.
2. The equipment name labels for unit-substations 'USW' and 'USR' are swapped. These labels should be corrected to match the as-built drawings.
3. The equipment rating and main device on unit-substation 'USE' was specified to be 1000A, but actual equipment installed is rated 1200A. We do not see any issue with this discrepancy.
4. We observed the nameplate ratings on four distribution boards that do not match the plans. We suspect during the original installation; theses four boards were inadvertently mixed-up as they are all single section distribution board sections and look identical. The under-rated equipment should be addressed as soon as possible as they are not protected with the appropriate over-current device per NEC.
    a. Distribution board 'EDP2' is connected to a 600A feeder and specified to be rated 600A. The actual equipment installed is rated 250A.
    b. Distribution board 'EDP3' is connected to a 600A feeder and specified to be rated 600A. The actual equipment installed is rated 250A.
    c. Distribution board 'EH3' is connected to a 100A feeder and specified to be rated 100A. The actual equipment installed is rated 600A.
    d. Distribution board 'DPH1' is connected to a 200A feeder and specified to be rated 225A. The actual equipment installed is rated 600A.
5. When the central plant on Level 6 was upgraded, the third chiller was eliminated. This circuit breaker is currently locked out. We suggest confirming the conductors have been properly pulled back to a junction box and capped.
6. Review of the panelboard directories for emergency branch panels indicate loads have been added that are not compliant with code. Only those loads as identified in NEC 700 are permitted.

B. Electrical Capacity

There are (3) three unit-substations providing step-down of the medium voltage utility service to 277/480V, 3-phase, 4-wire for building distribution. The ratings of this equipment are as follows:

Unit-substation 'USW' (mislabeled USR) = 1,500 kVA 12.47kV-277/480V, 3-phase, 4-wire
Unit-substation 'USE' = 750 kVA 12.47kV-277/480V, 3-phase, 4-wire
Unit-substation 'USR' (mislabeled USW) = 2,500 kVA 12.47kV-277/480V, 3-phase, 4-wire

We observed the following instantaneous loads on each unit-substation at the time of our site visit. We walked the building between 4pm to 8pm on October 15, 2018. These loads appear to be much less than the building NVE service capacity from a medium voltage service. We would like to request utility bills for a 12-month period.

Unit-substation 'USW' (mislabeled USR) = 168 kVA
Unit-substation 'USE' = 91 kVA

Unit-substation ‘USR’ (mislabeled USW) = 158 kVA

Due to the extremely low utilization of the unit-substation capacity, we observed the voltage readings to be slightly high, but less than 5% over-voltage.

Unit-substation ‘USW’ (mislabeled USR) = 287/500 V
Unit-substation ‘USE’ = 291/506 V
Unit-substation ‘USR’ (mislabeled USW) = 286/497 V

C. Condition

Distribution Equipment

Generally, the electrical distribution equipment is in good condition and appears original to the building. Switchboards, panelboards, transformers and other electrical distribution equipment do not have an expected lifespan. If the equipment is kept clean and regular testing/maintenance performed the equipment can generally last through the life of the building.

The bolted pressure switches (or Pringle Switches) utilized for the main device at the unit-substations can be problematic. They are basically a spring assisted knife switch. If these devices do not receive regular maintenance, they may fail to open or close. NETA recommends annual visual/mechanical inspections and testing performed every (3) three years.

Generator was completely rebuilt and reinstalled in 2015. It appears to be well maintained based on dates observed on the batteries and oil filters. A well-maintained standby generator can be expected to last 10,000 to 30,000 hours of use. We would request the generator and ATS testing reports in order to determine the approximate generator runtime to date.

Lighting

Lighting appears to be original to the building. General overhead lighting sources are fluorescent. We recommend consideration of LED replacement fixtures to update the lighting in the building for both energy savings and visual quality.

D. Proposed Remodel

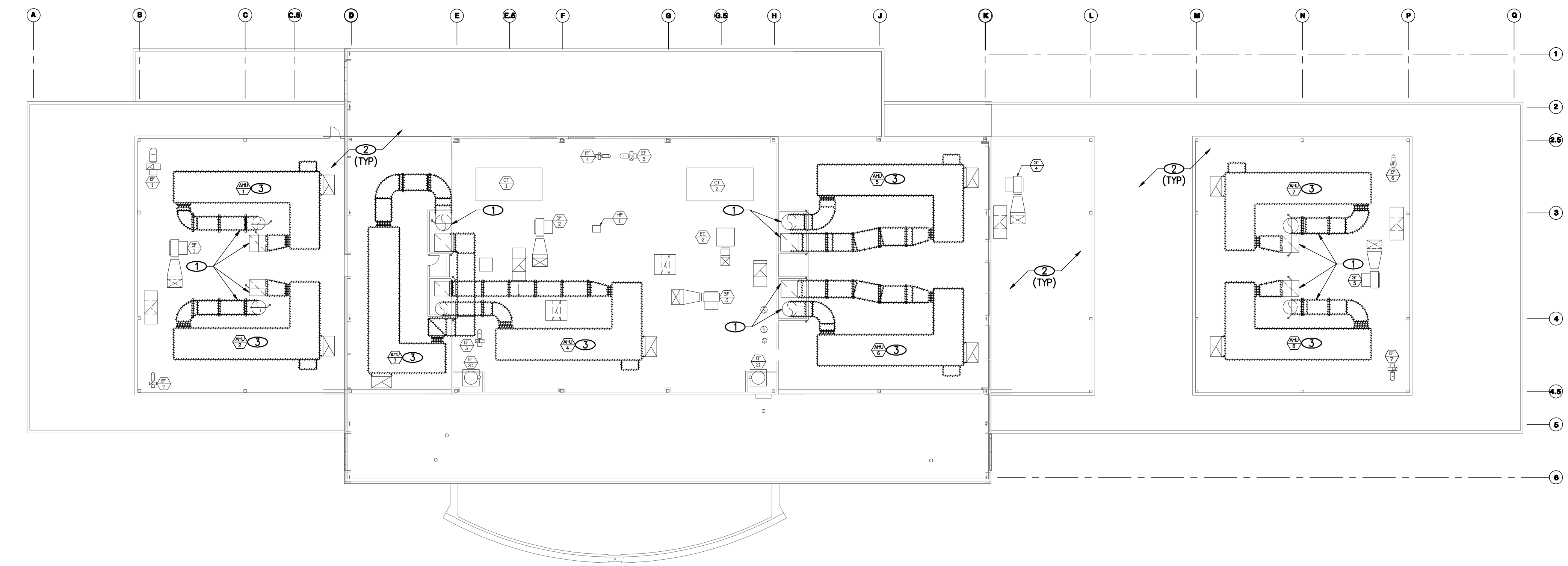
1. Correct nameplates on medium voltage equipment to match plans.
2. Verify bussing on distribution boards ‘EDP2’, ‘EDP3’, ‘EH3’, and ‘DPH1’. It may be that only the incorrect covers with nameplate rating were installed on each board. However, where bussing is found to be under-rated, the equipment should be replaced. Modifications to ‘EH3’ and ‘DPH1’ should not be required. Two (2) new 600A, 277/480V, 3-phase, 4-wire distribution boards may be required to replace ‘EDP2’ and ‘EDP3’. To minimize downtime, the new distribution boards should be installed within the same electrical room (or as close as possible) so that the incoming and outgoing feeder work between the existing and new equipment can be performed prior to any shutdowns. Following the incoming/outgoing feeder prep work, it is expected that approximately two (2) 24-hour shutdowns per distribution board will be required complete the installation.
3. Loads not permitted under NEC 700 should be removed from Emergency panels. If these loads require generator backup, an optional standby system per NEC 702 should be installed. This will require an additional breaker at the generator distribution panel, an Automatic Transfer Switch (ATS) and panelboards as may be required within the building.
    a. Existing loads that will be relocated to the new optional standby system include:
        i. Phone room UPS
        ii. Computer room and other miscellaneous receptacles
        iii. Motorized doors not associated with life safety systems
        iv. Governor’s gate
    b. New loads that will be added to the new optional standby system include:
        i. New server/data room cooling equipment.
4. Bolted pressure switches utilized as the main device at each unit-substation should be tested and serviced.
5. Verify walls in electrical rooms with 2-hour fire resistive ratings and seal holes observed in walls.
6. The generator and ATS components should be tested to verify they comply with NEC and NFPA 110. Repair or replacement can be evaluated when these reports are made available, but it is anticipated that the existing generator will not require replacement and is sufficiently sized to accommodate the existing and new loads that require generator back-up power noted above.
7. As part of a code update to the building, we suggest the following:
    a. Correct the swing of the doors in rooms with equipment rated 800A or more. Per 2017 NEC 110.26(C)(3), doors should open in the direction of egress and be equipped with panic hardware.
    b. Replace exterior receptacle covers in wet locations with while-in-use type covers per 2017 NEC 406.9.
8. Replace existing fluorescent lighting with new fixtures that utilize an LED lamp source. An update to the lighting throughout the building will also trigger an update of the lighting controls per 2018 IECC including occupancy sensors, daylights controls, etc.
9. We understand the state has indicated the access control and surveillance systems are outdated. We suggest a study of these systems be performed.

11. FIRE ALARM SYSTEM

Replace the existing fire alarm system in its entirety.

APPENDIX - DRAWINGS

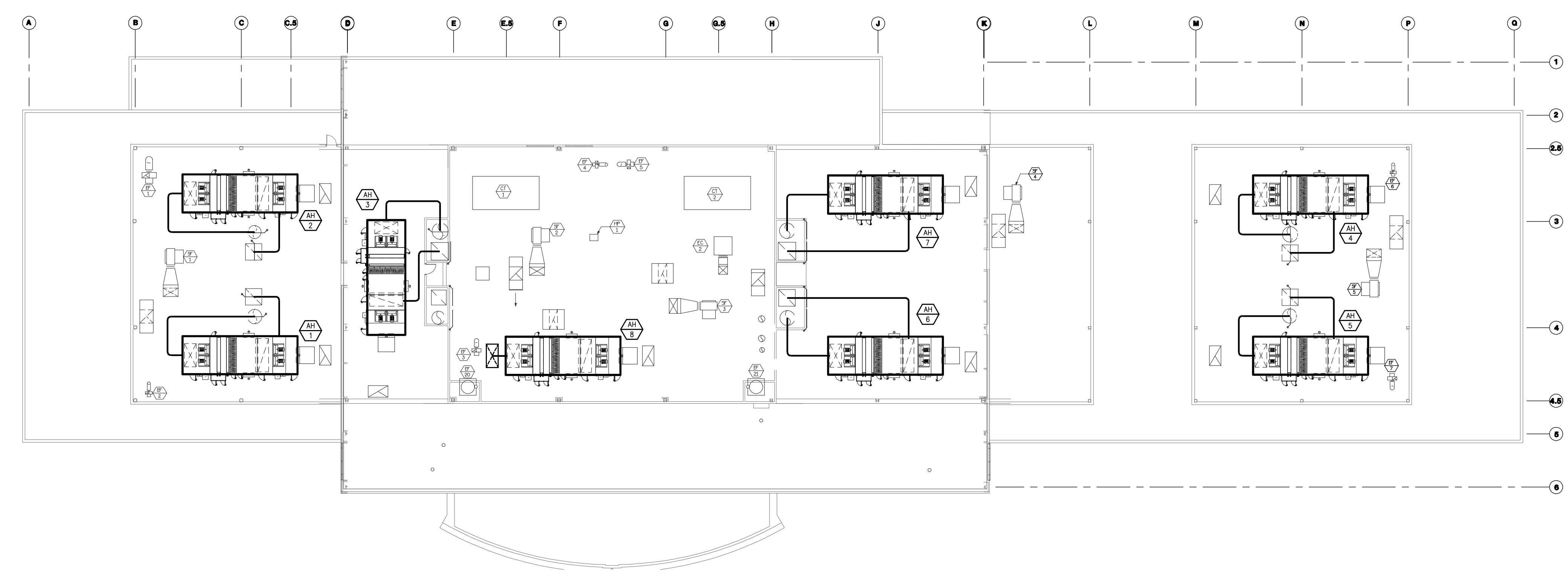
M1 Overall Mechanical Roof Plan
M2 Overall Hydronic Piping Plan – Alternate Routing Below the Roof
M3 Central Plant Chiller Room
M4 Server/Telecom Rooms Cooling System - Piping Diagram
M5 Mechanical Zoning Diagram
Level 1 Mechanical Zoning Plan
Level 2 Mechanical Zoning Plan
Level 3 Mechanical Zoning Plan
Level 4 Mechanical Zoning Plan
Level 5 Mechanical Zoning Plan
P1 Overall Plumbing Plan - Underground Waste & Vent Piping



OVERALL MECHANICAL DEMO ROOF PLAN

NO SCALE

1 M1



OVERALL MECHANICAL ROOF PLAN - R1 OPTION

NO SCALE

2 M1

NOTES

(1) ALL EXISTING EXPOSED DUCTWORK ON ROOF TO BE REMOVED AND REPLACED WITH NEW THERMADUCT PRODUCT. THERMADUCT SHALL BE PROVIDED WITH R-14.1 INSULATION.

(2) ALL EXISTING HYDRONIC PIPING TO BE ELEVATED TO 8 FT ABOVE ROOF LEVEL.

2.1 CHILLED WATER PIPING UPGRADE

REMOVE EXISTING FIBERGLASS INSULATION AND PVC JACKET THROUGHOUT.

MITIGATE ALL CORRODED FITTINGS BY REPLACING WITH NEW ELBOWS, T-BRANCHES ETC.

PROVIDE CORROSION PROTECTION AT EXTERIOR OF HYDRONIC PIPING.

PROVIDE 2" THICK POLYISOCYANURATE INSULATION WITH ALUMINUM JACKET.

2.2 HEATING HOT WATER PIPING UPGARDE

REMOVE EXISTING FIBERGLASS INSULATION AND PVC JACKET THROUGHOUT.

PROVIDE CORROSION PROTECTION

PROVIDE 2" THICK INSULATION WITH ALUMINUM JACKET.

(3) EXISTING AIR HANDLING UNIT AND ASSOCIATED PIPING AND CONTROLS TO BE REMOVED.

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-	-	MM-DD-YEAR

REVISIONS

DATE	BY	

NV5

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GRANT SAWYER OFFICE BUILDING

REMODEL REPORT

OVERALL MECHANICAL ROOF PLAN - R1 OPTION

SHEET NUMBER:

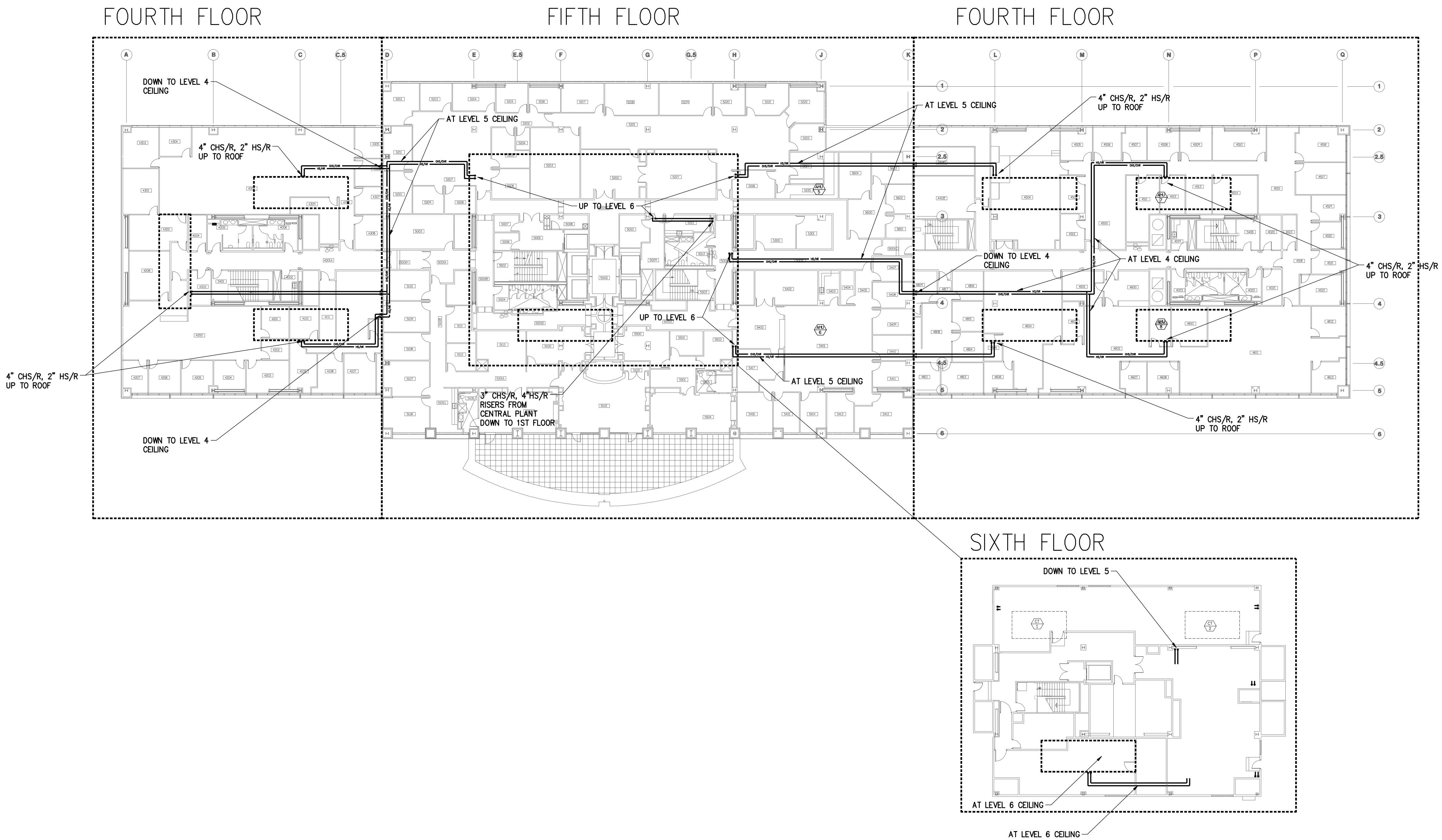
M1

SCALE: -

JOB NUMBER: -

NOTES

1 -



OVERALL HYDRONIC PIPING PLAN - ALTERNATE ROUTING BELOW THE ROOF
NO SCALE

1
M2

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OVERALL HYDRONIC PIPING PLAN - ALTERNATE ROUTING BELOW THE ROOF

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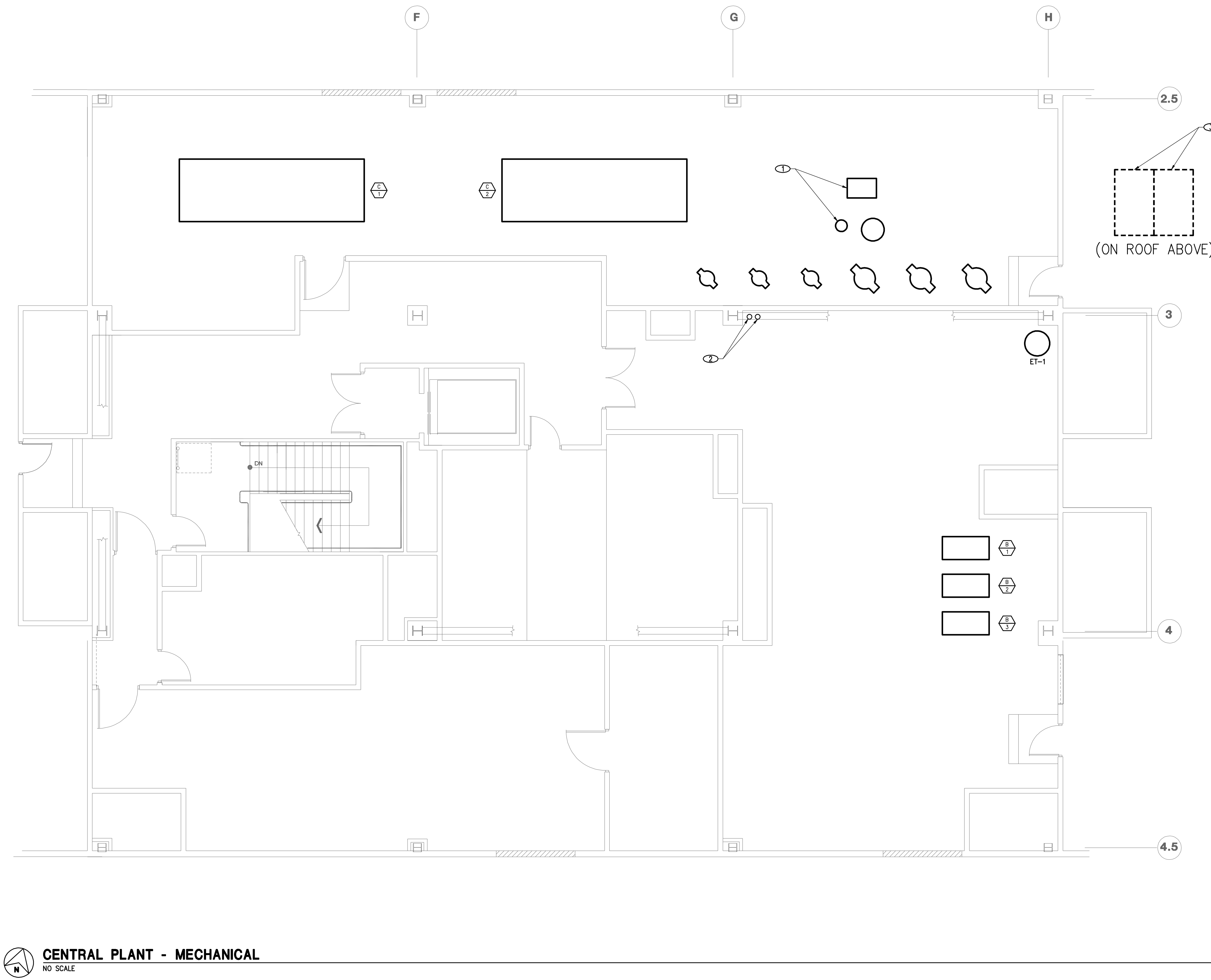
REMODEL REPORT

SHEET NUMBER:
M2

SCALE: -
JOB NUMBER: -

NOTES

1. EXISTING PLATE/FRAME HEAT EXCHANGER AND ASSOCIATED PUMP TO BE REMOVED AND REPLACED WITH UPSIZED HX-1 CAPABLE OF PROVIDING THE COOLING FOR ALL SERVER/DATA ROOMS. DURING THE WATER ECONOMIZER MODE OF OPERATION. (205 GPM AT 66/56° F) (COOLING TOWERS FREE COOLING).
2. NEW 3" CHS/CHR RISER SERVING ALL COOLING-ONLY FAN COIL UNITS.
3. VRF BACK-UP COOLING SYSTEM SIMILAR TO LG ELECTRONICS MODEL ARUM312BTE5 (265MBH).



CENTRAL PLANT - MECHANICAL
NO SCALE

1
M3

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GRANT SAWYER OFFICE BUILDING

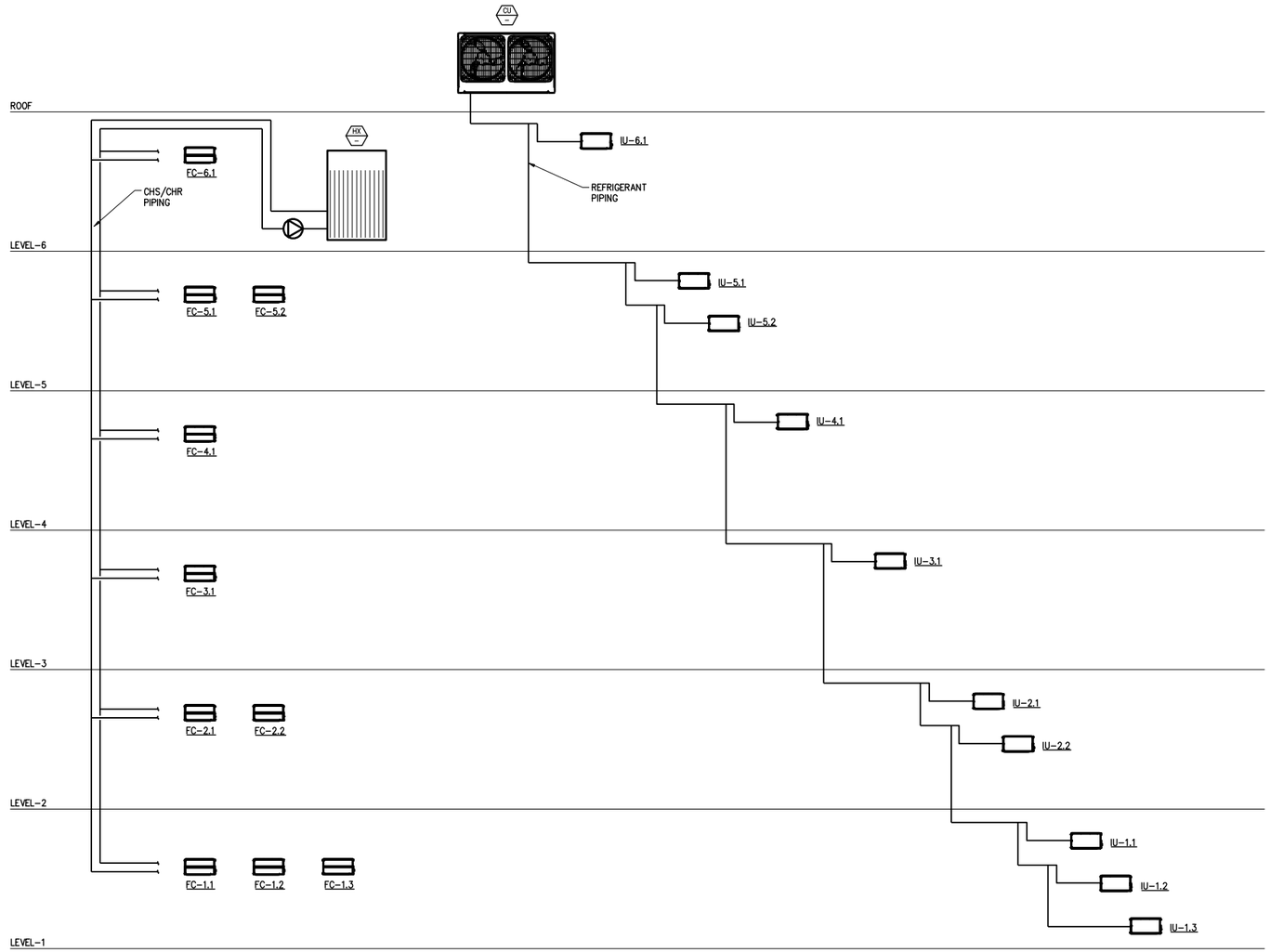
REMODEL REPORT

CENTRAL PLANT - MECHANICAL

SHEET NUMBER: M3

SCALE: -

JOB NUMBER: -



SERVER/TELECOM ROOMS COOLING SYSTEM - PIPING DIAGRAM

NO SCALE

1
M4

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DATE: MM-DD-YEAR
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GRANT SAWYER OFFICE BUILDING

REMODEL REPORT

PIPING DIAGRAM

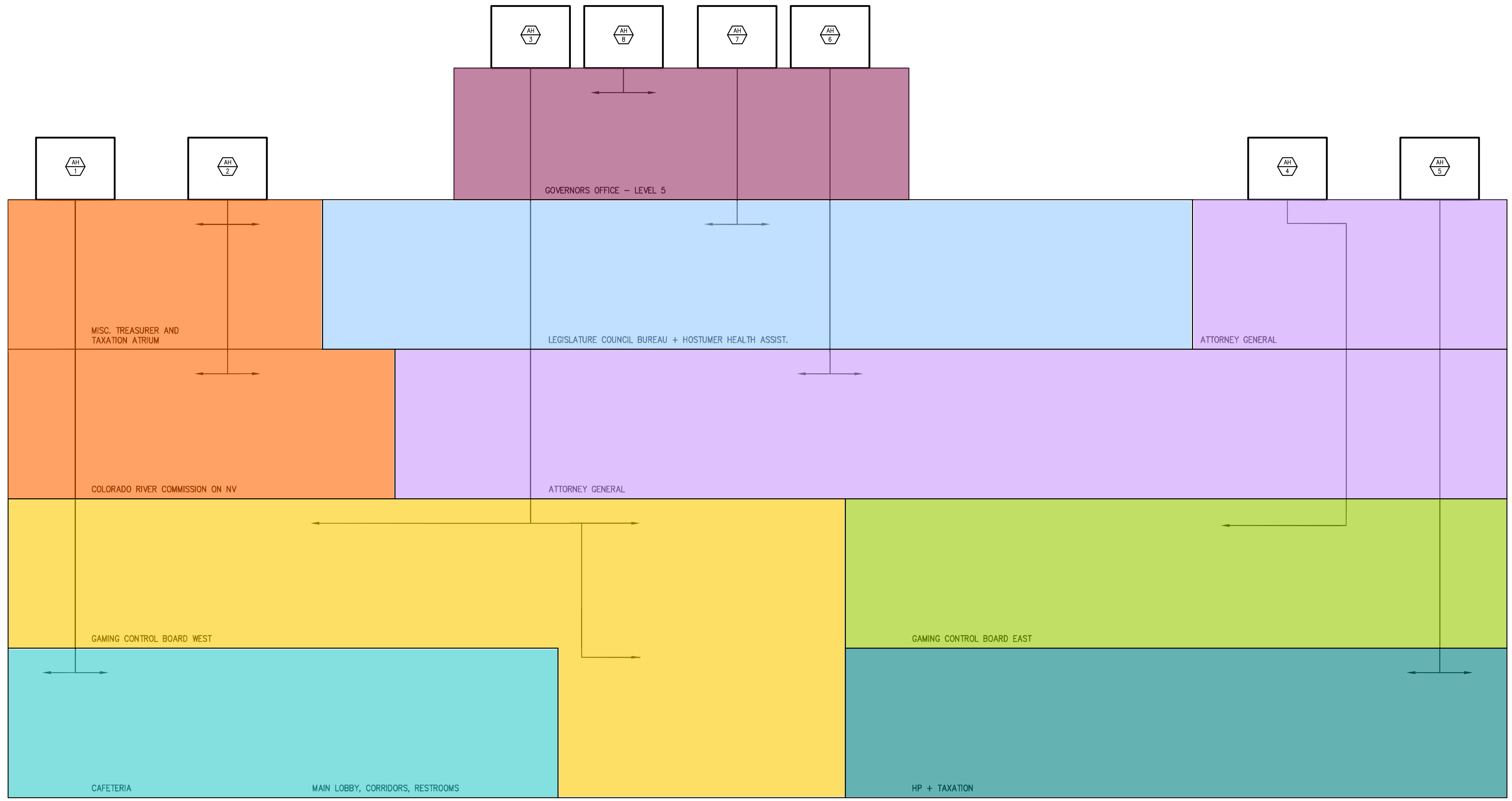
SHEET NUMBER:
M4

SCALE: –

JOB NUMBER: –

NOTICE

1. EXISTING SHAFTS WILL BE REUSED AND ENLARGED AS REQUIRED TO ACCOMMODATE NEW SA, RA DUCTS PER NEW HVAC ZONING PLAN.



MECHANICAL ZONING DIAGRAM - R1 OPTION

NO SCALE

1
M4

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GRANT SAWYER OFFICE BUILDING

REMODEL REPORT

MECHANICAL ZONING DIAGRAM

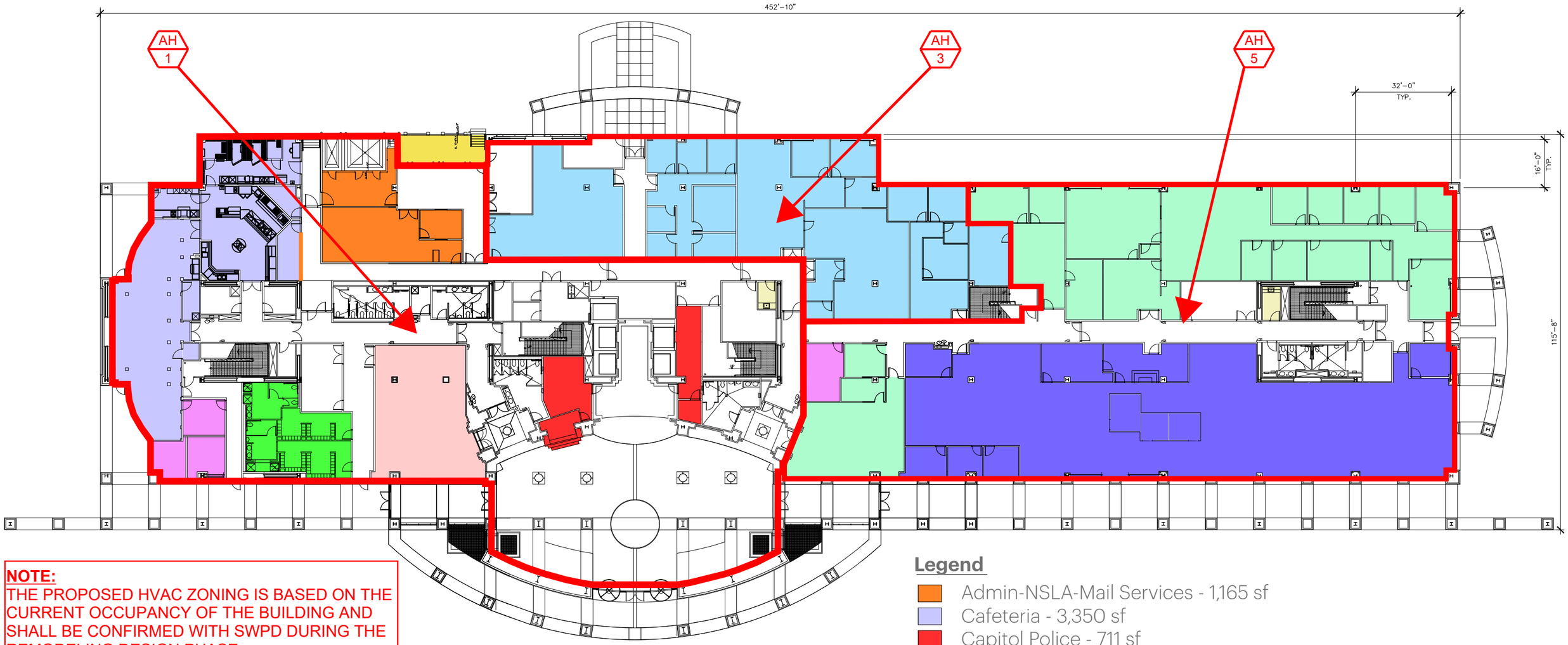
SHEET NUMBER:

M5

SCALE: –

JOB NUMBER: –

Level - 1 MECHANICAL ZONING PLAN



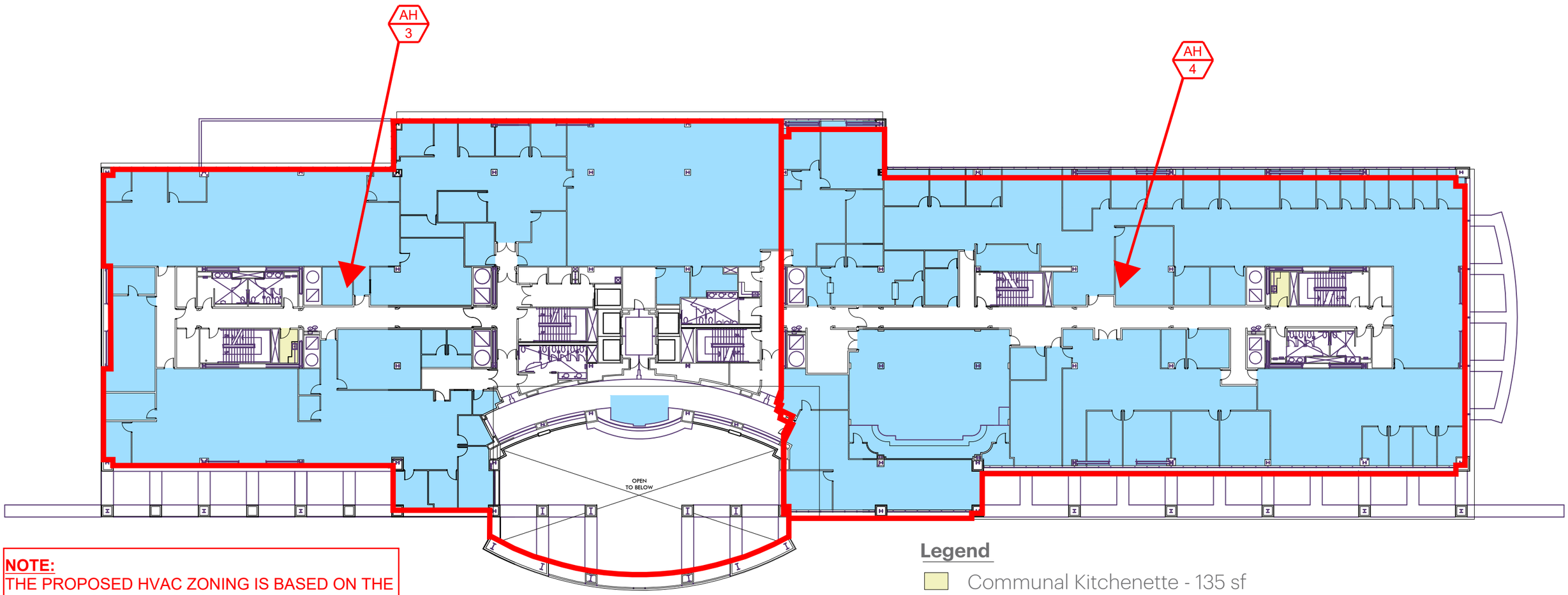
NOTE:
THE PROPOSED HVAC ZONING IS BASED ON THE CURRENT OCCUPANCY OF THE BUILDING AND SHALL BE CONFIRMED WITH SWPD DURING THE REMODELING DESIGN PHASE

0' 16' 32' 64'

Legend

- Admin-NSLA-Mail Services - 1,165 sf
- Cafeteria - 3,350 sf
- Capitol Police - 711 sf
- Communal Kitchen - 121 sf
- Communal Meeting Room - 1,407 sf
- Department Of Human Resources Management - 6,689 sf
- Department Of Taxation - 7,418 sf
- DPS Investigations Division - 720 sf
- Gaming Control Board (L1) - 6,159 sf
- Loading Dock - 275 sf
- Locker Room - 898 sf

Level - 2 MECHANICAL ZONING PLAN



NOTE:
THE PROPOSED HVAC ZONING IS BASED ON THE CURRENT OCCUPANCY OF THE BUILDING AND SHALL BE CONFIRMED WITH SWPD DURING THE REMODELING DESIGN PHASE

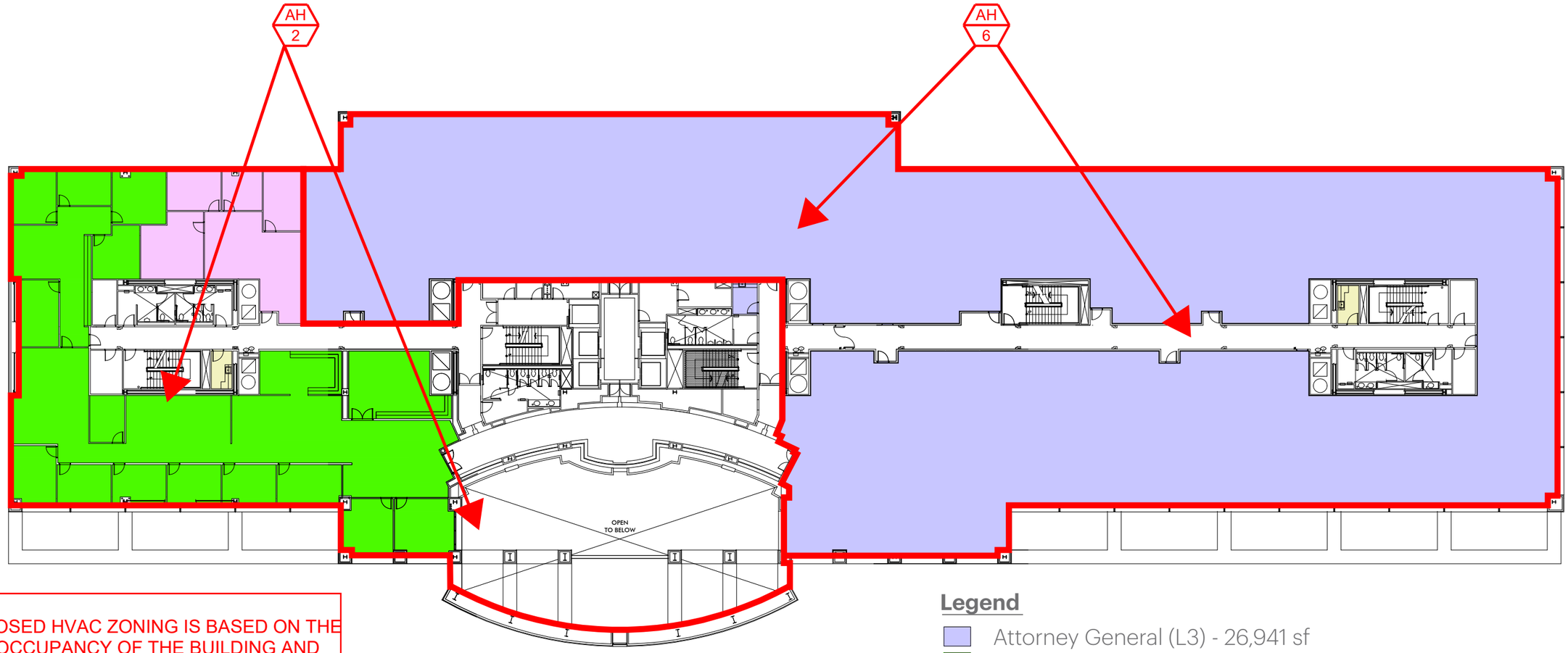
0’ 16’ 32’ 64’

Legend

- Communal Kitchenette - 135 sf
- Gaming Control Board (L2) - 34,284 sf

Total: 34,419 sf

Level - 3 MECHANICAL ZONING PLAN



NOTE:
THE PROPOSED HVAC ZONING IS BASED ON THE CURRENT OCCUPANCY OF THE BUILDING AND SHALL BE CONFIRMED WITH SWPD DURING THE REMODELING DESIGN PHASE

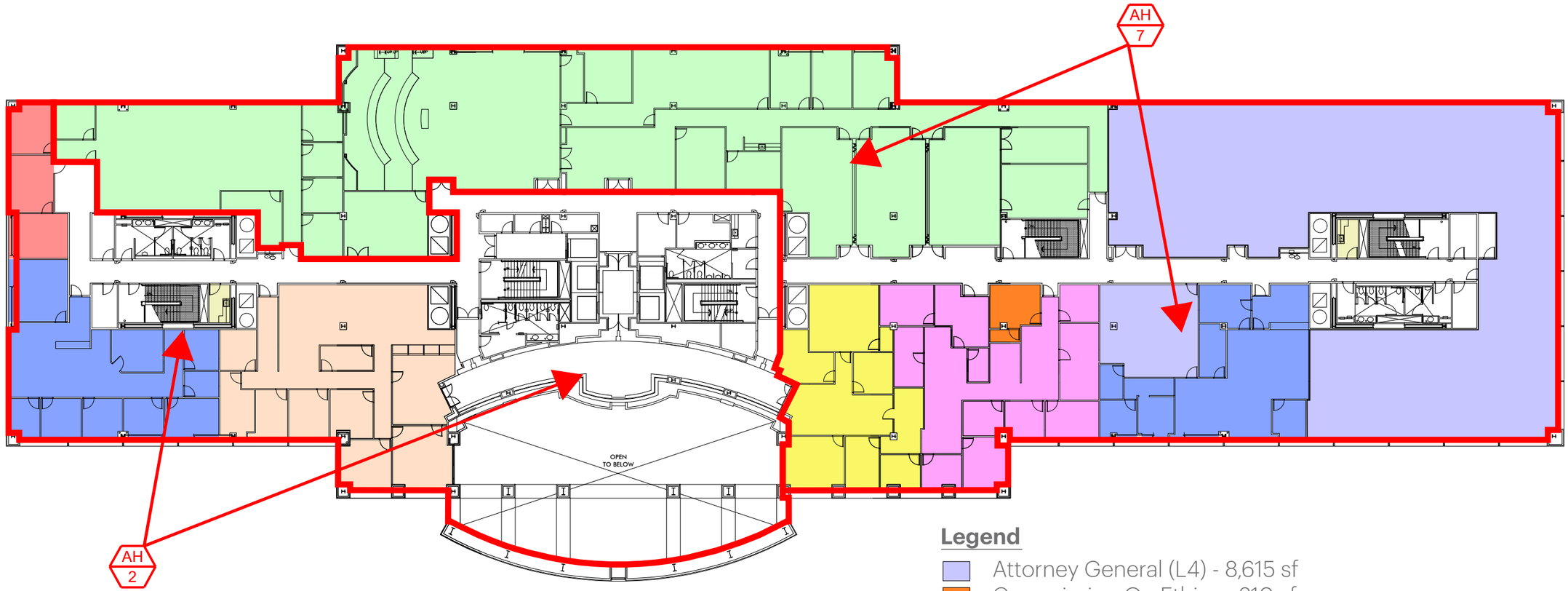
0’ 16’ 32’ 64’

Legend

- Attorney General (L3) - 26,941 sf
- Colorado River Commission Of Nevada - 6,977 sf
- Communal Kitchenette - 135 sf
- Veterans Services - 1,511 sf

Total: 35,564 sf

Level - 4 MECHANICAL ZONING PLAN



NOTE:
THE PROPOSED HVAC ZONING IS BASED ON THE CURRENT OCCUPANCY OF THE BUILDING AND SHALL BE CONFIRMED WITH SWPD DURING THE REMODELING DESIGN PHASE

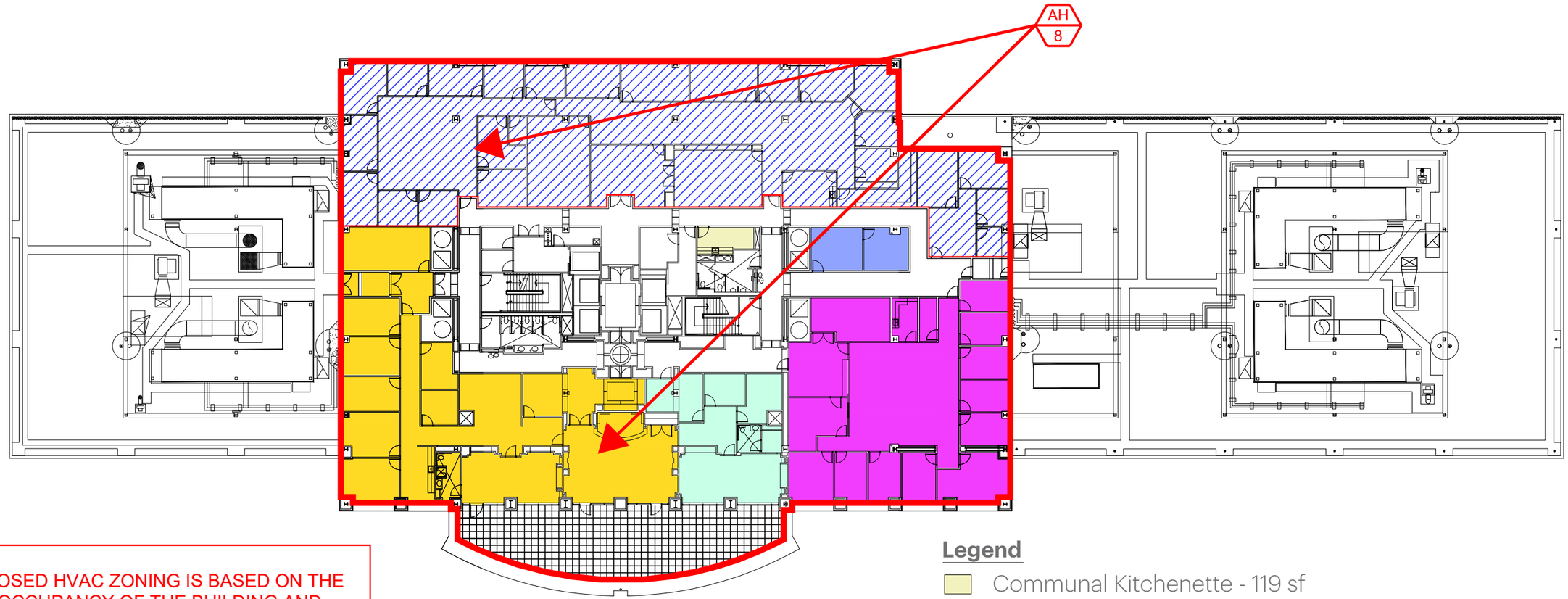
0’ 16’ 32’ 64’

Legend

- Attorney General (L4) - 8,615 sf
- Commission On Ethics - 210 sf
- Communal Kitchenette - 135 sf
- Consumer Health Assistance - 2,584 sf
- Controller’s Office - 634 sf
- Department Of Taxation
  Marijuana Enforcement Division - 3,142 sf
- Governor’s Office Of Workforce Innovation (OWINN) - 1,894 sf
- Legislative Council Bureau - 12,586 sf
- State Treasurer - 4,181 sf
  (Unclaimed Property - 2,290 sf +
  College Savings - 1,891 sf)

Total: 33,981 sf

Level - 5 MECHANICAL ZONING PLAN



NOTE:
THE PROPOSED HVAC ZONING IS BASED ON THE CURRENT OCCUPANCY OF THE BUILDING AND SHALL BE CONFIRMED WITH SWPD DURING THE REMODELING DESIGN PHASE

0’ 16’ 32’ 64’

Legend

- Communal Kitchenette - 119 sf
- State Treasurer (L5) - 346 sf
- Governor’s Office - 4,351 sf
- Governor’s Office Of Economic Development (GOED) - 3,628 sf
- Lieutenant Governor’s Office - 1,160 sf
- Vacant Space - 7,576 sf

Total: 17,180 sf

MATERIALS SCHEDULE

SERVICE	MATERIALS
SOIL, WASTE AND VENT	SCHEDULE 80 PVC WITH SOLVENT WELD FITTINGS.
GREASE WASTE AND VENT BELOW GRADE	SCHEDULE 80 PVC WITH SOLVENT WELD FITTINGS.

NOTES

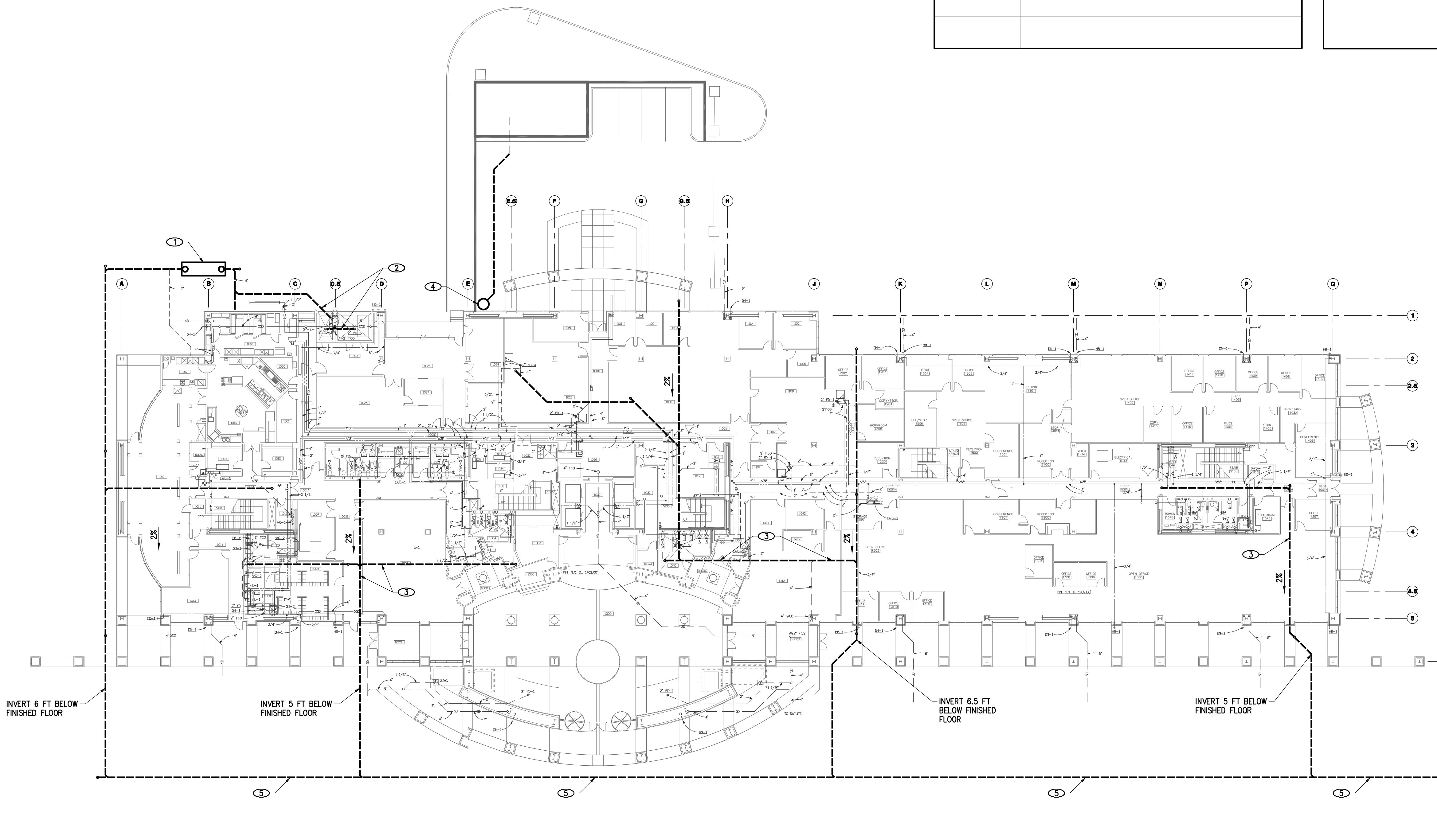
1. NEW 2000 GALLON GREASE INTERCEPTOR – JENSEN PRECAST.
2. NEW UNDERGROUND GREASE WASTE PIPING WITH HEAT TRACE.
3. NEW UNDERGROUND WASTE AND VENT PIPING.
4. PUMP ROOM WASTE SUMP PUMP. 50 GPM AT 30 FT, 1/2 HP.
5. SEE CIVIL PLANS FOR CONTINUATION.

DRAWN BY: - CHECKED BY: - DATE: MM-DD-YEAR

REVISIONS

DATE | BY

NV5



OVERALL PLUMBING PLAN - UNDERGROUND WASTE PIPING

NO SCALE

1 / P1

OVERALL PLUMBING PLAN - UNDERGROUND WASTE PIPING

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT

SHEET NUMBER:

P1

SCALE: -

JOB NUMBER: -

HKA
Elevator Consulting, Inc.

January 02, 2019

Brian Henley
Partner, Architect
KGA ARCHITECTURE
9075 West Diablo Drive, Suite 300
Las Vegas, Nevada 89148

Reference: GRANT SAWYER STATE OFFICE BUILDING – R1

Dear Brian:

On October 15, 2018 HKA Elevator Consulting, Inc. made a site visit to the Grant Sawyer State Office Building at 555 E Washington Ave located in Las Vegas, NV. The building is 224,000 gross square feet in size and located just north of downtown Las Vegas. The purpose of our visit was to survey four (4) passenger elevators and one (1) service elevator for modernization, repair or replacement. The survey was to determine the existing elevator equipment condition, building and hoistway construction and determine the work by others criteria for the elevator modernization specifications. The following is the result of our survey. The vertical transportation equipment was manufactured and installed by Montgomery Elevator Company in 1995.

ELEVATOR OPTIONS:

A. Remodel or Modernize. R1

GRANT SAWYER ELEVATOR INVENTORY:

Elevator	Use	Capacity	Speed FPM	Machine Type	Floors Served	Openings	Door Type	Door Opg
1	Passenger	3500	350	OH DC Geared	1,2,3,4,5	Front	C/O	3'–6"
2	Passenger	3500	350	OH DC Geared	1,2,3,4,5	Front	C/O	3'–6"
3	Passenger	3500	350	OH DC Geared	1,2,3,4,5	Front	C/O	3'–6"
4	Passenger	3500	350	OH DC Geared	1,1R,2,3,4,5, 5R	Front & Rear	C/O	3'–6"
Serv. 5	Service	4000	350	OH DC Geared	1,2,3,4,5,6	Front	S/O	4'–0"

EXECUTIVE SUMMARY OF CONDITIONS:

The existing elevator equipment was manufactured and installed by Montgomery Elevator Company in 1995. The elevator equipment is original to the building and has not been modernized. The current service provider is Otis Elevator Company.

We found the annual and five year code required tests are all overdue. The date of the last inspection was in 2015 for the passenger elevators and 2012 for the service elevator. In our opinion, all elevators should be written up and red-tagged if corrections are not implemented. The last five year full load test was performed in 2012. These tests and inspections should be completed immediately.

The machines are Montgomery geared DC traction model 208E, roped 1:1. The passenger cars have a

30HP DC motor and the service car has a 40HP DC motor. The machines are in fair to poor condition and are now obsolete. Replacement parts are becoming very hard to procure. We noted the hoist ropes are severely rouging / undersized and are in need of replacement as they do not meet current codes. The elevators were all running approximately 10% less than contract speed.

The controllers are Montgomery solid state Ultron model controllers. The controllers and drives are in poor condition and are now obsolete. Replacement parts cannot be obtained. Elevator #2 has been shut down for 2 years due to the need for a new drive unit.

MODERNIZE RECOMMENDATIONS for 20 YEAR LIFE EXPECTANCY:

Major components that can be retained and refurbished include:

1. Car frames and platforms.
2. Hoistway entrance doors and frames.
3. Hoistway equipment and counterweights.
4. Rails and brackets.
5. Pit equipment.
6. Lobby panel

We are recommending the following components to be replaced with new equipment:

1. New AC machines and rope grippers.
2. Existing solid state controllers with new microprocessor control systems.
3. New positioning system.
4. Existing DC drives with new AC motor drive units.
5. New governors.
6. Existing cab interiors.
7. Existing door operators and associated hoistway equipment with new heavy duty high speed closed loop operators.
8. Existing hoistway and machine room wiring with all new code complying wiring.
9. Existing signals and operating fixtures with new vandal resistant fixtures meeting all ADA requirements.
10. Elevator Management System.
11. Destination Dispatch option.

ESTIMATED COST FOR MODERNIZATION:

Based on the above recommendations, we estimate the modernization of the vertical transportation to be approximately $350,000 per elevator or a total cost of approximately $1.75M. This estimate does not include any work that will be required to be performed by other contractors to place existing hoistways, machine rooms and electrical work in compliance with code. It does include some modest cab interior upgrades.

ESTIMATED COST SUMMARY:

Based on the above recommendations, we estimate the budget cost of the vertical transportation to be approximately as follows:

Option	Scheme	Cost	Installation Time	Life Expectancy
R1	Modernize 5 Add destination dispatch @	$1.75M $200K	10 weeks/ car	20 Yrs.

@ Destination Dispatch is an optional feature.

These estimates do not include any work that will be required to be performed by other contractors to upgrade existing hoistways, machine rooms and electrical work for compliance with code. For the new elevator scenario, this does include the cost to build the new core and only includes four (4) passenger elevators. The service elevator would remain in place and be fully modernized. The old core will need to be removed as well.

SCHEDULE:

TASK:	TIME FRAME EXP.:
Write Specifications:	3 weeks
Final decisions:	2 weeks
Put out RFP / job walk:	1 week
Bids Due:	3 weeks
Award:	8 weeks
Contract:	2 weeks
Submittals:	4 weeks
Fabrication:	12 weeks
Shipping:	1 week
First Round – 1 passenger:	8 weeks
Second Round – 1 passenger:	8 weeks
Third Round –1 passenger unit:	8 weeks
Fourth Round – 1 passenger:	8 weeks
Fifth Round – 1 service:	10 weeks
TOTAL Expected Schedule:	**1.5 Yrs.**

WORK BY OTHER CONTRACTORS:

Generally, elevator contractors do not assume the responsibility of general contractor. There will be work required to complete the project beyond the scope of the elevator contractor. For example, these items will include:

1. Machine Room Construction: Modifications to make the machine room legal with full height enclosure to separate elevator equipment from other non-elevator related equipment with a minimum 7'-0" clear head room. Access door to be self-closing, self-locking and openable from inside without a key. Remove and do not locate any pipes, conduit, ducts or other equipment in machine room that is not necessary for the proper operation of elevator equipment. The machine room for the elevator equipment shall be arranged so that passage through the machine room is not necessary to gain access to other equipment or other parts of the building, or for the removal of non-elevator related equipment through the machine room.

2. Machine Room Ventilation: Provide natural or mechanical ventilation, heating or air conditioning in machine rooms of sufficient capacity to maintain a temperature between 50 degrees F. and 90 degrees F. Maximum relative humidity (non-condensing) 85%. Locate mechanical ventilation equipment outside of elevator machine room. The average elevator equipment heat release for this project is as follows:

    a. Elevator No. 1-4 = 15,000 BTU/HR/ELEVATOR

    b. Elevator No.5 = 18,000 BTU/HR/ELEVATOR

3. Machine Room Electrical Requirements

    a. Power Circuits: Replace existing disconnect switches with dedicated three phase power feeders through individually lockable fused mainline disconnect switch or circuit breaker for each elevator with feeders extended to controllers. Size feeders to limit voltage drop to less than 5%. Use copper conductors only. Provide continuous system ground conductor.

    b. Car Lighting and Accessories Circuits: Provide new 120 V.A.C., 20 Amp single phase power with lockable S.P.S.T. disconnect switch in machine room with wire extended to studs on each elevator controller. Provide emergency power back up.

    c. Telephone Communication Lines: Provide new communication lines connected to studs on each elevator controller.

        i. Passenger Emergency Communication: Provide one line per elevator.

        ii. Remote monitoring: Provide one line per group of elevators (if desired).

    d. Fireman's Communication Circuit; For Life Safety Buildings: If a Fire Control Room is provided in the building, provide communication wiring between Fire Control Room and connect to studs on each elevator controller in elevator machine room.

    e. Public Address or Life Safety Speakers; For Life Safety Buildings: If a Fire Control Room is provided in the building, provide speakers to the elevator contractor for installation in elevator car and provide wiring from Fire Control Room and connect to studs on each elevator controller in elevator machine room.

    f. Smoke Detector Circuits: Provide new smoke detector at Main Floor lobby for Alternate Floor Fire Recall Service. Provide wiring from detectors in elevator lobbies, hoistways and machine rooms to controller designated by Elevator Contractor for fire emergency service. Any smoke detectors installed in elevator hoistways shall be accessible for servicing from outside of hoistway.

    g. Lighting and Outlets: Modify existing lighting to provide minimum 20 foot-candles at machine room floor. Locate light switch within 18 inches of lock jamb side of access door. Provide GFI convenience outlets on all walls.

    h. Emergency Standby Power: Provide emergency standby power source sized to run largest elevator in each of the following groups:

Group I	Elevators No.1-4
Group II	Elevators No. 5

        i. Power source shall be sized to absorb regenerative power from elevator systems which equals approximately 25% to 45% of full load running. In general, the total standby power load should be no less than twice the standby load imposed by the elevators alone.

        ii. Provide time delay automatic transfer switch to distribute standby power through normal feeders of power circuits. Provide two pairs of No. 14 gauge wires from auxiliary contacts on transfer switch to machine room to operate as follows:

            1. One dry contact to open when normal power fails and emergency standby power becomes available and to close when normal power returns to signal elevator controllers.

            2. One dry contact to open on emergency power and to close 30 to 60 seconds prior to transfer back to normal power to allow elevators to

Grant Sawyer Office Building
Las Vegas, NV
KGA Architecture
January 2, 2019

come to rest prior to normal power resumption.

iii. Connect car lighting, fan and communication system circuits on emergency power source.

i. Common Circuit: Provide a new dedicated 20 Amp 120 Volt 1-Phase circuit through lockable fused disconnect switch with feeders extended to group controller panel designated by Elevator Contractor for each bank of two cars or more. Provide emergency power backup.

4. Block-Outs and Chases: Provide, as required by Elevator Contractor, for signal fixtures, conduits, pipe runs and other elevator equipment.

5. Patching and Painting: Provide patching and finishing of adjacent surfaces after elevator equipment has been installed.

6. Hoistway Ventilation: Provide hoistway ventilation for elevators serving more than 2 levels per governing building code. Do not ventilate into machine room. Ventilate directly to outside air or through mechanical ducts to outside air from top of hoistway below machine room floor. Check local codes for special requirements and capacity of ventilation.

7. Counterweight Screens: Provide screens between side-mounted counterweights and adjacent hoistways. Screens shall extend 6 inches horizontally beyond each counterweight rail and the full height of the hoistway. Screens shall be made from wire-mesh material equal to or stronger than .048-inch diameter wire with openings not exceeding ½ inch, securely fastened to keep the guard taut and plumb.

8. Counterweight Guard and Pit Ladders: Retain the existing counterweight guard and the pit ladder will be extended by the elevator company.

9. Pit: Cut out pit floor to accommodate a 24 inch X 24 inch sump hole capable of housing a sump pump that can pump 3000 gallons of water per hour to outside daylight. Install regular outlet for the pump. Install additional GFCI outlet in pit. Modify or replace existing lighting so light tubes are guarded and provide minimum 10 foot-candles at pit floor. Locate light switch and stop switch inside ladder. Lighting and outlets to be NEMA 4 if below the sill line. Provide sump and pump as required by local Codes. Waterproof pit as necessary. Elevator Company will paint pit floor and equipment.

AESTHETIC APPOINTMENTS:

Other items that must be discussed prior to our preparation of the elevator modernization specification include:

1. Cab Interior Upgrades: If so desired, consideration must be given to the weight of the new cab interiors. The code allows only a five (5%) increase in the current total car weight. The car weight that is currently stamped on the car crosshead data plate indicates 4900 pounds for the #1,2,3,5 cars and 5300 pounds for the #4 car. This means that the total new weight of the car cannot exceed 5145 pounds for the #1,2,3,5 cars and 5565 pounds for the #4 car with the new interiors. It is recommended that you contact your maintenance contractor to have them verify if the information on the data plate is accurate. This will require the contractor to weigh the cars. Your contractor may charge you for this service.

2. Hoistway Entrances: As part of the modernization you may wish to refinish the hoistway entrance frames and doors at each lobby. This can be incorporated into the modernization specification as part of the elevator contractor's work or you may wish to have this work done by other contractors of your choice.

3. Signals and Fixtures: New signals and operating fixtures, such as hall button stations, hall lanterns, car operating panels and car position indicators will be provided with the modernization. We intend to specify fixture faceplates of metal having the same material and finish that currently exists unless you wish something different.

Please review this information and give me a call to discuss these items prior to developing the rough draft of the modernization specification. Should you have any questions regarding the above, please do not hesitate to call.

Sincerely,
HKA Elevator Consulting, Inc.

Jeff Crusham

Jeff Crusham
Director, National Business Development

END OF REPORT

NSPWD Grant Sawyer State Office Building Repair R1

Las Vegas, NV

KGA
FEASIBILITY STUDY COST ESTIMATE REVISION3
Job No. 18236.000
11 January 2019

OC INSIGHT

COST ESTIMATE

INTRODUCTORY NOTES

This estimate is based on verbal direction from the client and the following items, received 17 December 2018 & 20 December 2018

Specifications and Reports	2018.11.06 Grant Sawyer State Office Building - Property Condition Assessment Vol. 2 KGA.pdf

The following items are excluded from this estimate:

- Escalation.
- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Furniture, fixtures & equipment.
- Temporary office facilities.
- Moving, storage and installation of owner furnished equipment.
- Relocation of personnel to offsite offices.
- Photovoltaic system.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

The midpoint of construction of October 2022 is based on:

- Construction start date of January 2022
- Estimated construction duration of 18 months

- This estimate is based on a CMAR delivery method.
- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$57,544,657	236,981	$242.82
02. SITE WORK	$1,169,153	750,474	$1.56

TOTAL CONSTRUCTION COST	$58,713,810

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$6,369,712	236,981	$26.88

TOTAL CONSTRUCTION COST	$65,083,522

NSPWD Grant Sawyer State Office Building Repair R1

Las Vegas, NV

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$40,275,896	236,981	$169.95
02. SITE WORK	$818,298	750,474	$1.09

TOTAL NET DIRECT COST		$41,094,194

GENERAL MARKUPS

DESIGN CONTINGENCY	15.00%	$6,164,129
PHASING	5.00%	$2,362,916
CMAR CONTINGENCY	4.00%	$1,984,850
GENERAL CONDITIONS/REQUIREMENTS	7.50%	$3,870,457
CONTRACTOR OVERHEAD AND PROFIT	3.75%	$2,080,370
INSURANCE	1.00%	$575,569
BONDS: CONTRACTOR	1.00%	$581,325

TOTAL CONSTRUCTION COST	$58,713,810

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE		$65,797	$0.28
03 SUPERSTRUCTURE		$329,841	$1.39
04 EXTERIOR CLOSURE		$129,256	$0.55
05 ROOFING		$669,362	$2.82
06 INTERIOR CONSTRUCTION		$10,944,357	$46.18
07 CONVEYING		$1,329,416	$5.61
08 MECHANICAL		$15,992,396	$67.48
09 ELECTRICAL		$6,690,670	$28.23
10 EQUIPMENT		$1,680,885	$7.09
11 SITEWORK		$2,443,916	$10.31
NET DIRECT BUILDING COST		$40,275,896	$169.95
DESIGN CONTINGENCY	15.00%	$6,041,384	$25.49
SUBTOTAL		$46,317,280	$195.45
PHASING	5.00%	$2,315,864	$9.77
SUBTOTAL		$48,633,144	$205.22
CMAR CONTINGENCY	4.00%	$1,945,326	$8.21
SUBTOTAL		$50,578,470	$213.43
GENERAL CONDITIONS/REQUIREMENTS	7.50%	$3,793,385	$16.01
SUBTOTAL		$54,371,855	$229.44
CONTRACTOR OVERHEAD AND PROFIT	3.75%	$2,038,945	$8.60
SUBTOTAL		$56,410,800	$238.04
INSURANCE	1.00%	$564,108	$2.38
SUBTOTAL		$56,974,908	$240.42
BONDS: CONTRACTOR	1.00%	$569,749	$2.40
TOTAL BUILDING COST		**$57,544,657**	**$242.82**

GROSS FLOOR AREA: 236,981 SF

NSPWD Grant Sawyer State Office Building Repair R1
BUILDING
Las Vegas, NV

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE		$65,797		$0.28
021 Slab On Grade	$65,797		$0.28	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$329,841		$1.39
031 Floor and Roof Construction	$329,841		$1.39	
032 Stair Construction				
04 EXTERIOR CLOSURE		$129,256		$0.55
041 Exterior Walls	$129,256		$0.55	
042 Exterior Doors/Windows				
05 ROOFING		$669,362		$2.82
051 Roofing	$669,362		$2.82	
06 INTERIOR CONSTRUCTION		$10,944,357		$46.18
061 Partitions	$2,288,545		$9.66	
062 Interior Finishes	$6,001,178		$25.32	
063 Specialties	$990,238		$4.18	
064 Interior Doors/Windows	$1,664,396		$7.02	
07 CONVEYING		$1,329,416		$5.61
071 Elevators	$1,329,416		$5.61	
08 MECHANICAL		$15,992,396		$67.48
081 Plumbing	$370,653		$1.56	
082 H.V.A.C.	$15,398,833		$64.98	
083 Fire Protection	$222,910		$0.94	
084 Special Mechanical				
09 ELECTRICAL		$6,690,670		$28.23
091 Standard Electrical	$6,244,849		$26.35	
092 Special Electrical	$445,821		$1.88	
10 EQUIPMENT		$1,680,885		$7.09
101 Fixed/Movable Equipment	$442,095		$1.87	
102 Furnishings	$1,238,790		$5.23	
103 Special Construction				
11 SITEWORK		$2,443,916		$10.31
111 Site Preparation	$2,443,916		$10.31	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$40,275,896**			**$169.95**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$818,298	$1.09
NET DIRECT SITE COST		$818,298	$1.09
DESIGN CONTINGENCY	15.00%	$122,745	$0.16
SUBTOTAL		$941,043	$1.25
PHASING	5.00%	$47,052	$0.06
SUBTOTAL		$988,095	$1.32
CMAR CONTINGENCY	4.00%	$39,524	$0.05
SUBTOTAL		$1,027,619	$1.37
GENERAL CONDITIONS/REQUIREMENTS	7.50%	$77,071	$0.10
SUBTOTAL		$1,104,690	$1.47
CONTRACTOR OVERHEAD AND PROFIT	3.75%	$41,426	$0.06
SUBTOTAL		$1,146,116	$1.53
INSURANCE	1.00%	$11,461	$0.02
SUBTOTAL		$1,157,577	$1.54
BONDS: CONTRACTOR	1.00%	$11,576	$0.02
TOTAL SITE COST		**$1,169,153**	**$1.56**

TOTAL SITE AREA: 750,474 SF

NSPWD Grant Sawyer State Office Building Repair R1
SITE WORK
Las Vegas, NV

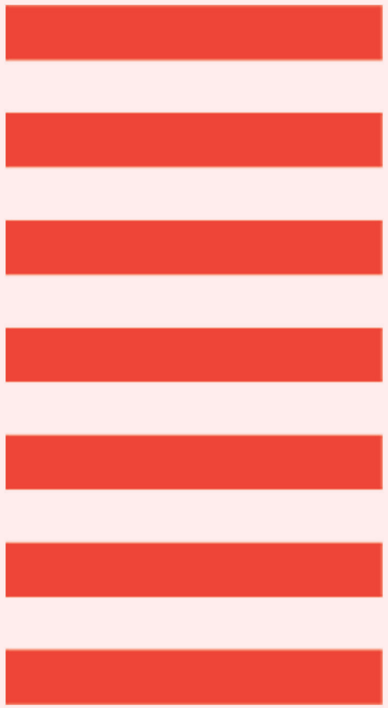
FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$818,298		$1.09
111 Site Preparation	$495,396		$0.66	
112 Site Improvements	$246,334		$0.33	
113 Site Utilities	$76,568		$0.10	
114 Off-Site Work				
NET DIRECT SITE COST		**$818,298**	**$1.09**	

Reprogramming | Concept R2-A



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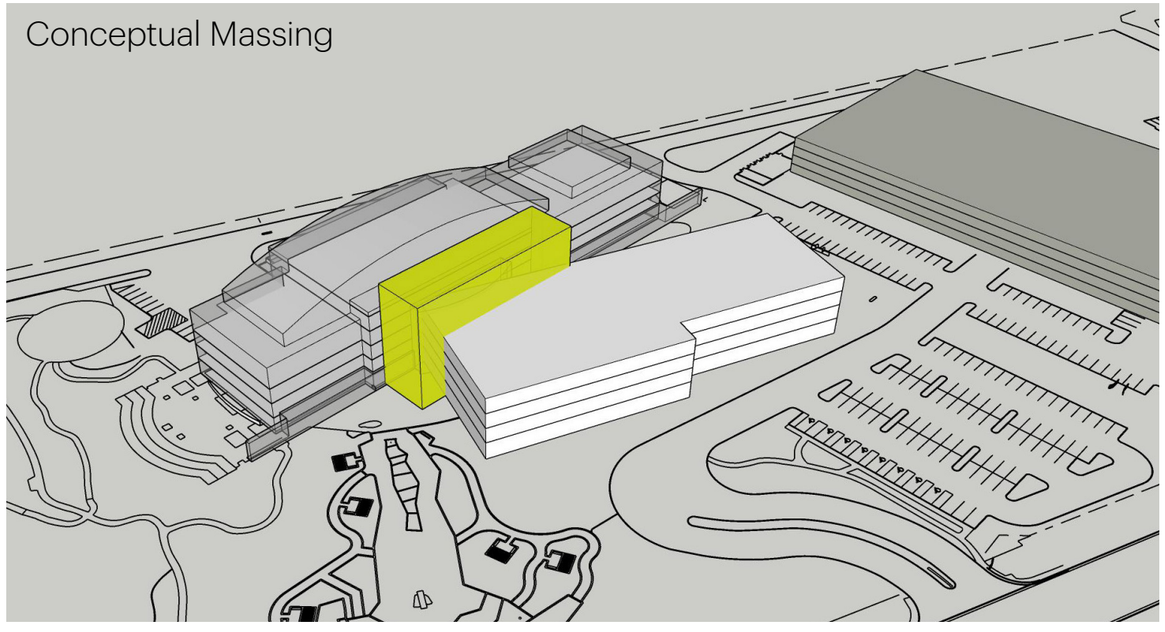
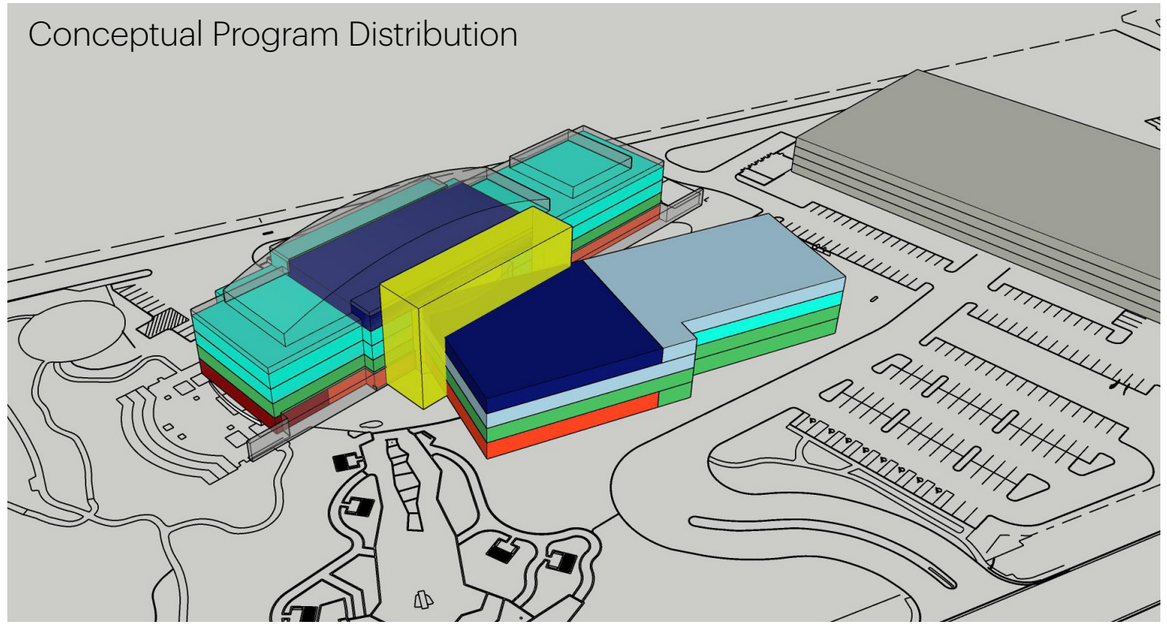
Reprogramming | Concept R2-A

Creating a Courtyard

Concept R2-A proposes an expansion of the existing Grant Sawyer building in order to provide for the full program area need. The close relationship the new and existing building areas allows for shared vertical circulation. The vertical circulation core is relocated from the center of the existing building to the center of the new campus, freeing up floor area on the existing floor plates and allowing the same core to serve the existing and expansion areas. By situating the expansion area in front of the existing building, at an angle parallel to Washington Avenue, an angular courtyard is created which allows for access of natural light to all sides of both building volumes. The courtyard also serves as a shared landscape space which will provide usable outdoor area to be enjoyed by all building occupants, and viewed from the adjacent interior office spaces. In order to accomodate the projected occupant load, a four-level parking garage is added to the site.





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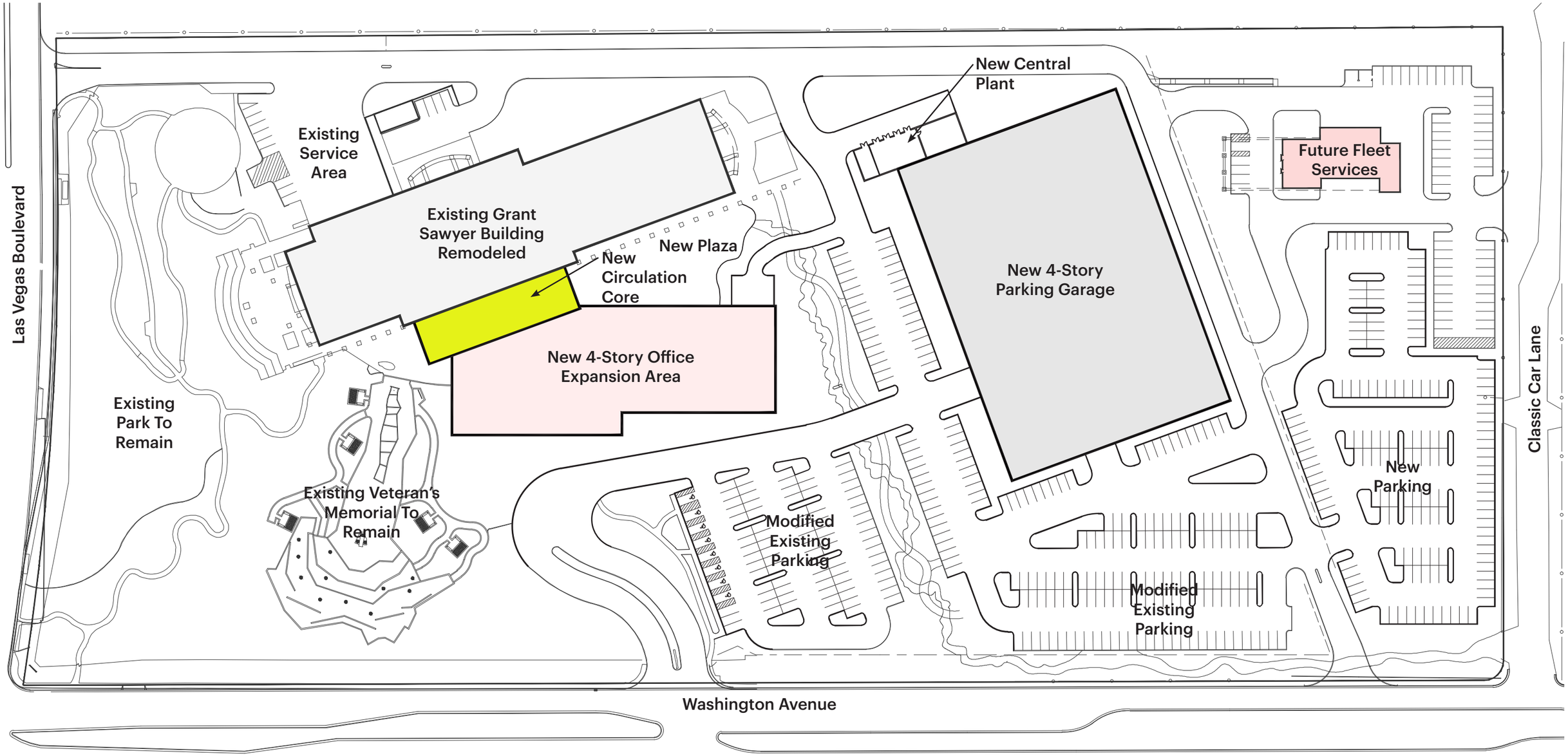
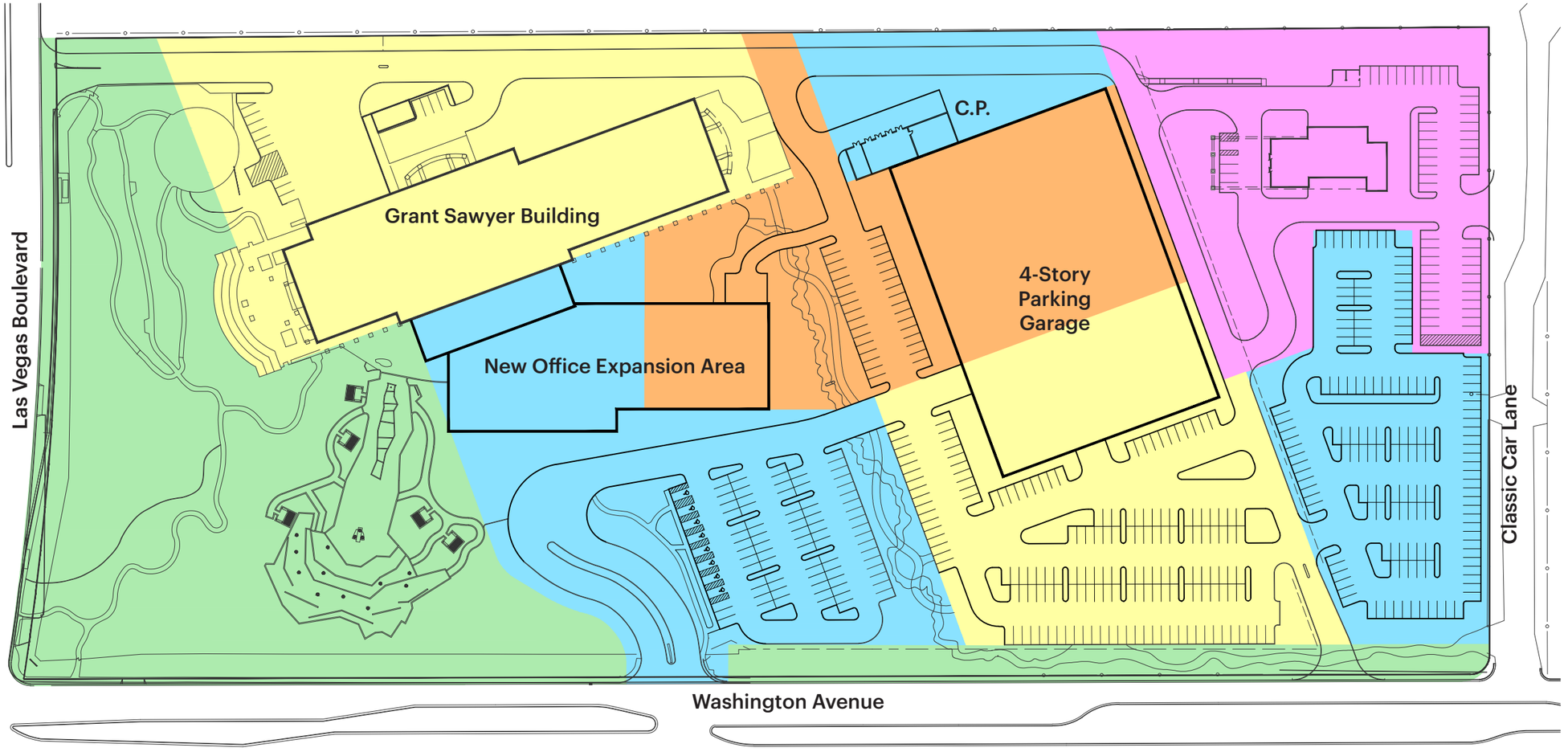
Concept R2-A | Conceptual Site Plan



Surface Parking: 456 Spaces
Garage Parking: 912 Spaces
Total Parking: 1,368 Spaces

Concept R2-A | Conceptual Phasing Plan



Phase I
Build a new 4-story, 100,000 S.F. west half of the addition to the existing Grant Sawyer Building, including a new vertical circulation core which will eventually serve the existing area of the Grant Sawyer Building as well. Build a new Central Plant. Build a new parking lot at the existing Fantasy Park and solar farm.

Phase II
Build a new 4-story, 80,000 S.F. east half of the addition to the existing Grant Sawyer Building. Build the north half of the 4-story parking garage over a portion of the current surface parking lot.

Phase III
Remodel the Grant Sawyer Building. Build the south half of the 4-story parking garage.

Concept R2-A | Conceptual Level 1 Floor Plan

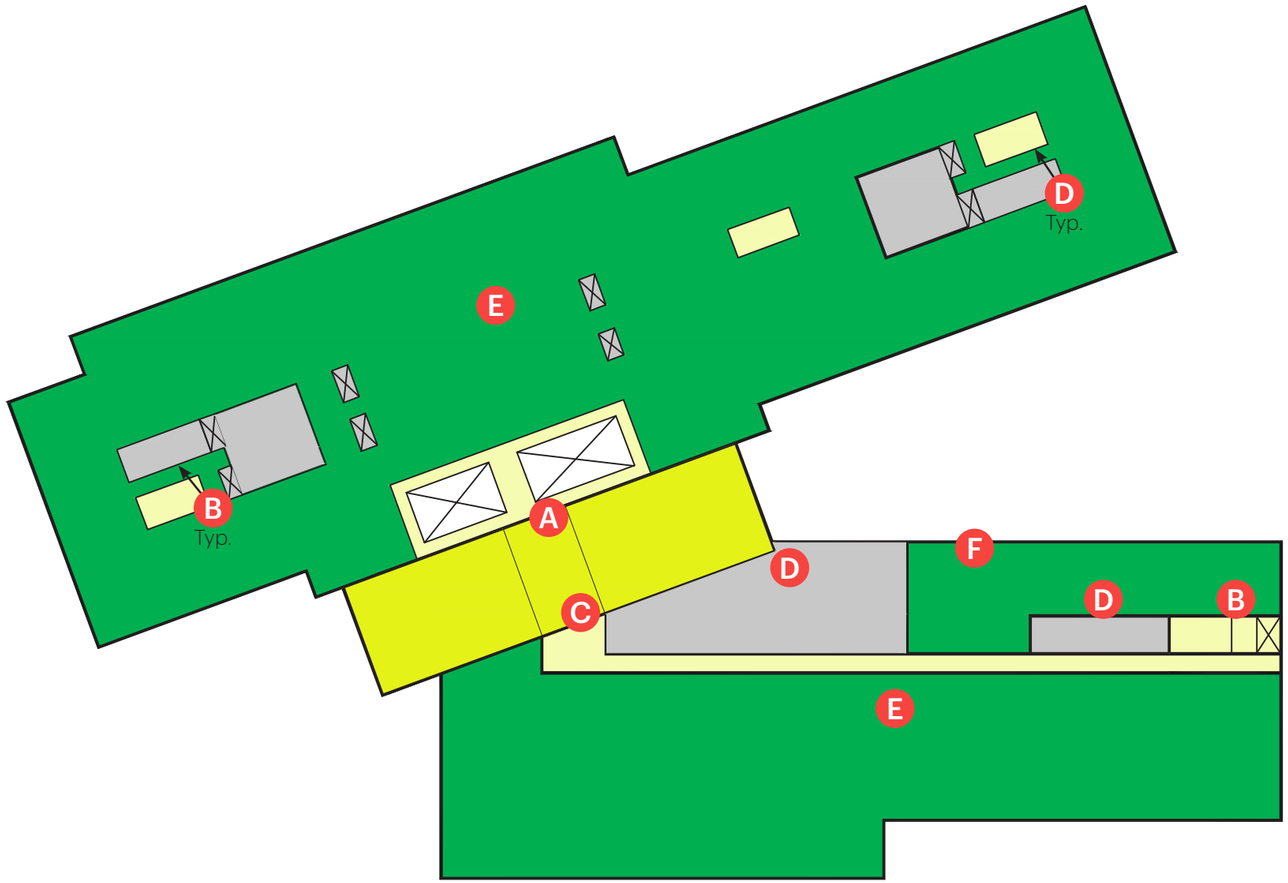
The vertical circulation cores contain passenger and freight elevators, exit stairs, restrooms, lactation rooms, janitor's closets and utility spaces and shafts. The onsolidation and stacking of these repeated core elements on each level of the new construction is proposed in order to minimize intrusion of these elements into the tenant areas.

0' 30' 60' 120' 180'

- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Cafeteria
- F Shared Break Room
- G Mail Services
- H Controller's Office - Vendor Database Services
- I Dept. of Human Resources Management
- J Secretary of State
- K Innovation Center
- L Capitol Police
- M Dept. of Public Safety (DPS) Investigation Division
- N Governor's Garage
- O Dept. of Taxation

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-A | Conceptual Level 2 Floor Plan

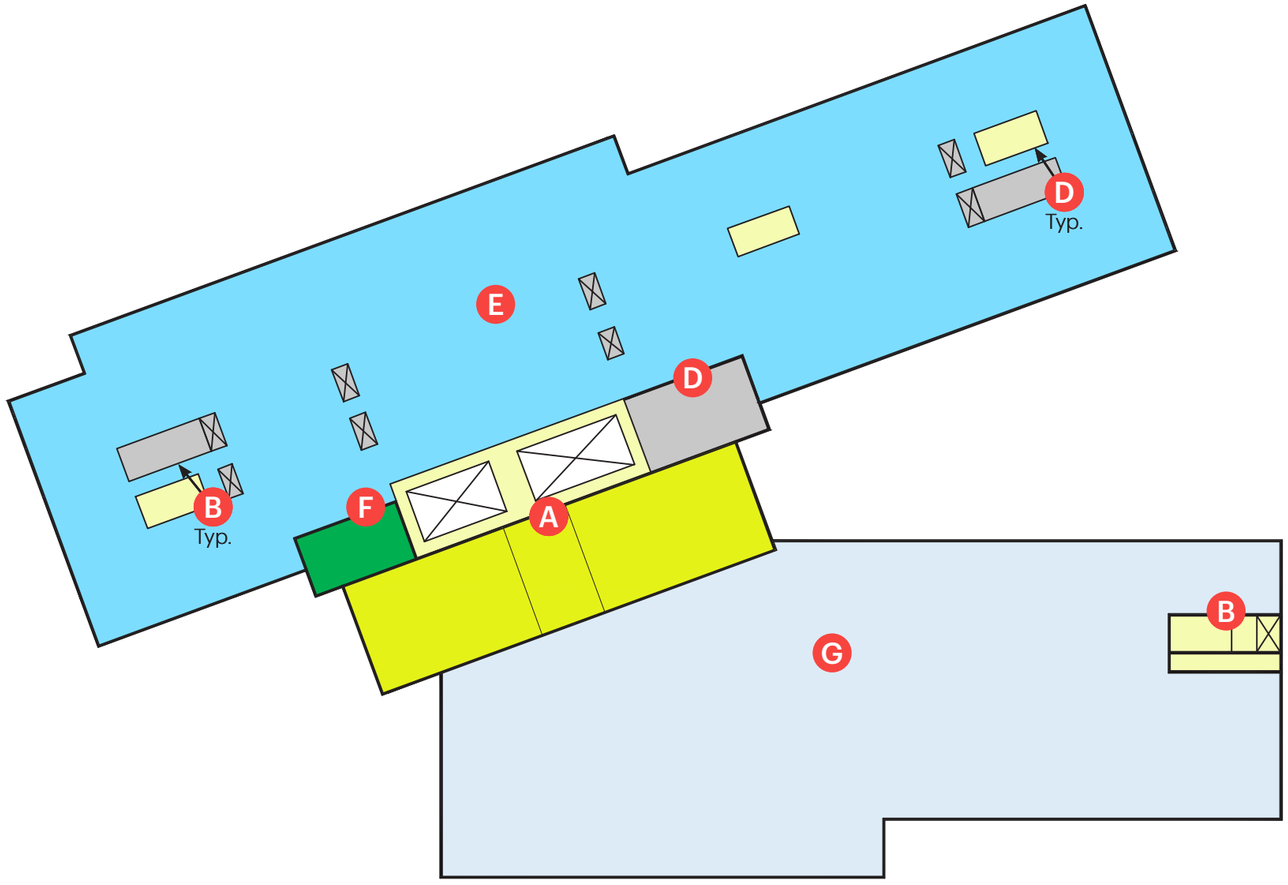


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Dept. of Veteran's Services

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-A | Conceptual Level 3 Floor Plan

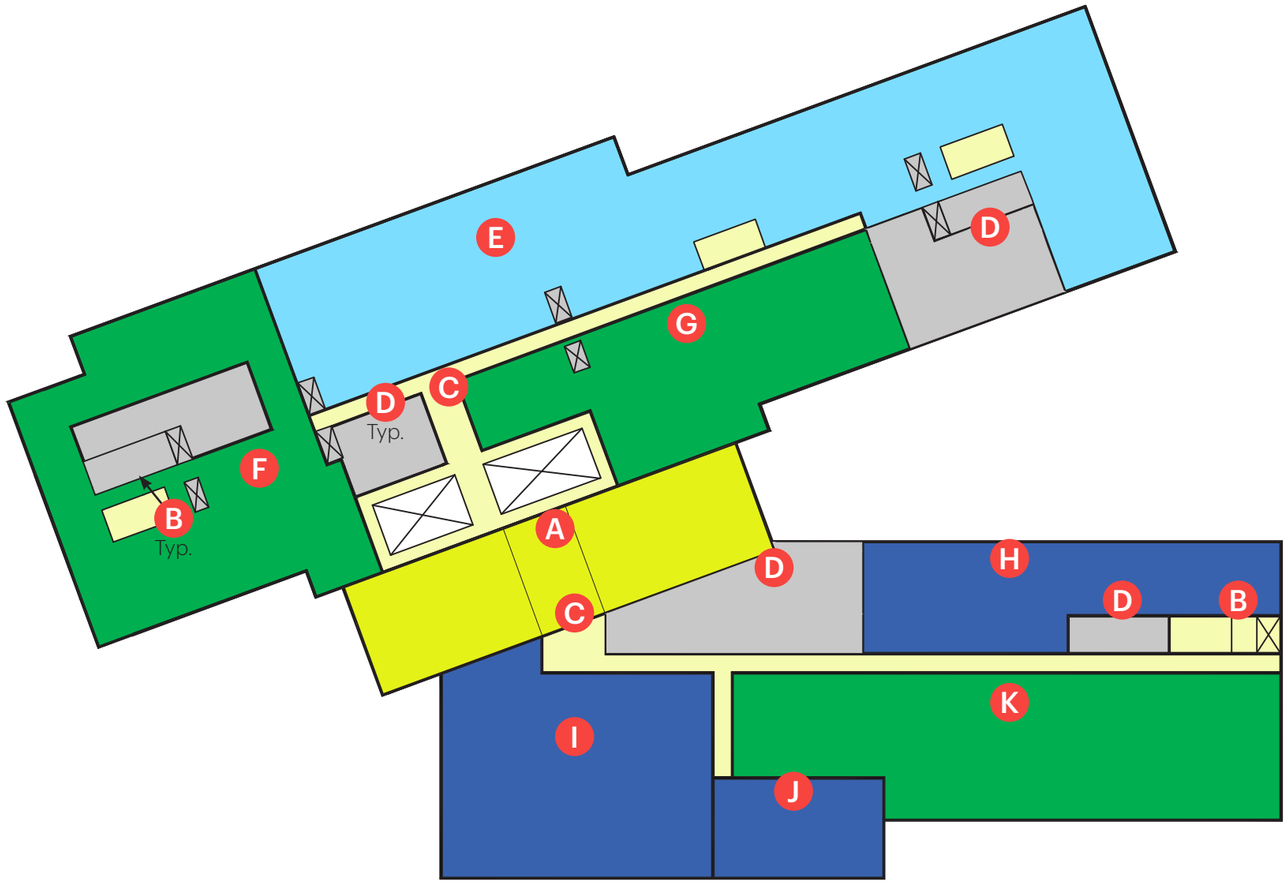


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Attorney General
- F Commision on Ethics
- G Legislative Counsel Bureau

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-A | Conceptual Level 4 Floor Plan

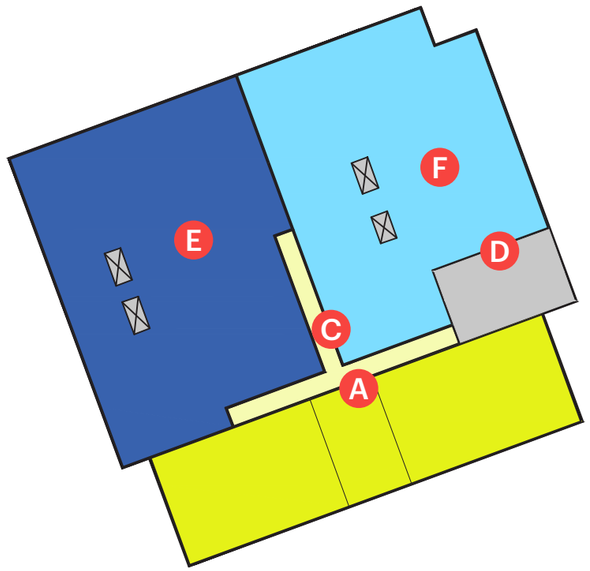


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Attorney General
- F Dept. of Employment, Training & Rehabilitation
- G Consumer Health Assistance Bureau
- H Governor's Office of Workforce Innovation (OWINN)
- I Office of the Governor
- J Office of the Lieutenant Governor
- K Colorado River Commission of Nevada

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-A | Conceptual Level 5 Floor Plan

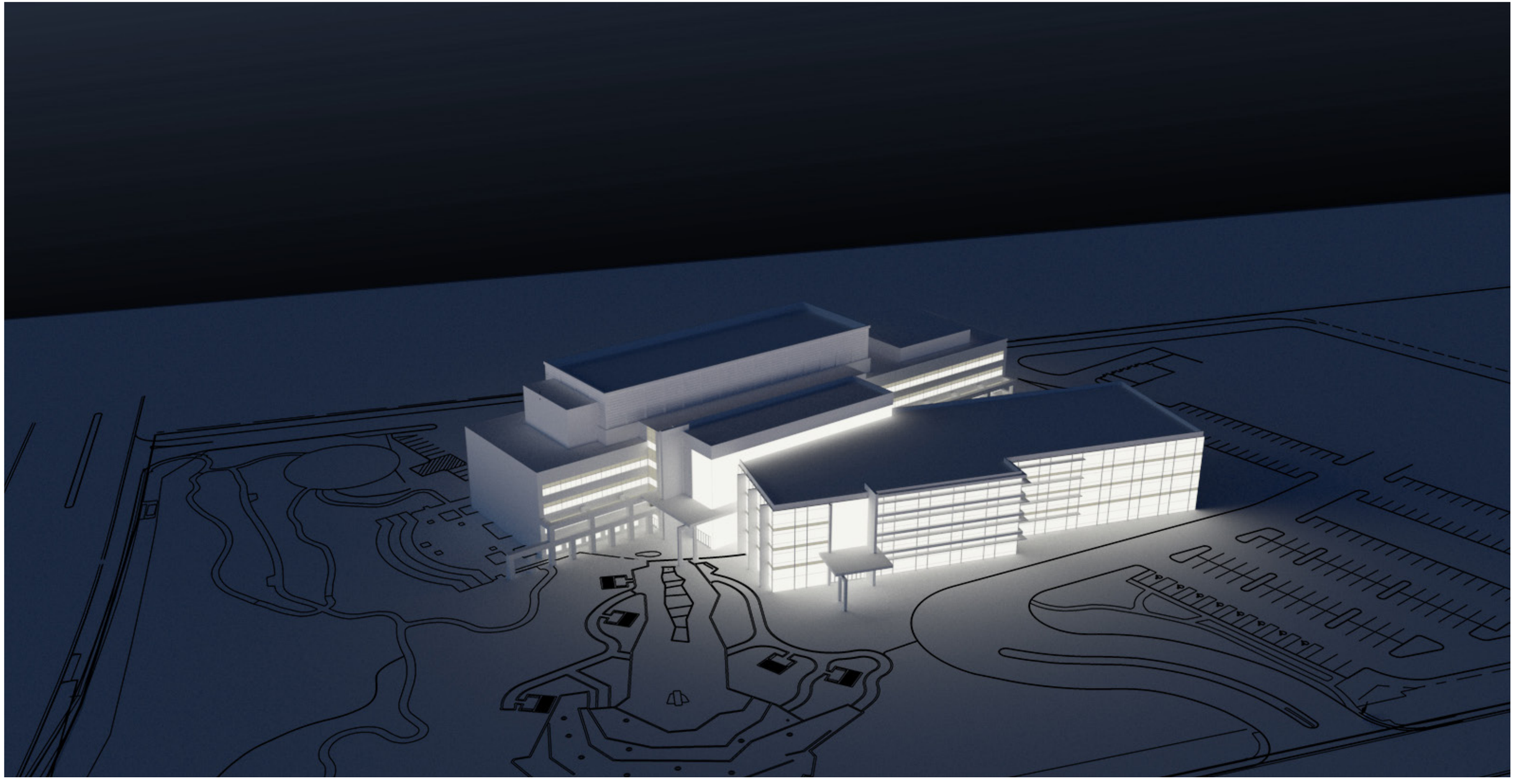


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Governor's Office Economic Development (GOED)
- F State Treasurer

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-A | Conceptual 3D View



Concept R2-A | Conceptual 3D View

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REPROGRAMMING AND EXPANSION

CONCEPT R2-A

1.0 General Information

Concept R2-A reflects modifications to the existing building, adding a new shared core, constructing a new building just south of the existing building and constructing a new multi-level parking garage in the east parking lot.

2.0 Drainage and Grading

This concept will require regrading of the area south of the existing building in order to surface drain around the new office building and shared core. It initially appears this can be accomplished without the need of storm drain pipe facilities. The existing parking lot south of the new building will need to be reconfigured and regraded but should not require regrading this entire parking lot. The garage area may need to be regraded to fit the garage footprint within this existing parking lot to avoid excessive first floor to second floor head heights. The Veterans Memorial should not be affected by this concept.

Significant over excavation of existing soils under all of the new structures may be required due to undesirable soils conditions. This may be minimized by utilizing alternative structure footing types such as piles or caissons.

3.0 Utilities

The two existing combined service water meters and backflow devices must be upgraded to current LVVWD standards and the increased domestic demands as well as the potential increase in on-site fire flow due to differing construction types of proposed buildings. The existing waterline under the proposed building will need to be demolished and a new waterline (10”±) will need to be looped around this building. A water loop around the proposed garage with at least 4 new fire hydrants will need to be installed around the garage for fire protection. These new loops will be fed by the existing system and the upgraded water meters and backflow devices.

The existing on-site sewer line within the east parking area will need to be relocated around the south side of the garage and extended to the new building. A sewer line will also need to be extended to the southwest corner of the existing building to provide continuing sewer services for laterals in that area. All new sewer mains will be 8-inch and will require manholes at angle points and at a maximum of 300’ spacing. The existing 8” sewer main should have adequate capacity for this concept.

4.0 Hardscape

New asphalt and concrete walks and curbs will be required within the project areas.

5.0 Summary

This concept can be accomplished with minimal issues and challenges except for those items noted above.

Structural Design Narrative- Concept R2-A – New 4-Story building to share common core with existing building – 01/02/19

John A. Martin & Associates of Nevada
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Pete Padilla, P.E.

Mechanical Roof Framing over Existing Building

The roof over the mechanical equipment shall be supported on wide flange columns that extend through the roof level. The wide flange framing will support a perforated metal decking with frames to support the edges as required. Lateral support will be moment frames. This will enclose the existing mechanical ductwork and equipment but will not convert the existing roof to a habitable floor.

Existing Elevator Cores

Infill existing elevator cores with concrete over metal deck and steel beams.

Existing Brace Removal

The building was constructed per the 1991 UBC, based upon the 2018 IBC the current seismic factor would be 1.9 x higher than the original code. Changing of the existing lateral system would require upgrading all braces, columns, footings and drag/chord systems. Therefore, removing or changing the lateral system is not recommended.

New High Roof Framing

The area of the high roof which supports the mechanical equipment and electrical room will be framed using 3 ½" concrete over the flutes of 3" x 18 gage metal deck spanning between wide flanged beam spaced typically at 7'-6" on center, with few exceptions, spanning between wide flanged girders spanning between columns. Housekeeping pads should be maximum of 6" thick normal weight concrete. The roof steel will be sloped to achieve drainage and limit the use of built up roofing.

The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Core location is not adequate as a lateral element alone. Steel moment frames throughout the building would be required to keep the open nature of the plans.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load.

Penetrations for pipes and shafts will require frames constructed of angles and channels supported on the wide flange beams. In the areas where there is concrete over metal deck, most openings shall be framed using reinforcing in the concrete slab in lieu of structural steel frames.

Typical Floor Framing

The floors will be framed using 3 ½" of concrete over the flutes of 3" x 18 gage deck, reinforced with welded wire fabric and negative reinforcing over the supports. To ensure the ability to achieve floor flatness, the framing is designed to allow for an additional ½" of concrete.

Penetrations for piping and shafts through metal deck will be accomplished using reinforcing steel at the perimeter of the openings with a formed concrete edge. The deck must remain in place until the concrete attains a compressive strength of 3,000 psi.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load. This columns will extend approximately 4' above the floor level at the splice locations. The top of the column section will be prepared for a welded column splice.

Foundations

Foundation design is pending completion of the geotechnical investigation and preparation of the geotechnical report. For purposes of this narrative, we are assuming the building will be supported on spread footings with strip footings required at the moment frames.

Piles may be required as alternate foundations depending on geotechnical recommendations.

The typical foundations should be placed 2' below finished floor. Footing elevations can be adjusted based on requirements of utilities. Shafts containing elevators should be placed approximate 5'-6"' below finished floor to allow for pits.

Retaining walls and dock walls will utilize conventional foundations. Retaining wall design is pending verification of grading.

Parking Garage Options

- **Precast with Shear Walls**
  Greatest savings are achieved with all precast elements (walls, beams, spandrels, tees)
  Precast shear walls at perimeter, L beams at perimeter, inverted tees at interior column lines, double tees with topping slab.
- **Cast-in place**
  Moment frames in transverse direction, shear walls in longitudinal direction, 14"/16" x 30" tapered beams at 18' on center, 5" post tensioned slab, 24" x 30" girders at transfer locations, 24" x 24" typical columns, 24" x 30" columns at transfer girders

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GRANT SAWYER OFFICE BUILDING
REPROGRAMMING NARRATIVE R2-A OPTION
NV5 PROJECT NO. 018.0745.00

Prepared for:

KGA Architecture
9075 Diablo Dr, Suite 300
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Prepared by:

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Las Vegas, NV 89118

Issue Date:

January 2, 2019

Revision No.	Issue Date	Prepared By	Reviewed By	Remarks
1	1/02/2019	Alex Jankovic JJ Wisdom	KGA	Reprogramming R2

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

When pursing this investigation, we had in mind the three RRR =Repair, Remodel, Replace and the 20 years fix of the MEP systems as our final goal.

Based on the architectural conceptual drawings for the Reprogramming and Replacement options the central utility plant (CUP) will be located in the parking garage building.

Reprogramming options R2-A

The CUP plant will house the chilled water plant and heating hot water plant.

The chiller room will consist of 2 x 350 tons magnetic bearing chillers, cooling towers and associated chilled water pumps and condenser water pumps with a dedicated space for future expansion to serve the existing GSOB. The proposed chilled water plant will be variable primary flow system with direct buried pre-insulated chilled water piping serving the proposed new buildings per R2 options.

The boiler plant will consist of 2 x 3000 MBH gas fired condensing boilers, combination bridge/air separator and associated boiler pumps and variable flow building pumps and a dedicated space for future expansion to serve the existing GSOB.

The heating plant will deliver 160^{0}F/130^{0}F heating hot water to the buildings via underground pre-insulated hydronic piping.

Reprogramming options R2-A, R2-B, R2-C will include the existing 224,000 sq.ft Grant Sawyer office building (GSOB) and 180,000 sq.ft building expansion.

In all R2 options the GSOB central plant at level 6 will remain in operation to serve the eight air handling systems until the end of its useful life. At the same time the new chilled water/hot water piping stub-outs will be provided for future connection to CUP.

Fire Protection: Existing diesel fire pumps shall be removed and replaced with electric-drive fire pumps per 2018 IBC.

Life Safety-Smoke Removal System: Existing system shall be upgraded per 2018 IBC, 2018 UMC.

Existing 15KV Nevada Energy service shall be re-used to serve the site. New owner 15KV electrical distribution and 480V generator distribution shall be provided for the building expansion and sized to serve the existing GSOB. The existing electrical infrastructure serving the GSOB shall be protected in place during expansion construction and then removed in its entirety during the remodel. New electrical infrastructure served from the building expansion electrical systems shall be provided during the remodel.

2. MECHANICAL SYSTEMS

2.1 GENERAL

2.1.1 Existing GSOB Office Building

Existing GSOB air handling units are located on the roof and they will be removed and replaced with new air handling units based on the proposed zoning plan.

AH-1	30,000 CFM	Level 1 - Main Lobby, Cafeteria
AH-2	38,000 CFM	Level 3 & 4 – Atrium & Offices - West
AH-3	35,000 CFM	Level 2 Gaming Control Board - West
AH-4	25,000 CFM	Level 2 Gaming Control Board - East
AH-5	20,000 CFM	Level 1 HR/Dept of Taxation - East
AH-6	32,000 CFM	Level 3 Attorney General Offices
AH-7	33,000 CFM	Level 4 AG, Legislative Council Bureau
AH-8	32,000 CFM	Level 5 Governor's Offices

Central Plant and DDC control system – recently renovated.
Mechanical Updates: VAV terminal units – New Alerton Controls + hose kits & isolation valves.

Proposed Reprogramming:
Exterior ductwork on roof will be completely removed and replaced with a brand new properly sized internally lined ductwork and routed within the new roof enclosure provided by architect.
Level 5 Ductwork shall be completely removed and replaced with new ductwork per SMACNA requirements.
Interior medium pressure ductwork compromised with openings & flex duct connections for additional cooling of server rooms will be fixed by disconnecting of flex ductwork and properly sealing the system.
All existing fire/smoke dampers that are no longer used as part of the 2012 upgrade, shall be removed.
Based on the reprogramming requirements, some of the vertical risers may be redesigned to serve the dedicated agency for a more appropriate control and operation.
Server/Data rooms cooling system shall be completely disconnected from the medium pressure ductwork. A dedicated chilled water - cooling system will be provided for server/data rooms utilizing the cooling only fan-coil units with emergency VRF system as a back-up cooling. The new chilled water risers will be installed within the same chase and routed from chiller room down to the first floor to serve these cooling only fan-coil units throughout the building.

2.1.2 New Building Expansion

The new 180,000 sq.ft building expansion will be designed per current SPWD design criteria, including the CUP – central utility plant to serve the new building expansion as well as the space for future replacement of chillers and boilers serving the existing GSOB.
The HVAC design shall comply with 2018 Uniform Mechanical Code.

2.2 REPROGRAMMING – OPTION R2-A

2.2.1 Existing GSOB Office Building

Existing central plant located on level 6 of the existing GSOB will remain in place to serve the remodeled & reprogrammed existing office building.

Proposed Remodel:
Existing chilled water hydronic piping shows considerable exterior corrosion at the multiple fittings, take-offs and elbows, due to incorrect insulation type and compromised vapor barrier or damaged service jacket.
Hydronic piping through the wall/ through the slab penetrations are compromised and shall be replaced and properly insulated and protected with pipe sleeves.
Heating hot water piping system experienced multiple leak points in the building during the temperature variations from start/stop or low/high conditions.
All hydronic piping to be replaced entirely, throughout the building.

Server, Data Rooms Cooling Capacities
Total Projected Cooling Capacity = 25 tons (300 MBH).
Final cooling capacity will be verified including some spare capacity for future expansion.
Proposed Remodel: Add a dedicate 3" CHS/CHR riser to serve the server/data rooms on all floors.
New cooling only fan-coil units will be selected with VRF back-up cooling system.

- The compromised medium pressure ductwork with holes intended to cool the server, data, TR rooms has been identified.
- All server/ TR rooms and current cooling problems have been identified.
- The new CHS/CHR risers to serve the Data/TR rooms throughout the facility will be provided utilizing the same shaft.
- CHW fan-coil units + VRF back-up split system will be designed.
- Central plant plate/frame heat exchanger will be upsized to handle all cooling only fan-coil units.

Proposed Remodel:
Server/Data rooms cooling system shall be completely disconnected from the medium pressure ductwork. A dedicated chilled water - cooling system will be provided for server/data rooms utilizing the cooling only fan-coil units with emergency VRF system as a back-up cooling. The new chilled water risers will be installed within the same chase and routed from chiller room down to the first floor to serve these cooling only fan-coil units throughout the building.

2.2.2 New Building Expansion

The new CUP central plant, located within the Parking Garage Building will incorporate water chillers, cooling towers, plate and frame heat exchangers (water side economizers), variable primary flow system with chilled water pumps and appropriate ancillary equipment and systems to provide comfort and process cooling for the facility. The plant will also incorporate low pressure, 94% efficiency condensing hot water boilers, primary and secondary hot water pumps and ancillary equipment and systems to provide space heating for the facility. The CUP central plant will provide a space for future replacement of existing GSOB central plant on 6th floor. The underground chilled water and hot water piping will be sized to handle both existing building and new building expansion. The stub-outs will be provided within the core area of GSOB at 6th floor for future connection to the CUP.

Central Chilled Water Plant
The chilled water plant will be designed per SPWD requirements.
Two (2) magnetic bearing water cooled chillers at 350 tons each, with multiple compressors, with integrated refrigerant cooled VFD's and micro-processor controls system, have been selected to provide a total cooling capacity of 700 tons of refrigeration for new building expansion. This configuration will meet the building load and provide 20% redundancy.

The cooling tower fans, secondary flow chilled water pumps will be provided with VFD's. The chilled water distribution system will be deigned to provide a chilled water supply temperature at 44°F with a chilled water return temperature at 58°F. The system will serve air handling units and strategically located fan coil units. Cooling only fan-coil units will be provided for the MDF rooms, IDF rooms, chiller room, boiler room and elevator equipment rooms. During the winter season two dedicated jockey pumps will be employed to serve the cooling requirements for the fan-coil unit process cooling loads, utilizing the plate/frame heat exchanger. Split system DX cooling will be provided as a back-up for MDF, IDF and AV rooms, with the roof mounted VRF condensing unit.
The chilled water piping will be routed from the central plant up to fourth floor within the shaft with pipe connections to roof mounted air handling units. The pipe penetrations will be provided within the air handling unit pipe chases.

Central Heating Hot Water Plant
The heating hot water plant will be designed as a primary/secondary flow system, utilizing high efficiency low pressure, condensing gas fired boilers. The total calculated heating capacity has been estimated to be 6,000 MBH.
Two (2) high efficiency hot water boilers with a capacity of 3000 MBH heat input have been selected with associated hot water pumps and accessories. The heating hot water system will serve all air handling unit heating coils and VAV terminal unit reheat coils.
The hot water piping will be routed in the core area shaft along with the chilled water piping.

Air Handling Systems
The following air handling units will be provided for this facility:

- System AH-R2.1 45,000 CFM (Level One)
- System AH-R2.2 45,000 CFM (Levels Two)
- System AH-R2.3 45,000 CFM (Level Three)
- System AH-R2.4 45,000 CFM (Level Four)

Air handling systems will be designed as VAV systems providing supply air at 55° F and discharging the air through medium pressure ductwork to VAV terminal units. The air handling units will be provided with VFD's on supply and exhaust/relief fans, to facilitate 100% outside air economizer on a variable air volume basis.

The units will operate per BMS schedule. Supply fans will be plug type and exhaust/return fans will be a fan-wall type fan configuration. Variable frequency drives will provide fan volume control in response to a signal from duct mounted static pressure transmitters. Supply and return fan speeds will be modulated simultaneously as required by building load.

Fan Wall, or fan array, technology system will be considered for use on the project. The fans will meet the air flow performance specified and will not exceed the break horsepower or sound power levels specified. Fan performance will be based on testing and be in accordance with AMCA Standards 210 and 300. Completely isolated assemblies will be dynamically balanced and shall be designed for heavy-duty industrial applications. Fan assemblies that meet a dynamic balance of BV-5 (G 1.0) do not require isolation.

The supply air distribution system will consist of medium-pressure, externally insulated galvanized steel ductwork with pressure independent electrically actuated VAV terminal units with reheat coils, low pressure externally insulated ductwork downstream of terminals and diffusers. The return air distribution system will consist of externally insulated galvanized steel ductwork and return grilles. Sound attenuating flexible ductwork with woven nylon fabric type lining will be provided at the supply diffusers and return grilles to control noise.
Ductwork will be constructed in accordance with SMACNA standards and duct leakage shall not exceed 2% for low-pressure ductwork. The use of sound attenuating flexible duct at diffusers and grilles will be limited to five feet in total length to minimize duct static pressure losses.

The VAV air handling units will consist of the following components: Exhaust/relief fan section, outside air economizer, 30% (MERV8) efficient pre-filter section with a reserved space for 85% (MERV13) final filters, hot water heating coil and chilled water-cooling coil, supply air fan section with discharge air attenuator and factory installed VFD's for supply and exhaust/return fans in air-conditioned enclosure. Duct mounted smoke detectors will be provided per UMC 609. The duct detectors will be addressable type and compatible with the fire alarm system.
Refer to Mechanical Site Plan-Option R2-A for details.

3. PLUMBING SYSTEMS

3.1 REPROGRAMMING – OPTIONS R2-1,

3.1.1 Existing GSOB Office Building

Initial Findings:
Cast Iron waste piping above ground shall be replaced.
Replace the existing grease interceptor with a new 2,000 gallon Jensen Precast grease interceptor.
Kitchen area underground grease waste piping to be removed and replaced with PVC piping with heat trace.
All underground waste piping shall be replaced with Schedule 80 PVC piping.
Site waste lines shall be routed south of the building per Overall Plumbing plan.

Proposed Remodel:
Waste Piping above ground: All above ground piping to be replaced or epoxy lined utilizing the "NU Flow" non-pressurized epoxy linin (CIPP) – the cured in-place pipe restoration process.
Underground Waste Piping: All underground cast iron waste piping to be removed and replaced with Sch 80 PVC properly sloped with 2% slope waste piping.
All existing trap primers shall be replaced with new electronic prat primers.
Domestic water booster pumps are beyond the ASHRAE recommended life expectancy and shall be replaced.
These is no RPBP – reduced pressure backflow preventer at the property. The new RPBFP will be installed.
Kitchen area domestic hot water piping shall be provided with thermostatic mixing valves at the hand sink faucets to provide the tempering water at 110^{0}F.

3.1.2 New Building Expansion

The plumbing systems will include the following:
Sanitary waste and vent system will be provided for the public restrooms, break rooms and mechanical rooms. Drainage piping will be sloped at 2% per UPC. Sanitary waste and vent piping will be service weight cast iron no-hub piping with no-hub 4 band type couplings with neoprene gaskets. A separate 2,000 gallon grease interceptor will be provided for the fourth floor kitchen grease waste system.

Cold water distribution piping system will be provided for the restrooms, fourth floor kitchen area, break-rooms and mechanical plant rooms. Hot water distribution in the main building will be provided by utilizing the high

efficiency condensing water heaters: one located in the boiler room to serve the restrooms and the general building requirements, and one located on the fourth floor to serve the kitchen area.

Exterior hose bibs will be provided for adequate external coverage and maintenance of the facility.

Materials, equipment and systems installed shall meet all pertinent requirements of all applicable codes. The systems described herein shall be provided to serve all fixtures, equipment and areas within the building.

Plumbing Fixtures
Commercial grade water saving wall mounted water closets with electronic flush valves and wall hung sensor operated flush valve urinals will be utilized. Water closets with battery powered 1.28 GPF electronic flush valves, and battery powered 0.125 GPF electronic flush valve urinals will be utilized in the men's restrooms. Water closets with battery powered 1.28/1.1 GPF dual flush valves will be provided in the women's restrooms. Commercial grade additional plumbing fixtures including all carriers, trim, valves and traps will be provided at locations as determined by the architectural plans. Water saving plumbing fixtures shall contribute to water savings design requirements.
Roof drainage system shall be provided utilizing the roof drain/ overflow roof drains and storm drainage piping within the building.

Domestic Water Distribution:

Cold Water Systems
The domestic water service shall be provided from the site water supply. Existing domestic booster pump set will be with new triplex booster pumps and will be sized for 300 GPM @ 80 ft head.
A pressure gauge on main domestic water line serving the building downstream of main shut-off valve shall be provided.

Domestic cold water system design shall be per the Uniform Plumbing Code and ASPE Design Manuals. Pipe velocity shall not exceed 8 feet per second. Domestic cold water systems shall be sized using flush valves curves. Pressure ranges at plumbing fixtures shall be as follows: Minimum: 35 psi, Maximum: 80 psi.

Domestic Hot Water System
Domestic hot water system design shall be per ASHRAE 90.1, 2016 Standard, ASHRAE HVAC Application Handbook, Chapter 48 "Service Water Heating" and ASPE Design Manuals. Pipe velocity shall not exceed 5 feet per second.

Multiple water heaters will be provided within the water heater room serving the new building expansion. Three high efficiency condensing water heaters AO Smith, BTH-199 with 100 gallon storage and 288 GPH recovery capacity will be utilized to satisfy the hot water requirements.

Plumbing Fixtures Water Consumption
All plumbing fixtures shall be coordinated with SPWD and UPC guidelines. They will be low flow type as follows:

- Water Closet: 1.28 GPF @ men's restrooms
- Water Closet: 1.28/ 1.1 GPF @ women's restrooms (dual flush)
- Urinal: 0.125 GPF
- Lavatory: 0.35 GPM
- Sinks: 0.5 GPM

Domestic Water Piping
Domestic water piping shall be Type L copper. All domestic hot and hot water return piping shall be insulated with closed cell insulation. Cold water piping shall not be insulated.
All interior exposed insulation shall have PVC jacket and PVC fitting covers. All exterior exposed insulation shall have aluminum jacket and covers. Aluminum jackets shall be secured with stainless steel bands.
Condensate drain piping shall be Type M copper.

Sanitary Drainage System
Sanitary waste and vent system shall be per the 2018 Uniform Plumbing Code.
All floor drains, floor sinks, access doors, and cleanout covers shall be secured using vandal-resistant fasteners. Floor drains shall be provided in all toilet rooms. Cleanouts shall be provided every 50'-0".

Install cleanouts in sufficient number and located such that drain augers can be conveniently used on any part of the drainage system. The installation shall be made in compliance with the Cast-Iron Soil-Pipe Institute Engineering Manual.
Locate all clean-outs, devices, etc., in plumbing chases so as they are readily accessible by facility maintenance personnel.

Automatic solenoid type trap primers will be provided for all floor drains and floor sinks, including the floor sinks in mechanical rooms and fire riser room.

Sanitary Waste Piping
Sanitary waste and vent piping for all building shall be hubless cast iron pipe and fittings with heavy duty stainless steel couplings.
Sanitary sewer demand for the building based on the main building layout will require 8" building connection.

Site Utilities
All onsite utilities will be distributed underground with approximately 3 ft of backfill cover based upon regional weather conditions and applicable codes. Utility lines will be located in road right of ways per civil utility plans.
A dedicated 2,000 gallon grease interceptor will be provided to serve the cafeteria and innovation center.

The 4" domestic cold water service with shut-off valve will be provided with internal shut-off within the booster pump room.
Based on the pipe size the cold water service can handle approx. 1,700 CWFU, which is equivalent to 300 GPM of total domestic water flow.

Domestic hot water has been provided via high efficiency condensing water heaters with 94% efficiency.

All sanitary sewer and storm sewer lines extend to a point 5 ft outside the building for connection by the civil. Sanitary waste and vent piping, and roof drain and overflow drain piping below grade shall be service weight cast iron no-hub piping with no-hub four (4) band type couplings with neoprene gaskets.

A rainfall rate of 1.5 in. per hour will be utilized in accordance with UPC Appendix B, Rate of Rainfall for Various Cities.

Natural gas consumption has been estimated to be 6,800 kBtu/h for R2 Options.
Medium pressure gas service will be provided by Southwest Gas Corporation per site plan.

4. ELECTRICAL SYSTEMS

4.1 GENERAL

4.1.1 Nevada Energy Service

Existing Nevada Energy infrastructure appears to be sized to accommodate a 15KV 10MVA maximum service. The existing service originates from a pole at the Southeast corner of the property, transitions underground and is routed along the East property line to the North property line and then into the existing building medium voltage switchgear 'MVS1'. The underground Nevada Energy feeder route appears to include several manholes which should allow connection to the existing service at both the East and North property lines as required by existing conditions and/or construction phasing.

Estimated total calculated load for this reprogramming option is 6996KVA with an estimated utility demand load of 2798KVA. The new electrical load is approximately double that of the existing building. This load increase will need to be submitted to Nevada Energy to determine if there are any required modifications to the Nevada Energy systems.

New 600A, 15KV switchgear with a primary Nevada Energy meter will be required. The switchgear will be located at the central plant and will serve the other buildings on the site via 15KV radial feeders.

4.1.2 Emergency/Legally Required Standby/Optional Standby Generator

A 1500KW, 480Y/277 volt, 3 phase, 4 wire generator will be provided to serve building emergency/legally required standby and optional standby loads. The generator will be located at the central plant and will serve the other buildings on the site via 480V radial feeders. Two (2) automatic transfer switches per building will be provided, one (1) for emergency loads and one (1) optional standby loads.

Emergency loads include:

- Fire pump and booster pump
- Fire alarm system
- Egress and exit lighting
- Cooling for emergency electrical room(s)
- Smoke control/purge equipment (if applicable)
- Elevator per bank
- Elevator cab lights

Optional Standby (owner selected) loads include:

- Telecommunications and security / surveillance equipment in MDF and IDF's
- Cooling for MDF's, IDF's and electrical rooms containing optional standby electrical equipment
- Cafeteria walk-in coolers / freezers
- Domestic water booster pump
- Mission critical spaces and associated infrastructure including:
  - Governor's Space
  - Capital Police Space
- Select central plant equipment to support space conditioning for the areas noted above

4.1.3 New/Remodel Work Requirements

References

The electrical and auxiliary system design will adhere to the following codes, standards, and criteria in the preparation of the Project Electrical Design Documents.

IBC	International Building Code; 2018 Edition
NEC	National Electrical Code (NFPA 70); 2017 Edition
NESC	National Electrical Safety Code; 2018 Edition
NFPA 72	National Fire Alarm Code; 2018 Edition
NFPA 101	Life Safety Code; 2018 Edition
NFPA 110	Emergency and Standby Power Systems; 2018 Edition
IEEE	Institute of Electrical and Electronics Engineers Standard 142; Grounding of Industrial & Commercial Power Systems
ADA	Americans with Disabilities Act
ANSI	American National Standard Institute
IECC	International Energy Conservation Code; 2018 Edition
IESNA	Illumination Engineering Society of North America Handbook – 10th Edition

Electrical Systems

New 15KV main switchgear and generator shall be located at the central plant/garage and shall serve the other buildings via radial feeders as noted above. Estimated capacities for each building are as follows:

- Central Plant/Garage – 2000KVA
- Existing Grant Sawyer Building – 3000KVA
- Building Expansion – 1500KVA

The existing Grant Sawyer Building normal power electrical service will be protected in place until it can be back-fed from the new 15KV electrical distribution system and the existing generator system will also be protected in place until the reprogramming of the existing building takes place. All electrical systems for the existing Grant Sawyer Building, including the existing generator, will be removed in their entirety for the reprogramming and new electrical distribution systems shall be provided.

The main electrical room for each building will be 1 hour rated, located with exterior access, and will house the main electrical service switchboard.

Grounding

The service shall be provided with a grounding electrode system in accordance with NEC Article 250, NEC Article 517 and IEEE green book. In order to ensure the facility is effectively grounded and bonded throughout, grounding bonds will be configured in star topology. This grounding system, from a power standpoint, will serve primarily as a bonding point for the required safety/equipment grounding for separately derived systems; however, the system is also being designed to serve as an effective performance ground for telecommunications and other building auxiliary systems. Insulated equipment grounding conductors will be provided in all raceways for power systems. A lightning protection system is not anticipated at this point.

Surge Suppression (SPD)

Suppression will be provided at the service entrance equipment for each building to minimize the impact of electrical line disturbances.

Distribution
Site distribution will include 15KV service to each building and, depending on final load calculations, to main electrical rooms within each building. Exterior pad mounted, interior dry-type unit substation and/or step down transformers shall be used for 480Y/277 volt, 3 phase, 4 wire and 208Y/120 volt, 3 phase, 4 wire service.

Lighting, HVAC and other large utilization equipment will be supplied from the 480Y/277 volt distribution system. Large loads will be served from the main switchboard.

Receptacles and other miscellaneous loads shall be served from the 208Y/120 volt, 3 phase, 4 wire service.

All electrical panel boards and step down transformers will be located in designated electrical rooms / closets.

Distribution equipment will be sized for 25% spare capacity. Equipment shall contain a minimum of 10% space for addition of over-current devices.
Transformers shall comply with CSL-3 energy standards.

Building systems, HVAC, power and lighting shall be independently metered, metering shall be connected to the BMCS system. The building service entrance shall be metered independently of the utility. Meters shall be connected to a sitewide metering system.

Feeders
15KV feeders will be concrete encased below grade and installed in galvanized rigid steel conduit (RGS) above grade.

480Y/277 volt and 208Y/120 volt feeders will conform to NEC Article 215. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All feeder conductors will be PVC insulated type THHN/THWN or XHHN. Feeders shall be copper.

Branch Circuits
Branch circuits will conform to NEC Article 210. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All branch circuit conductors will be copper, PVC insulated type THHN/THWN or XHHN. Minimum conductor size shall be #12 AWG. MC, AC, or other cable type wiring systems are not acceptable.

Receptacles
All 20A-125V convenience receptacles will be grounding type mounted in 4-inch square boxes at 18 inches above finish floor. Ground Fault Circuit Interrupter (GFCI) receptacles will be used in locations as required by NEC 210.8(B). Double duplex receptacles will be provided at each office workstation. Convenience receptacles located in corridors and common areas will be spaced at maximum 50' apart.

General Lighting
Interior lighting will consist primarily of 277V LED fixtures. Fixture types will be coordinated with the individual space requirements to provide the fixture selections that are suitable to the space. Fixture types and proposed lighting layout will be coordinated with the design team prior to commencement of lighting design. Light levels will be per IES recommendations. The lighting power density will be designed to exceed the minimum requirements of IECC by at least 20%.

Space	Type of Fixture	Average Lighting Level
Offices	2x4 Direct/Indirect LED Lay-In	50FC
Meeting Rooms	LED Pendant and Downlights	40FC
Lobby/Waiting	LED Downlights and Pendants	40FC
Restrooms	1x4 LED Flanged Troffer and LED Downlights	30FC
Cafeteria	LED 2X4 Direct/Indirect	50FC

Exterior lighting shall be LED lamp sources. LED lighting will provide quality color rendition from an energy efficient source. Exterior lighting will be controlled by a combination astronomical time clock / photocell and/or building energy management system. Fixture mounted occupancy sensor shall be provided at parking areas and pedestrian walkways for further energy reductions.

Lighting Control
Due to IECC requirements a lighting control system will be provided. Local room controllers will be provided for normally occupied rooms. These local room controllers will integrate with room occupancy / daylight sensors and dimmers. Normally unoccupied rooms will utilize occupancy sensors with local switching.

Lightning Protection
An early streamer emission lightning protection system shall be used.

5. APPENDIX – DRAWINGS

MPE-R2A - Mechanical, Plumbing & Electrical Site Plan – Option R2-A
MCUP_R2 - Central Utility Plant – Options R2-A, R2-B, R2-C
MFD_R2 - Mechanical Flow Diagram
MZ_R2 – Mechanical Zoning Diagram - R2 Options
E-R2A – Electrical Single Line Diagram – Option R2-A

END

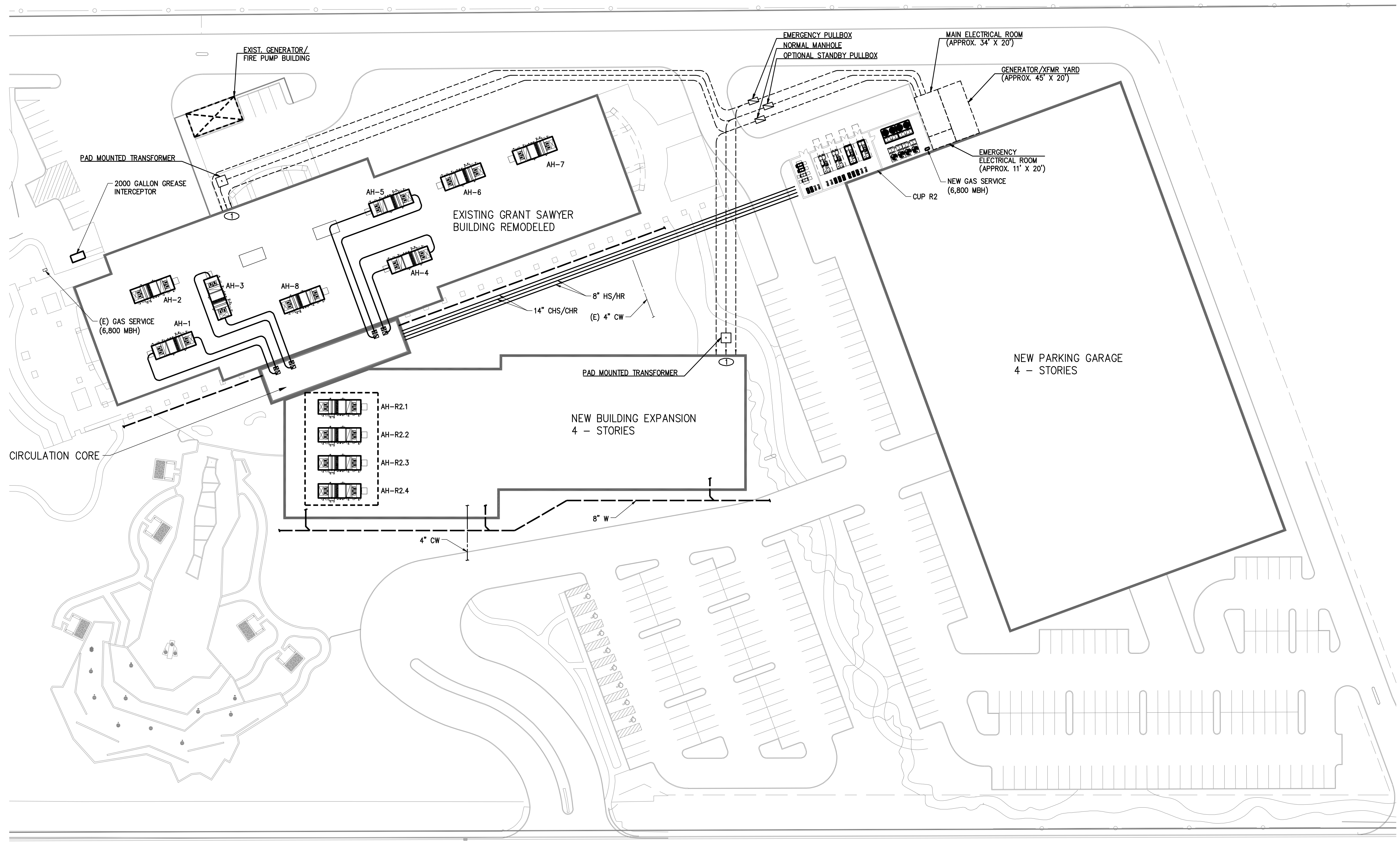
J:\18.0745\Docs\Other Reports\2018-12-11 R2, R3 Narrative\R2-A Option\2018-12-11 GSOB - R2-A Narrative.docx

NOTES

1	TO NEW BUILDING ELECTRICAL INFRASTRUCTURE.

AHU ZONING

AHU	ZONE	LEVEL
AH-1	MAIN LOBBY + CAFFE	1
AH-2	OFFICES + ARTRIUM	3, 4
AH-3	GAMING CONTROL BOARD	1, 2
AH-4	GAMING CONTROL BOARD	2
AH-5	TAXATION + HR	1
AH-6	ATTORNEY GENERAL	3
AH-7	LEGISLATIVE COUNCIL BUREAU, ATTORNEY GENERAL	4
AH-8	GOVERNOR'S OFFICE	5



MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R2-A
NO SCALE

1
M1

DRAWN BY: -
CHECKED BY: -
DATE: -
REVISIONS
DATE BY

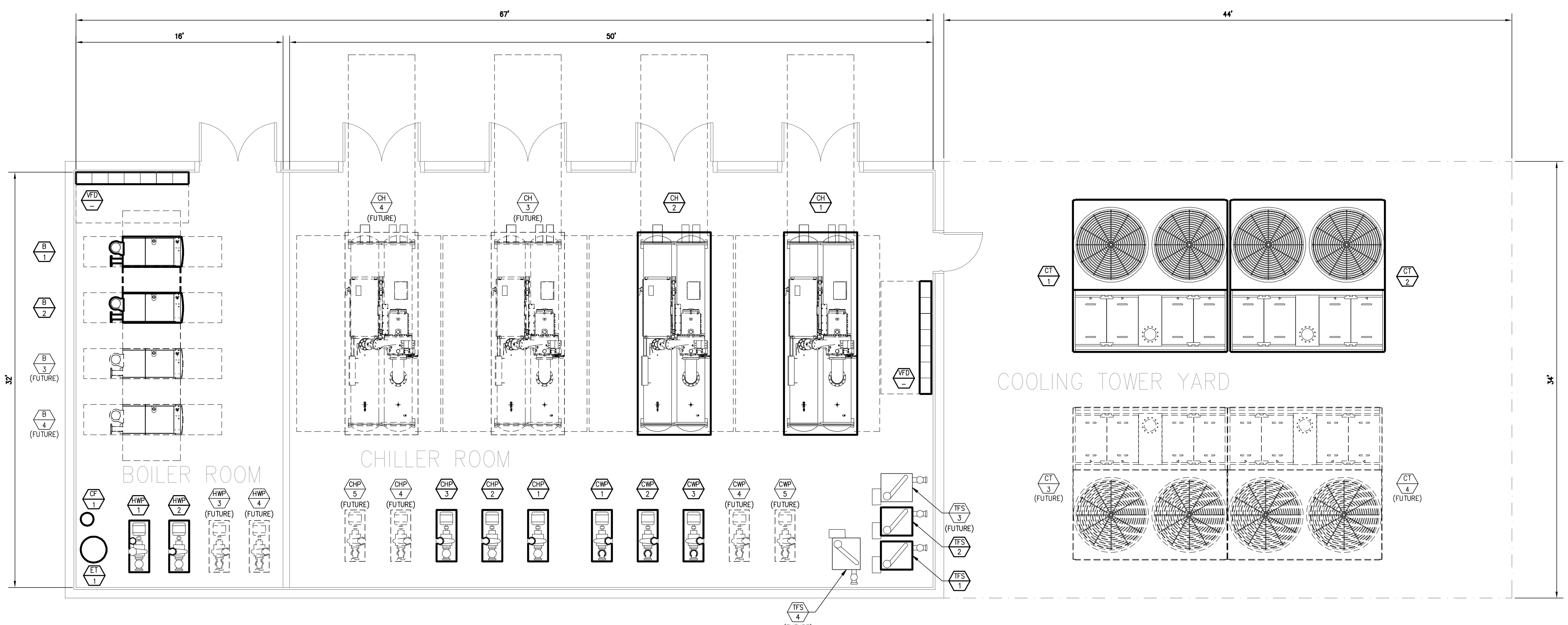
NV5

MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R2-A

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2-A

SHEET NUMBER:
MPE-R2A
SCALE: -
JOB NUMBER: 18.0745



CENTRAL UTILITY PLANT - MECHANICAL R2 DESIGN OPTIONS

NO SCALE

1
M6

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DATE | BY | REVISIONS

CENTRAL UTILITY PLANT - MECHANICAL R2 DESIGN OPTIONS

GRANT SAWYER OFFICE BUILDING

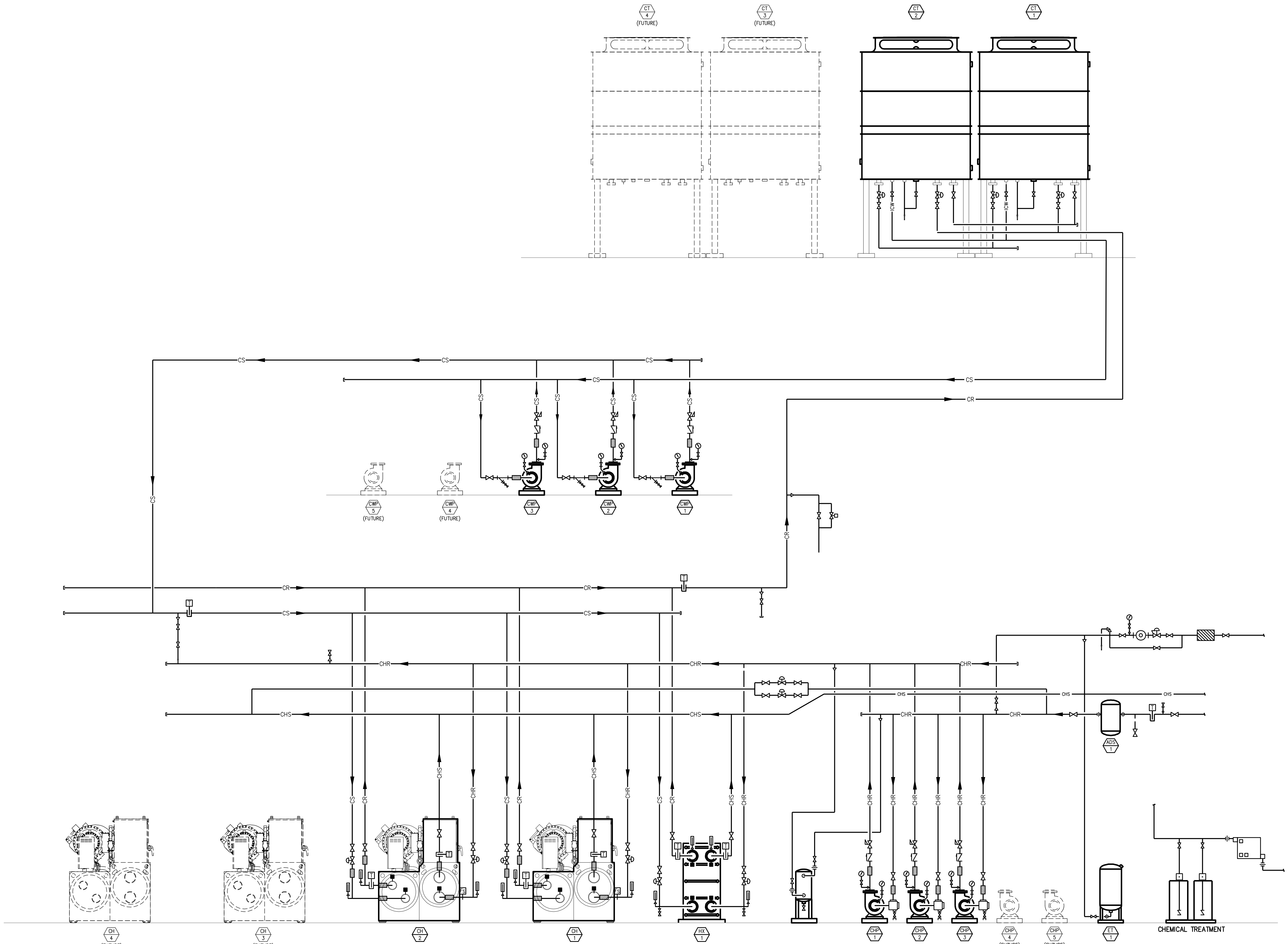
REMODEL REPORT - R2

SHEET NUMBER:

MCUP-R2

SCALE: -

JOB NUMBER: 18.0745



CHILLED / CONDENSER WATER FLOW DIAGRAM - R2

NO SCALE

1
M7

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CHECKED BY: -
DATE: -

REVISIONS

DATE	BY	

NV5

MECHANICAL FLOW DIAGRAM

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2

SHEET NUMBER:

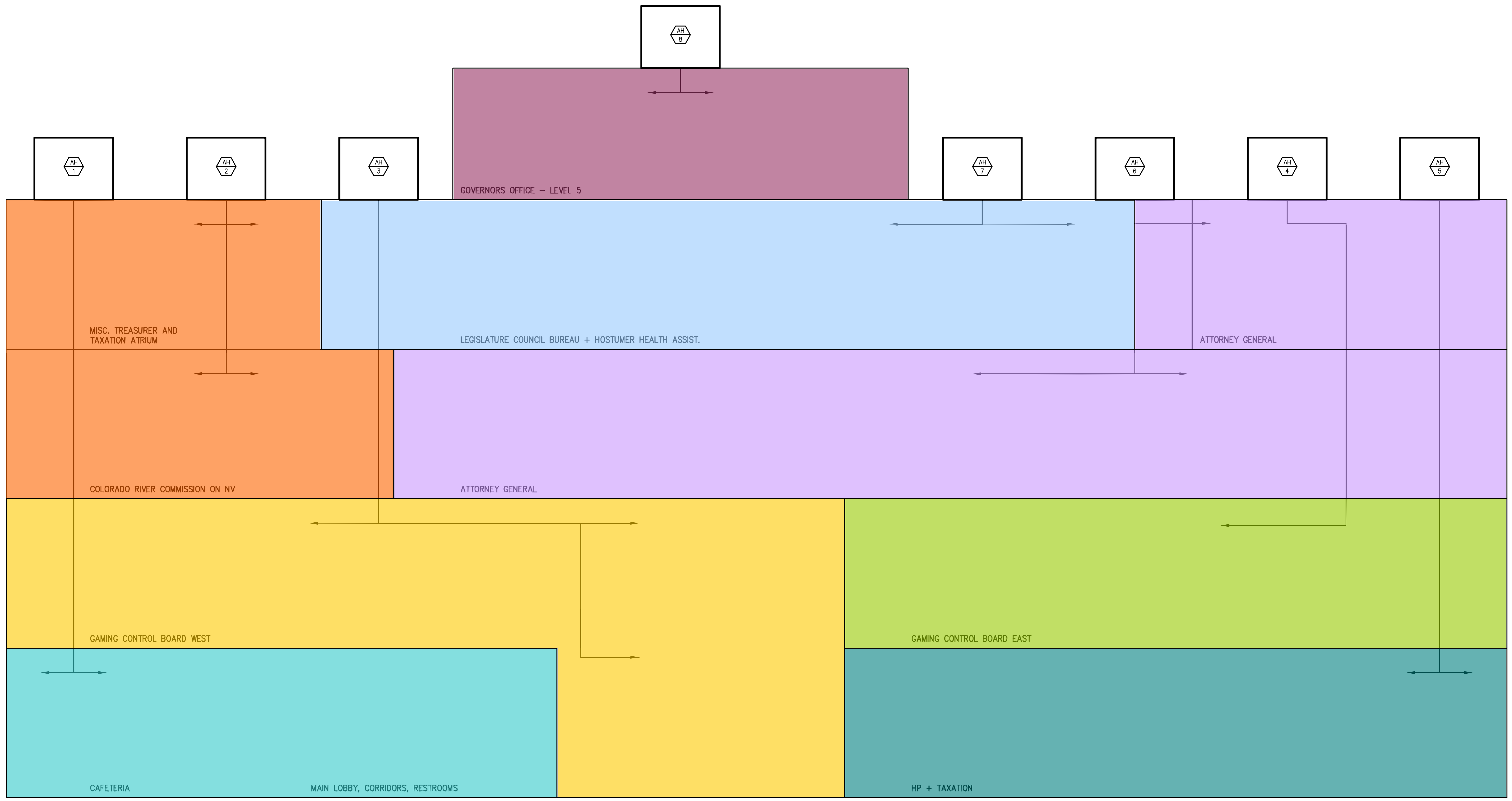
MFD-R2

SCALE: -

JOB NUMBER: 18.0745

NOTICE

1. NEW SHAFTS WILL BE PROVIDED TO FACILITATE THE ROUTING OF SA, RA DUCTS PER NEW HVAC ZONING PLAN.



MECHANICAL ZONING DIAGRAM - R2 OPTIONS
NO SCALE

1
M4

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DATE: –

DATE	BY	REVISIONS

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5155 W PATRICK LANE
LAS VEGAS, NV 89118
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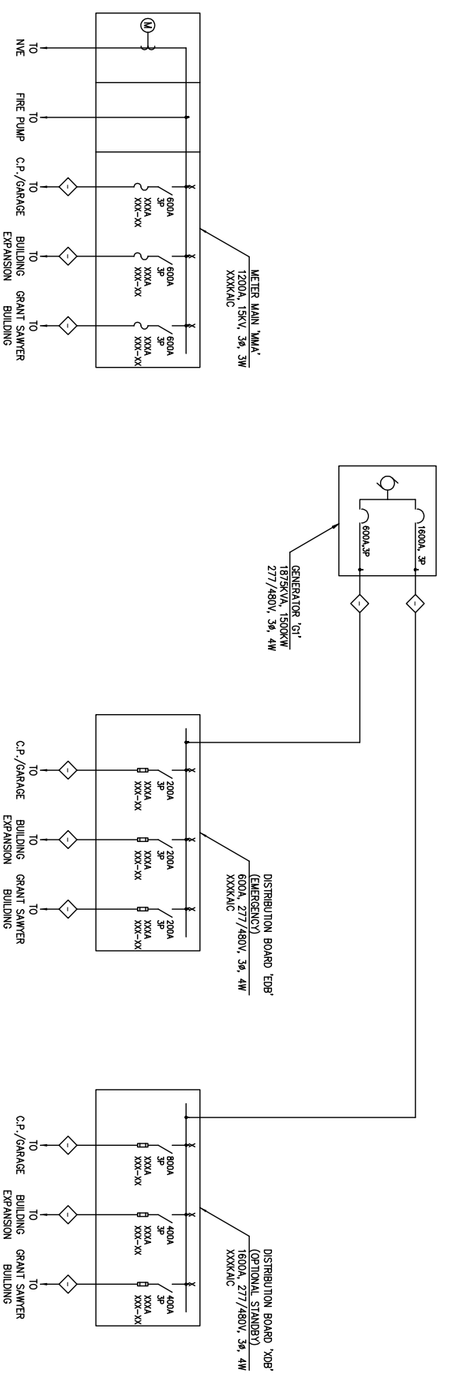
MECHANICAL ZONING DIAGRAM - R2 OPTIONS

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT

SHEET NUMBER:
MZ-R2
SCALE: –
JOB NUMBER: –



ELECTRICAL SINGLE LINE - OPTION R2-A

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2-A

SHEET NUMBER: **E-R2A**

SCALE: -

JOB NUMBER: 18.0745

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-	-	-

DATE	BY	REVISIONS
		1

NV5
1115 W PACKMAN LANE
LAS VEGAS, NV 89115
702.382.9500
NV5.COM

HKA
Elevator Consulting, Inc.

January 02, 2019

Brian Henley
Partner, Architect
KGA ARCHITECTURE
9075 West Diablo Drive, Suite 300
Las Vegas, Nevada 89148

Reference: GRANT SAWYER STATE OFFICE BUILDING

Dear Brian:

NEW ELEVATOR CORE STUDY AND RESULTS: R2A

Office Passenger Elevator Criteria:

Average Interval: 27-30 Seconds or Less
Estimated Demand: 12.5% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and UP Peak
Population Density: 1200 end of 2040
Density: 80%
Occupancy: 100%

NEW CD STUDY - Office Passenger Elevator Results:

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-A	2 Way	5	4 MRL	200	1200	6.0 / 6.0	25.8	16.8	139 / 13.9	Excellent
R2-A	UP	5	4 MRL	200	1200	8.3	18.8	12.4	135 / 13.5	Excellent
R2-A	2 Way	5	3 MRL	350	1200	7.0 / 7.0	34.1	22.3	123 / 12.3	Fair
R2-B/C	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	33	21.5	67 / 12.0	Good
R2-B/C	UP	4	2 MRL ea.	350	600	7.1	29.8	19.4	71 / 12.5	Excellent
R3-A	2 Way	8	3 MRL ea.	350	600	4.1 / 4.1	29.9	19.4	80 / 14.4	Excellent
R3-A	UP	8	3 MRL ea.	350	600	6.5	24.7	16.0	79 / 14.2	Excellent
R3-A	2 Way	8	2 MRL ea.	350	600	5.3 / 5.3	52.3	34.0	60 / 10.8	Poor
R3-A	UP	8	2 MRL ea.	350	600	11	45.6	29.6	69 / 12.3	Poor
R3-B	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	32.2	20.9	68 / 13.0	Good
R3-B	UP	4	2 MRL ea.	350	600	5.2	23.0	15.0	68 / 13.0	Excellent

Summary Elevators:

- R2-A – Provide 4 new passengers in the central core. Modernize the existing north building service elevator in place. Add 1 new dedicated service elevator 4500# at 200 FPM in new core or near a new loading dock elsewhere in south building. Special operation may be required for Governor's access so destination dispatching may be a consideration. VIP service can be a destination feature that can offer a private express elevator ride. Cost: $2.55M. Destination dispatch - add $200k

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-A	2 Way	5	4 MRL	200	1200	6.0 / 6.0	25.8	16.8	139 / 13.9	Excellent
R2-A	UP	5	4 MRL	200	1200	8.3	18.8	12.4	135 / 13.5	Excellent

Parking Garages Passenger Elevator Criteria:

Average Interval: 45-50 Seconds or Less
Estimated Demand: 9-10% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and DN Peak (morning)
Population: 1200 end of 2040
Occupancy: 100%
No People per Car (Avg.) 1.2
Stalls: R2A, R3A: **1057**
Stalls: R2B, R2C, R3B: **1233**
First floor- no users, assume 25% on floor 2 take stairs

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2A, R3A	2 Way	4	2 MRL ea.	200	1268	6.0 / 6.0	40.4	26.3	10.2	Excellent
R2A, R3A	DN	4	2 MRL ea.	200	1268	8.0	26.6	17.3	10.4	Excellent
R2B, R2C, R3B	2 Way	4	2 MRL ea.	200	1480	7.0 / 7.0	43.5	28.3	9.5	Good
R2B, R2C, R3B	DN	4	2 MRL ea.	200	1480	10.0	28.5	18.5	10.3	Excellent

END OF REPORT

Grant Sawyer Office Building
Las Vegas, NV
KGA Architecture
January 2, 2019

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A

Las Vegas

KGA
FEASIBILITY STUDY COST ESTIMATE REVISION3
Job No. 18236.000
16 January 2019

INSIGHT

COST ESTIMATE

INTRODUCTORY NOTES

This estimate is based on verbal direction from the client and the following items, received 17 December 2018, 20 December 2018 & 04 January 2019

The following items are excluded from this estimate:

- Escalation.
- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Furniture, fixtures & equipment, unless noted otherwise.
- Temporary office facilities.
- Moving, storage and installation of owner furnished equipment.
- Relocation of personnel to offsite offices.
- Photovoltaic system.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

Phase I Project Timeline

The midpoint of construction of April 2022 is based on:

- Construction start date of July 2021
- Estimated construction duration of 18 months

Phase II Project Timeline

The midpoint of construction of April 2024 is based on:

- Construction start date of July 2023
- Estimated construction duration of 18 months

Phase III Project Timeline

The midpoint of construction of April 2026 is based on:

- Construction start date of July 2025
- Estimated construction duration of 18 months

- This estimate is based on a CMAR delivery method.
- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$38,979,618	100,000	$389.80
02. CORE ELEVATORS AND CIRCULATION	$9,392,120	37,125	$252.99
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$4,507,332	2,144	$2,102.30
04. PHASE I SITE WORK	$6,032,469	466,144	$12.94

TOTAL CONSTRUCTION COST	$58,911,538

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$2,657,751	137,125	$19.38

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$61,569,289

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase I

Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$29,006,667	100,000	$290.07
02. CORE ELEVATORS AND CIRCULATION	$6,989,142	37,125	$188.26
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$3,354,129	2,144	$1,564.43
04. PHASE I SITE WORK	$4,489,059	466,144	$9.63

TOTAL NET DIRECT COST	$43,838,997

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$6,575,850
PHASING	1.50%	$756,223
CMAR CONTINGENCY	4.00%	$2,046,843
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,660,896
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,871,940
INSURANCE	1.00%	$577,507
BONDS: CONTRACTOR	1.00%	$583,283

TOTAL CONSTRUCTION COST	$58,911,538

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$150,583	$1.51
02 SUBSTRUCTURE		$355,376	$3.55
03 SUPERSTRUCTURE		$4,584,359	$45.84
04 EXTERIOR CLOSURE		$4,962,924	$49.63
05 ROOFING		$530,053	$5.30
06 INTERIOR CONSTRUCTION		$5,096,273	$50.96
07 CONVEYING			
08 MECHANICAL		$7,107,407	$71.07
09 ELECTRICAL		$5,792,035	$57.92
10 EQUIPMENT		$427,657	$4.28
11 SITEWORK			
NET DIRECT BUILDING COST		$29,006,667	$290.07
DESIGN CONTINGENCY	15.00%	$4,351,000	$43.51
SUBTOTAL		$33,357,667	$333.58
PHASING	1.50%	$500,365	$5.00
SUBTOTAL		$33,858,032	$338.58
CMAR CONTINGENCY	4.00%	$1,354,321	$13.54
SUBTOTAL		$35,212,353	$352.12
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$1,760,618	$17.61
SUBTOTAL		$36,972,971	$369.73
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,238,595	$12.39
SUBTOTAL		$38,211,566	$382.12
INSURANCE	1.00%	$382,116	$3.82
SUBTOTAL		$38,593,681	$385.94
BONDS: CONTRACTOR	1.00%	$385,937	$3.86
TOTAL BUILDING COST		**$38,979,618**	**$389.80**

GROSS FLOOR AREA: 100,000 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase I
BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$150,583		$1.51
011 Standard Foundations	$150,583		$1.51	
012 Special Foundations				
02 SUBSTRUCTURE		$355,376		$3.55
021 Slab On Grade	$355,376		$3.55	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$4,584,359		$45.84
031 Floor and Roof Construction	$4,291,625		$42.92	
032 Stair Construction	$292,734		$2.93	
04 EXTERIOR CLOSURE		$4,962,924		$49.63
041 Exterior Walls	$1,275,680		$12.76	
042 Exterior Doors/Windows	$3,687,244		$36.87	
05 ROOFING		$530,053		$5.30
051 Roofing	$530,053		$5.30	
06 INTERIOR CONSTRUCTION		$5,096,273		$50.96
061 Partitions	$1,325,133		$13.25	
062 Interior Finishes	$2,426,733		$24.27	
063 Specialties	$380,674		$3.81	
064 Interior Doors/Windows	$963,733		$9.64	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$7,107,407		$71.07
081 Plumbing	$1,103,414		$11.03	
082 H.V.A.C.	$5,299,263		$52.99	
083 Fire Protection	$704,730		$7.05	
084 Special Mechanical				
09 ELECTRICAL		$5,792,035		$57.92
091 Standard Electrical	$5,029,481		$50.29	
092 Special Electrical	$762,554		$7.63	
10 EQUIPMENT		$427,657		$4.28
101 Fixed/Movable Equipment	$66,257		$0.66	
102 Furnishings	$361,400		$3.61	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$29,006,667**		**$290.07**

FEASIBILITY STUDY COST ESTIMATE REVISION3 OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$44,723	$1.20
02 SUBSTRUCTURE		$105,547	$2.84
03 SUPERSTRUCTURE		$1,356,907	$36.55
04 EXTERIOR CLOSURE		$440,793	$11.87
05 ROOFING		$157,426	$4.24
06 INTERIOR CONSTRUCTION		$1,469,457	$39.58
07 CONVEYING		$1,973,997	$53.17
08 MECHANICAL		$723,930	$19.50
09 ELECTRICAL		$662,297	$17.84
10 EQUIPMENT		$54,065	$1.46
11 SITEWORK			
NET DIRECT BUILDING COST		$6,989,142	$188.26
DESIGN CONTINGENCY	15.00%	$1,048,371	$28.24
SUBTOTAL		$8,037,513	$216.50
PHASING	1.50%	$120,563	$3.25
SUBTOTAL		$8,158,076	$219.75
CMAR CONTINGENCY	4.00%	$326,323	$8.79
SUBTOTAL		$8,484,399	$228.54
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$424,220	$11.43
SUBTOTAL		$8,908,619	$239.96
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$298,439	$8.04
SUBTOTAL		$9,207,058	$248.00
INSURANCE	1.00%	$92,071	$2.48
SUBTOTAL		$9,299,128	$250.48
BONDS: CONTRACTOR	1.00%	$92,991	$2.50
TOTAL BUILDING COST		**$9,392,120**	**$252.99**

GROSS FLOOR AREA: 37,125 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase I
CORE ELEVATORS AND CIRCULATION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3 OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$44,723		$1.20
011 Standard Foundations	$44,723		$1.20	
012 Special Foundations				
02 SUBSTRUCTURE		$105,547		$2.84
021 Slab On Grade	$105,547		$2.84	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$1,356,907		$36.55
031 Floor and Roof Construction	$1,207,528		$32.53	
032 Stair Construction	$149,379		$4.02	
04 EXTERIOR CLOSURE		$440,793		$11.87
041 Exterior Walls	$209,497		$5.64	
042 Exterior Doors/Windows	$231,296		$6.23	
05 ROOFING		$157,426		$4.24
051 Roofing	$157,426		$4.24	
06 INTERIOR CONSTRUCTION		$1,469,457		$39.58
061 Partitions	$313,063		$8.43	
062 Interior Finishes	$877,217		$23.63	
063 Specialties	$167,369		$4.51	
064 Interior Doors/Windows	$111,808		$3.01	
07 CONVEYING		$1,973,997		$53.17
071 Elevators	$1,973,997		$53.17	
08 MECHANICAL		$723,930		$19.50
081 Plumbing	$352,365		$9.49	
082 H.V.A.C.	$237,395		$6.39	
083 Fire Protection	$134,170		$3.61	
084 Special Mechanical				
09 ELECTRICAL		$662,297		$17.84
091 Standard Electrical	$599,654		$16.15	
092 Special Electrical	$62,643		$1.69	
10 EQUIPMENT		$54,065		$1.46
101 Fixed/Movable Equipment	$12,047		$0.32	
102 Furnishings	$42,018		$1.13	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$6,989,142**		**$188.26**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$10,720	$5.00
02 SUBSTRUCTURE		$25,299	$11.80
03 SUPERSTRUCTURE		$92,981	$43.37
04 EXTERIOR CLOSURE		$275,080	$128.30
05 ROOFING		$45,457	$21.20
06 INTERIOR CONSTRUCTION		$101,217	$47.21
07 CONVEYING			
08 MECHANICAL		$2,483,126	$1,158.17
09 ELECTRICAL		$320,249	$149.37
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT BUILDING COST		$3,354,129	$1,564.43
DESIGN CONTINGENCY	15.00%	$503,119	$234.66
SUBTOTAL		$3,857,248	$1,799.09
PHASING	1.50%	$57,859	$26.99
SUBTOTAL		$3,915,107	$1,826.08
CMAR CONTINGENCY	4.00%	$156,604	$73.04
SUBTOTAL		$4,071,711	$1,899.12
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$203,586	$94.96
SUBTOTAL		$4,275,297	$1,994.08
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$143,222	$66.80
SUBTOTAL		$4,418,519	$2,060.88
INSURANCE	1.00%	$44,185	$20.61
SUBTOTAL		$4,462,705	$2,081.49
BONDS: CONTRACTOR	1.00%	$44,627	$20.81
TOTAL BUILDING COST		**$4,507,332**	**$2,102.30**

GROSS FLOOR AREA: 2,144 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase I
CENTRAL PLANT BUILDING AND EQUIPMENT
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$10,720		$5.00
011 Standard Foundations	$10,720		$5.00	
012 Special Foundations				
02 SUBSTRUCTURE		$25,299		$11.80
021 Slab On Grade	$25,299		$11.80	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$92,981		$43.37
031 Floor and Roof Construction	$92,981		$43.37	
032 Stair Construction				
04 EXTERIOR CLOSURE		$275,080		$128.30
041 Exterior Walls	$209,255		$97.60	
042 Exterior Doors/Windows	$65,825		$30.70	
05 ROOFING		$45,457		$21.20
051 Roofing	$45,457		$21.20	
06 INTERIOR CONSTRUCTION		$101,217		$47.21
061 Partitions	$25,828		$12.05	
062 Interior Finishes	$38,337		$17.88	
063 Specialties	$28,012		$13.07	
064 Interior Doors/Windows	$9,040		$4.22	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$2,483,126		$1,158.17
081 Plumbing	$36,140		$16.86	
082 H.V.A.C.	$2,428,906		$1,132.89	
083 Fire Protection	$18,080		$8.43	
084 Special Mechanical				
09 ELECTRICAL		$320,249		$149.37
091 Standard Electrical	$284,109		$132.51	
092 Special Electrical	$36,140		$16.86	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$3,354,129**		**$1,564.43**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$4,489,059	$9.63
NET DIRECT SITE COST		$4,489,059	$9.63
DESIGN CONTINGENCY	15.00%	$673,359	$1.44
SUBTOTAL		$5,162,418	$11.07
PHASING	1.50%	$77,436	$0.17
SUBTOTAL		$5,239,854	$11.24
CMAR CONTINGENCY	4.00%	$209,594	$0.45
SUBTOTAL		$5,449,448	$11.69
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$272,472	$0.58
SUBTOTAL		$5,721,921	$12.28
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$191,684	$0.41
SUBTOTAL		$5,913,605	$12.69
INSURANCE	1.00%	$59,136	$0.13
SUBTOTAL		$5,972,741	$12.81
BONDS: CONTRACTOR	1.00%	$59,727	$0.13
TOTAL SITE COST		**$6,032,469**	**$12.94**

TOTAL SITE AREA: 466,144 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase I
PHASE I SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$4,489,059		$9.63
111 Site Preparation	$1,534,967		$3.29	
112 Site Improvements	$1,262,115		$2.71	
113 Site Utilities	$1,691,977		$3.63	
114 Off-Site Work				
NET DIRECT SITE COST		**$4,489,059**		**$9.63**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING EXTENSION	$32,167,668	80,000	$402.10
02. PARKING GARAGE	$15,046,286	187,200	$80.38
03. PHASE II SITE WORK	$2,726,198	118,537	$23.00

TOTAL CONSTRUCTION COST	$49,940,152

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$1,550,557	80,000	$19.38

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$51,490,709

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase II

Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING EXTENSION	$23,937,557	80,000	$299.22
02. PARKING GARAGE	$11,196,688	187,200	$59.81
03. PHASE II SITE WORK	$2,028,699	118,537	$17.11

TOTAL NET DIRECT COST	$37,162,944

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$5,574,442
PHASING	1.50%	$641,061
CMAR CONTINGENCY	4.00%	$1,735,138
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,255,679
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,586,870
INSURANCE	1.00%	$489,561
BONDS: CONTRACTOR	1.00%	$494,457

TOTAL CONSTRUCTION COST	$49,940,152

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$120,467	$1.51
02 SUBSTRUCTURE		$284,302	$3.55
03 SUPERSTRUCTURE		$3,851,383	$48.14
04 EXTERIOR CLOSURE		$4,310,801	$53.89
05 ROOFING		$424,043	$5.30
06 INTERIOR CONSTRUCTION		$4,016,787	$50.21
07 CONVEYING			
08 MECHANICAL		$5,773,543	$72.17
09 ELECTRICAL		$4,647,607	$58.10
10 EQUIPMENT		$355,377	$4.44
11 SITEWORK		$153,247	$1.92
NET DIRECT BUILDING COST		$23,937,557	$299.22
DESIGN CONTINGENCY	15.00%	$3,590,634	$44.88
SUBTOTAL		$27,528,191	$344.10
PHASING	1.50%	$412,923	$5.16
SUBTOTAL		$27,941,113	$349.26
CMAR CONTINGENCY	4.00%	$1,117,645	$13.97
SUBTOTAL		$29,058,758	$363.23
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$1,452,938	$18.16
SUBTOTAL		$30,511,696	$381.40
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,022,142	$12.78
SUBTOTAL		$31,533,838	$394.17
INSURANCE	1.00%	$315,338	$3.94
SUBTOTAL		$31,849,176	$398.11
BONDS: CONTRACTOR	1.00%	$318,492	$3.98
TOTAL BUILDING COST		**$32,167,668**	**$402.10**

GROSS FLOOR AREA: 80,000 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase II
BUILDING EXTENSION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$120,467		$1.51
011 Standard Foundations	$120,467		$1.51	
012 Special Foundations				
02 SUBSTRUCTURE		$284,302		$3.55
021 Slab On Grade	$284,302		$3.55	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$3,851,383		$48.14
031 Floor and Roof Construction	$3,558,649		$44.48	
032 Stair Construction	$292,734		$3.66	
04 EXTERIOR CLOSURE		$4,310,801		$53.89
041 Exterior Walls	$1,175,970		$14.70	
042 Exterior Doors/Windows	$3,134,831		$39.19	
05 ROOFING		$424,043		$5.30
051 Roofing	$424,043		$5.30	
06 INTERIOR CONSTRUCTION		$4,016,787		$50.21
061 Partitions	$1,060,107		$13.25	
062 Interior Finishes	$1,941,386		$24.27	
063 Specialties	$244,307		$3.05	
064 Interior Doors/Windows	$770,987		$9.64	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$5,773,543		$72.17
081 Plumbing	$864,408		$10.81	
082 H.V.A.C.	$4,312,825		$53.91	
083 Fire Protection	$596,310		$7.45	
084 Special Mechanical				
09 ELECTRICAL		$4,647,607		$58.10
091 Standard Electrical	$4,033,227		$50.42	
092 Special Electrical	$614,380		$7.68	
10 EQUIPMENT		$355,377		$4.44
101 Fixed/Movable Equipment	$66,257		$0.83	
102 Furnishings	$289,120		$3.61	
103 Special Construction				
11 SITEWORK		$153,247		$1.92
111 Site Preparation	$153,247		$1.92	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$23,937,557**		**$299.22**	

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$234,000	$1.25
02 SUBSTRUCTURE		$552,240	$2.95
03 SUPERSTRUCTURE		$8,424,000	$45.00
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING		$250,000	$1.34
08 MECHANICAL		$676,313	$3.61
09 ELECTRICAL		$1,060,135	$5.66
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT SITE COST		$11,196,688	$59.81
DESIGN CONTINGENCY	15.00%	$1,679,503	$8.97
SUBTOTAL		$12,876,191	$68.78
PHASING	1.50%	$193,143	$1.03
SUBTOTAL		$13,069,334	$69.81
CMAR CONTINGENCY	4.00%	$522,773	$2.79
SUBTOTAL		$13,592,107	$72.61
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$679,605	$3.63
SUBTOTAL		$14,271,713	$76.24
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$478,102	$2.55
SUBTOTAL		$14,749,815	$78.79
INSURANCE	1.00%	$147,498	$0.79
SUBTOTAL		$14,897,313	$79.58
BONDS: CONTRACTOR	1.00%	$148,973	$0.80
TOTAL SITE COST		**$15,046,286**	**$80.38**

TOTAL SITE AREA: 187,200 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase II
PARKING GARAGE
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$1.25
011 Standard Foundations	$234,000		$1.25	
012 Special Foundations				
02 SUBSTRUCTURE		$552,240		$2.95
021 Slab On Grade	$552,240		$2.95	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$8,424,000		$45.00
031 Floor and Roof Construction	$8,424,000		$45.00	
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING		$250,000		$1.34
071 Elevators	$250,000		$1.34	
08 MECHANICAL		$676,313		$3.61
081 Plumbing	$251,547		$1.34	
082 H.V.A.C.	$30,117		$0.16	
083 Fire Protection	$394,649		$2.11	
084 Special Mechanical				
09 ELECTRICAL		$1,060,135		$5.66
091 Standard Electrical	$891,000		$4.76	
092 Special Electrical	$169,135		$0.90	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST	**$11,196,688**			**$59.81**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$2,028,699	$17.11
NET DIRECT SITE COST		$2,028,699	$17.11
DESIGN CONTINGENCY	15.00%	$304,305	$2.57
SUBTOTAL		$2,333,004	$19.68
PHASING	1.50%	$34,995	$0.30
SUBTOTAL		$2,367,999	$19.98
CMAR CONTINGENCY	4.00%	$94,720	$0.80
SUBTOTAL		$2,462,719	$20.78
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$123,136	$1.04
SUBTOTAL		$2,585,855	$21.81
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$86,626	$0.73
SUBTOTAL		$2,672,481	$22.55
INSURANCE	1.00%	$26,725	$0.23
SUBTOTAL		$2,699,206	$22.77
BONDS: CONTRACTOR	1.00%	$26,992	$0.23
TOTAL SITE COST		**$2,726,198**	**$23.00**

TOTAL SITE AREA: 118,537 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase II
PHASE II SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$2,028,699		$17.11
111 Site Preparation	$742,685		$6.27	
112 Site Improvements	$433,896		$3.66	
113 Site Utilities	$852,118		$7.19	
114 Off-Site Work				
NET DIRECT SITE COST		**$2,028,699**		**$17.11**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. REPROGRAM EXISTING GRANT SAWYER BUILDING	$47,823,555	236,981	$201.80
02. PARKING GARAGE EXTENSION	$15,622,016	187,200	$83.45
03. PHASE III SITE WORK	$4,286,512	238,482	$17.97
TOTAL CONSTRUCTION COST	**$67,732,083**		

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$4,593,156	236,981	$19.38
TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	**$72,325,239**		

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. REPROGRAM EXISTING GRANT SAWYER BUILDING	$35,587,879	236,981	$150.17
02. PARKING GARAGE EXTENSION	$11,625,117	187,200	$62.10
03. PHASE III SITE WORK	$3,189,806	238,482	$13.38
TOTAL NET DIRECT COST	**$50,402,802**		

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$7,560,420
PHASING	1.50%	$869,448
CMAR CONTINGENCY	4.00%	$2,353,307
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$3,059,299
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$2,152,217
INSURANCE	1.00%	$663,975
BONDS: CONTRACTOR	1.00%	$670,615
TOTAL CONSTRUCTION COST		**$67,732,083**

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE		$58,352	$0.25
03 SUPERSTRUCTURE		$316,577	$1.34
04 EXTERIOR CLOSURE		$124,058	$0.52
05 ROOFING		$642,446	$2.71
06 INTERIOR CONSTRUCTION		$10,042,152	$42.38
07 CONVEYING		$60,187	$0.25
08 MECHANICAL		$14,650,673	$61.82
09 ELECTRICAL		$6,432,657	$27.14
10 EQUIPMENT		$1,617,147	$6.82
11 SITEWORK		$1,643,630	$6.94
NET DIRECT BUILDING COST		$35,587,879	$150.17
DESIGN CONTINGENCY	15.00%	$5,338,182	$22.53
SUBTOTAL		$40,926,061	$172.70
PHASING	1.50%	$613,891	$2.59
SUBTOTAL		$41,539,952	$175.29
CMAR CONTINGENCY	4.00%	$1,661,598	$7.01
SUBTOTAL		$43,201,550	$182.30
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,160,077	$9.11
SUBTOTAL		$45,361,627	$191.41
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,519,615	$6.41
SUBTOTAL		$46,881,242	$197.83
INSURANCE	1.00%	$468,812	$1.98
SUBTOTAL		$47,350,054	$199.81
BONDS: CONTRACTOR	1.00%	$473,501	$2.00
TOTAL BUILDING COST		**$47,823,555**	**$201.80**

GROSS FLOOR AREA: 236,981 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase III
REPROGRAM EXISTING GRANT SAWYER BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE		$58,352		$0.25
021 Slab On Grade	$58,352		$0.25	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$316,577		$1.34
031 Floor and Roof Construction	$316,577		$1.34	
032 Stair Construction				
04 EXTERIOR CLOSURE		$124,058		$0.52
041 Exterior Walls	$124,058		$0.52	
042 Exterior Doors/Windows				
05 ROOFING		$642,446		$2.71
051 Roofing	$642,446		$2.71	
06 INTERIOR CONSTRUCTION		$10,042,152		$42.38
061 Partitions	$2,196,517		$9.27	
062 Interior Finishes	$5,320,140		$22.45	
063 Specialties	$928,028		$3.92	
064 Interior Doors/Windows	$1,597,467		$6.74	
07 CONVEYING		$60,187		$0.25
071 Elevators	$60,187		$0.25	
08 MECHANICAL		$14,650,673		$61.82
081 Plumbing	$879,115		$3.71	
082 H.V.A.C.	$13,540,496		$57.14	
083 Fire Protection	$231,062		$0.98	
084 Special Mechanical				
09 ELECTRICAL		$6,432,657		$27.14
091 Standard Electrical	$5,990,501		$25.28	
092 Special Electrical	$442,156		$1.87	
10 EQUIPMENT		$1,617,147		$6.82
101 Fixed/Movable Equipment	$424,316		$1.79	
102 Furnishings	$1,192,831		$5.03	
103 Special Construction				
11 SITEWORK		$1,643,630		$6.94
111 Site Preparation	$1,643,630		$6.94	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$35,587,879**		**$150.17**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$234,000	$1.25
02 SUBSTRUCTURE		$552,240	$2.95
03 SUPERSTRUCTURE		$8,603,495	$45.96
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING		$250,000	$1.34
08 MECHANICAL		$676,313	$3.61
09 ELECTRICAL		$1,060,135	$5.66
10 EQUIPMENT			
11 SITEWORK		$248,934	$1.33
NET DIRECT SITE COST		$11,625,117	$62.10
DESIGN CONTINGENCY	15.00%	$1,743,768	$9.31
SUBTOTAL		$13,368,885	$71.41
PHASING	1.50%	$200,533	$1.07
SUBTOTAL		$13,569,418	$72.49
CMAR CONTINGENCY	4.00%	$542,777	$2.90
SUBTOTAL		$14,112,195	$75.39
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$705,610	$3.77
SUBTOTAL		$14,817,804	$79.15
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$496,396	$2.65
SUBTOTAL		$15,314,201	$81.81
INSURANCE	1.00%	$153,142	$0.82
SUBTOTAL		$15,467,343	$82.62
BONDS: CONTRACTOR	1.00%	$154,673	$0.83
TOTAL SITE COST		**$15,622,016**	**$83.45**

TOTAL SITE AREA: 187,200 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase III
PARKING GARAGE EXTENSION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$1.25
011 Standard Foundations	$234,000		$1.25	
012 Special Foundations				
02 SUBSTRUCTURE		$552,240		$2.95
021 Slab On Grade	$552,240		$2.95	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$8,603,495		$45.96
031 Floor and Roof Construction	$8,603,495		$45.96	
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING		$250,000		$1.34
071 Elevators	$250,000		$1.34	
08 MECHANICAL		$676,313		$3.61
081 Plumbing	$251,547		$1.34	
082 H.V.A.C.	$30,117		$0.16	
083 Fire Protection	$394,649		$2.11	
084 Special Mechanical				
09 ELECTRICAL		$1,060,135		$5.66
091 Standard Electrical	$891,000		$4.76	
092 Special Electrical	$169,135		$0.90	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$248,934		$1.33
111 Site Preparation	$248,934		$1.33	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST	**$11,625,117**			**$62.10**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$3,189,806	$13.38
NET DIRECT SITE COST		$3,189,806	$13.38
DESIGN CONTINGENCY	15.00%	$478,471	$2.01
SUBTOTAL		$3,668,277	$15.38
PHASING	1.50%	$55,024	$0.23
SUBTOTAL		$3,723,301	$15.61
CMAR CONTINGENCY	4.00%	$148,932	$0.62
SUBTOTAL		$3,872,233	$16.24
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$193,612	$0.81
SUBTOTAL		$4,065,845	$17.05
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$136,206	$0.57
SUBTOTAL		$4,202,051	$17.62
INSURANCE	1.00%	$42,021	$0.18
SUBTOTAL		$4,244,071	$17.80
BONDS: CONTRACTOR	1.00%	$42,441	$0.18
TOTAL SITE COST		**$4,286,512**	**$17.97**

TOTAL SITE AREA: 238,482 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-A Phase III
PHASE III SITE WORK
Las Vegas

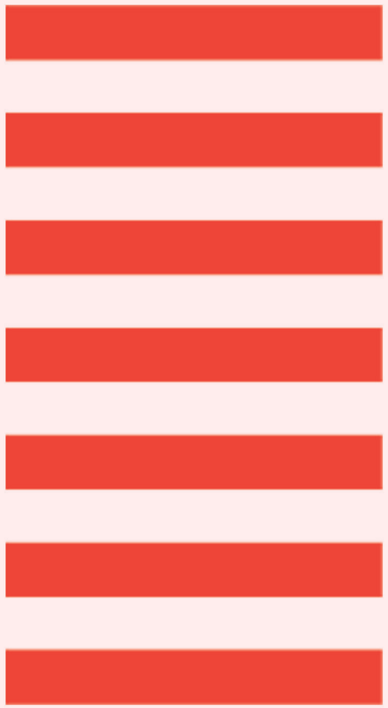
FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$3,189,806		$13.38
111 Site Preparation	$1,192,410		$5.00	
112 Site Improvements	$1,553,456		$6.51	
113 Site Utilities	$443,940		$1.86	
114 Off-Site Work				
NET DIRECT SITE COST		**$3,189,806**		**$13.38**

Reprogramming | Concept R2-B



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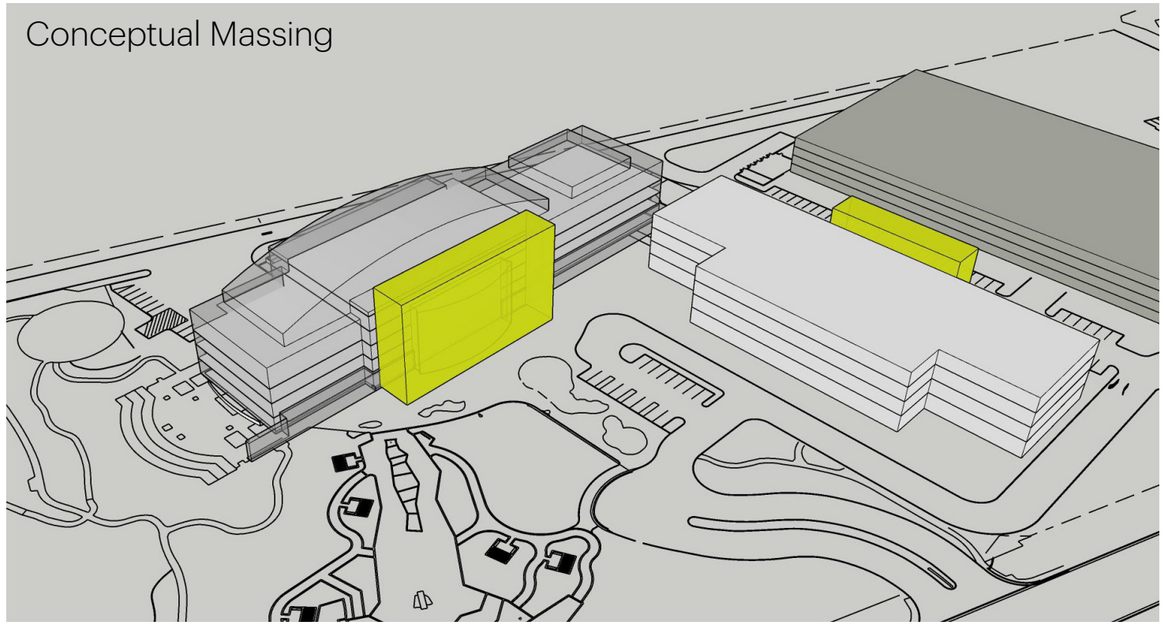
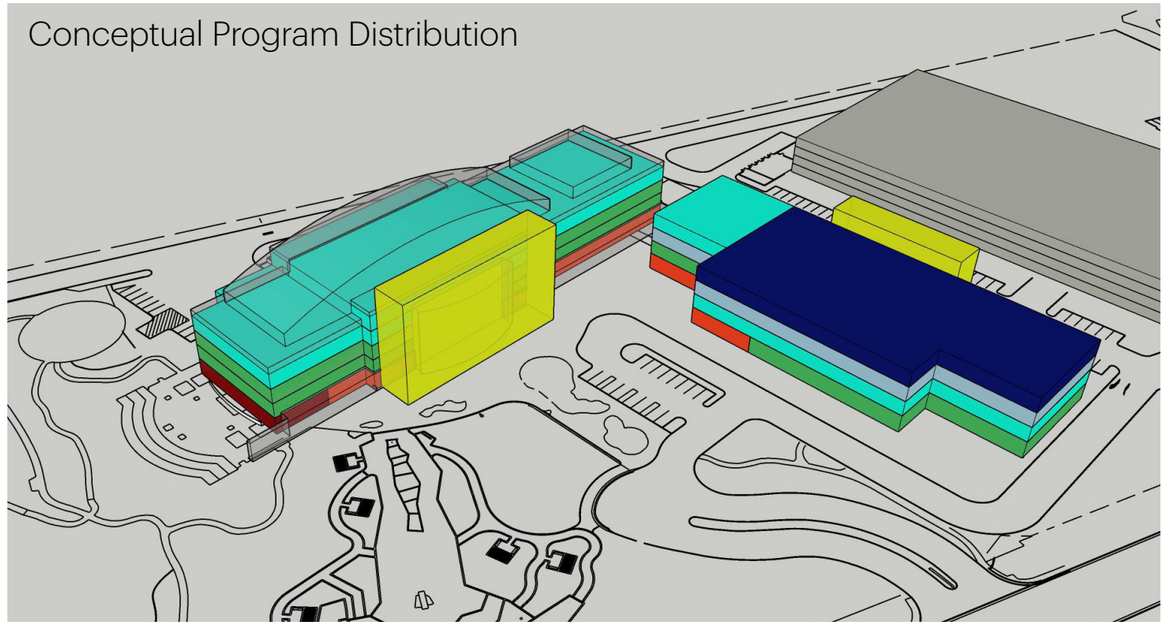
Reprogramming | Concept R2-B

Creating a Campus

Concept R2-B furthers the distinction between the existing and expansion areas by placing the expansion area in a separate building set at a ninety degree angle relative to the existing Grant Sawyer building. Corridors on levels 2, 3 and 4 connect the two building volumes to allow the horizontal distribution of some larger departments or agencies across the same floor in both buildings. The expansion area core, which includes vertical transportation and utility shafts as well as restrooms, is placed to one side of the building rather than in a traditional central location to allow an unencumbered floor plate for maximum flexibility for the layout of office spaces. Similarly, a new offset core is proposed for the Grant Sawyer building, allowing some existing shafts to be filled in to unencumber portions of the existing floor plan while providing for the easy installation of new elevators and restrooms, and offering the psychological benefit of a new entry facade.





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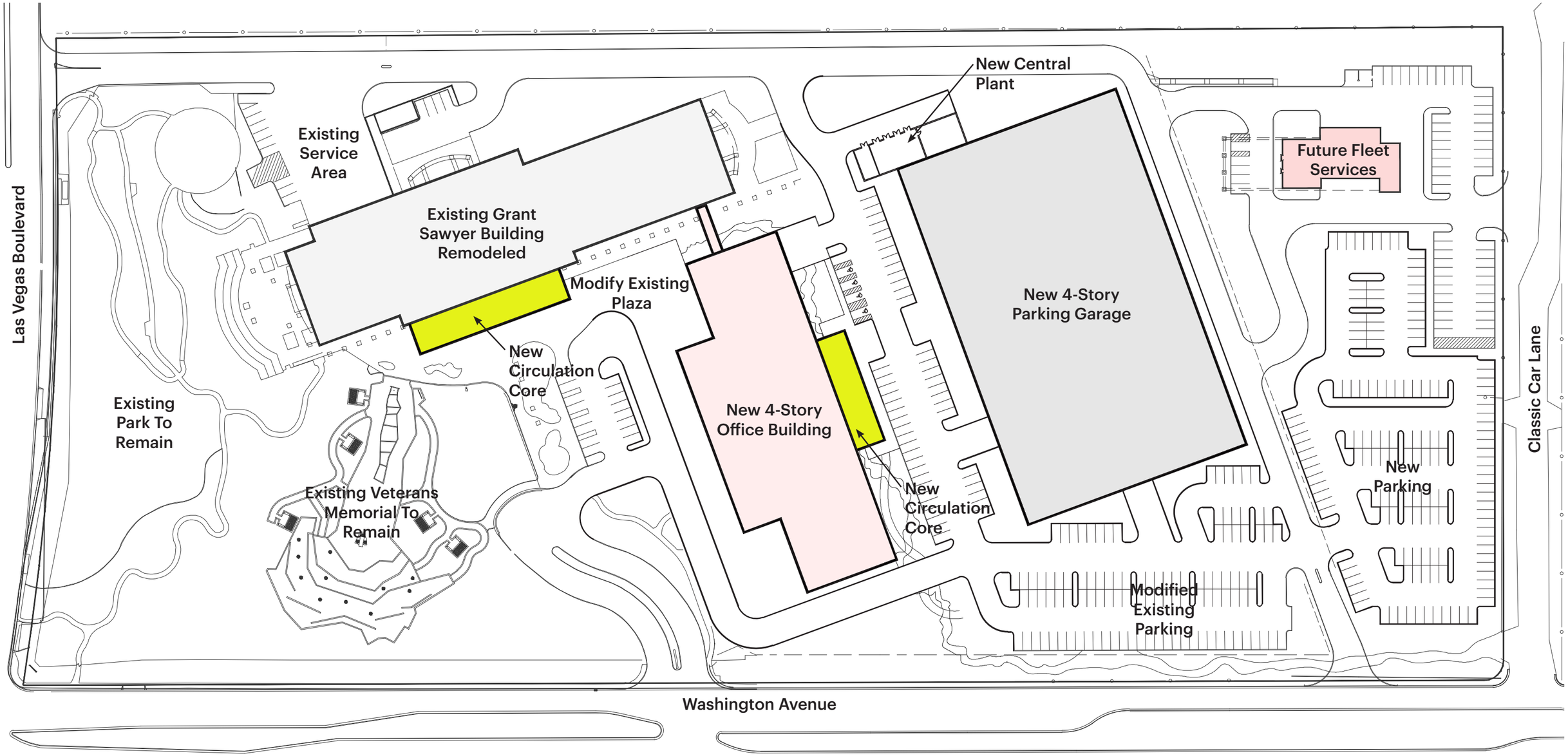
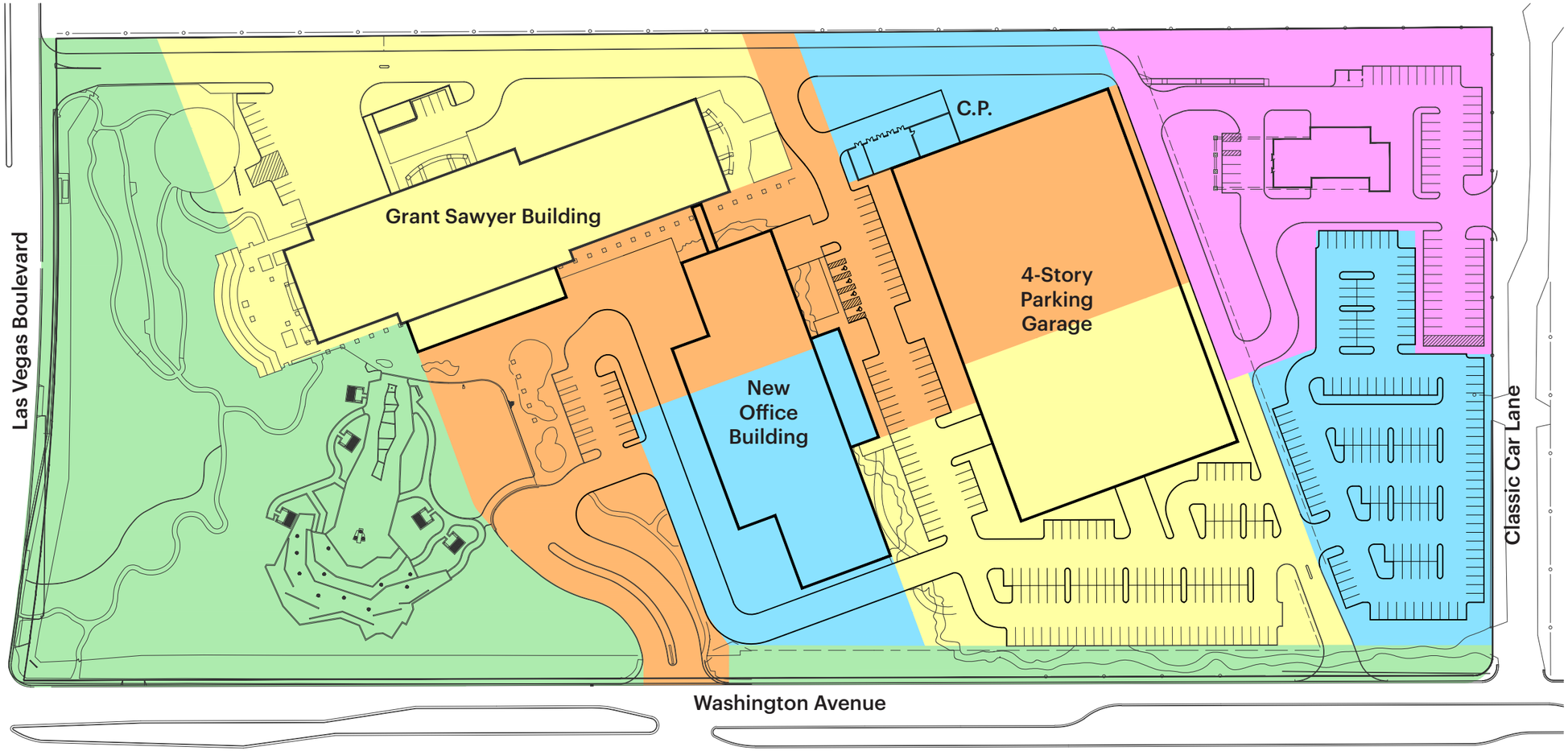
Concept R2-B | Conceptual Site Plan



Surface Parking: 347 Spaces
Garage Parking: 1,041 Spaces
Total Parking: 1,388 Spaces

Concept R2-B | Conceptual Phasing Plan



Phase I
Build a new 4-story, 100,000 S.F. south half of the new Office Building on a portion of the existing parking lot to the south of the Grant Sawyer Building. Build a new Central Plant. Build a new parking lot at the existing Fantasy Park and solar farm.

Phase II
Build a new 4-story, 80,000 S.F. north half of the new Office Building. Build the north half of the 4-story parking garage over a portion of the current surface parking lot.

Phase III
Remodel the Grant Sawyer Building. Build the south half of the 4-story parking garage.

Concept R2-B | Conceptual Level 1 Floor Plan

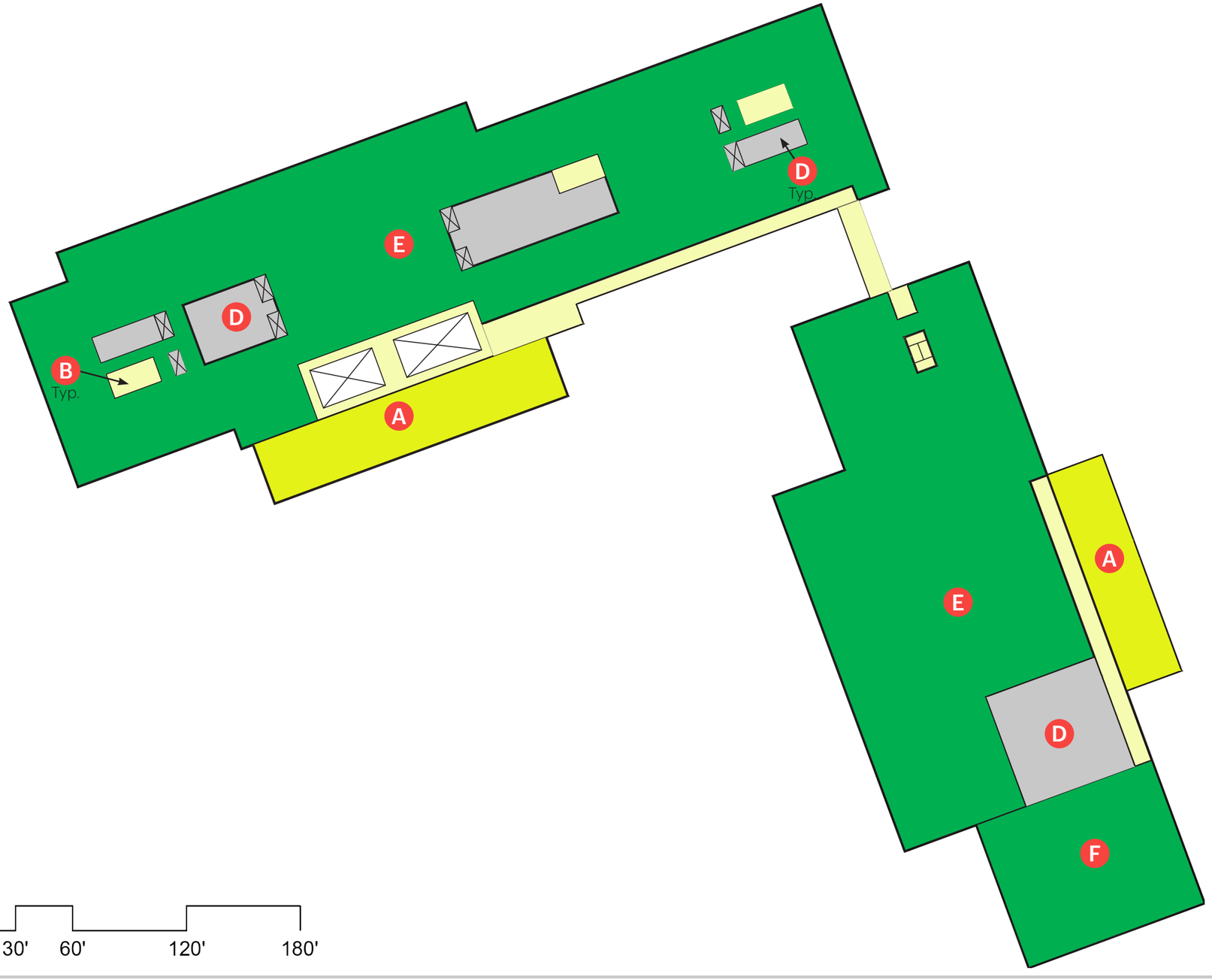
- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Cafeteria
- F Shared Break Room
- G Mail Services
- H Controller's Office - Vendor Database Services
- I Dept. of Human Resources Management
- J Secretary of State
- K Governor's Garage
- L Dept. of Public Safety (DPS) Investigation Division
- M Innovation Center
- N Dept. of Veteran's Services
- O Capitol Police
- P Dept. of Taxation

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

The vertical circulation cores contain passenger and freight elevators, exit stairs, restrooms, lactation rooms, janitor's closets and utility spaces and shafts. The onsolidation and stacking of these repeated core elements on each level of the new construction is proposed in order to minimize intrusion of these elements into the tenant areas.

0' 30' 60' 120' 180'

Concept R2-B | Conceptual Level 2 Floor Plan



- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Consumer Health Assistance Bureau

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

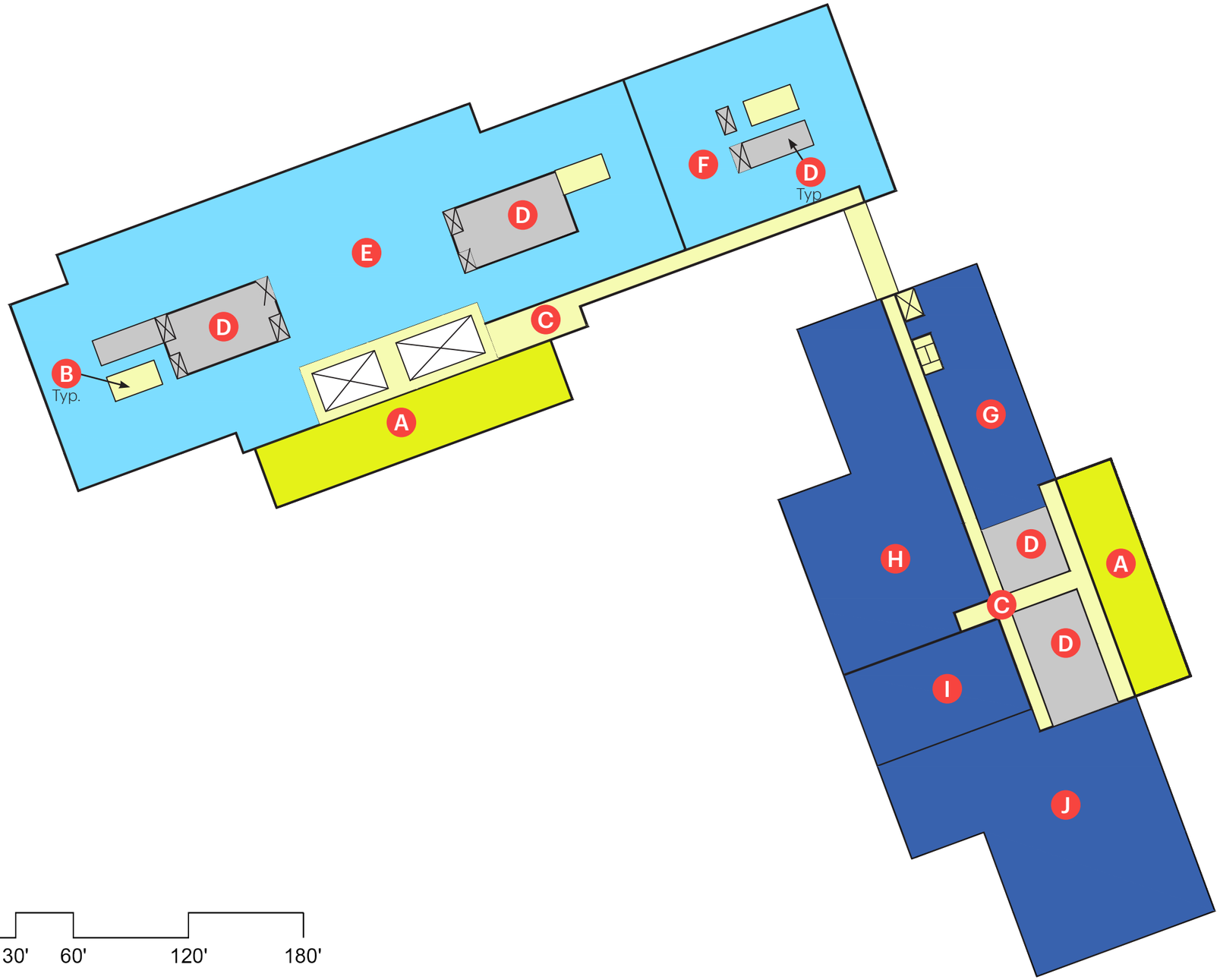
Concept R2-B | Conceptual Level 3 Floor Plan

- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Attorney General
- F Legislative Counsel Bureau
- G Commision on Ethics

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

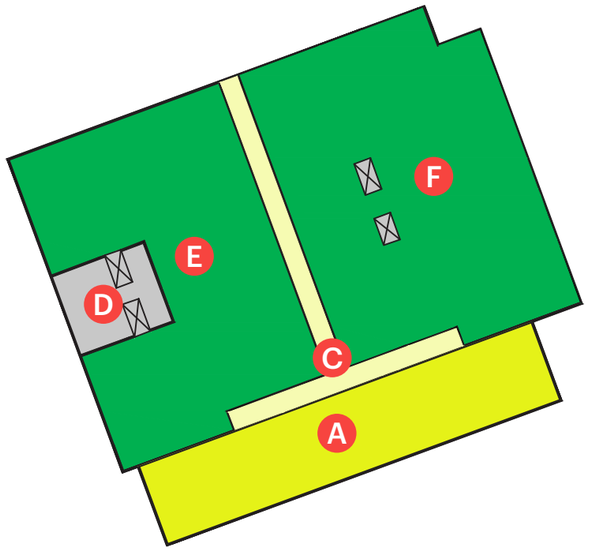
Concept R2-B | Conceptual Level 4 Floor Plan



- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Attorney General
- F State Treasurer
- G Governor's Office of Workforce Innovation (OWINN)
- H Office of the Governor
- I Office of the Lieutenant Governor
- J Governor's Office Economic Development (GOED)

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-B | Conceptual Level 5 Floor Plan

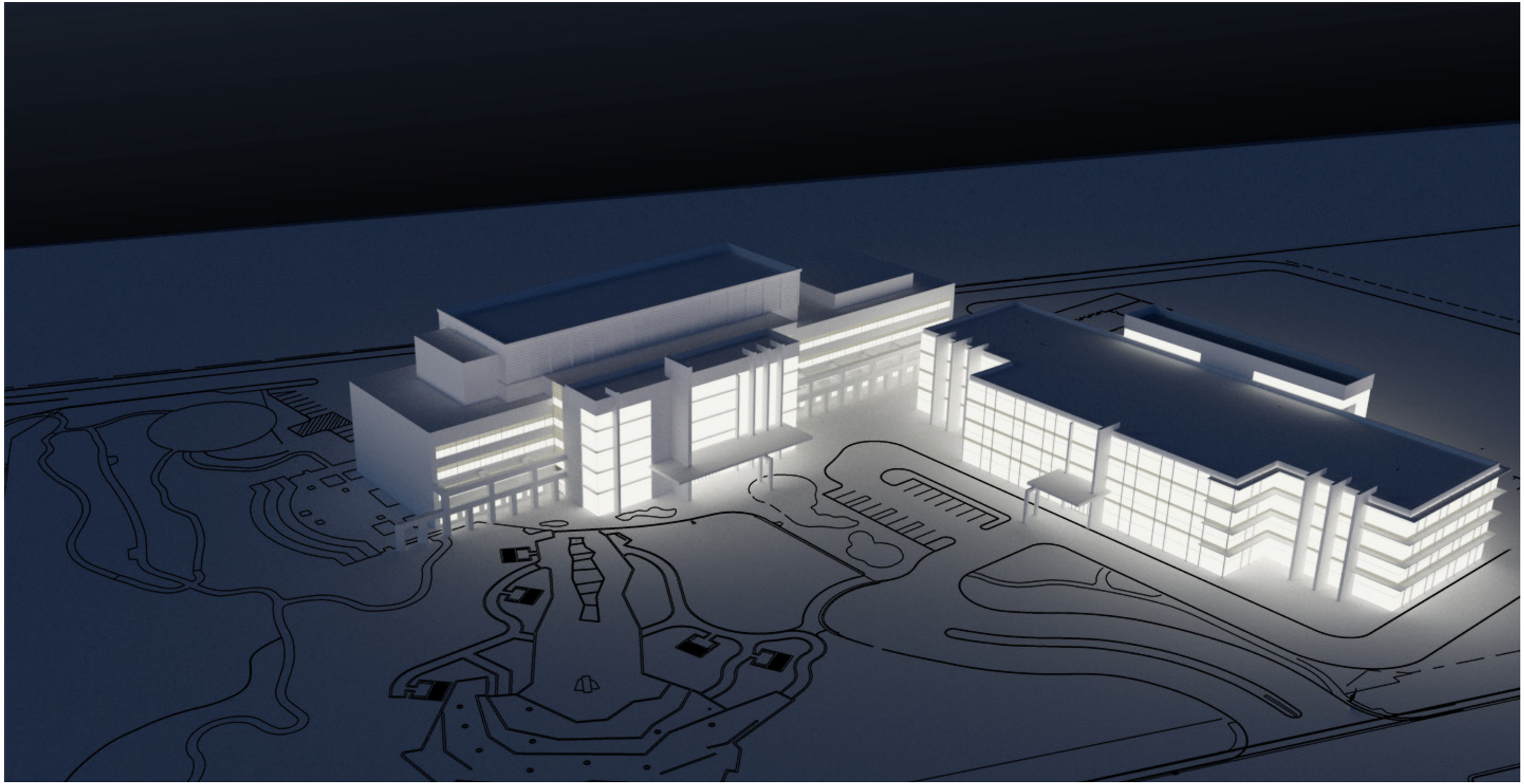


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Dept. of Employment, Training & Rehabilitation
- F Colorado River Commission of Nevada

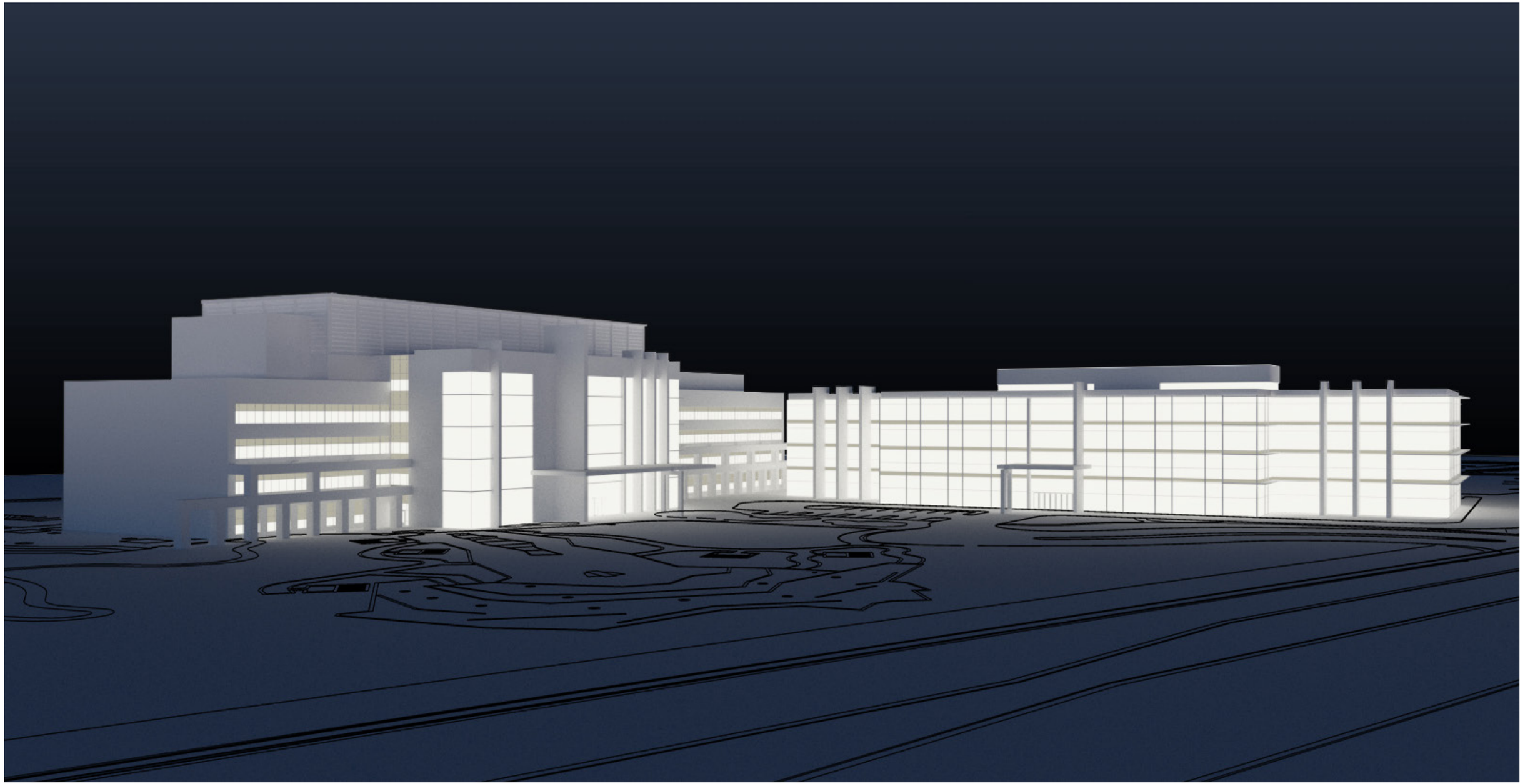
0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-B | Conceptual 3D View



Concept R2-B | Conceptual 3D View



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REPROGRAMMING AND EXPANSION

CONCEPT R2-B

1.0 General Information

Concept R2-B reflects modifications to the existing building, adding a new shared core, constructing a new building south and east of the existing building and constructing a new multi-level parking garage in the east parking lot.

2.0 Drainage

This concept will require regrading of the area south and east of the existing building in order to surface drain around the new office building. It initially appears this can be accomplished without the need of storm drain pipe facilities if the connecting bridge between the existing and new building occurs at the second floor and above. The existing parking lot south and west of the new building will need to be reconfigured and regraded. The south end of the new building will require significant grading for at least 50% of the south side of the new building due to higher elevations the closer it gets to Washington Avenue. The garage area may need to be regraded to fit the garage footprint within this existing parking lot to avoid excessive first floor to second floor head heights. The Veterans Memorial should not be affected by this concept.

Significant over excavation of existing soils under all of the new structures may be required due to undesirable soils conditions. This may be minimized by utilizing alternative structure footing types such as piles or caissons.

3.0 Utilities

The two existing combined service water meters and backflow devices must be upgraded to current LVVWD standards and the increased domestic demands as well as the potential increase in on-site fire flow due to differing construction types of proposed buildings. The existing waterline under the proposed building will need to be demolished and a new waterline (10”±) will need to be looped around this building. A water loop around the proposed garage with at least 4 new fire hydrants will need to be installed around the garage for fire protection. These new loops will be fed by the existing system and the upgraded water meters and backflow devices.

The existing on-site sewer line within the east parking area will need to be relocated around the south side of the garage and extended to the new building. A sewer line will also need to be extended to the southwest corner of the existing building around the south and west sides of the new office building to provide continuing sewer services for laterals servicing the existing building. All new sewer mains will be 8” and will require manholes at angle points and at a maximum of 300’ spacing. The existing 8” sewer main should have adequate capacity for this concept.

4.0 Hardscape

New asphalt and concrete walks and curbs will be required within the project areas.

5.0 Summary

This concept can be accomplished but challenges will occur due to the higher elevations as one gets closer to Washington Avenue, In this concept, the building will be perpendicular to existing contours which almost always creates grading issues leading potentially to higher costs due to increased grading and potential retaining wall requirements.

Structural Design Narrative- Concept R2-B – New 4-Story building separate from existing except possible bridges for circulation – 01/02/19

John A. Martin & Associates of Nevada
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Pete Padilla, P.E.

Mechanical Roof Framing over Existing Building

The roof over the mechanical equipment shall be supported on wide flange columns that extend through the roof level. The wide flange framing will support a perforated metal decking with frames to support the edges as required. Lateral support will be moment frames. This will enclose the existing mechanical ductwork and equipment but will not convert the existing roof to a habitable floor.

Existing Elevator Cores

Infill existing elevator cores with concrete over metal deck and steel beams.

Existing Brace Removal

The building was constructed per the 1991 UBC, based upon the 2018 IBC the current seismic factor would be 1.9 x higher than the original code. Changing of the existing lateral system would require upgrading all braces, columns, footings and drag/chord systems. Therefore, removing or changing the lateral system is not recommended.

New High Roof Framing

The area of the high roof which supports the mechanical equipment and electrical room will be framed using 3 ½" concrete over the flutes of 3" x 18 gage metal deck spanning between wide flanged beam spaced typically at 7'-6" on center, with few exceptions, spanning between wide flanged girders spanning between columns. Housekeeping pads should be maximum of 6" thick normal weight concrete. The roof steel will be sloped to achieve drainage and limit the use of built up roofing.

The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Core location is not adequate as a lateral element alone. Steel moment frames throughout the building would be required to keep the open nature of the plans.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load.

Penetrations for pipes and shafts will require frames constructed of angles and channels supported on the wide flange beams. In the areas where there is concrete over metal deck, most openings shall be framed using reinforcing in the concrete slab in lieu of structural steel frames.

Typical Floor Framing

The floors will be framed using 3 ½" of concrete over the flutes of 3" x 18 gage deck, reinforced with welded wire fabric and negative reinforcing over the supports. To ensure the ability to achieve floor flatness, the framing is designed to allow for an additional ½" of concrete.

Penetrations for piping and shafts through metal deck will be accomplished using reinforcing steel at the perimeter of the openings with a formed concrete edge. The deck must remain in place until the concrete attains a compressive strength of 3,000 psi.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load. This columns will extend approximately 4' above the floor level at the splice locations. The top of the column section will be prepared for a welded column splice.

Foundations

Foundation design is pending completion of the geotechnical investigation and preparation of the geotechnical report. For purposes of this narrative, we are assuming the building will be supported on spread footings with strip footings required at the moment frames.

Piles may be required as alternate foundations depending on geotechnical recommendations.

The typical foundations should be placed 2' below finished floor. Footing elevations can be adjusted based on requirements of utilities. Shafts containing elevators should be placed approximate 5'-6"' below finished floor to allow for pits.

Retaining walls and dock walls will utilize conventional foundations. Retaining wall design is pending verification of grading.

Parking Garage Options

- **Precast with Shear Walls**
  Greatest savings are achieved with all precast elements (walls, beams, spandrels, tees)
  Precast shear walls at perimeter, L beams at perimeter, inverted tees at interior column lines, double tees with topping slab.
- **Cast-in place**
  Moment frames in transverse direction, shear walls in longitudinal direction, 14"/16" x 30" tapered beams at 18' on center, 5" post tensioned slab, 24" x 30" girders at transfer locations, 24" x 24" typical columns, 24" x 30" columns at transfer girders

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GRANT SAWYER OFFICE BUILDING
REPROGRAMMING NARRATIVE R2-B OPTION
NV5 PROJECT NO. 018.0745.00

Prepared for:

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Issue Date:

January 2, 2019

Revision No.	Issue Date	Prepared By	Reviewed By	Remarks
1	1/02/2019	Alex Jankovic JJ Wisdom	KGA	Reprogramming R2

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

When pursing this investigation, we had in mind the three RRR =Repair, Remodel, Replace and the 20 years fix of the MEP systems as our final goal.

Based on the architectural conceptual drawings for the Reprogramming and Replacement options the central utility plant (CUP) will be located in the parking garage building.

Reprogramming options R2-B

The CUP plant will house the chilled water plant and heating hot water plant.

The chiller room will consist of 2 x 350 tons magnetic bearing chillers, cooling towers and associated chilled water pumps and condenser water pumps with a dedicated space for future expansion to serve the existing GSOB. The proposed chilled water plant will be variable primary flow system with direct buried pre-insulated chilled water piping serving the proposed new buildings per R2 options.

The boiler plant will consist of 2 x 3000 MBH gas fired condensing boilers, combination bridge/air separator and associated boiler pumps and variable flow building pumps and a dedicated space for future expansion to serve the existing GSOB.

The heating plant will deliver 160^{0}F/130^{0}F heating hot water to the buildings via underground pre-insulated hydronic piping.

Reprogramming options R2-A, R2-B, R2-C will include the existing 224,000 sq.ft Grant Sawyer office building (GSOB) and 180,000 sq.ft building expansion.

In all R2 options the GSOB central plant at level 6 will remain in operation to serve the eight air handling systems until the end of its useful life. At the same time the new chilled water/hot water piping stub-outs will be provided for future connection to CUP.

Fire Protection: Existing diesel fire pumps shall be removed and replaced with electric-drive fire pumps per 2018 IBC.

Life Safety-Smoke Removal System: Existing system shall be upgraded per 2018 IBC, 2018 UMC.

Existing 15KV Nevada Energy service shall be re-used to serve the site. New owner 15KV electrical distribution and 480V generator distribution shall be provided for the building expansion and sized to serve the existing GSOB. The existing electrical infrastructure serving the GSOB shall be protected in place during expansion construction and then removed in its entirety during the remodel. New electrical infrastructure served from the building expansion electrical systems shall be provided during the remodel.

2. MECHANICAL SYSTEMS

2.1 GENERAL

2.1.1 Existing GSOB Office Building

Existing GSOB air handling units are located on the roof and they will be removed and replaced with new air handling units based on the proposed zoning plan.

AH-1	30,000 CFM	Level 1 - Main Lobby, Cafeteria
AH-2	38,000 CFM	Level 3 & 4 – Atrium & Offices - West
AH-3	35,000 CFM	Level 2 Gaming Control Board - West
AH-4	25,000 CFM	Level 2 Gaming Control Board - East
AH-5	20,000 CFM	Level 1 HR/Dept of Taxation - East
AH-6	32,000 CFM	Level 3 Attorney General Offices
AH-7	33,000 CFM	Level 4 AG, Legislative Council Bureau
AH-8	32,000 CFM	Level 5 Governor's Offices

Central Plant and DDC control system – recently renovated.
Mechanical Updates: VAV terminal units – New Alerton Controls + hose kits & isolation valves.

Proposed Reprogramming:
Exterior ductwork on roof will be completely removed and replaced with a brand new properly sized internally lined ductwork and routed within the new roof enclosure provided by architect.
Level 5 Ductwork shall be completely removed and replaced with new ductwork per SMACNA requirements.
Interior medium pressure ductwork compromised with openings & flex duct connections for additional cooling of server rooms will be fixed by disconnecting of flex ductwork and properly sealing the system.
All existing fire/smoke dampers that are no longer used as part of the 2012 upgrade, shall be removed.
Based on the reprogramming requirements, some of the vertical risers may be redesigned to serve the dedicated agency for a more appropriate control and operation.
Server/Data rooms cooling system shall be completely disconnected from the medium pressure ductwork. A dedicated chilled water - cooling system will be provided for server/data rooms utilizing the cooling only fan-coil units with emergency VRF system as a back-up cooling. The new chilled water risers will be installed within the same chase and routed from chiller room down to the first floor to serve these cooling only fan-coil units throughout the building.

2.1.2 New Building Expansion

The new 180,000 sq.ft building expansion will be designed per current SPWD design criteria, including the CUP – central utility plant to serve the new building expansion as well as the space for future replacement of chillers and boilers serving the existing GSOB.
The HVAC design shall be in compliance with 2018 Uniform Mechanical Code.

2.2 REPROGRAMMING – OPTION R2-B

2.2.1 Existing GSOB Office Building

Existing central plant located on level 6 of the existing GSOB will remain in place to serve the remodeled & reprogrammed existing office building.

Proposed Remodel:
Chilled water hydronic piping shows considerable exterior corrosion at the multiple fittings, take-offs and elbows, due to incorrect insulation type and compromised vapor barrier or damaged service jacket.
All hydronic piping including the chilled water and heating hot water piping shall be replaced entirely, throughout the building.

Server, Data Rooms Cooling Capacities
Total Projected Cooling Capacity = 25 tons (300 MBH).
Final cooling capacity will be verified including some spare capacity for future expansion.
Proposed Remodel: Add a dedicate 3" CHS/CHR riser to serve the server/data rooms on all floors.
New cooling only fan-coil units will be selected with VRF back-up cooling system.

- The compromised medium pressure ductwork with holes intended to cool the server, data, TR rooms has been identified.
- All server/ TR rooms and current cooling problems have been identified.
- The new CHS/CHR risers to serve the Data/TR rooms throughout the facility will be provided utilizing the same shaft.
- CHW fan-coil units + VRF back-up split system will be designed.
- Central plant plate/frame heat exchanger will be upsized to handle all cooling only fan-coil units.

Proposed Remodel:
Server/Data rooms cooling system shall be completely disconnected from the medium pressure ductwork. A dedicated chilled water - cooling system will be provided for server/data rooms utilizing the cooling only fan-coil units with emergency VRF system as a back-up cooling. The new chilled water risers will be installed within the same chase and routed from chiller room down to the first floor to serve these cooling only fan-coil units throughout the building.

2.2.2 New Building Expansion

The new CUP central plant, located within the Parking Garage Building will incorporate water chillers, cooling towers, plate and frame heat exchangers (water side economizers), variable primary flow system with chilled water pumps and appropriate ancillary equipment and systems to provide comfort and process cooling for the facility. The plant will also incorporate low pressure, 94% efficiency condensing hot water boilers, primary and secondary hot water pumps and ancillary equipment and systems to provide space heating for the facility. The CUP central plant will provide a space for future replacement of existing GSOB central plant on 6th floor. The underground chilled water and hot water piping will be sized to handle both existing building and new building expansion. The stub-outs will be provided within the core area of GSOB at 6th floor for future connection to the CUP.

Central Chilled Water Plant
The chilled water plant will be designed per SPWD requirements.
Two (2) magnetic bearing water cooled chillers at 350 tons each, with multiple compressors, with integrated refrigerant cooled VFD's and micro-processor controls system, have been selected to provide a total cooling capacity of 700 tons of refrigeration for new building expansion. This configuration will meet the building load and provide 20% redundancy.
The cooling tower fans, secondary flow chilled water pumps will be provided with VFD's. The chilled water distribution system will be deigned to provide a chilled water supply temperature at 44°F with a chilled water return temperature at 58°F. The system will serve air handling units and strategically located fan coil units.
Cooling only fan-coil units will be provided for the MDF rooms, IDF rooms, chiller room, boiler room and

elevator equipment rooms. During the winter season two dedicated jockey pumps will be employed to serve the cooling requirements for the fan-coil unit process cooling loads, utilizing the plate/frame heat exchanger. Split system DX cooling will be provided as a back-up for MDF, IDF and AV rooms, with the roof mounted VRF condensing unit.
The chilled water piping will be routed from the central plant up to fourth floor within the shaft with pipe connections to roof mounted air handling units. The pipe penetrations will be provided within the air handling unit pipe chases.

Central Heating Hot Water Plant
The heating hot water plant will be designed as a primary/secondary flow system, utilizing high efficiency low pressure, condensing gas fired boilers. The total calculated heating capacity has been estimated to be 6,000 MBH.
Two (2) high efficiency hot water boilers with a capacity of 3000 MBH heat input have been selected with associated hot water pumps and accessories. The heating hot water system will serve all air handling unit heating coils and VAV terminal unit reheat coils.
The hot water piping will be routed in the core area shaft along with the chilled water piping.

Air Handling Systems
The following air handling units will be provided for this facility:

- System AH-R2.1 45,000 CFM (Level One)
- System AH-R2.2 45,000 CFM (Levels Two)
- System AH-R2.3 45,000 CFM (Level Three)
- System AH-R2.4 45,000 CFM (Level Four)

Air handling systems will be designed as VAV systems providing supply air at 55° F and discharging the air through medium pressure ductwork to VAV terminal units. The air handling units will be provided with VFD's on supply and exhaust/relief fans, to facilitate 100% outside air economizer on a variable air volume basis.

The units will operate per BMS schedule. Supply fans will be plug type and exhaust/return fans will be a fan-wall type fan configuration. Variable frequency drives will provide fan volume control in response to a signal from duct mounted static pressure transmitters. Supply and return fan speeds will be modulated simultaneously as required by building load.

Fan Wall, or fan array, technology system will be considered for use on the project. The fans will meet the air flow performance specified and will not exceed the break horsepower or sound power levels specified. Fan performance will be based on testing and be in accordance with AMCA Standards 210 and 300. Completely isolated assemblies will be dynamically balanced and shall be designed for heavy-duty industrial applications. Fan assemblies that meet a dynamic balance of BV-5 (G 1.0) do not require isolation.

The supply air distribution system will consist of medium-pressure, externally insulated galvanized steel ductwork with pressure independent electrically actuated VAV terminal units with reheat coils, low pressure externally insulated ductwork downstream of terminals and diffusers. The return air distribution system will consist of externally insulated galvanized steel ductwork and return grilles. Sound attenuating flexible ductwork with woven nylon fabric type lining will be provided at the supply diffusers and return grilles to control noise.

Ductwork will be constructed in accordance with SMACNA standards and duct leakage shall not exceed 2% for low-pressure ductwork. The use of sound attenuating flexible duct at diffusers and grilles will be limited to five feet in total length to minimize duct static pressure losses.

The VAV air handling units will consist of the following components: Exhaust/relief fan section, outside air economizer, 30% (MERV8) efficient pre-filter section with a reserved space for 85% (MERV13) final filters, hot water heating coil and chilled water-cooling coil, supply air fan section with discharge air attenuator and factory installed VFD's for supply and exhaust/return fans in air-conditioned enclosure. Duct mounted smoke detectors will be provided per UMC 609. The duct detectors will be addressable type and compatible with the fire alarm system.
Refer to Mechanical Site Plan-Option R2-B for details.

3. PLUMBING SYSTEMS

3.1 REPROGRAMMING – OPTION R2-B

3.1.1 Existing GSOB Office Building

Initial Findings:
Cast Iron waste piping above ground shall be replaced.
Replace the existing grease interceptor with a new 2,000 gallon Jensen Precast grease interceptor.
Kitchen area underground grease waste piping to be removed and replaced with PVC piping with heat trace.
All underground waste piping shall be replaced with Schedule 80 PVC piping.
Site waste lines shall be routed south of the building per Overall Plumbing plan.

Proposed Remodel:
Waste Piping above ground: All above ground piping to be replaced or epoxy lined utilizing the "NU Flow" non-pressurized epoxy linin (CIPP) – the cured in-place pipe restoration process.
Underground Waste Piping: All underground cast iron waste piping to be removed and replaced with Sch 80 PVC properly sloped with 2% slope waste piping.
All existing trap primers shall be replaced with new electronic prat primers.
Domestic water booster pumps are beyond the ASHRAE recommended life expectancy and shall be replaced.
These is no RPBP – reduced pressure backflow preventer at the property. The new RPBFP will be installed.
Kitchen area domestic hot water piping shall be provided with thermostatic mixing valves at the hand sink faucets to provide the tempering water at 110^{0}F.

3.1.2 New Building Expansion

The plumbing systems will include the following:
Sanitary waste and vent system will be provided for the public restrooms, break rooms and mechanical rooms. Drainage piping will be sloped at 2% per UPC. Sanitary waste and vent piping will be service weight cast iron no-hub piping with no-hub 4 band type couplings with neoprene gaskets. A separate 2,000 gallon grease interceptor will be provided for the fourth floor kitchen grease waste system.

Cold water distribution piping system will be provided for the restrooms, fourth floor kitchen area, break-rooms and mechanical plant rooms. Hot water distribution in the main building will be provided by utilizing the high efficiency condensing water heaters: one located in the boiler room to serve the restrooms and the general building requirements, and one located on the fourth floor to serve the kitchen area.

Exterior hose bibs will be provided for adequate external coverage and maintenance of the facility.

Materials, equipment and systems installed shall meet all pertinent requirements of all applicable codes. The systems described herein shall be provided to serve all fixtures, equipment and areas within the building.

Plumbing Fixtures
Commercial grade water saving wall mounted water closets with electronic flush valves and wall hung sensor operated flush valve urinals will be utilized. Water closets with battery powered 1.28 GPF electronic flush valves, and battery powered 0.125 GPF electronic flush valve urinals will be utilized in the men's restrooms. Water closets with battery powered 1.28/1.1 GPF dual flush valves will be provided in the women's restrooms. Commercial grade additional plumbing fixtures including all carriers, trim, valves and traps will be provided at locations as determined by the architectural plans. Water saving plumbing fixtures shall contribute to water savings design requirements.
Roof drainage system shall be provided utilizing the roof drain/ overflow roof drains and storm drainage piping within the building.

Domestic Water Distribution:

Cold Water Systems
The domestic water service shall be provided from the site water supply. Existing domestic booster pump set will be with new triplex booster pumps and will be sized for 300 GPM @ 80 ft head.
A pressure gauge on main domestic water line serving the building downstream of main shut-off valve shall be provided.

Domestic cold water system design shall be per the Uniform Plumbing Code and ASPE Design Manuals. Pipe velocity shall not exceed 8 feet per second. Domestic cold water systems shall be sized using flush valves curves. Pressure ranges at plumbing fixtures shall be as follows: Minimum: 35 psi, Maximum: 80 psi.

Domestic Hot Water System
Domestic hot water system design shall be per ASHRAE 90.1, 2016 Standard, ASHRAE HVAC Application Handbook, Chapter 48 "Service Water Heating" and ASPE Design Manuals. Pipe velocity shall not exceed 5 feet per second.

Multiple water heaters will be provided within the water heater room serving the new building expansion. Three high efficiency condensing water heaters AO Smith, BTH-199 with 100 gallon storage and 288 GPH recovery capacity will be utilized to satisfy the hot water requirements.

Plumbing Fixtures Water Consumption
All plumbing fixtures shall be coordinated with SPWD and UPC guidelines. They will be low flow type as follows:

- Water Closet: 1.28 GPF @ men's restrooms
- Water Closet: 1.28/ 1.1 GPF @ women's restrooms (dual flush)
- Urinal: 0.125 GPF
- Lavatory: 0.35 GPM
- Sinks: 0.5 GPM

Domestic Water Piping
Domestic water piping shall be Type L copper. All domestic hot and hot water return piping shall be insulated with closed cell insulation. Cold water piping shall not be insulated.
All interior exposed insulation shall have PVC jacket and PVC fitting covers. All exterior exposed insulation shall have aluminum jacket and covers. Aluminum jackets shall be secured with stainless steel bands.
Condensate drain piping shall be Type M copper.

Sanitary Drainage System
Sanitary waste and vent system shall be per the 2018 Uniform Plumbing Code.
All floor drains, floor sinks, access doors, and cleanout covers shall be secured using vandal-resistant fasteners. Floor drains shall be provided in all toilet rooms. Cleanouts shall be provided every 50'-0".

Install cleanouts in sufficient number and located such that drain augers can be conveniently used on any part of the drainage system. The installation shall be made in compliance with the Cast-Iron Soil-Pipe Institute Engineering Manual.
Locate all clean-outs, devices, etc., in plumbing chases so as they are readily accessible by facility maintenance personnel.

Automatic solenoid type trap primers will be provided for all floor drains and floor sinks, including the floor sinks in mechanical rooms and fire riser room.

Sanitary Waste Piping
Sanitary waste and vent piping for all building shall be hubless cast iron pipe and fittings with heavy duty stainless steel couplings.
Sanitary sewer demand for the building based on the main building layout will require 8" building connection.

Site Utilities
All onsite utilities will be distributed underground with approximately 3 ft of backfill cover based upon regional weather conditions and applicable codes. Utility lines will be located in road right of ways per civil utility plans.
A dedicated 2,000 gallon grease interceptor will be provide to serve the cafeteria and innovation center.

The 4" domestic cold water service with shut-off valve will be provided with internal shut-off within the booster pump room.
Based on the pipe size the cold water service can handle approx. 1,700 CWFU, which is equivalent to 300 GPM of total domestic water flow.

Domestic hot water has been provided via high efficiency condensing water heaters with 94% efficiency.

All sanitary sewer and storm sewer lines extend to a point 5 ft outside the building for connection by the civil.
Sanitary waste and vent piping, and roof drain and overflow drain piping below grade shall be service weight cast iron no-hub piping with no-hub four (4) band type couplings with neoprene gaskets.

A rainfall rate of 1.5 in. per hour will be utilized in accordance with UPC Appendix B, Rate of Rainfall for Various Cities.

Natural gas consumption has been estimated to be 6,800 kBtu/h for R2 Options.
Medium pressure gas service will be provided by Southwest Gas Corporation per site plan.

4. ELECTRICAL SYSTEMS

4.1 GENERAL

4.1.1 Nevada Energy Service

Existing Nevada Energy infrastructure appears to be sized to accommodate a 15KV 10MVA maximum service. The existing service originates from a pole at the Southeast corner of the property, transitions underground and is routed along the East property line to the North property line and then into the existing building medium voltage switchgear 'MVS1'. The underground Nevada Energy feeder route appears to include several manholes which should allow connection to the existing service at both the East and North property lines as required by existing conditions and/or construction phasing.

Estimated total calculated load for this reprogramming option is 6996KVA with an estimated utility demand load of 2798KVA. The new electrical load is approximately double that of the existing building. This load increase will need to be submitted to Nevada Energy to determine if there are any required modifications to the Nevada Energy systems.

New 600A, 15KV switchgear with a primary Nevada Energy meter will be required. The switchgear will be located at the central plant and will serve the other buildings on the site via 15KV radial feeders.

4.1.2 Emergency/Legally Required Standby/Optional Standby Generator

A 1500KW, 480Y/277 volt, 3 phase, 4 wire generator will be provided to serve building emergency/legally required standby and optional standby loads. The generator will be located at the central plant and will serve the other buildings on the site via 480V radial feeders. Two (2) automatic transfer switches per building will be provided, one (1) for emergency loads and one (1) optional standby loads.

Emergency loads include:

- Fire pump and booster pump
- Fire alarm system
- Egress and exit lighting
- Cooling for emergency electrical room(s)
- Smoke control/purge equipment (if applicable)
- Elevator per bank
- Elevator cab lights

Optional Standby (owner selected) loads include:

- Telecommunications and security / surveillance equipment in MDF and IDF's
- Cooling for MDF's, IDF's and electrical rooms containing optional standby electrical equipment
- Cafeteria walk-in coolers / freezers
- Domestic water booster pump
- Mission critical spaces and associated infrastructure including:
  - Governor's Space
  - Capital Police Space
- Select central plant equipment to support space conditioning for the areas noted above

4.1.3 New/Remodel Work Requirements

References

The electrical and auxiliary system design will adhere to the following codes, standards, and criteria in the preparation of the Project Electrical Design Documents.

IBC	International Building Code; 2018 Edition
NEC	National Electrical Code (NFPA 70); 2017 Edition
NESC	National Electrical Safety Code; 2018 Edition
NFPA 72	National Fire Alarm Code; 2018 Edition
NFPA 101	Life Safety Code; 2018 Edition
NFPA 110	Emergency and Standby Power Systems; 2018 Edition
IEEE	Institute of Electrical and Electronics Engineers Standard 142; Grounding of Industrial & Commercial Power Systems
ADA	Americans with Disabilities Act
ANSI	American National Standard Institute
IECC	International Energy Conservation Code; 2018 Edition
IESNA	Illumination Engineering Society of North America Handbook – 10th Edition

Electrical Systems

New 15KV main switchgear and generator shall be located at the central plant/garage and shall serve the other buildings via radial feeders as noted above. Estimated capacities for each building are as follows:

- Central Plant/Garage – 2000KVA
- Existing Grant Sawyer Building – 3000KVA
- Building Expansion – 1500KVA

The existing Grant Sawyer Building normal power electrical service will be protected in place until it can be back-fed from the new 15KV electrical distribution system and the existing generator system will also be protected in place until the reprogramming of the existing building takes place. All electrical systems for the existing Grant Sawyer Building, including the existing generator, will be removed in their entirety for the reprogramming and new electrical distribution systems shall be provided.

The main electrical room for each building will be 1 hour rated, located with exterior access, and will house the main electrical service switchboard.

Grounding

The service shall be provided with a grounding electrode system in accordance with NEC Article 250, NEC Article 517 and IEEE green book. In order to ensure the facility is effectively grounded and bonded throughout, grounding bonds will be configured in star topology. This grounding system, from a power standpoint, will serve primarily as a bonding point for the required safety/equipment grounding for separately derived systems; however, the system is also being designed to serve as an effective performance ground for telecommunications and other building auxiliary systems. Insulated equipment grounding conductors will be provided in all raceways for power systems. A lightning protection system is not anticipated at this point.

Surge Suppression (SPD)

Suppression will be provided at the service entrance equipment for each building to minimize the impact of electrical line disturbances.

Distribution
Site distribution will include 15KV service to each building and, depending on final load calculations, to main electrical rooms within each building. Exterior pad mounted, interior dry-type unit substation and/or step down transformers shall be used for 480Y/277 volt, 3 phase, 4 wire and 208Y/120 volt, 3 phase, 4 wire service.

Lighting, HVAC and other large utilization equipment will be supplied from the 480Y/277 volt distribution system. Large loads will be served from the main switchboard.

Receptacles and other miscellaneous loads shall be served from the 208Y/120 volt, 3 phase, 4 wire service.

All electrical panel boards and step down transformers will be located in designated electrical rooms / closets.

Distribution equipment will be sized for 25% spare capacity. Equipment shall contain a minimum of 10% space for addition of over-current devices.
Transformers shall comply with CSL-3 energy standards.

Building systems, HVAC, power and lighting shall be independently metered, metering shall be connected to the BMCS system. The building service entrance shall be metered independently of the utility. Meters shall be connected to a sitewide metering system.

Feeders
15KV feeders will be concrete encased below grade and installed in galvanized rigid steel conduit (RGS) above grade.

480Y/277 volt and 208Y/120 volt feeders will conform to NEC Article 215. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All feeder conductors will be PVC insulated type THHN/THWN or XHHN. Feeders shall be copper.

Branch Circuits
Branch circuits will conform to NEC Article 210. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All branch circuit conductors will be copper, PVC insulated type THHN/THWN or XHHN. Minimum conductor size shall be #12 AWG. MC, AC, or other cable type wiring systems are not acceptable.

Receptacles
All 20A-125V convenience receptacles will be grounding type mounted in 4-inch square boxes at 18 inches above finish floor. Ground Fault Circuit Interrupter (GFCI) receptacles will be used in locations as required by NEC 210.8(B). Double duplex receptacles will be provided at each office workstation. Convenience receptacles located in corridors and common areas will be spaced at maximum 50' apart.

General Lighting
Interior lighting will consist primarily of 277V LED fixtures. Fixture types will be coordinated with the individual space requirements to provide the fixture selections that are suitable to the space. Fixture types and proposed lighting layout will be coordinated with the design team prior to commencement of lighting design. Light levels will be per IES recommendations. The lighting power density will be designed to exceed the minimum requirements of IECC by at least 20%.

Space	Type of Fixture	Average Lighting Level
Offices	2x4 Direct/Indirect LED Lay-In	50FC
Meeting Rooms	LED Pendant and Downlights	40FC
Lobby/Waiting	LED Downlights and Pendants	40FC
Restrooms	1x4 LED Flanged Troffer and LED Downlights	30FC
Cafeteria	LED 2X4 Direct/Indirect	50FC

Exterior lighting shall be LED lamp sources. LED lighting will provide quality color rendition from an energy efficient source. Exterior lighting will be controlled by a combination astronomical time clock / photocell and/or building energy management system. Fixture mounted occupancy sensor shall be provided at parking areas and pedestrian walkways for further energy reductions.

Lighting Control
Due to IECC requirements a lighting control system will be provided. Local room controllers will be provided for normally occupied rooms. These local room controllers will integrate with room occupancy / daylight sensors and dimmers. Normally unoccupied rooms will utilize occupancy sensors with local switching.

Lightning Protection
An early streamer emission lightning protection system shall be used.

5. APPENDIX – DRAWINGS

MPE-R2B – Mechanical, Plumbing & Electrical Site Plan – Option R2-B
MCUP_R2 - Central Utility Plant – Options R2-A, R2-B, R2-C
MFD_R2 – Mechanical Flow Diagram
MZ_R2 - Mechanical Zoning Diagram R2 Options
E-R2B – Electrical Single Line Diagram – Option R2-B

END

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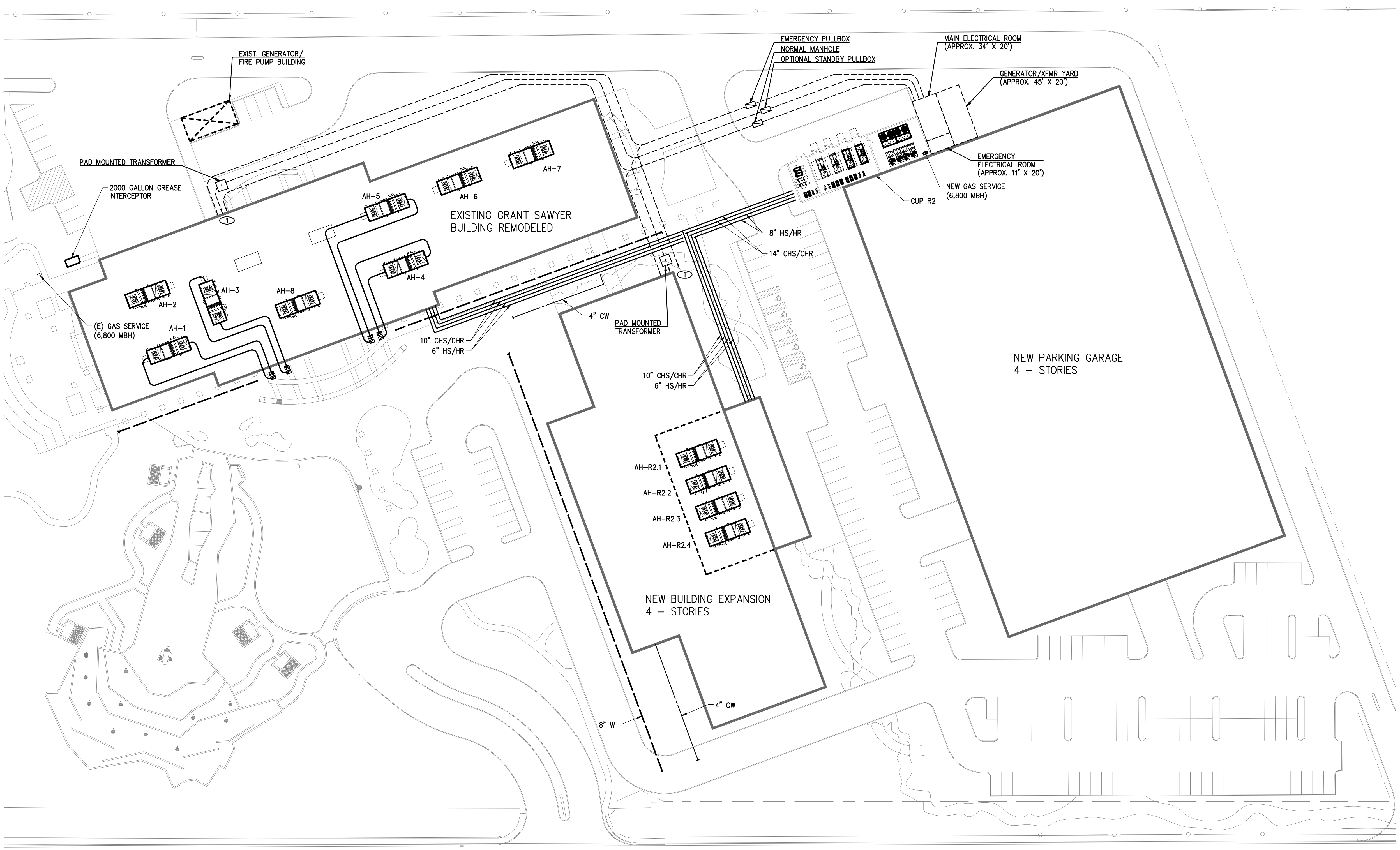
NOTES

1	TO NEW BUILDING ELECTRICAL INFRASTRUCTURE.

AHU ZONING

AHU	ZONE	LEVEL
AH-1	MAIN LOBBY + CAFFE	1
AH-2	OFFICES + ARTRIUM	3, 4
AH-3	GAMING CONTROL BOARD	1, 2
AH-4	GAMING CONTROL BOARD	2
AH-5	TAXATION + HR	1
AH-6	ATTORNEY GENERAL	3
AH-7	LEGISLATIVE COUNCIL BUREAU, ATTORNEY GENERAL	4
AH-8	GOVERNOR'S OFFICE	5



MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R2-B
NO SCALE

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M2

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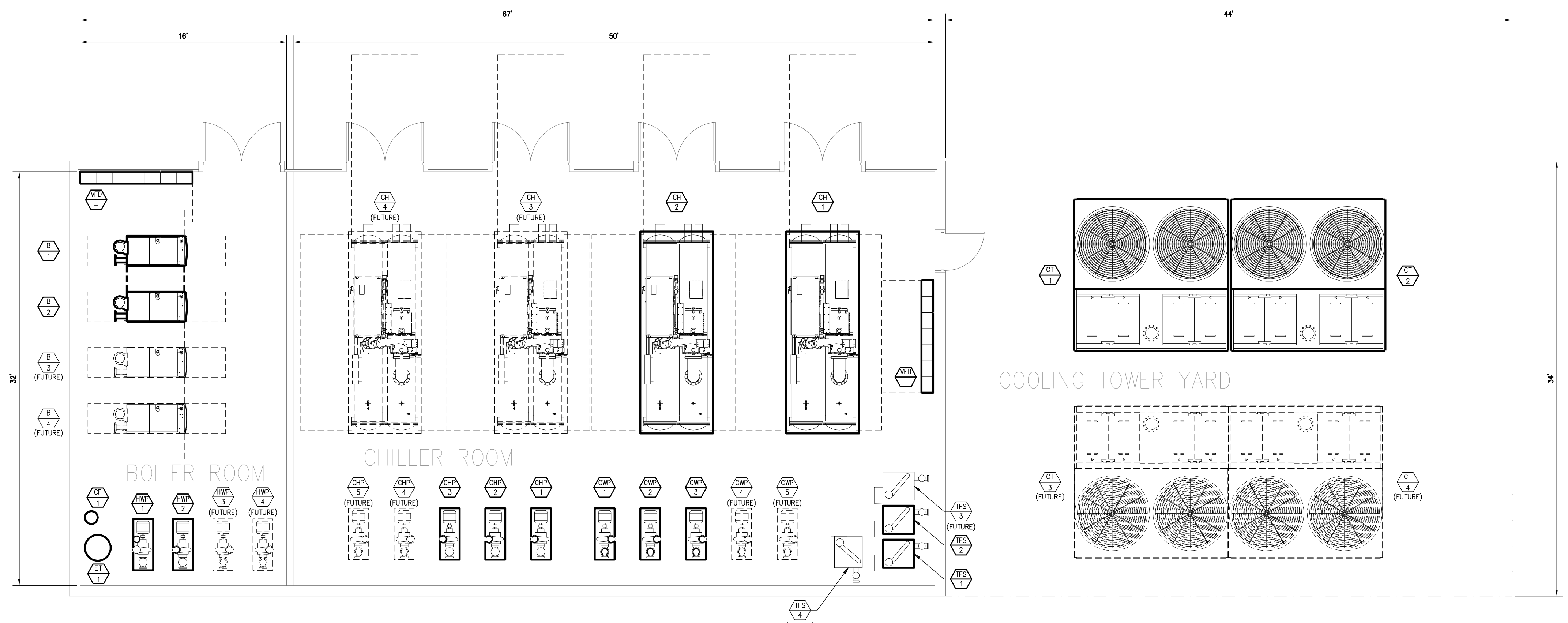
MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R2-B

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2-B

SHEET NUMBER:
MPE-R2B
SCALE: –
JOB NUMBER: 18.0745



CENTRAL UTILITY PLANT - MECHANICAL R2 DESIGN OPTIONS
NO SCALE

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CENTRAL UTILITY PLANT - MECHANICAL R2 DESIGN OPTIONS

GRANT SAWYER OFFICE BUILDING

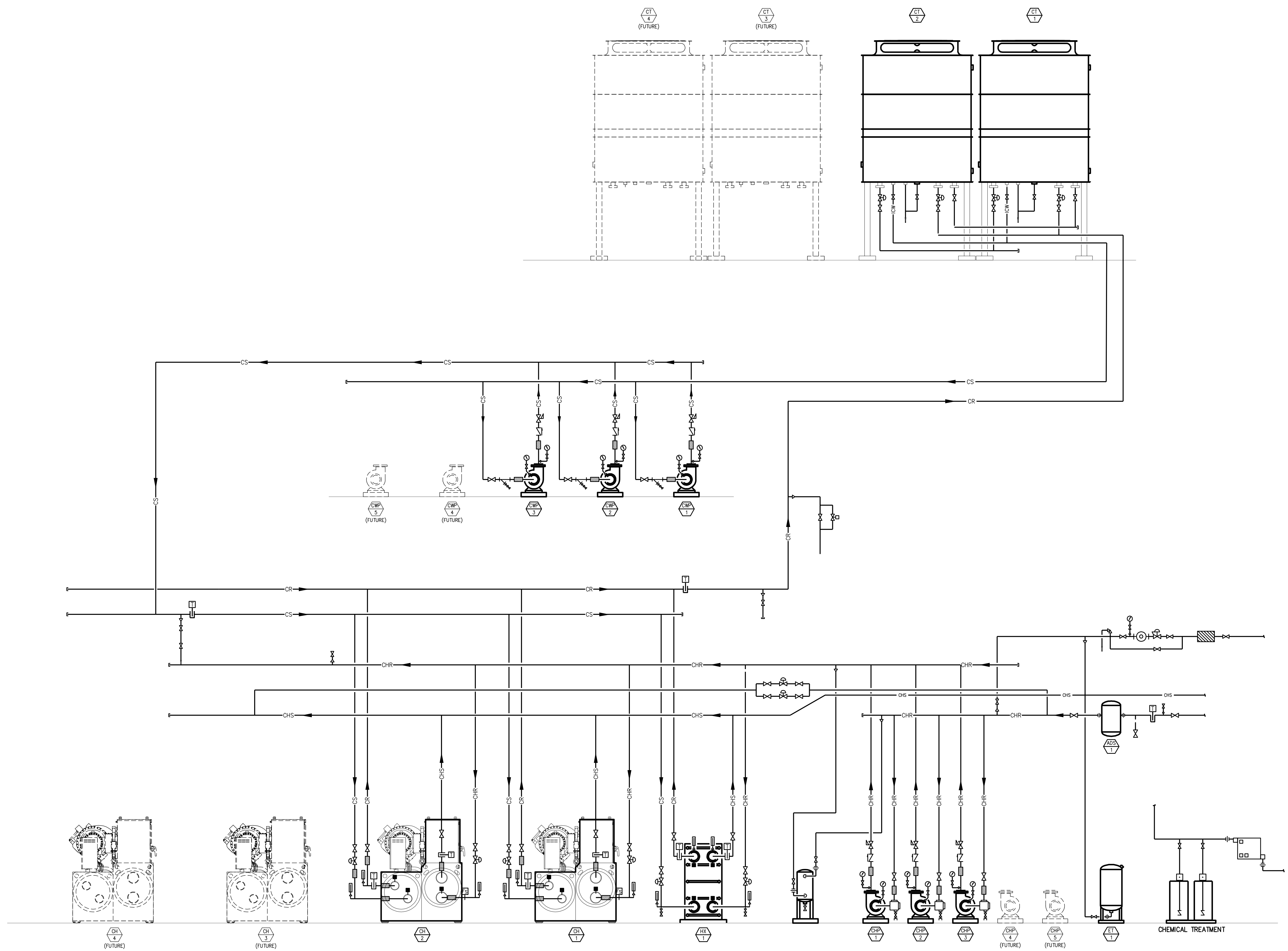
REMODEL REPORT - R2

SHEET NUMBER:

MCUP-R2

SCALE: –

JOB NUMBER: 18.0745



CHILLED / CONDENSER WATER FLOW DIAGRAM - R2

NO SCALE

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DATE BY

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MECHANICAL FLOW DIAGRAM

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2

SHEET NUMBER:

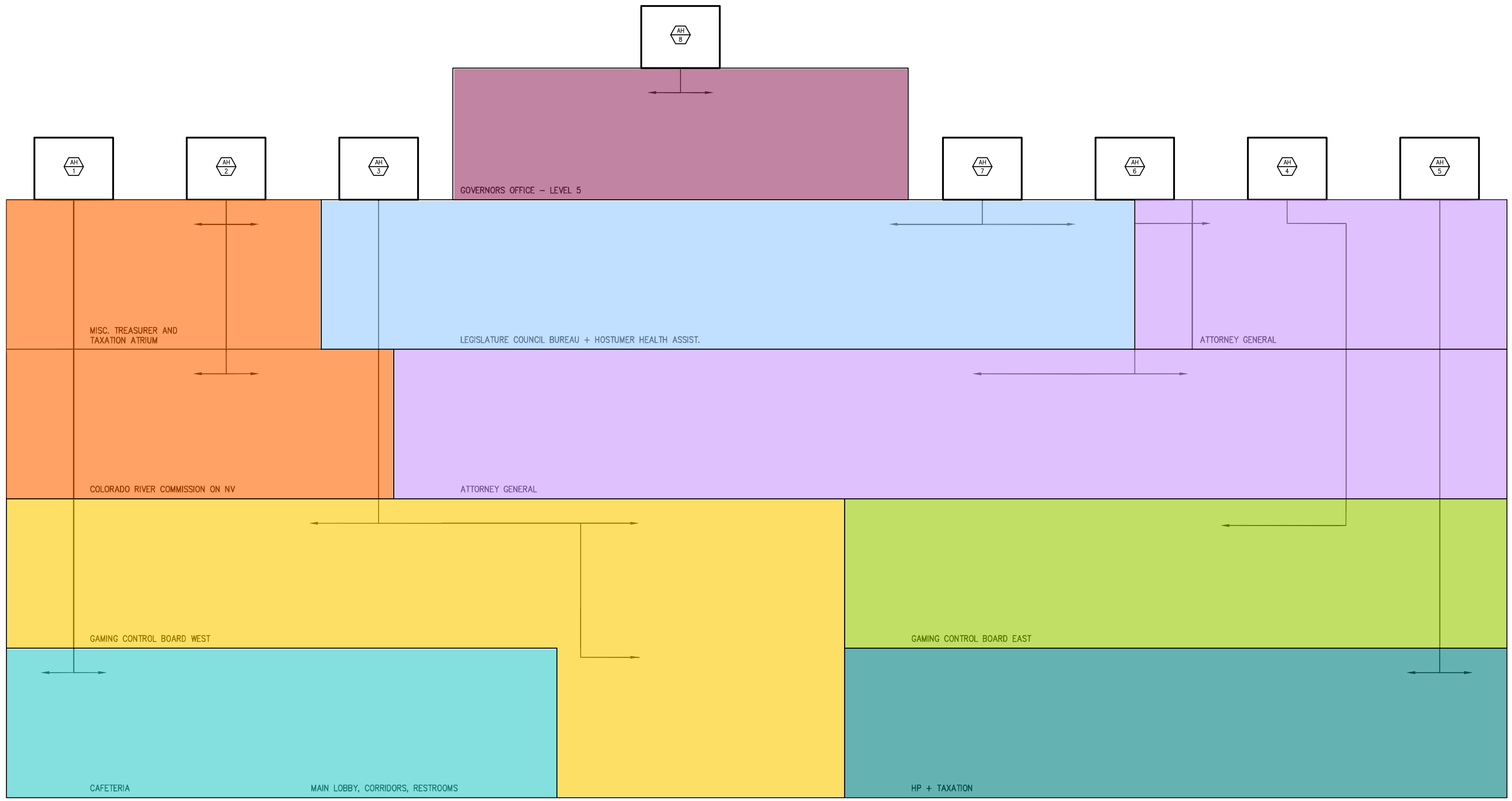
MFD-R2

SCALE: -

JOB NUMBER: 18.0745

NOTICE

1. NEW SHAFTS WILL BE PROVIDED TO FACILITATE THE ROUTING OF SA, RA DUCTS PER NEW HVAC ZONING PLAN.



MECHANICAL ZONING DIAGRAM - R2 OPTIONS
NO SCALE

1 / M4

DRAWN BY: –
CHECKED BY: –
DATE: –

REVISIONS

DATE	BY	

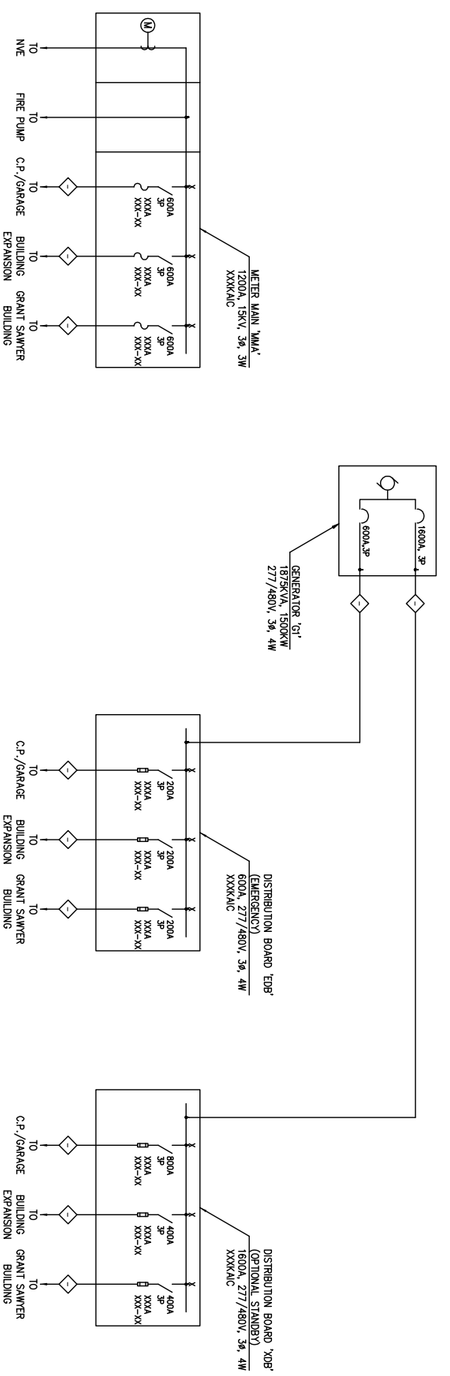
NV5
5155 W PATRICK LANE
LAS VEGAS, NV 89118
702.362.9200
NV5.COM

MECHANICAL ZONING DIAGRAM - R2 OPTIONS

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT

SHEET NUMBER:
MZ-R2
SCALE: –
JOB NUMBER: –



ELECTRICAL SINGLE LINE - OPTION R2-B

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2-B

SHEET NUMBER: **E-R2B**

SCALE: -

JOB NUMBER: 18.0745

DRAWN BY:	CHECKED BY:	DATE:
-	-	-

DATE	BY	REVISIONS
		1

NV5
1115 W PACKMAN LANE
LAS VEGAS, NV 89115
702.382.9500
NV5.COM

HKA
Elevator Consulting, Inc.

January 02, 2019

Brian Henley
Partner, Architect
KGA ARCHITECTURE
9075 West Diablo Drive, Suite 300
Las Vegas, Nevada 89148

Reference: GRANT SAWYER STATE OFFICE BUILDING

Dear Brian:

NEW ELEVATOR CORE STUDY AND RESULTS: R2-B

Office Passenger Elevator Criteria:

Average Interval: 27-30 Seconds or Less
Estimated Demand: 12.5% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and UP Peak
Population Density: 1200 end of 2040
Density: 80%
Occupancy: 100%

NEW CD STUDY - Office Passenger Elevator Results:

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-A	2 Way	5	4 MRL	200	1200	6.0 / 6.0	25.8	16.8	139 / 13.9	Excellent
R2-A	UP	5	4 MRL	200	1200	8.3	18.8	12.4	135 / 13.5	Excellent
R2-A	2 Way	5	3 MRL	350	1200	7.0 / 7.0	34.1	22.3	123 / 12.3	Fair
R2-B/C	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	33	21.5	67 / 12.0	Good
R2-B/C	UP	4	2 MRL ea.	350	600	7.1	29.8	19.4	71 / 12.5	Excellent
R3-A	2 Way	8	3 MRL ea.	350	600	4.1 / 4.1	29.9	19.4	80 / 14.4	Excellent
R3-A	UP	8	3 MRL ea.	350	600	6.5	24.7	16.0	79 / 14.2	Excellent
R3-A	2 Way	8	2 MRL ea.	350	600	5.3 / 5.3	52.3	34.0	60 / 10.8	Poor
R3-A	UP	8	2 MRL ea.	350	600	11	45.6	29.6	69 / 12.3	Poor
R3-B	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	32.2	20.9	68 / 13.0	Good
R3-B	UP	4	2 MRL ea.	350	600	5.2	23.0	15.0	68 / 13.0	Excellent

- R2-B - Provide 2 new passengers in the central core. Modernize the existing north building service elevator in place. Provide 2 new passengers in the south core. Add 1 new dedicated service elevator 4500# at 200 FPM in new core or near a new loading dock elsewhere in south building. Governor's access can be gained via a card reader. Cost: $2.55M

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-B/C	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	33	21.5	67 / 12.0	Good
R2-B/C	UP	4	2 MRL ea.	350	600	7.1	29.8	19.4	71 / 12.5	Excellent

Parking Garages Passenger Elevator Criteria:

Average Interval: 45-50 Seconds or Less
Estimated Demand: 9-10% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and DN Peak (morning)
Population: 1200 end of 2040
Occupancy: 100%
No People per Car (Avg.) 1.2
Stalls: R2A, R3A: **1057**
Stalls: R2B, R2C, R3B: **1233**
First floor- no users, assume 25% on floor 2 take stairs

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2A, R3A	2 Way	4	2 MRL ea.	200	1268	6.0 / 6.0	40.4	26.3	10.2	Excellent
R2A, R3A	DN	4	2 MRL ea.	200	1268	8.0	26.6	17.3	10.4	Excellent
R2B, R2C, R3B	2 Way	4	2 MRL ea.	200	1480	7.0 / 7.0	43.5	28.3	9.5	Good
R2B, R2C, R3B	DN	4	2 MRL ea.	200	1480	10.0	28.5	18.5	10.3	Excellent

END OF REPORT

Grant Sawyer Office Building
Las Vegas, NV
KGA Architecture
January 2, 2019

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B

Las Vegas

KGA
FEASIBILITY STUDY COST ESTIMATE REVISION3
Job No. 18236.000
16 January 2019

OC INSIGHT

COST ESTIMATE

INTRODUCTORY NOTES

This estimate is based on verbal direction from the client and the following items, received 17 December 2018, 20 December 2018 & 04 January 2019

The following items are excluded from this estimate:

- Escalation.
- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Furniture, fixtures & equipment, unless noted otherwise.
- Temporary office facilities.
- Moving, storage and installation of owner furnished equipment.
- Relocation of personnel to offsite offices.
- Photovoltaic system.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

Phase I Project Timeline

The midpoint of construction of April 2022 is based on:

- Construction start date of July 2021
- Estimated construction duration of 18 months

Phase II Project Timeline

The midpoint of construction of April 2024 is based on:

- Construction start date of July 2023
- Estimated construction duration of 18 months

Phase III Project Timeline

The midpoint of construction of April 2026 is based on:

- Construction start date of July 2025
- Estimated construction duration of 18 months

- This estimate is based on a CMAR delivery method.
- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$38,820,971	100,000	$388.21
02. CORE ELEVATORS AND CONVEYING	$9,503,838	29,700	$319.99
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$4,507,332	2,144	$2,102.30
04. PHASE I SITE WORK	$8,104,444	390,676	$20.74

TOTAL CONSTRUCTION COST	$60,936,585

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$3,016,608	129,700	$23.26

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$63,953,193

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$28,888,610	100,000	$288.89
02. CORE ELEVATORS AND CONVEYING	$7,072,277	29,700	$238.12
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$3,354,129	2,144	$1,564.43
04. PHASE I SITE WORK	$6,030,919	390,676	$15.44

TOTAL NET DIRECT COST	$45,345,935

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$6,801,890
PHASING	1.50%	$782,217
CMAR CONTINGENCY	4.00%	$2,117,202
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,752,362
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,936,287
INSURANCE	1.00%	$597,359
BONDS: CONTRACTOR	1.00%	$603,333

TOTAL CONSTRUCTION COST	$60,936,585

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$150,583	$1.51
02 SUBSTRUCTURE		$355,376	$3.55
03 SUPERSTRUCTURE		$4,584,359	$45.84
04 EXTERIOR CLOSURE		$4,962,924	$49.63
05 ROOFING		$530,053	$5.30
06 INTERIOR CONSTRUCTION		$5,017,970	$50.18
07 CONVEYING			
08 MECHANICAL		$7,067,653	$70.68
09 ELECTRICAL		$5,792,035	$57.92
10 EQUIPMENT		$427,657	$4.28
11 SITEWORK			
NET DIRECT BUILDING COST		$28,888,610	$288.89
DESIGN CONTINGENCY	15.00%	$4,333,292	$43.33
SUBTOTAL		$33,221,902	$332.22
PHASING	1.50%	$498,329	$4.98
SUBTOTAL		$33,720,230	$337.20
CMAR CONTINGENCY	4.00%	$1,348,809	$13.49
SUBTOTAL		$35,069,039	$350.69
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$1,753,452	$17.53
SUBTOTAL		$36,822,491	$368.22
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,233,553	$12.34
SUBTOTAL		$38,056,045	$380.56
INSURANCE	1.00%	$380,560	$3.81
SUBTOTAL		$38,436,605	$384.37
BONDS: CONTRACTOR	1.00%	$384,366	$3.84
TOTAL BUILDING COST		**$38,820,971**	**$388.21**

GROSS FLOOR AREA: 100,000 SF

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$150,583		$1.51
011 Standard Foundations	$150,583		$1.51	
012 Special Foundations				
02 SUBSTRUCTURE		$355,376		$3.55
021 Slab On Grade	$355,376		$3.55	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$4,584,359		$45.84
031 Floor and Roof Construction	$4,291,625		$42.92	
032 Stair Construction	$292,734		$2.93	
04 EXTERIOR CLOSURE		$4,962,924		$49.63
041 Exterior Walls	$1,275,680		$12.76	
042 Exterior Doors/Windows	$3,687,244		$36.87	
05 ROOFING		$530,053		$5.30
051 Roofing	$530,053		$5.30	
06 INTERIOR CONSTRUCTION		$5,017,970		$50.18
061 Partitions	$1,325,133		$13.25	
062 Interior Finishes	$2,426,733		$24.27	
063 Specialties	$302,371		$3.02	
064 Interior Doors/Windows	$963,733		$9.64	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$7,067,653		$70.68
081 Plumbing	$1,063,660		$10.64	
082 H.V.A.C.	$5,299,263		$52.99	
083 Fire Protection	$704,730		$7.05	
084 Special Mechanical				
09 ELECTRICAL		$5,792,035		$57.92
091 Standard Electrical	$5,029,481		$50.29	
092 Special Electrical	$762,554		$7.63	
10 EQUIPMENT		$427,657		$4.28
101 Fixed/Movable Equipment	$66,257		$0.66	
102 Furnishings	$361,400		$3.61	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$28,888,610**		**$288.89**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$44,723	$1.51
02 SUBSTRUCTURE		$105,547	$3.55
03 SUPERSTRUCTURE		$1,064,640	$35.85
04 EXTERIOR CLOSURE		$2,188,591	$73.69
05 ROOFING		$157,426	$5.30
06 INTERIOR CONSTRUCTION		$1,204,477	$40.55
07 CONVEYING		$895,670	$30.16
08 MECHANICAL		$590,589	$19.89
09 ELECTRICAL		$549,593	$18.50
10 EQUIPMENT		$271,021	$9.13
11 SITEWORK			
NET DIRECT BUILDING COST		$7,072,277	$238.12
DESIGN CONTINGENCY	15.00%	$1,060,842	$35.72
SUBTOTAL		$8,133,119	$273.84
PHASING	1.50%	$121,997	$4.11
SUBTOTAL		$8,255,115	$277.95
CMAR CONTINGENCY	4.00%	$330,205	$11.12
SUBTOTAL		$8,585,320	$289.07
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$429,266	$14.45
SUBTOTAL		$9,014,586	$303.52
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$301,989	$10.17
SUBTOTAL		$9,316,575	$313.69
INSURANCE	1.00%	$93,166	$3.14
SUBTOTAL		$9,409,740	$316.83
BONDS: CONTRACTOR	1.00%	$94,097	$3.17
TOTAL BUILDING COST		**$9,503,838**	**$319.99**

GROSS FLOOR AREA: 29,700 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase I
CORE ELEVATORS AND CONVEYING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$44,723		$1.51
011 Standard Foundations	$44,723		$1.51	
012 Special Foundations				
02 SUBSTRUCTURE		$105,547		$3.55
021 Slab On Grade	$105,547		$3.55	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$1,064,640		$35.85
031 Floor and Roof Construction	$952,606		$32.07	
032 Stair Construction	$112,034		$3.77	
04 EXTERIOR CLOSURE		$2,188,591		$73.69
041 Exterior Walls	$407,612		$13.72	
042 Exterior Doors/Windows	$1,780,979		$59.97	
05 ROOFING		$157,426		$5.30
051 Roofing	$157,426		$5.30	
06 INTERIOR CONSTRUCTION		$1,204,477		$40.55
061 Partitions	$250,450		$8.43	
062 Interior Finishes	$701,773		$23.63	
063 Specialties	$162,807		$5.48	
064 Interior Doors/Windows	$89,447		$3.01	
07 CONVEYING		$895,670		$30.16
071 Elevators	$895,670		$30.16	
08 MECHANICAL		$590,589		$19.89
081 Plumbing	$286,109		$9.63	
082 H.V.A.C.	$197,144		$6.64	
083 Fire Protection	$107,336		$3.61	
084 Special Mechanical				
09 ELECTRICAL		$549,593		$18.50
091 Standard Electrical	$486,950		$16.40	
092 Special Electrical	$62,643		$2.11	
10 EQUIPMENT		$271,021		$9.13
101 Fixed/Movable Equipment	$12,047		$0.41	
102 Furnishings	$258,974		$8.72	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$7,072,277**		**$238.12**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$10,720	$5.00
02 SUBSTRUCTURE		$25,299	$11.80
03 SUPERSTRUCTURE		$92,981	$43.37
04 EXTERIOR CLOSURE		$275,080	$128.30
05 ROOFING		$45,457	$21.20
06 INTERIOR CONSTRUCTION		$101,217	$47.21
07 CONVEYING			
08 MECHANICAL		$2,483,126	$1,158.17
09 ELECTRICAL		$320,249	$149.37
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT BUILDING COST		$3,354,129	$1,564.43
DESIGN CONTINGENCY	15.00%	$503,119	$234.66
SUBTOTAL		$3,857,248	$1,799.09
PHASING	1.50%	$57,859	$26.99
SUBTOTAL		$3,915,107	$1,826.08
CMAR CONTINGENCY	4.00%	$156,604	$73.04
SUBTOTAL		$4,071,711	$1,899.12
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$203,586	$94.96
SUBTOTAL		$4,275,297	$1,994.08
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$143,222	$66.80
SUBTOTAL		$4,418,519	$2,060.88
INSURANCE	1.00%	$44,185	$20.61
SUBTOTAL		$4,462,705	$2,081.49
BONDS: CONTRACTOR	1.00%	$44,627	$20.81
TOTAL BUILDING COST		**$4,507,332**	**$2,102.30**

GROSS FLOOR AREA: 2,144 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase I
CENTRAL PLANT BUILDING AND EQUIPMENT
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$10,720		$5.00
011 Standard Foundations	$10,720		$5.00	
012 Special Foundations				
02 SUBSTRUCTURE		$25,299		$11.80
021 Slab On Grade	$25,299		$11.80	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$92,981		$43.37
031 Floor and Roof Construction	$92,981		$43.37	
032 Stair Construction				
04 EXTERIOR CLOSURE		$275,080		$128.30
041 Exterior Walls	$209,255		$97.60	
042 Exterior Doors/Windows	$65,825		$30.70	
05 ROOFING		$45,457		$21.20
051 Roofing	$45,457		$21.20	
06 INTERIOR CONSTRUCTION		$101,217		$47.21
061 Partitions	$25,828		$12.05	
062 Interior Finishes	$38,337		$17.88	
063 Specialties	$28,012		$13.07	
064 Interior Doors/Windows	$9,040		$4.22	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$2,483,126		$1,158.17
081 Plumbing	$36,140		$16.86	
082 H.V.A.C.	$2,428,906		$1,132.89	
083 Fire Protection	$18,080		$8.43	
084 Special Mechanical				
09 ELECTRICAL		$320,249		$149.37
091 Standard Electrical	$284,109		$132.51	
092 Special Electrical	$36,140		$16.86	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$3,354,129**		**$1,564.43**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$6,030,919	$15.44
NET DIRECT SITE COST		$6,030,919	$15.44
DESIGN CONTINGENCY	15.00%	$904,638	$2.32
SUBTOTAL		$6,935,557	$17.75
PHASING	1.50%	$104,033	$0.27
SUBTOTAL		$7,039,590	$18.02
CMAR CONTINGENCY	4.00%	$281,584	$0.72
SUBTOTAL		$7,321,174	$18.74
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$366,059	$0.94
SUBTOTAL		$7,687,233	$19.68
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$257,522	$0.66
SUBTOTAL		$7,944,755	$20.34
INSURANCE	1.00%	$79,448	$0.20
SUBTOTAL		$8,024,202	$20.54
BONDS: CONTRACTOR	1.00%	$80,242	$0.21
TOTAL SITE COST		**$8,104,444**	**$20.74**

TOTAL SITE AREA: 390,676 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase I
PHASE I SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$6,030,919		$15.44
111 Site Preparation	$1,455,412		$3.73	
112 Site Improvements	$2,967,627		$7.60	
113 Site Utilities	$1,607,880		$4.12	
114 Off-Site Work				
NET DIRECT SITE COST		**$6,030,919**		**$15.44**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING EXTENSION	$32,417,259	80,000	$405.22
02. PARKING GARAGE	$15,046,286	187,200	$80.38
03. PHASE II SITE WORK	$5,274,323	201,519	$26.17
TOTAL CONSTRUCTION COST	**$52,737,868**		

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$1,860,668	80,000	$23.26
TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	**$54,598,536**		

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING EXTENSION	$24,123,290	80,000	$301.54
02. PARKING GARAGE	$11,196,688	187,200	$59.81
03. PHASE II SITE WORK	$3,924,885	201,519	$19.48
TOTAL NET DIRECT COST	**$39,244,863**		

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$5,886,729
PHASING	1.50%	$676,974
CMAR CONTINGENCY	4.00%	$1,832,343
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,382,045
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,675,769
INSURANCE	1.00%	$516,987
BONDS: CONTRACTOR	1.00%	$522,157
TOTAL CONSTRUCTION COST		**$52,737,868**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$120,467	$1.51
02 SUBSTRUCTURE		$284,302	$3.55
03 SUPERSTRUCTURE		$3,851,383	$48.14
04 EXTERIOR CLOSURE		$4,276,975	$53.46
05 ROOFING		$424,043	$5.30
06 INTERIOR CONSTRUCTION		$4,016,787	$50.21
07 CONVEYING			
08 MECHANICAL		$5,965,567	$74.57
09 ELECTRICAL		$4,647,607	$58.10
10 EQUIPMENT		$355,377	$4.44
11 SITEWORK		$180,782	$2.26
NET DIRECT BUILDING COST		$24,123,290	$301.54
DESIGN CONTINGENCY	15.00%	$3,618,494	$45.23
SUBTOTAL		$27,741,784	$346.77
PHASING	1.50%	$416,127	$5.20
SUBTOTAL		$28,157,910	$351.97
CMAR CONTINGENCY	4.00%	$1,126,316	$14.08
SUBTOTAL		$29,284,227	$366.05
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$1,464,211	$18.30
SUBTOTAL		$30,748,438	$384.36
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,030,073	$12.88
SUBTOTAL		$31,778,511	$397.23
INSURANCE	1.00%	$317,785	$3.97
SUBTOTAL		$32,096,296	$401.20
BONDS: CONTRACTOR	1.00%	$320,963	$4.01
TOTAL BUILDING COST		**$32,417,259**	**$405.22**

GROSS FLOOR AREA: 80,000 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase II
BUILDING EXTENSION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$120,467		$1.51
011 Standard Foundations	$120,467		$1.51	
012 Special Foundations				
02 SUBSTRUCTURE		$284,302		$3.55
021 Slab On Grade	$284,302		$3.55	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$3,851,383		$48.14
031 Floor and Roof Construction	$3,558,649		$44.48	
032 Stair Construction	$292,734		$3.66	
04 EXTERIOR CLOSURE		$4,276,975		$53.46
041 Exterior Walls	$1,142,144		$14.28	
042 Exterior Doors/Windows	$3,134,831		$39.19	
05 ROOFING		$424,043		$5.30
051 Roofing	$424,043		$5.30	
06 INTERIOR CONSTRUCTION		$4,016,787		$50.21
061 Partitions	$1,060,107		$13.25	
062 Interior Finishes	$1,941,386		$24.27	
063 Specialties	$244,307		$3.05	
064 Interior Doors/Windows	$770,987		$9.64	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$5,965,567		$74.57
081 Plumbing	$1,074,502		$13.43	
082 H.V.A.C.	$4,294,755		$53.68	
083 Fire Protection	$596,310		$7.45	
084 Special Mechanical				
09 ELECTRICAL		$4,647,607		$58.10
091 Standard Electrical	$4,033,227		$50.42	
092 Special Electrical	$614,380		$7.68	
10 EQUIPMENT		$355,377		$4.44
101 Fixed/Movable Equipment	$66,257		$0.83	
102 Furnishings	$289,120		$3.61	
103 Special Construction				
11 SITEWORK		$180,782		$2.26
111 Site Preparation	$180,782		$2.26	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$24,123,290**			**$301.54**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$234,000	$1.25
02 SUBSTRUCTURE		$552,240	$2.95
03 SUPERSTRUCTURE		$8,424,000	$45.00
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING		$250,000	$1.34
08 MECHANICAL		$676,313	$3.61
09 ELECTRICAL		$1,060,135	$5.66
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT SITE COST		$11,196,688	$59.81
DESIGN CONTINGENCY	15.00%	$1,679,503	$8.97
SUBTOTAL		$12,876,191	$68.78
PHASING	1.50%	$193,143	$1.03
SUBTOTAL		$13,069,334	$69.81
CMAR CONTINGENCY	4.00%	$522,773	$2.79
SUBTOTAL		$13,592,107	$72.61
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$679,605	$3.63
SUBTOTAL		$14,271,713	$76.24
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$478,102	$2.55
SUBTOTAL		$14,749,815	$78.79
INSURANCE	1.00%	$147,498	$0.79
SUBTOTAL		$14,897,313	$79.58
BONDS: CONTRACTOR	1.00%	$148,973	$0.80
TOTAL SITE COST		**$15,046,286**	**$80.38**

TOTAL SITE AREA: 187,200 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase II
PARKING GARAGE
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$1.25
011 Standard Foundations	$234,000		$1.25	
012 Special Foundations				
02 SUBSTRUCTURE		$552,240		$2.95
021 Slab On Grade	$552,240		$2.95	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$8,424,000		$45.00
031 Floor and Roof Construction	$8,424,000		$45.00	
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING		$250,000		$1.34
071 Elevators	$250,000		$1.34	
08 MECHANICAL		$676,313		$3.61
081 Plumbing	$251,547		$1.34	
082 H.V.A.C.	$30,117		$0.16	
083 Fire Protection	$394,649		$2.11	
084 Special Mechanical				
09 ELECTRICAL		$1,060,135		$5.66
091 Standard Electrical	$891,000		$4.76	
092 Special Electrical	$169,135		$0.90	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST	**$11,196,688**			**$59.81**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$3,924,885	$19.48
NET DIRECT SITE COST		$3,924,885	$19.48
DESIGN CONTINGENCY	15.00%	$588,733	$2.92
SUBTOTAL		$4,513,618	$22.40
PHASING	1.50%	$67,704	$0.34
SUBTOTAL		$4,581,322	$22.73
CMAR CONTINGENCY	4.00%	$183,253	$0.91
SUBTOTAL		$4,764,575	$23.64
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$238,229	$1.18
SUBTOTAL		$5,002,804	$24.83
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$167,594	$0.83
SUBTOTAL		$5,170,398	$25.66
INSURANCE	1.00%	$51,704	$0.26
SUBTOTAL		$5,222,102	$25.91
BONDS: CONTRACTOR	1.00%	$52,221	$0.26
TOTAL SITE COST		**$5,274,323**	**$26.17**

TOTAL SITE AREA: 201,519 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase II
PHASE II SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$3,924,885		$19.48
111 Site Preparation	$1,157,595		$5.74	
112 Site Improvements	$1,097,752		$5.45	
113 Site Utilities	$1,669,538		$8.28	
114 Off-Site Work				
NET DIRECT SITE COST		**$3,924,885**		**$19.48**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. REPROGRAM EXISTING GRANT SAWYER BUILDING	$47,823,555	236,981	$201.80
02. CORE ELEVATORS AND CONVEYING	$10,591,599	37,125	$285.30
03. PARKING GARAGE EXTENSION	$15,622,016	187,200	$83.45
04. PHASE III SITE WORK	$4,141,135	230,968	$17.93

TOTAL CONSTRUCTION COST	$78,178,305

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$6,375,253	274,106	$23.26

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$84,553,558

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. REPROGRAM EXISTING GRANT SAWYER BUILDING	$35,587,879	236,981	$150.17
02. CORE ELEVATORS AND CONVEYING	$7,881,734	37,125	$212.30
03. PARKING GARAGE EXTENSION	$11,625,117	187,200	$62.10
04. PHASE III SITE WORK	$3,081,624	230,968	$13.34

TOTAL NET DIRECT COST	$58,176,354

GENERAL MARKUPS - BASE BID		
DESIGN CONTINGENCY	15.00%	$8,726,453
PHASING	1.50%	$1,003,542
CMAR CONTINGENCY	4.00%	$2,716,254
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$3,531,130
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$2,484,150
INSURANCE	1.00%	$766,379
BONDS: CONTRACTOR	1.00%	$774,043

TOTAL CONSTRUCTION COST	$78,178,305

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$58,352	$0.25
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE		$316,577	$1.34
04 EXTERIOR CLOSURE		$124,058	$0.52
05 ROOFING		$642,446	$2.71
06 INTERIOR CONSTRUCTION		$10,042,152	$42.38
07 CONVEYING		$60,187	$0.25
08 MECHANICAL		$14,650,673	$61.82
09 ELECTRICAL		$6,432,657	$27.14
10 EQUIPMENT		$1,617,147	$6.82
11 SITEWORK		$1,643,630	$6.94
NET DIRECT BUILDING COST		$35,587,879	$150.17
DESIGN CONTINGENCY	15.00%	$5,338,182	$22.53
SUBTOTAL		$40,926,061	$172.70
PHASING	1.50%	$613,891	$2.59
SUBTOTAL		$41,539,952	$175.29
CMAR CONTINGENCY	4.00%	$1,661,598	$7.01
SUBTOTAL		$43,201,550	$182.30
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,160,077	$9.11
SUBTOTAL		$45,361,627	$191.41
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,519,615	$6.41
SUBTOTAL		$46,881,242	$197.83
INSURANCE	1.00%	$468,812	$1.98
SUBTOTAL		$47,350,054	$199.81
BONDS: CONTRACTOR	1.00%	$473,501	$2.00
TOTAL BUILDING COST		**$47,823,555**	**$201.80**

GROSS FLOOR AREA: 236,981 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase III
REPROGRAM EXISTING GRANT SAWYER BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$58,352		$0.25
011 Standard Foundations	$58,352		$0.25	
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$316,577		$1.34
031 Floor and Roof Construction	$316,577		$1.34	
032 Stair Construction				
04 EXTERIOR CLOSURE		$124,058		$0.52
041 Exterior Walls	$124,058		$0.52	
042 Exterior Doors/Windows				
05 ROOFING		$642,446		$2.71
051 Roofing	$642,446		$2.71	
06 INTERIOR CONSTRUCTION		$10,042,152		$42.38
061 Partitions	$2,196,517		$9.27	
062 Interior Finishes	$5,320,140		$22.45	
063 Specialties	$928,028		$3.92	
064 Interior Doors/Windows	$1,597,467		$6.74	
07 CONVEYING		$60,187		$0.25
071 Elevators	$60,187		$0.25	
08 MECHANICAL		$14,650,673		$61.82
081 Plumbing	$879,115		$3.71	
082 H.V.A.C.	$13,540,496		$57.14	
083 Fire Protection	$231,062		$0.98	
084 Special Mechanical				
09 ELECTRICAL		$6,432,657		$27.14
091 Standard Electrical	$5,990,501		$25.28	
092 Special Electrical	$442,156		$1.87	
10 EQUIPMENT		$1,617,147		$6.82
101 Fixed/Movable Equipment	$424,316		$1.79	
102 Furnishings	$1,192,831		$5.03	
103 Special Construction				
11 SITEWORK		$1,643,630		$6.94
111 Site Preparation	$1,643,630		$6.94	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$35,587,879**		**$150.17**	

FEASIBILITY STUDY COST ESTIMATE REVISION3 OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$44,723	$1.20
02 SUBSTRUCTURE		$105,547	$2.84
03 SUPERSTRUCTURE		$1,356,907	$36.55
04 EXTERIOR CLOSURE		$2,406,221	$64.81
05 ROOFING		$157,426	$4.24
06 INTERIOR CONSTRUCTION		$1,440,545	$38.80
07 CONVEYING		$689,371	$18.57
08 MECHANICAL		$723,930	$19.50
09 ELECTRICAL		$662,297	$17.84
10 EQUIPMENT		$294,767	$7.94
11 SITEWORK			
NET DIRECT BUILDING COST		$7,881,734	$212.30
DESIGN CONTINGENCY	15.00%	$1,182,260	$31.85
SUBTOTAL		$9,063,994	$244.15
PHASING	1.50%	$135,960	$3.66
SUBTOTAL		$9,199,954	$247.81
CMAR CONTINGENCY	4.00%	$367,998	$9.91
SUBTOTAL		$9,567,952	$257.72
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$478,398	$12.89
SUBTOTAL		$10,046,350	$270.61
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$336,553	$9.07
SUBTOTAL		$10,382,902	$279.67
INSURANCE	1.00%	$103,829	$2.80
SUBTOTAL		$10,486,732	$282.47
BONDS: CONTRACTOR	1.00%	$104,867	$2.82
TOTAL BUILDING COST		**$10,591,599**	**$285.30**

GROSS FLOOR AREA: 37,125 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase III
CORE ELEVATORS AND CONVEYING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3 OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$44,723		$1.20
011 Standard Foundations	$44,723		$1.20	
012 Special Foundations				
02 SUBSTRUCTURE		$105,547		$2.84
021 Slab On Grade	$105,547		$2.84	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$1,356,907		$36.55
031 Floor and Roof Construction	$1,207,528		$32.53	
032 Stair Construction	$149,379		$4.02	
04 EXTERIOR CLOSURE		$2,406,221		$64.81
041 Exterior Walls	$455,625		$12.27	
042 Exterior Doors/Windows	$1,950,596		$52.54	
05 ROOFING		$157,426		$4.24
051 Roofing	$157,426		$4.24	
06 INTERIOR CONSTRUCTION		$1,440,545		$38.80
061 Partitions	$313,063		$8.43	
062 Interior Finishes	$877,217		$23.63	
063 Specialties	$138,457		$3.73	
064 Interior Doors/Windows	$111,808		$3.01	
07 CONVEYING		$689,371		$18.57
071 Elevators	$689,371		$18.57	
08 MECHANICAL		$723,930		$19.50
081 Plumbing	$352,365		$9.49	
082 H.V.A.C.	$237,395		$6.39	
083 Fire Protection	$134,170		$3.61	
084 Special Mechanical				
09 ELECTRICAL		$662,297		$17.84
091 Standard Electrical	$599,654		$16.15	
092 Special Electrical	$62,643		$1.69	
10 EQUIPMENT		$294,767		$7.94
101 Fixed/Movable Equipment	$12,047		$0.32	
102 Furnishings	$282,720		$7.62	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$7,881,734**		**$212.30**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$234,000	$1.25
02 SUBSTRUCTURE		$552,240	$2.95
03 SUPERSTRUCTURE		$8,603,495	$45.96
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING		$250,000	$1.34
08 MECHANICAL		$676,313	$3.61
09 ELECTRICAL		$1,060,135	$5.66
10 EQUIPMENT			
11 SITEWORK		$248,934	$1.33
NET DIRECT SITE COST		$11,625,117	$62.10
DESIGN CONTINGENCY	15.00%	$1,743,768	$9.31
SUBTOTAL		$13,368,885	$71.41
PHASING	1.50%	$200,533	$1.07
SUBTOTAL		$13,569,418	$72.49
CMAR CONTINGENCY	4.00%	$542,777	$2.90
SUBTOTAL		$14,112,195	$75.39
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$705,610	$3.77
SUBTOTAL		$14,817,804	$79.15
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$496,396	$2.65
SUBTOTAL		$15,314,201	$81.81
INSURANCE	1.00%	$153,142	$0.82
SUBTOTAL		$15,467,343	$82.62
BONDS: CONTRACTOR	1.00%	$154,673	$0.83
TOTAL SITE COST		**$15,622,016**	**$83.45**

TOTAL SITE AREA: 187,200 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase III
PARKING GARAGE EXTENSION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$1.25
011 Standard Foundations	$234,000		$1.25	
012 Special Foundations				
02 SUBSTRUCTURE		$552,240		$2.95
021 Slab On Grade	$552,240		$2.95	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$8,603,495		$45.96
031 Floor and Roof Construction	$8,603,495		$45.96	
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING		$250,000		$1.34
071 Elevators	$250,000		$1.34	
08 MECHANICAL		$676,313		$3.61
081 Plumbing	$251,547		$1.34	
082 H.V.A.C.	$30,117		$0.16	
083 Fire Protection	$394,649		$2.11	
084 Special Mechanical				
09 ELECTRICAL		$1,060,135		$5.66
091 Standard Electrical	$891,000		$4.76	
092 Special Electrical	$169,135		$0.90	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$248,934		$1.33
111 Site Preparation	$248,934		$1.33	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST		**$11,625,117**		**$62.10**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$3,081,624	$13.34
NET DIRECT SITE COST		$3,081,624	$13.34
DESIGN CONTINGENCY	15.00%	$462,244	$2.00
SUBTOTAL		$3,543,868	$15.34
PHASING	1.50%	$53,158	$0.23
SUBTOTAL		$3,597,026	$15.57
CMAR CONTINGENCY	4.00%	$143,881	$0.62
SUBTOTAL		$3,740,907	$16.20
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$187,045	$0.81
SUBTOTAL		$3,927,952	$17.01
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$131,586	$0.57
SUBTOTAL		$4,059,538	$17.58
INSURANCE	1.00%	$40,595	$0.18
SUBTOTAL		$4,100,134	$17.75
BONDS: CONTRACTOR	1.00%	$41,001	$0.18
TOTAL SITE COST		**$4,141,135**	**$17.93**

TOTAL SITE AREA: 230,968 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-B Phase III
PHASE III SITE WORK
Las Vegas

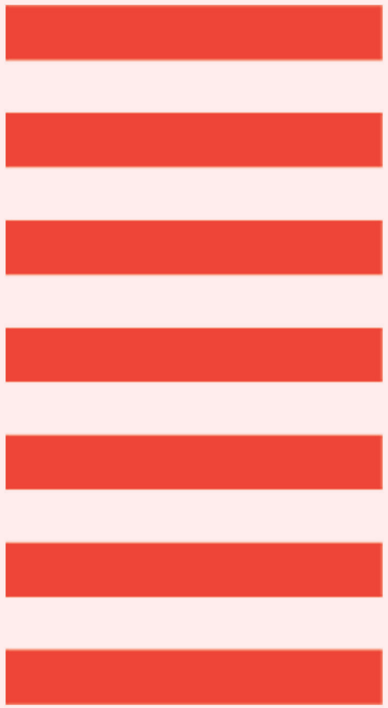
FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$3,081,624		$13.34
111 Site Preparation	$1,210,528		$5.24	
112 Site Improvements	$1,433,944		$6.21	
113 Site Utilities	$437,152		$1.89	
114 Off-Site Work				
NET DIRECT SITE COST		**$3,081,624**		**$13.34**

Reprogramming | Concept R2-C



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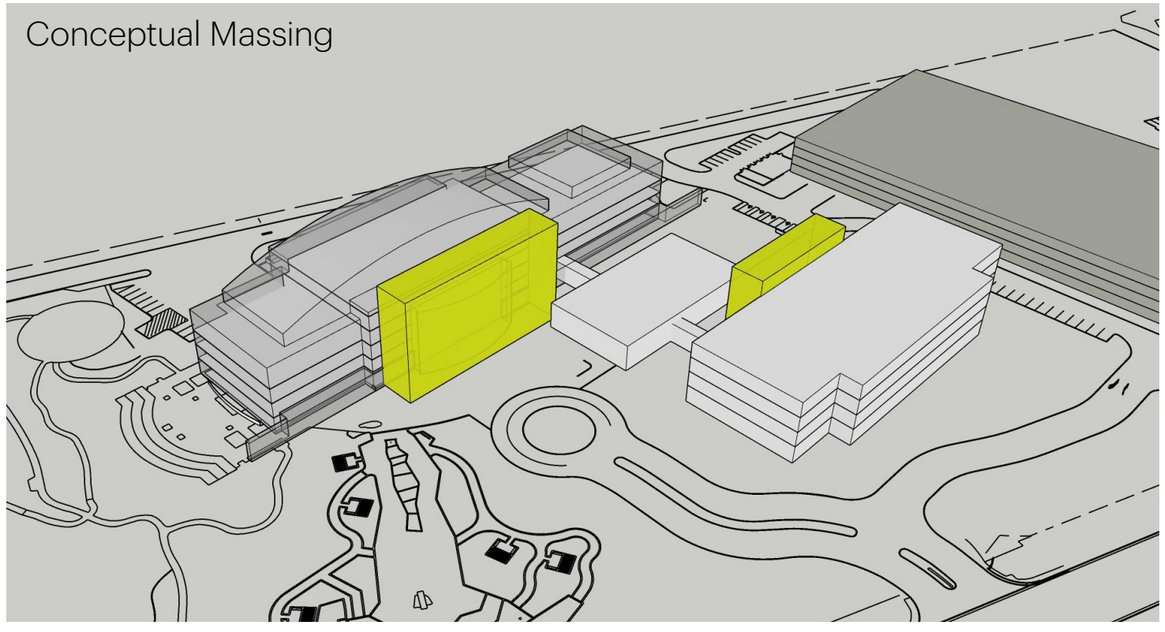
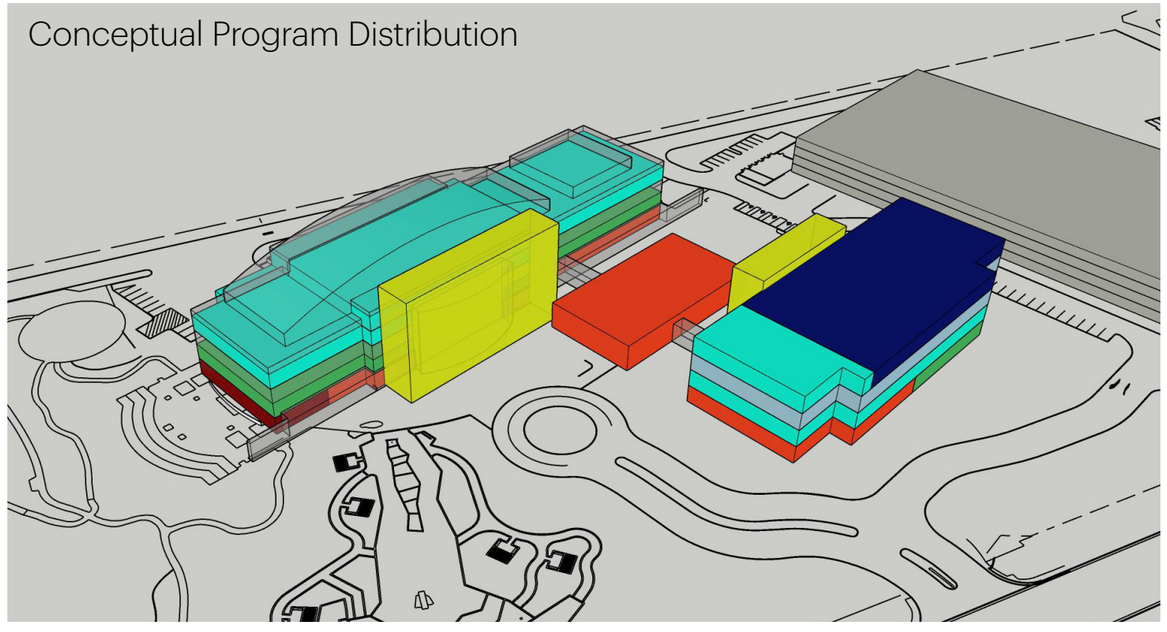
Reprogramming | Concept R2-C

Highlighting Innovation

Concept R2-C further embraces the campus concept by introducing a pavilion-like central building which contains the Innovation Center meeting and co-working spaces, as well as a new cafeteria and other shared functions. The prominent placement of the Innovation Center is intended to attract building occupants and the visiting public to a central, convenient location within the campus. As an independent structure apart from ground-level connecting walkways, the central building is positioned to maximize the ability to admit natural light and provide views to landscape areas surrounding it. Additionally, the prominent position is reflective of the programmatic potential of the Innovation Center to promote the exchange of ideas between departments, and between the government and members of the public, while providing an approachable, positive image to the home of State government in southern Nevada.





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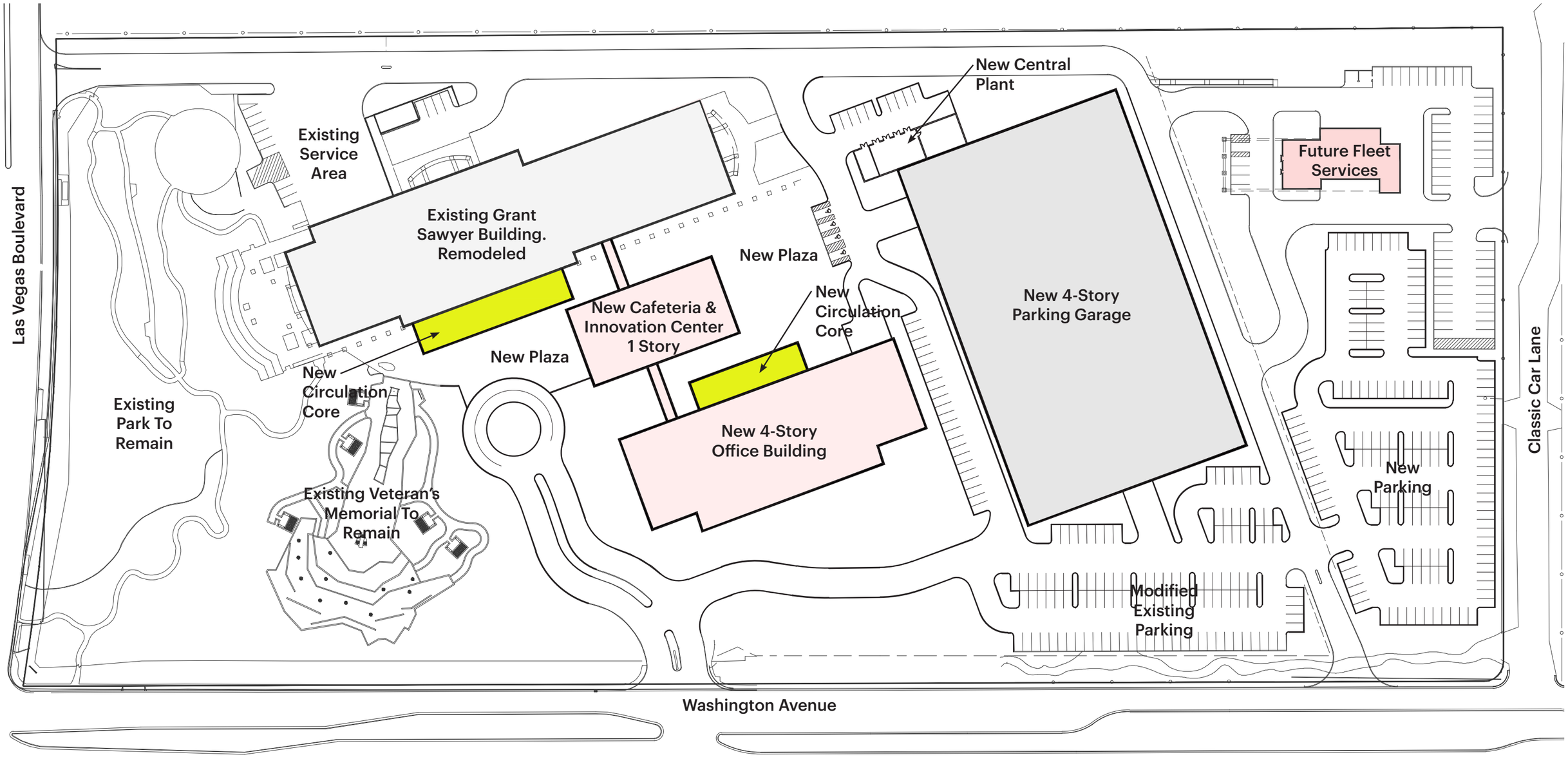
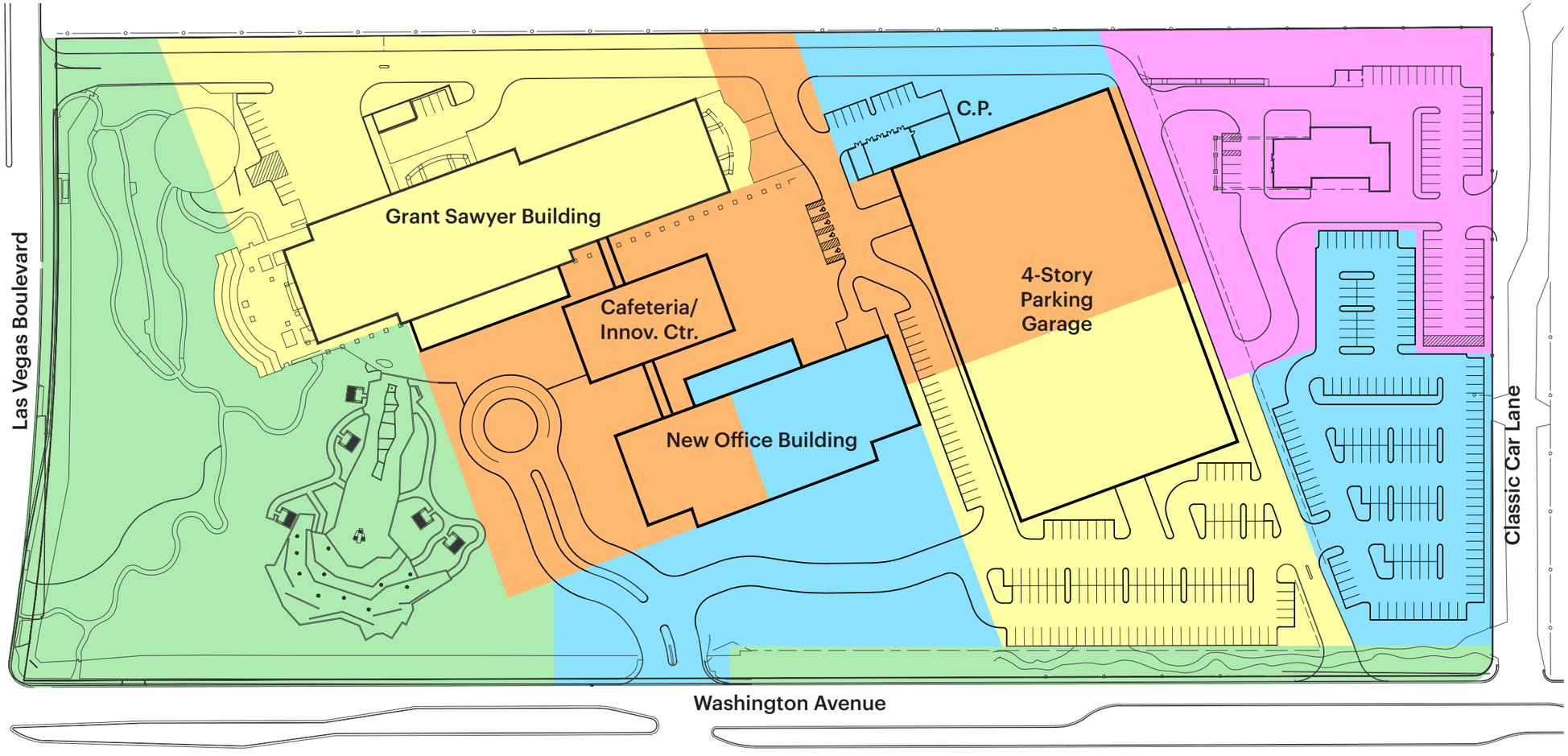
Concept R2-C | Conceptual Site Plan



Surface Parking: 314 Spaces
Garage Parking: 1,037 Spaces
Total Parking: 1,351 Spaces

Concept R2-C | Conceptual Phasing Plan



Phase I
Build a new 4-story, 100,000 S.F. eastern portion of the new Office Building on a portion of the existing parking lot to the south of the Grant Sawyer Building. Build a new Central Plant. Build a new parking lot at the existing Fantasy Park and solar farm.

Phase II
Build a new 4-story, 68,000 S.F. western portion of the new Office Building and 12,000 S.F. single-story Innovation Center Building. Build the north half of the 4-story parking garage over a portion of the current surface parking lot.

Phase III
Remodel the Grant Sawyer Building. Build the south half of the 4-story parking garage.

Concept R2-C | Conceptual Level 1 Floor Plan

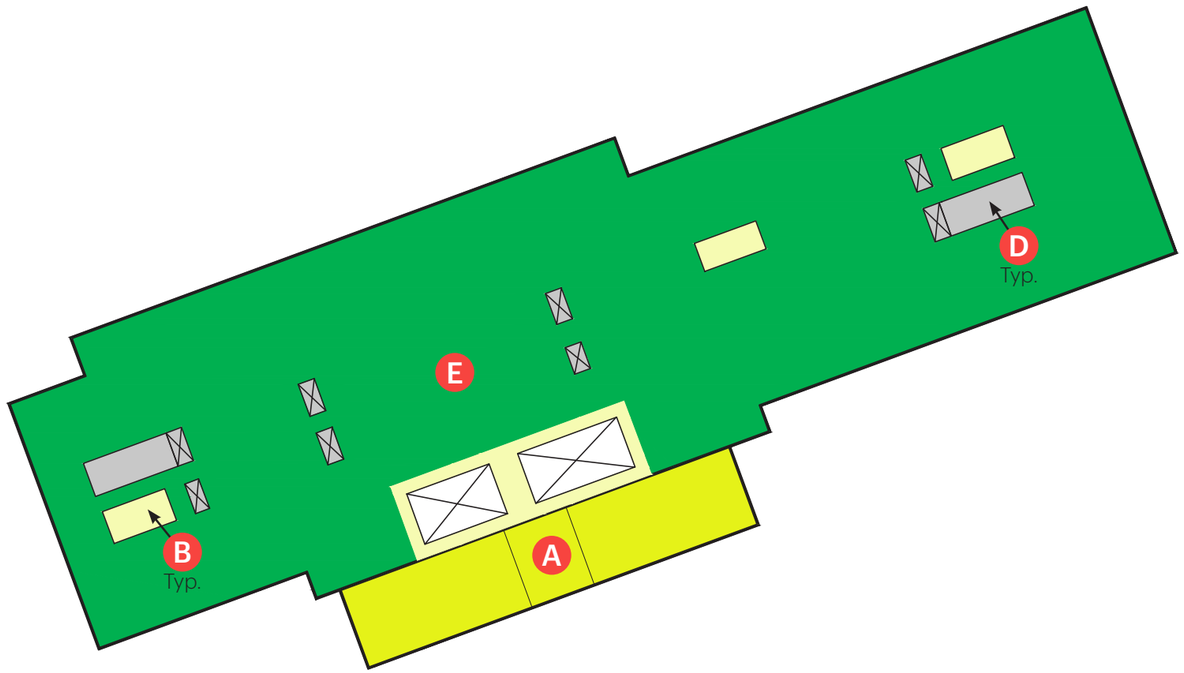
- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Cafeteria
- F Mail Services
- G Capitol Police
- H Dept. of Public Safety (DPS) Investigation Division
- I Controller's Office - Vendor Database Services
- J Dept. of Human Resources Management
- K Secretary of State
- L Innovation Center
- M Shared Break Room
- N Governor's Garage
- O Dept. of Taxation

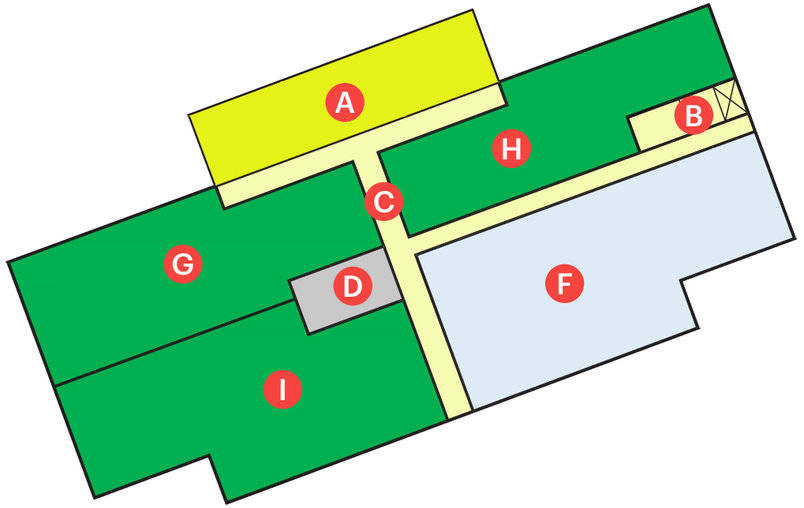
The vertical circulation cores contain passenger and freight elevators, exit stairs, restrooms, lactation rooms, janitor's closets and utility spaces and shafts. The onsolidation and stacking of these repeated core elements on each level of the new construction is proposed in order to minimize intrusion of these elements into the tenant areas.

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-C | Conceptual Level 2 Floor Plan



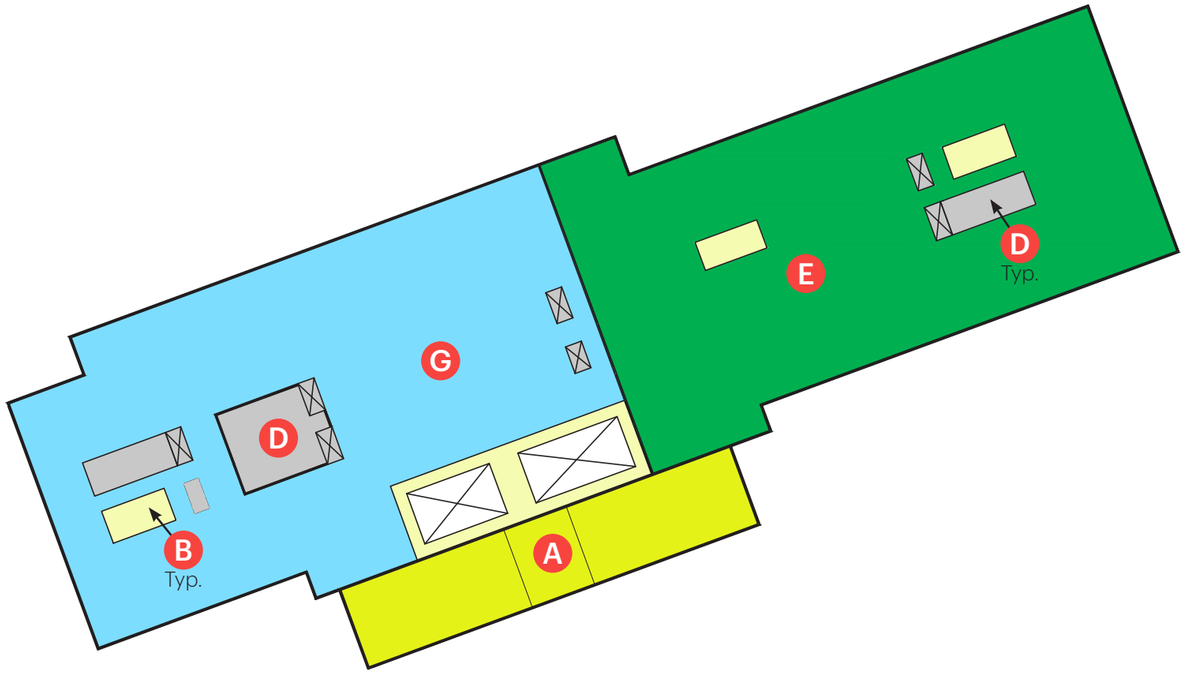


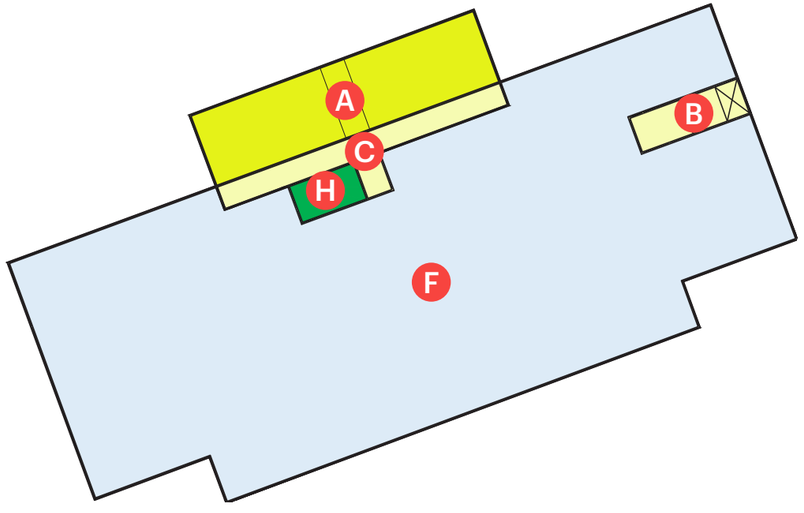
- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Legislative Counsel Bureau
- G Consumer Health Assistance Bureau
- H Dept. of Veteran's Services
- I Dept. of Employment, Training & Rehabilitation

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-C | Conceptual Level 3 Floor Plan



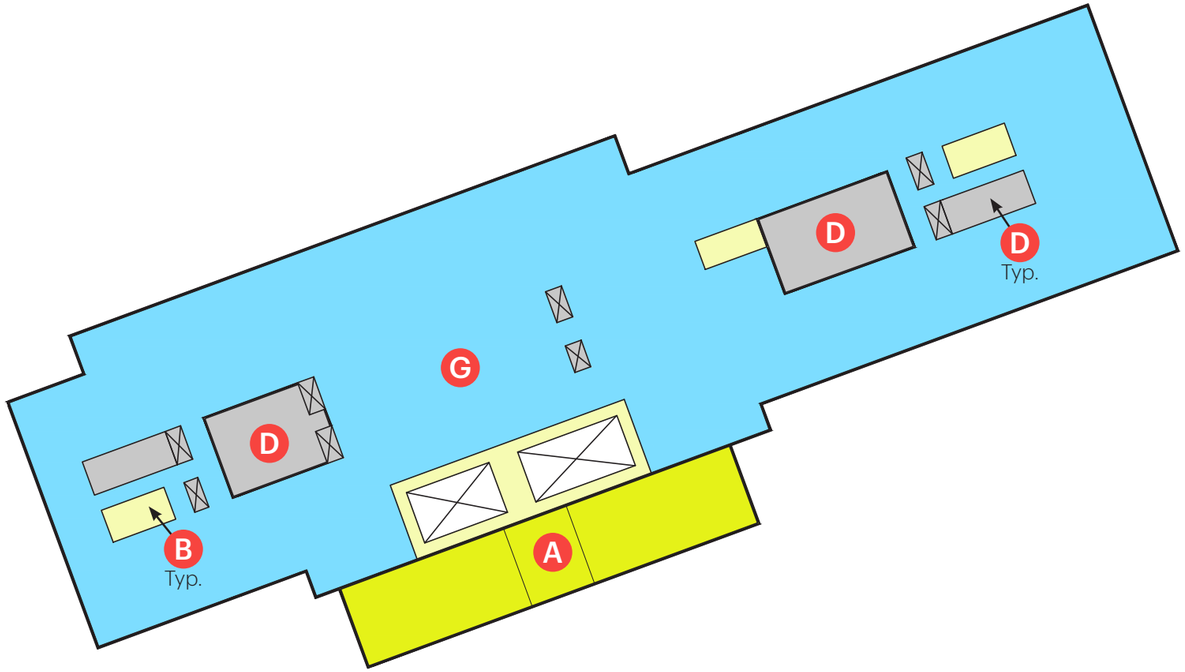


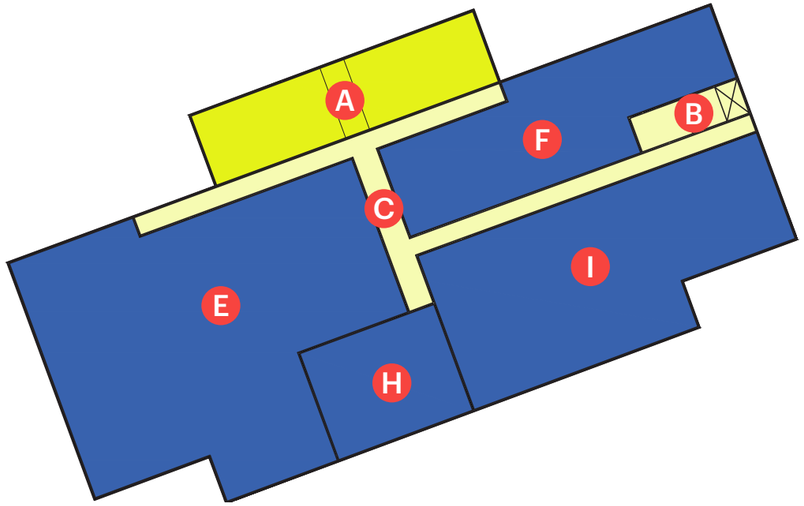
- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Legislative Counsel Bureau
- G Attorney General
- H Commision on Ethics

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R2-C | Conceptual Level 4 Floor Plan



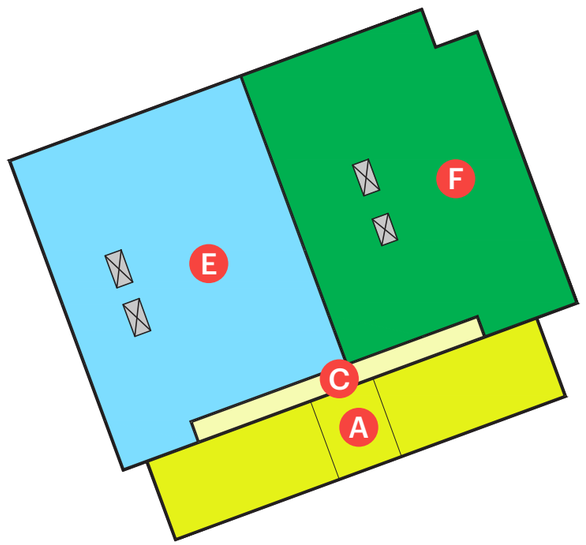


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Governor's Office Economic Development (GOED)
- F Governor's Office of Workforce Innovation (OWINN)
- G Attorney General
- H Office of the Lieutenant Governor
- I Office of the Governor

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

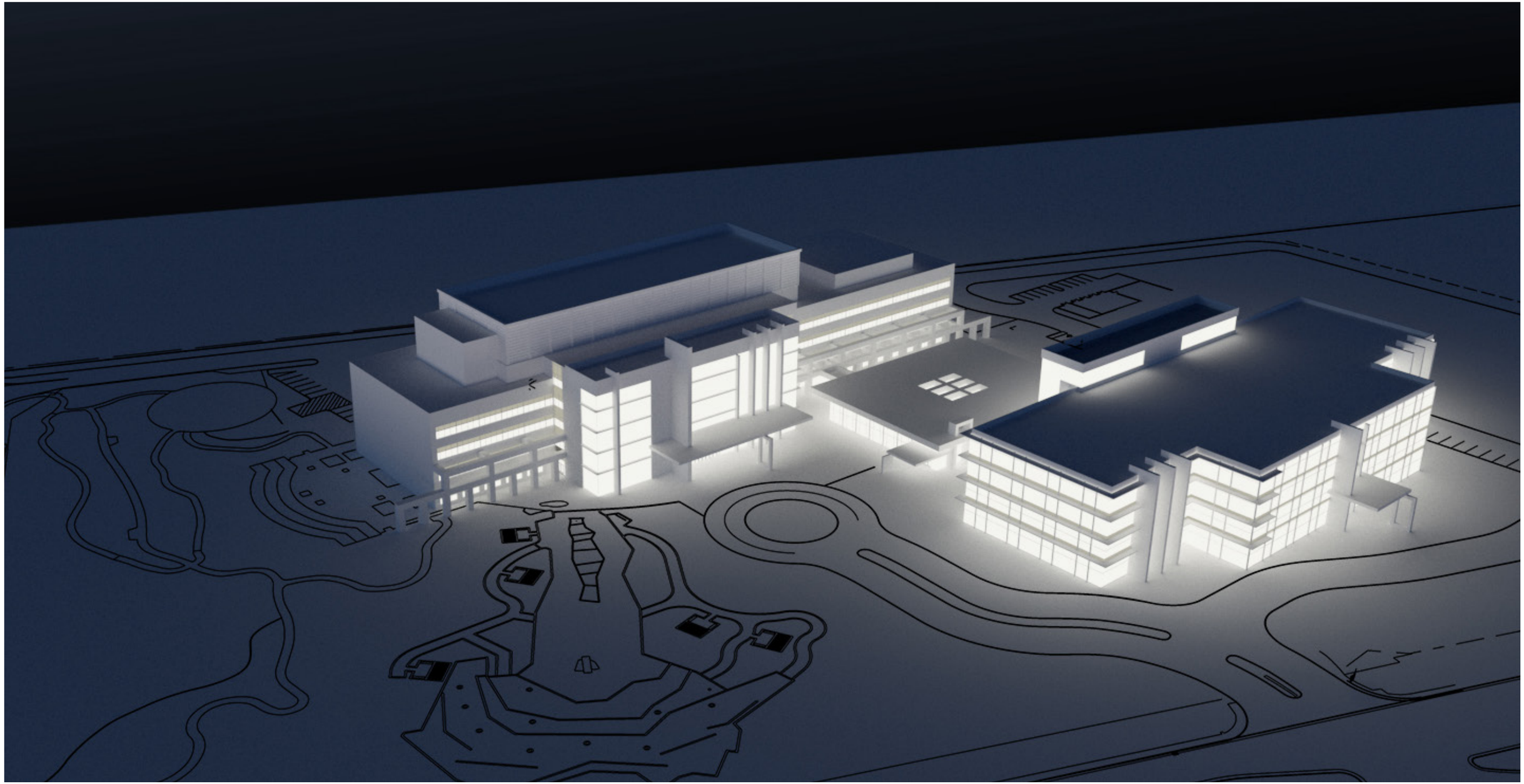
Concept R2-C | Conceptual Level 5 Floor Plan



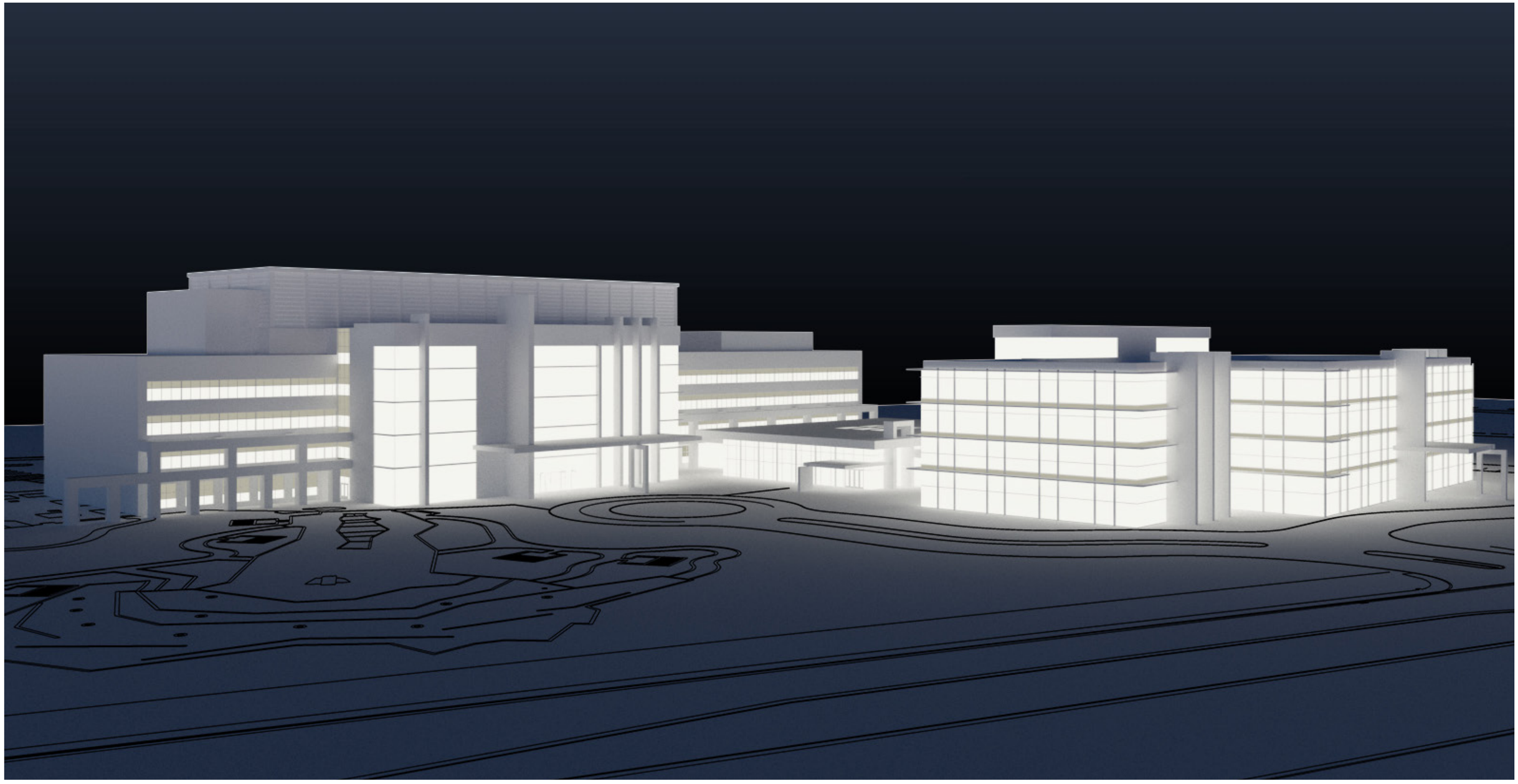
- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E State Treasurer
- F Colorado River Commission of Nevada

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory



Concept R2-C | Conceptual 3D View



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Lochsa engineering

REPROGRAMMING AND EXPANSION

CONCEPT R2-C

1.0 General Information

Concept R2-C reflects modifications to the existing building, adding a new shared common area, constructing a new building south of the existing building and common area with connecting hallways and constructing a new multi-level parking garage in the east parking lot.

2.0 Drainage

This concept will require regrading of a large area south of the existing building in order to establish new building floor elevation close to the existing floor elevation. It initially appears this will need to be accomplished with the use of storm drain pipe facilities. The existing parking lot south of the new building will need to be reconfigured and regraded but will probably require regrading this entire parking lot. The garage area may need to be regraded to fit the garage footprint within this existing parking lot to avoid excessive first floor to second floor head heights. The Veterans Memorial should not be affected by this concept.

Significant over excavation of existing soils under all of the new structures may be required due to undesirable soils conditions. This may be minimized by utilizing alternative structure footing types such as piles or caissons.

3.0 Utilities

The two existing combined service water meters and backflow devices must be upgraded to current LVVWD standards and the increased domestic demands as well as the potential increase in on-site fire flow due to differing construction types of proposed buildings. The existing waterline under the proposed building will need to be demolished and a new waterline (10”±) will need to be looped around these buildings. A water loop around the proposed garage with at least 4 new fire hydrants will need to be installed around the garage for fire protection. These new loops will be fed by the existing system and the upgraded water meters and backflow devices.

The existing on-site sewer line within the east parking area will need to be relocated around the south side of the garage and extended to the new building. A sewer line will also need to be extended to the southwest corner of the existing building to provide continuing sewer services for laterals servicing in that area. All new sewer mains will be 8-inch and will require manholes at angle points and at a maximum of 300’ spacing. The existing 8-inch sewer main should have adequate capacity for this concept.

4.0 Hardscape

New asphalt and concrete walks and curbs will be required within the project areas.

5.0 Summary

This concept can be accomplished but challenges will occur due to the higher elevations as one gets closer to Washington Avenue, Although the new office building parallels the contours, the connecting hallways and common use building will want to have similar floor elevations as the existing office building. Retaining walls on the east side of the new office building may be required as well as an underground storm drainage system.

Structural Design Narrative- Concept R2-C –

New 4-Story building separate from existing except connecting to new innovation center building – 01/02/19

John A. Martin & Associates of Nevada
STRUCTURAL ENGINEERS
John A. Martin, Jr., S.E.
Steve Schiller, S.E.
Gregory L. Clapp, S.E.
Tammy Carter, P.E.
Gordon Kuang, P.E.
Pete Padilla, P.E.

Mechanical Roof Framing over Existing Building

The roof over the mechanical equipment shall be supported on wide flange columns that extend through the roof level. The wide flange framing will support a perforated metal decking with frames to support the edges as required. Lateral support will be moment frames. This will enclose the existing mechanical ductwork and equipment but will not convert the existing roof to a habitable floor.

Existing Elevator Cores

Infill existing elevator cores with concrete over metal deck and steel beams.

Existing Brace Removal

The building was constructed per the 1991 UBC, based upon the 2018 IBC the current seismic factor would be 1.9 x higher than the original code. Changing of the existing lateral system would require upgrading all braces, columns, footings and drag/chord systems. Therefore, removing or changing the lateral system is not recommended.

New High Roof Framing

The area of the high roof which supports the mechanical equipment and electrical room will be framed using 3 ½" concrete over the flutes of 3" x 18 gage metal deck spanning between wide flanged beam spaced typically at 7'-6" on center, with few exceptions, spanning between wide flanged girders spanning between columns. Housekeeping pads should be maximum of 6" thick normal weight concrete. The roof steel will be sloped to achieve drainage and limit the use of built up roofing.

The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Core location is not adequate as a lateral element alone. Steel moment frames throughout the building would be required to keep the open nature of the plans.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load.

Penetrations for pipes and shafts will require frames constructed of angles and channels supported on the wide flange beams. In the areas where there is concrete over metal deck, most openings shall be framed using reinforcing in the concrete slab in lieu of structural steel frames.

Typical Floor Framing

The floors will be framed using 3 ½" of concrete over the flutes of 3" x 18 gage deck, reinforced with welded wire fabric and negative reinforcing over the supports. To ensure the ability to achieve floor flatness, the framing is designed to allow for an additional ½" of concrete.

Penetrations for piping and shafts through metal deck will be accomplished using reinforcing steel at the perimeter of the openings with a formed concrete edge. The deck must remain in place until the concrete attains a compressive strength of 3,000 psi.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load. This columns will extend approximately 4' above the floor level at the splice locations. The top of the column section will be prepared for a welded column splice.

Foundations

Foundation design is pending completion of the geotechnical investigation and preparation of the geotechnical report. For purposes of this narrative, we are assuming the building will be supported on spread footings with strip footings required at the moment frames.

Piles may be required as alternate foundations depending on geotechnical recommendations.

The typical foundations should be placed 2' below finished floor. Footing elevations can be adjusted based on requirements of utilities. Shafts containing elevators should be placed approximate 5'-6"' below finished floor to allow for pits.

Retaining walls and dock walls will utilize conventional foundations. Retaining wall design is pending verification of grading.

New Innovation Center

This separate 1-Story building will connect the existing building to the new building for commons area. The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Anticipate lateral system to be moment frames to allow plenty of open window storefront systems.

Parking Garage Options

- **Precast with Shear Walls**
  Greatest savings are achieved with all precast elements (walls, beams, spandrels, tees)
  Precast shear walls at perimeter, L beams at perimeter, inverted tees at interior column lines, double tees with topping slab.

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- **Cast-in place**
  Moment frames in transverse direction, shear walls in longitudinal direction, 14”/16” x 30” tapered beams at 18’ on center, 5” post tensioned slab, 24” x 30” girders at transfer locations, 24” x 24” typical columns, 24” x 30” columns at transfer girders

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GRANT SAWYER OFFICE BUILDING
REPROGRAMMING NARRATIVE R2-C OPTION
NV5 PROJECT NO. 018.0745.00

Prepared for:

KGA Architecture
9075 Diablo Dr, Suite 300
Las Vegas, NV 89148

Prepared by:

NV5
5155 W Patrick Ln
Las Vegas, NV 89118

Issue Date:

January 2, 2019

Revision No.	Issue Date	Prepared By	Reviewed By	Remarks
1	1/02/2019	Alex Jankovic JJ Wisdom	KGA	Reprogramming R2

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

When pursing this investigation, we had in mind the three RRR =Repair, Remodel, Replace and the 20 years fix of the MEP systems as our final goal.

Based on the architectural conceptual drawings for the Reprogramming and Replacement options the central utility plant (CUP) will be located in the parking garage building.

Reprogramming options R2-C

The CUP plant will house the chilled water plant and heating hot water plant.

The chiller room will consist of 2 x 350 tons magnetic bearing chillers, cooling towers and associated chilled water pumps and condenser water pumps with a dedicated space for future expansion to serve the existing GSOB. The proposed chilled water plant will be variable primary flow system with direct buried pre-insulated chilled water piping serving the proposed new buildings per R2 options.

The boiler plant will consist of 2 x 3000 MBH gas fired condensing boilers, combination bridge/air separator and associated boiler pumps and variable flow building pumps and a dedicated space for future expansion to serve the existing GSOB.

The heating plant will deliver 160^{0}F/130^{0}F heating hot water to the buildings via underground pre-insulated hydronic piping.

Reprogramming options R2-A, R2-B, R2-C will include the existing 224,000 sq.ft Grant Sawyer office building (GSOB) and 180,000 sq.ft building expansion.

In all R2 options the GSOB central plant at level 6 will remain in operation to serve the eight air handling systems until the end of its useful life. At the same time the new chilled water/hot water piping stub-outs will be provided for future connection to CUP.

Fire Protection: Existing diesel fire pumps shall be removed and replaced with electric-drive fire pumps per 2018 IBC.

Life Safety-Smoke Removal System: Existing system shall be upgraded per 2018 IBC, 2018 UMC.

Existing 15KV Nevada Energy service shall be re-used to serve the site. New owner 15KV electrical distribution and 480V generator distribution shall be provided for the building expansion and sized to serve the existing GSOB. The existing electrical infrastructure serving the GSOB shall be protected in place during expansion construction and then removed in its entirety during the remodel. New electrical infrastructure served from the building expansion electrical systems shall be provided during the remodel.

2. MECHANICAL SYSTEMS

2.1 GENERAL

2.1.1 Existing GSOB Office Building

Existing GSOB air handling units are located on the roof and they will be removed and replaced with new air handling units based on the proposed zoning plan.

AH-1	30,000 CFM	Level 1 - Main Lobby, Cafeteria
AH-2	38,000 CFM	Level 3 & 4 – Atrium & Offices - West
AH-3	35,000 CFM	Level 2 Gaming Control Board - West
AH-4	25,000 CFM	Level 2 Gaming Control Board - East
AH-5	20,000 CFM	Level 1 HR/Dept of Taxation - East
AH-6	32,000 CFM	Level 3 Attorney General Offices
AH-7	33,000 CFM	Level 4 AG, Legislative Council Bureau
AH-8	32,000 CFM	Level 5 Governor's Offices

Central Plant and DDC control system – recently renovated.
Mechanical Updates: VAV terminal units – New Alerton Controls + hose kits & isolation valves.

Proposed Reprogramming:
Exterior ductwork on roof will be completely removed and replaced with a brand new properly sized internally lined ductwork and routed within the new roof enclosure provided by architect.
Level 5 Ductwork shall be completely removed and replaced with new ductwork per SMACNA requirements.
Interior medium pressure ductwork compromised with openings & flex duct connections for additional cooling of server rooms will be fixed by disconnecting of flex ductwork and properly sealing the system.
All existing fire/smoke dampers that are no longer used as part of the 2012 upgrade, shall be removed.
Based on the reprogramming requirements, some of the vertical risers may be redesigned to serve the dedicated agency for a more appropriate control and operation.
Server/Data rooms cooling system shall be completely disconnected from the medium pressure ductwork. A dedicated chilled water - cooling system will be provided for server/data rooms utilizing the cooling only fan-coil units with emergency VRF system as a back-up cooling. The new chilled water risers will be installed within the same chase and routed from chiller room down to the first floor to serve these cooling only fan-coil units throughout the building.

2.1.2 New Building Expansion

The new 180,000 sq.ft building expansion will be designed per current SPWD design criteria, including the CUP – central utility plant to serve the new building expansion as well as the space for future replacement of chillers and boilers serving the existing GSOB.
The HVAC design shall be in compliance with 2018 Uniform Mechanical Code.

2.2 REPROGRAMMING – OPTION R2-C

2.2.1 Existing GSOB Office Building

Existing central plant located on level 6 of the existing GSOB will remain in place to serve the remodeled & reprogrammed existing office building.

Proposed Remodel:
Chilled water hydronic piping shows considerable exterior corrosion at the multiple fittings, take-offs and elbows, due to incorrect insulation type and compromised vapor barrier or damaged service jacket.
To mitigate the chilled water piping, approx. 25% of piping system shall be replaced and 100% of the insulation shall be replaced with rigid polyisocyanurate insulation with correct vapor barrier and provision of dams at each pipe fitting to prevent any condensation.
Based on the field camera scoping the interior of chilled water piping is not affected and can perform in the future.
Hydronic piping through the wall/ through the slab penetrations are compromised and shall be replaced and properly insulated and protected with pipe sleeves.
Heating hot water piping is in good condition. Additional review has to be performed to verify the leak points in the system.

Server, Data Rooms Cooling Capacities
Total Projected Cooling Capacity = 25 tons (300 MBH).
Final cooling capacity will be verified including some spare capacity for future expansion.
Proposed Remodel: Add a dedicate 3" CHS/CHR riser to serve the server/data rooms on all floors.
New cooling only fan-coil units will be selected with VRF back-up cooling system.

- The compromised medium pressure ductwork with holes intended to cool the server, data, TR rooms has been identified.
- All server/ TR rooms and current cooling problems have been identified.
- The new CHS/CHR risers to serve the Data/TR rooms throughout the facility will be provided utilizing the same shaft.
- CHW fan-coil units + VRF back-up split system will be designed.
- Central plant plate/frame heat exchanger will be upsized to handle all cooling only fan-coil units.

Proposed Remodel:
Server/Data rooms cooling system shall be completely disconnected from the medium pressure ductwork. A dedicated chilled water - cooling system will be provided for server/data rooms utilizing the cooling only fan-coil units with emergency VRF system as a back-up cooling. The new chilled water risers will be installed within the same chase and routed from chiller room down to the first floor to serve these cooling only fan-coil units throughout the building.

2.2.2 New Building Expansion

The new CUP central plant, located within the Parking Garage Building will incorporate water chillers, cooling towers, plate and frame heat exchangers (water side economizers), variable primary flow system with chilled water pumps and appropriate ancillary equipment and systems to provide comfort and process cooling for the facility. The plant will also incorporate low pressure, 94% efficiency condensing hot water boilers, primary and secondary hot water pumps and ancillary equipment and systems to provide space heating for the facility. The CUP central plant will provide a space for future replacement of existing GSOB central plant on 6th floor. The underground chilled water and hot water piping will be sized to handle both existing building and new building expansion. The stub-outs will be provided within the core area of GSOB at 6th floor for future connection to the CUP.

Central Chilled Water Plant
The chilled water plant will be designed per SPWD requirements.
Two (2) magnetic bearing water cooled chillers at 350 tons each, with multiple compressors, with integrated refrigerant cooled VFD's and micro-processor controls system, have been selected to provide a total cooling

capacity of 700 tons of refrigeration for new building expansion. This configuration will meet the building load and provide 20% redundancy.
The cooling tower fans, secondary flow chilled water pumps will be provided with VFD's. The chilled water distribution system will be deigned to provide a chilled water supply temperature at 44°F with a chilled water return temperature at 58°F. The system will serve air handling units and strategically located fan coil units. Cooling only fan-coil units will be provided for the MDF rooms, IDF rooms, chiller room, boiler room and elevator equipment rooms. During the winter season two dedicated jockey pumps will be employed to serve the cooling requirements for the fan-coil unit process cooling loads, utilizing the plate/frame heat exchanger. Split system DX cooling will be provided as a back-up for MDF, IDF and AV rooms, with the roof mounted VRF condensing unit.
The chilled water piping will be routed from the central plant up to fourth floor within the shaft with pipe connections to roof mounted air handling units. The pipe penetrations will be provided within the air handling unit pipe chases.

Central Heating Hot Water Plant
The heating hot water plant will be designed as a primary/secondary flow system, utilizing high efficiency low pressure, condensing gas fired boilers. The total calculated heating capacity has been estimated to be 6,000 MBH.
Two (2) high efficiency hot water boilers with a capacity of 3000 MBH heat input have been selected with associated hot water pumps and accessories. The heating hot water system will serve all air handling unit heating coils and VAV terminal unit reheat coils.
The hot water piping will be routed in the core area shaft along with the chilled water piping.

Air Handling Systems
The following air handling units will be provided for this facility:

- System AH-R2.1 45,000 CFM (Level One)
- System AH-R2.2 45,000 CFM (Levels Two)
- System AH-R2.3 45,000 CFM (Level Three)
- System AH-R2.4 45,000 CFM (Level Four)
- System AH-R2.5 20,000 CFM (Cafeteria, Innovation Center)

Air handling systems will be designed as VAV systems providing supply air at 55° F and discharging the air through medium pressure ductwork to VAV terminal units. The air handling units will be provided with VFD's on supply and exhaust/relief fans, to facilitate 100% outside air economizer on a variable air volume basis.

The units will operate per BMS schedule. Supply fans will be plug type and exhaust/return fans will be a fan-wall type fan configuration. Variable frequency drives will provide fan volume control in response to a signal from duct mounted static pressure transmitters. Supply and return fan speeds will be modulated simultaneously as required by building load.

Fan Wall, or fan array, technology system will be considered for use on the project. The fans will meet the air flow performance specified and will not exceed the break horsepower or sound power levels specified. Fan performance will be based on testing and be in accordance with AMCA Standards 210 and 300. Completely isolated assemblies will be dynamically balanced and shall be designed for heavy-duty industrial applications. Fan assemblies that meet a dynamic balance of BV-5 (G 1.0) do not require isolation.

The supply air distribution system will consist of medium-pressure, externally insulated galvanized steel ductwork with pressure independent electrically actuated VAV terminal units with reheat coils, low pressure externally insulated ductwork downstream of terminals and diffusers. The return air distribution system will consist of externally insulated galvanized steel ductwork and return grilles. Sound attenuating flexible ductwork with woven nylon fabric type lining will be provided at the supply diffusers and return grilles to control noise.
Ductwork will be constructed in accordance with SMACNA standards and duct leakage shall not exceed 2% for low-pressure ductwork. The use of sound attenuating flexible duct at diffusers and grilles will be limited to five feet in total length to minimize duct static pressure losses.

The VAV air handling units will consist of the following components: Exhaust/relief fan section, outside air economizer, 30% (MERV8) efficient pre-filter section with a reserved space for 85% (MERV13) final filters, hot water heating coil and chilled water-cooling coil, supply air fan section with discharge air attenuator and factory installed VFD's for supply and exhaust/return fans in air-conditioned enclosure. Duct mounted smoke detectors will be provided per UMC 609. The duct detectors will be addressable type and compatible with the fire alarm system.
Refer to Mechanical Site Plan-Option R2-C for details.

3. PLUMBING SYSTEMS

3.1 REPROGRAMMING – OPTION R2-C

3.1.1 Existing GSOB Office Building

Initial Findings:
Cast Iron waste piping above ground shall be replaced.
Replace the existing grease interceptor with a new 2,000 gallon Jensen Precast grease interceptor.
Kitchen area underground grease waste piping to be removed and replaced with PVC piping with heat trace.
All underground waste piping shall be replaced with Schedule 80 PVC piping.
Site waste lines shall be routed south of the building per Overall Plumbing plan.

Proposed Remodel:
Waste Piping above ground: All above ground piping to be replaced or epoxy lined utilizing the "NU Flow" non-pressurized epoxy linin (CIPP) – the cured in-place pipe restoration process.
Underground Waste Piping: All underground cast iron waste piping to be removed and replaced with Sch 80 PVC properly sloped with 2% slope waste piping.
All existing trap primers shall be replaced with new electronic prat primers.
Domestic water booster pumps are beyond the ASHRAE recommended life expectancy and shall be replaced.
These is no RPBP – reduced pressure backflow preventer at the property. The new RPBFP will be installed.
Kitchen area domestic hot water piping shall be provided with thermostatic mixing valves at the hand sink faucets to provide the tempering water at 110^{0}F.

3.1.2 New Building Expansion

The plumbing systems will include the following:
Sanitary waste and vent system will be provided for the public restrooms, break rooms and mechanical rooms.
Drainage piping will be sloped at 2% per UPC. Sanitary waste and vent piping will be service weight cast iron

no-hub piping with no-hub 4 band type couplings with neoprene gaskets. A separate 2,000 gallon grease interceptor will be provided for the fourth floor kitchen grease waste system.

Cold water distribution piping system will be provided for the restrooms, fourth floor kitchen area, break-rooms and mechanical plant rooms. Hot water distribution in the main building will be provided by utilizing the high efficiency condensing water heaters: one located in the boiler room to serve the restrooms and the general building requirements, and one located on the fourth floor to serve the kitchen area.

Exterior hose bibs will be provided for adequate external coverage and maintenance of the facility.

Materials, equipment and systems installed shall meet all pertinent requirements of all applicable codes. The systems described herein shall be provided to serve all fixtures, equipment and areas within the building.

Plumbing Fixtures
Commercial grade water saving wall mounted water closets with electronic flush valves and wall hung sensor operated flush valve urinals will be utilized. Water closets with battery powered 1.28 GPF electronic flush valves, and battery powered 0.125 GPF electronic flush valve urinals will be utilized in the men's restrooms. Water closets with battery powered 1.28/1.1 GPF dual flush valves will be provided in the women's restrooms. Commercial grade additional plumbing fixtures including all carriers, trim, valves and traps will be provided at locations as determined by the architectural plans. Water saving plumbing fixtures shall contribute to water savings design requirements.
Roof drainage system shall be provided utilizing the roof drain/ overflow roof drains and storm drainage piping within the building.

Domestic Water Distribution:
Cold Water Systems
The domestic water service shall be provided from the site water supply. Existing domestic booster pump set will be with new triplex booster pumps and will be sized for 300 GPM @ 80 ft head.
A pressure gauge on main domestic water line serving the building downstream of main shut-off valve shall be provided.

Domestic cold water system design shall be per the Uniform Plumbing Code and ASPE Design Manuals. Pipe velocity shall not exceed 8 feet per second. Domestic cold water systems shall be sized using flush valves curves. Pressure ranges at plumbing fixtures shall be as follows: Minimum: 35 psi, Maximum: 80 psi.

Domestic Hot Water System
Domestic hot water system design shall be per ASHRAE 90.1, 2016 Standard, ASHRAE HVAC Application Handbook, Chapter 48 "Service Water Heating" and ASPE Design Manuals. Pipe velocity shall not exceed 5 feet per second.

Multiple water heaters will be provided within the water heater room serving the new building expansion. Three high efficiency condensing water heaters AO Smith, BTH-199 with 100 gallon storage and 288 GPH recovery capacity will be utilized to satisfy the hot water requirements.

Plumbing Fixtures Water Consumption
All plumbing fixtures shall be coordinated with SPWD and UPC guidelines. They will be low flow type as follows:
- Water Closet: 1.28 GPF @ men's restrooms
- Water Closet: 1.28/ 1.1 GPF @ women's restrooms (dual flush)
- Urinal: 0.125 GPF
- Lavatory: 0.35 GPM
- Sinks: 0.5 GPM

Domestic Water Piping
Domestic water piping shall be Type L copper. All domestic hot and hot water return piping shall be insulated with closed cell insulation. Cold water piping shall not be insulated.
All interior exposed insulation shall have PVC jacket and PVC fitting covers. All exterior exposed insulation shall have aluminum jacket and covers. Aluminum jackets shall be secured with stainless steel bands.
Condensate drain piping shall be Type M copper.

Sanitary Drainage System
Sanitary waste and vent system shall be per the 2018 Uniform Plumbing Code.
All floor drains, floor sinks, access doors, and cleanout covers shall be secured using vandal-resistant fasteners. Floor drains shall be provided in all toilet rooms. Cleanouts shall be provided every 50'-0".
Install cleanouts in sufficient number and located such that drain augers can be conveniently used on any part of the drainage system. The installation shall be made in compliance with the Cast-Iron Soil-Pipe Institute Engineering Manual.
Locate all clean-outs, devices, etc., in plumbing chases so as they are readily accessible by facility maintenance personnel.

Automatic solenoid type trap primers will be provided for all floor drains and floor sinks, including the floor sinks in mechanical rooms and fire riser room.

Sanitary Waste Piping
Sanitary waste and vent piping for all building shall be hubless cast iron pipe and fittings with heavy duty stainless steel couplings.
Sanitary sewer demand for the building based on the main building layout will require 8" building connection.

Site Utilities
All onsite utilities will be distributed underground with approximately 3 ft of backfill cover based upon regional weather conditions and applicable codes. Utility lines will be located in road right of ways per civil utility plans.
A dedicated 2,000 gallon grease interceptor will be provided to serve the cafeteria and innovation center.

The 4" domestic cold water service with shut-off valve will be provided with internal shut-off within the booster pump room.
Based on the pipe size the cold water service can handle approx. 1,700 CWFU, which is equivalent to 300 GPM of total domestic water flow.
Domestic hot water has been provided via high efficiency condensing water heaters with 94% efficiency.

All sanitary sewer and storm sewer lines extend to a point 5 ft outside the building for connection by the civil.
Sanitary waste and vent piping, and roof drain and overflow drain piping below grade shall be service weight cast iron no-hub piping with no-hub four (4) band type couplings with neoprene gaskets.
A rainfall rate of 1.5 in. per hour will be utilized in accordance with UPC Appendix B.

Natural gas consumption has been estimated to be 6,800 kBtu/h for R2 Options.
Medium pressure gas service will be provided by Southwest Gas Corporation per site plan.

4. ELECTRICAL SYSTEMS

4.1 GENERAL

4.1.1 Nevada Energy Service

Existing Nevada Energy infrastructure appears to be sized to accommodate a 15KV 10MVA maximum service. The existing service originates from a pole at the Southeast corner of the property, transitions underground and is routed along the East property line to the North property line and then into the existing building medium voltage switchgear 'MVS1'. The underground Nevada Energy feeder route appears to include several manholes which should allow connection to the existing service at both the East and North property lines as required by existing conditions and/or construction phasing.

Estimated total calculated load for this reprogramming option is 6996KVA with an estimated utility demand load of 2798KVA. The new electrical load is approximately double that of the existing building. This load increase will need to be submitted to Nevada Energy to determine if there are any required modifications to the Nevada Energy systems.

New 600A, 15KV switchgear with a primary Nevada Energy meter will be required. The switchgear will be located at the central plant and will serve the other buildings on the site via 15KV radial feeders.

4.1.2 Emergency/Legally Required Standby/Optional Standby Generator

A 1500KW, 480Y/277 volt, 3 phase, 4 wire generator will be provided to serve building emergency/legally required standby and optional standby loads. The generator will be located at the central plant and will serve the other buildings on the site via 480V radial feeders. Two (2) automatic transfer switches per building will be provided, one (1) for emergency loads and one (1) optional standby loads.

Emergency loads include:

- Fire pump and booster pump
- Fire alarm system
- Egress and exit lighting
- Cooling for emergency electrical room(s)
- Smoke control/purge equipment (if applicable)
- Elevator per bank
- Elevator cab lights

Optional Standby (owner selected) loads include:

- Telecommunications and security / surveillance equipment in MDF and IDF's
- Cooling for MDF's, IDF's and electrical rooms containing optional standby electrical equipment
- Cafeteria walk-in coolers / freezers
- Domestic water booster pump
- Mission critical spaces and associated infrastructure including:
  - Governor's Space
  - Capital Police Space
- Select central plant equipment to support space conditioning for the areas noted above

4.1.3 New/Remodel Work Requirements

References

The electrical and auxiliary system design will adhere to the following codes, standards, and criteria in the preparation of the Project Electrical Design Documents.

IBC	International Building Code; 2018 Edition
NEC	National Electrical Code (NFPA 70); 2017 Edition
NESC	National Electrical Safety Code; 2018 Edition
NFPA 72	National Fire Alarm Code; 2018 Edition
NFPA 101	Life Safety Code; 2018 Edition
NFPA 110	Emergency and Standby Power Systems; 2018 Edition
IEEE	Institute of Electrical and Electronics Engineers Standard 142; Grounding of Industrial & Commercial Power Systems
ADA	Americans with Disabilities Act
ANSI	American National Standard Institute
IECC	International Energy Conservation Code; 2018 Edition
IESNA	Illumination Engineering Society of North America Handbook – 10th Edition

Electrical Systems

New 15KV main switchgear and generator shall be located at the central plant/garage and shall serve the other buildings via radial feeders as noted above. Estimated capacities for each building are as follows:

- Central Plant/Garage – 2000KVA
- Existing Grant Sawyer Building – 3000KVA
- Building Expansion – 1500KVA
  - Includes Cafeteria/Innovation Center – Will be served from 480V feeder(s) from Building Expansion electrical infrastructure

The existing Grant Sawyer Building normal power electrical service will be protected in place until it can be back-fed from the new 15KV electrical distribution system and the existing generator system will also be protected in place until the reprogramming of the existing building takes place. All electrical systems for the existing Grant Sawyer Building, including the existing generator, will be removed in their entirety for the reprogramming and new electrical distribution systems shall be provided.

The main electrical room for each building will be 1 hour rated, located with exterior access, and will house the main electrical service switchboard.

Grounding

The service shall be provided with a grounding electrode system in accordance with NEC Article 250, NEC Article 517 and IEEE green book. In order to ensure the facility is effectively grounded and bonded throughout, grounding bonds will be configured in star topology. This grounding system, from a power standpoint, will serve primarily as a bonding point for the required safety/equipment grounding for separately derived systems; however, the system is also being designed to serve as an effective performance ground for telecommunications and other building auxiliary systems. Insulated equipment grounding conductors will be provided in all raceways for power systems. A lightning protection system is not anticipated at this point.

Surge Suppression (SPD)

Suppression will be provided at the service entrance equipment for each building to minimize the impact of electrical line disturbances.

Distribution
Site distribution will include 15KV service to each building and, depending on final load calculations, to main electrical rooms within each building. Exterior pad mounted, interior dry-type unit substation and/or step down transformers shall be used for 480Y/277 volt, 3 phase, 4 wire and 208Y/120 volt, 3 phase, 4 wire service.

Lighting, HVAC and other large utilization equipment will be supplied from the 480Y/277 volt distribution system. Large loads will be served from the main switchboard.

Receptacles and other miscellaneous loads shall be served from the 208Y/120 volt, 3 phase, 4 wire service.

All electrical panel boards and step down transformers will be located in designated electrical rooms / closets.

Distribution equipment will be sized for 25% spare capacity. Equipment shall contain a minimum of 10% space for addition of over-current devices.
Transformers shall comply with CSL-3 energy standards.

Building systems, HVAC, power and lighting shall be independently metered, metering shall be connected to the BMCS system. The building service entrance shall be metered independently of the utility. Meters shall be connected to a sitewide metering system.

Feeders
15KV feeders will be concrete encased below grade and installed in galvanized rigid steel conduit (RGS) above grade.

480Y/277 volt and 208Y/120 volt feeders will conform to NEC Article 215. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All feeder conductors will be PVC insulated type THHN/THWN or XHHN. Feeders shall be copper.

Branch Circuits
Branch circuits will conform to NEC Article 210. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All branch circuit conductors will be copper, PVC insulated type THHN/THWN or XHHN. Minimum conductor size shall be #12 AWG. MC, AC, or other cable type wiring systems are not acceptable.

Receptacles
All 20A-125V convenience receptacles will be grounding type mounted in 4-inch square boxes at 18 inches above finish floor. Ground Fault Circuit Interrupter (GFCI) receptacles will be used in locations as required by NEC 210.8(B). Double duplex receptacles will be provided at each office workstation. Convenience receptacles located in corridors and common areas will be spaced at maximum 50’ apart.

General Lighting
Interior lighting will consist primarily of 277V LED fixtures. Fixture types will be coordinated with the individual space requirements to provide the fixture selections that are suitable to the space. Fixture types and proposed lighting layout will be coordinated with the design team prior to commencement of lighting design. Light levels will be per IES recommendations. The lighting power density will be designed to exceed the minimum requirements of IECC by at least 20%.

Space	Type of Fixture	Average Lighting Level
Offices	2x4 Direct/Indirect LED Lay-In	50FC
Meeting Rooms	LED Pendant and Downlights	40FC
Lobby/Waiting	LED Downlights and Pendants	40FC
Restrooms	1x4 LED Flanged Troffer and LED Downlights	30FC
Cafeteria	LED 2X4 Direct/Indirect	50FC

Exterior lighting shall be LED lamp sources. LED lighting will provide quality color rendition from an energy efficient source. Exterior lighting will be controlled by a combination astronomical time clock / photocell and/or building energy management system. Fixture mounted occupancy sensor shall be provided at parking areas and pedestrian walkways for further energy reductions.

Lighting Control
Due to IECC requirements a lighting control system will be provided. Local room controllers will be provided for normally occupied rooms. These local room controllers will integrate with room occupancy / daylight sensors and dimmers. Normally unoccupied rooms will utilize occupancy sensors with local switching.

Lightning Protection
An early streamer emission lightning protection system shall be used.

5. APPENDIX – DRAWINGS

MPE-R2C - Mechanical, Pluming & Electrical Site Plan – Option R2-C
MCUP_R2 - Central Utility Plant – Options R2-A, R2-B, R2-C
MFD_R2 - Mechanical Flow Diagram
MZ_R2 - Mechanical Zoning Diagram - R2 Options
E-R2C - Electrical Single Line Diagram – Option R2-C

END

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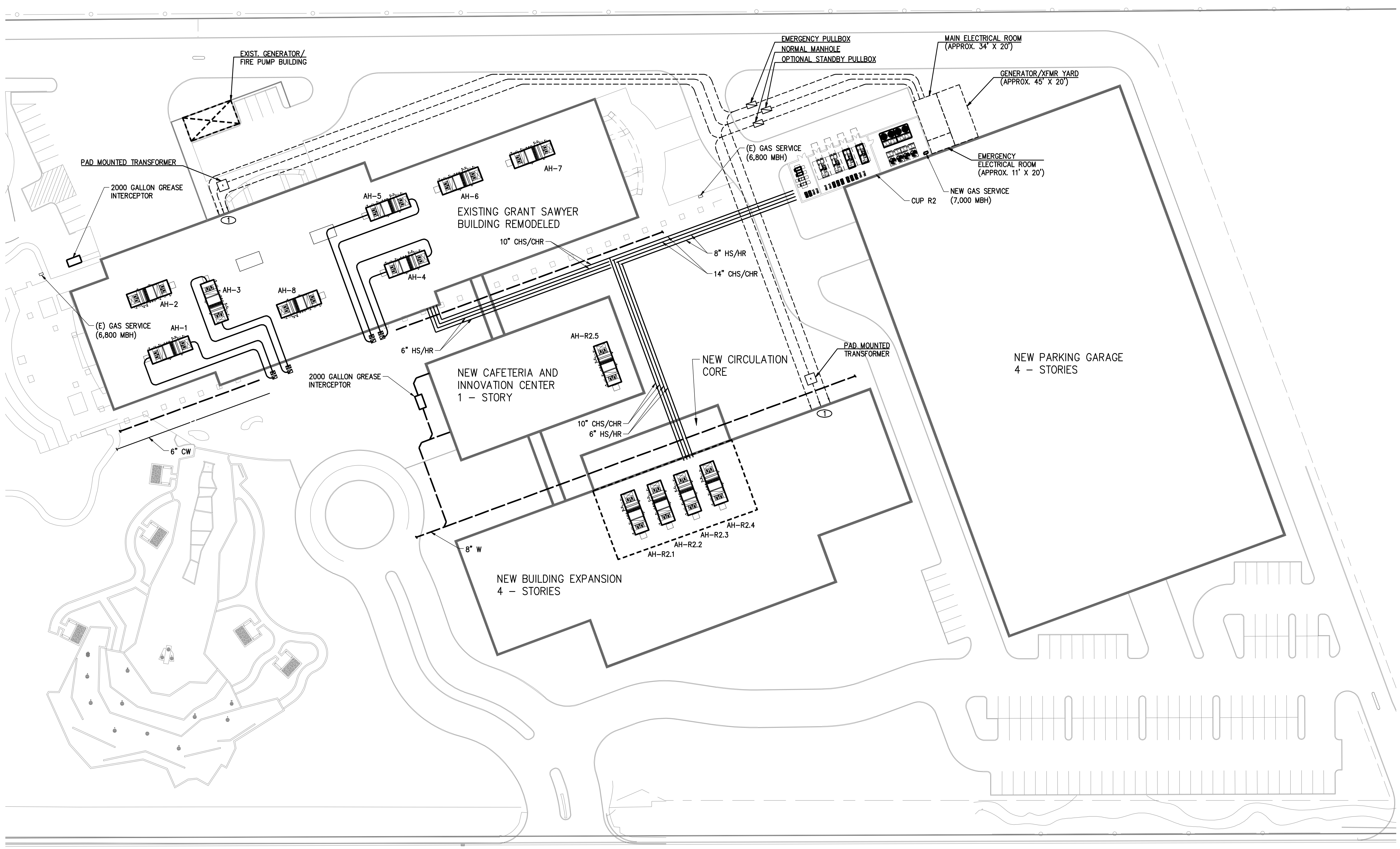
NOTES

1	TO NEW BUILDING ELECTRICAL INFRASTRUCTURE.

AHU ZONING

AHU	ZONE	LEVEL
AH-1	MAIN LOBBY + CAFFE	1
AH-2	OFFICES + ARTRIUM	3, 4
AH-3	GAMING CONTROL BOARD	1, 2
AH-4	GAMING CONTROL BOARD	2
AH-5	TAXATION + HR	1
AH-6	ATTORNEY GENERAL	3
AH-7	LEGISLATIVE COUNCIL BUREAU, ATTORNEY GENERAL	4
AH-8	GOVERNOR'S OFFICE	5



MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R2-C
NO SCALE

1
M3

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DATE BY REVISIONS

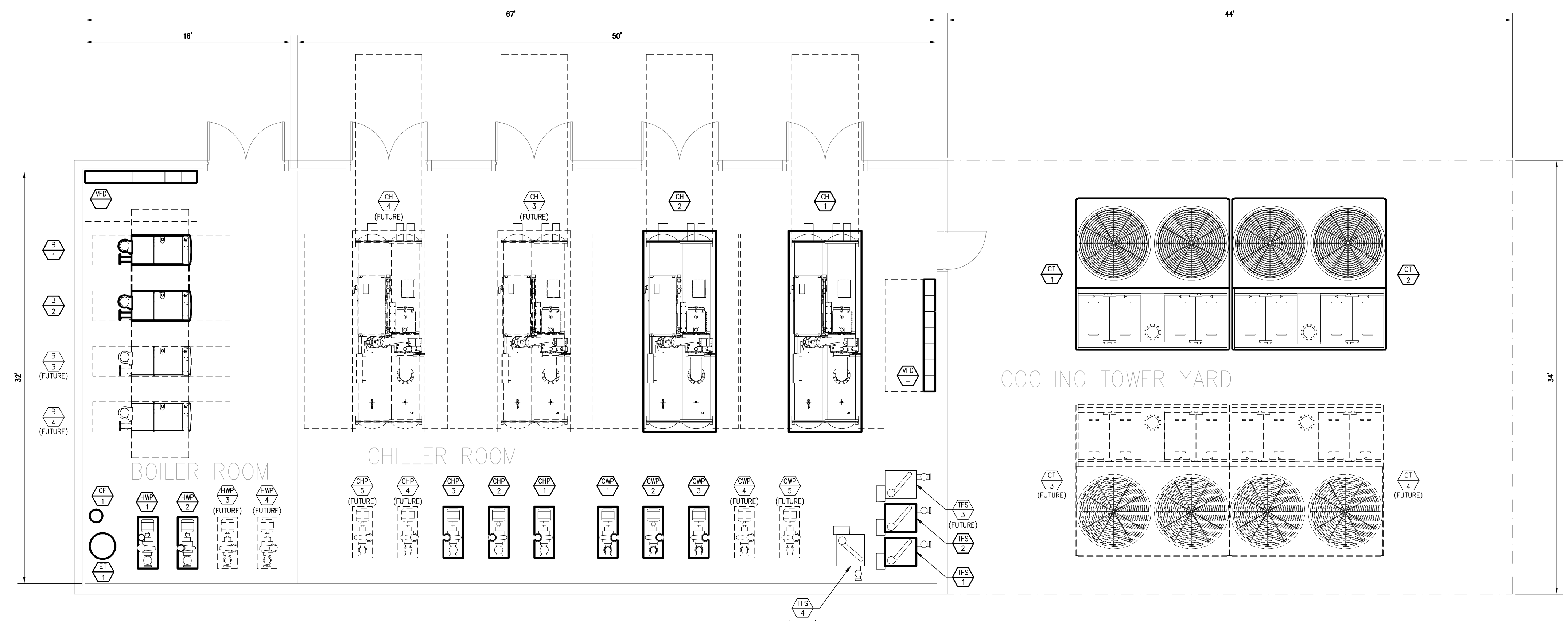
NV5

MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R2-C

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2-C

SHEET NUMBER:
MPE-R2C
SCALE: –
JOB NUMBER: 18.0745



CENTRAL UTILITY PLANT - MECHANICAL R2 DESIGN OPTIONS
NO SCALE

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DATE: -
DATE | BY | REVISIONS

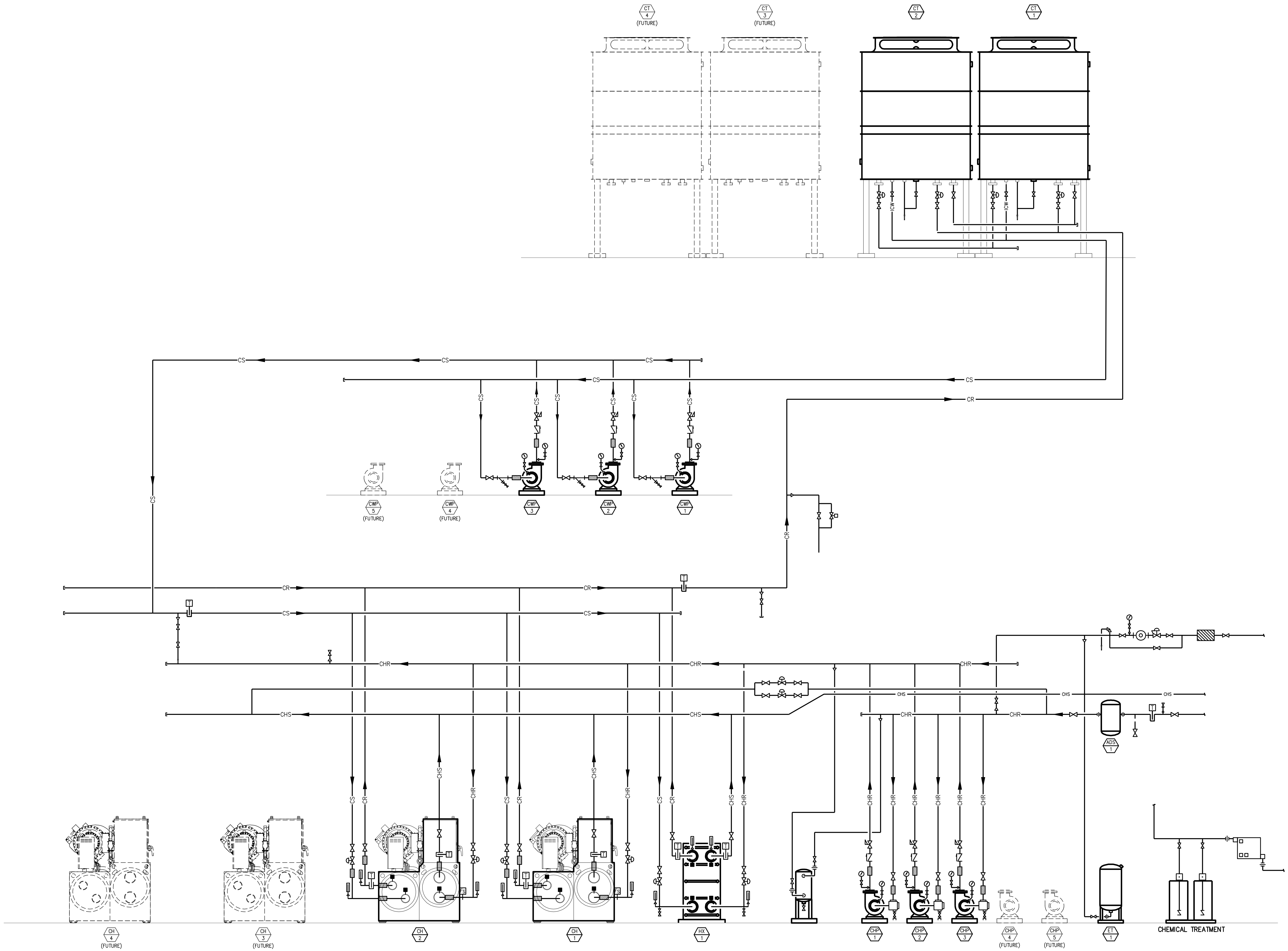
NV5

CENTRAL UTILITY PLANT - MECHANICAL R2 DESIGN OPTIONS

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2

SHEET NUMBER:
MCUP-R2
SCALE: -
JOB NUMBER: 18.0745



CHILLED / CONDENSER WATER FLOW DIAGRAM - R2
NO SCALE

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NV5

MECHANICAL FLOW DIAGRAM

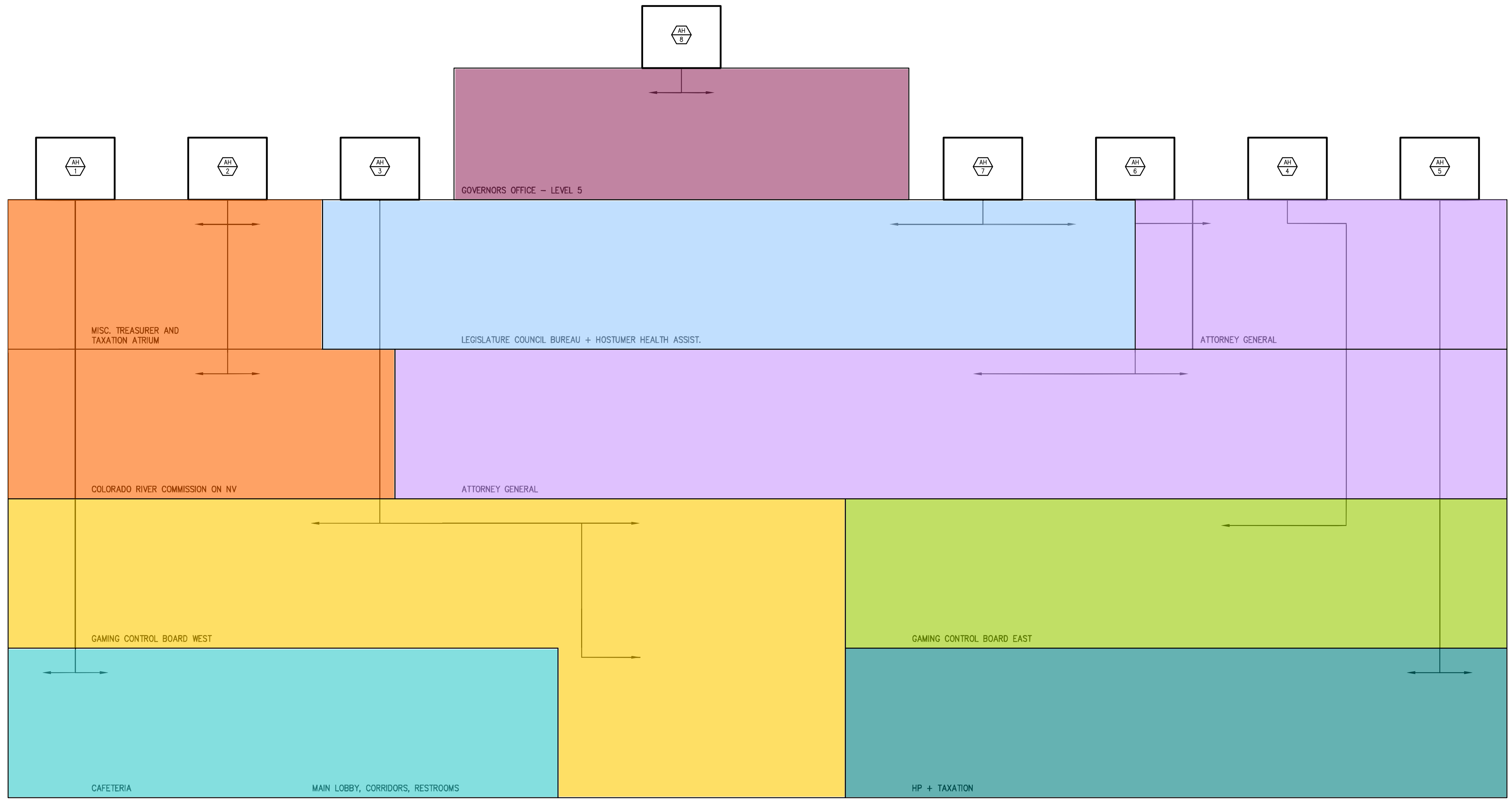
GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2

SHEET NUMBER:
MFD-R2
SCALE: -
JOB NUMBER: 18.0745

NOTICE

1. NEW SHAFTS WILL BE PROVIDED TO FACILITATE THE ROUTING OF SA, RA DUCTS PER NEW HVAC ZONING PLAN.



MECHANICAL ZONING DIAGRAM - R2 OPTIONS
NO SCALE

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M4

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REVISIONS

DATE | BY

NV5

MECHANICAL ZONING DIAGRAM - R2 OPTIONS

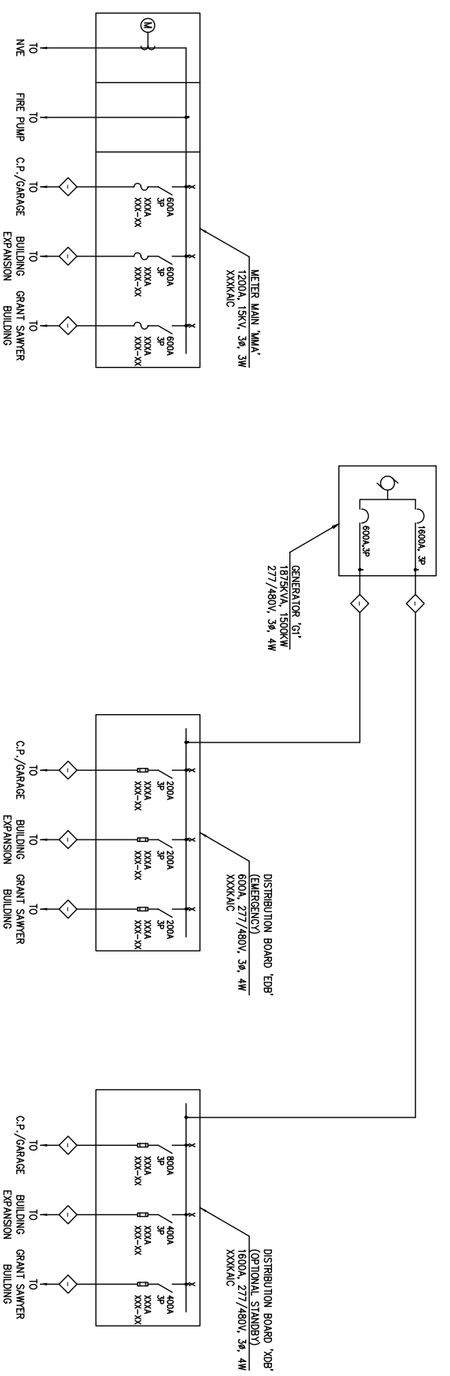
GRANT SAWYER OFFICE BUILDING

REMODEL REPORT

SHEET NUMBER:

MZ-R2

SCALE: –
JOB NUMBER: –



ELECTRICAL SINGLE LINE - OPTION R2-C

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R2-C

SHEET NUMBER: **E-R2C**

SCALE: -

JOB NUMBER: 18.0745

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NV5
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HKA
Elevator Consulting, Inc.

January 02, 2019

Brian Henley
Partner, Architect
KGA ARCHITECTURE
9075 West Diablo Drive, Suite 300
Las Vegas, Nevada 89148

Reference: GRANT SAWYER STATE OFFICE BUILDING R2-C

Dear Brian:

NEW ELEVATOR CORE STUDY AND RESULTS:

Office Passenger Elevator Criteria:

Average Interval: 27-30 Seconds or Less
Estimated Demand: 12.5% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and UP Peak
Population Density: 1200 end of 2040
Density: 80%
Occupancy: 100%

NEW CD STUDY - Office Passenger Elevator Results:

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-A	2 Way	5	4 MRL	200	1200	6.0 / 6.0	25.8	16.8	139 / 13.9	Excellent
R2-A	UP	5	4 MRL	200	1200	8.3	18.8	12.4	135 / 13.5	Excellent
R2-A	2 Way	5	3 MRL	350	1200	7.0 / 7.0	34.1	22.3	123 / 12.3	Fair
R2-B/C	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	33	21.5	67 / 12.0	Good
R2-B/C	UP	4	2 MRL ea.	350	600	7.1	29.8	19.4	71 / 12.5	Excellent
R3-A	2 Way	8	3 MRL ea.	350	600	4.1 / 4.1	29.9	19.4	80 / 14.4	Excellent
R3-A	UP	8	3 MRL ea.	350	600	6.5	24.7	16.0	79 / 14.2	Excellent
R3-A	2 Way	8	2 MRL ea.	350	600	5.3 / 5.3	52.3	34.0	60 / 10.8	Poor
R3-A	UP	8	2 MRL ea.	350	600	11	45.6	29.6	69 / 12.3	Poor
R3-B	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	32.2	20.9	68 / 13.0	Good
R3-B	UP	4	2 MRL ea.	350	600	5.2	23.0	15.0	68 / 13.0	Excellent

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-B/C	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	33	21.5	67 / 12.0	Good
R2-B/C	UP	4	2 MRL ea.	350	600	7.1	29.8	19.4	71 / 12.5	Excellent

- R2-C - Provide 2 new passengers in the central core of each building. Modernize the existing north building service elevator in place. Add 1 new dedicated service elevator 4500# at 200 FPM in new core or near a new loading dock elsewhere in south building. Governor's access can be gained via a card reader. Cost: $2.55M. (same as R2-B)

Parking Garages Passenger Elevator Criteria:

Average Interval: 45-50 Seconds or Less
Estimated Demand: 9-10% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and DN Peak (morning)
Population: 1200 end of 2040
Occupancy: 100%
No People per Car (Avg.) 1.2
Stalls: R2A, R3A: **1057**
Stalls: R2B, R2C, R3B: **1233**
First floor- no users, assume 25% on floor 2 take stairs

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2A, R3A	2 Way	4	2 MRL ea.	200	1268	6.0 / 6.0	40.4	26.3	10.2	Excellent
R2A, R3A	DN	4	2 MRL ea.	200	1268	8.0	26.6	17.3	10.4	Excellent
R2B, R2C, R3B	2 Way	4	2 MRL ea.	200	1480	7.0 / 7.0	43.5	28.3	9.5	Good
R2B, R2C, R3B	DN	4	2 MRL ea.	200	1480	10.0	28.5	18.5	10.3	Excellent

END OF REPORT

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C

Las Vegas

KGA
FEASIBILITY STUDY COST ESTIMATE REVISION3
Job No. 18236.000
16 January 2019

INSIGHT

COST ESTIMATE

INTRODUCTORY NOTES

This estimate is based on verbal direction from the client and the following items, received 20 December 2018

The following items are excluded from this estimate:

- Escalation
- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Furniture, fixtures & equipment, unless noted otherwise.
- Temporary office facilities.
- Moving, storage and installation of owner furnished equipment.
- Relocation of personnel to offsite offices.
- Photovoltaic system.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

Phase I Project Timeline

The midpoint of construction of April 2022 is based on:

- Construction start date of July 2021
- Estimated construction duration of 18 months

Phase II Project Timeline

The midpoint of construction of April 2024 is based on:

- Construction start date of July 2023
- Estimated construction duration of 18 months

Phase III Project Timeline

The midpoint of construction of April 2026 is based on:

- Construction start date of July 2025
- Estimated construction duration of 18 months

- This estimate is based on a CMAR delivery method.
- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$39,958,678	100,000	$399.59
02. CORE ELEVATORS AND CIRCULATION	$8,582,215	29,700	$288.96
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$4,948,052	2,144	$2,307.86
04. PHASE I SITE WORK	$5,725,595	424,189	$13.50

TOTAL CONSTRUCTION COST	$59,214,540

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$2,513,840	129,700	$19.38

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$61,728,380

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$29,735,234	100,000	$297.35
02. CORE ELEVATORS AND CIRCULATION	$6,386,452	29,700	$215.03
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$3,682,091	2,144	$1,717.39
04. PHASE I SITE WORK	$4,260,699	424,189	$10.04

TOTAL NET DIRECT COST	$44,064,476

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$6,609,671
PHASING	1.50%	$760,112
CMAR CONTINGENCY	4.00%	$2,057,370
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,674,581
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,881,568
INSURANCE	1.00%	$580,478
BONDS: CONTRACTOR	1.00%	$586,283

TOTAL CONSTRUCTION COST	$59,214,540

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$150,583	$1.51
02 SUBSTRUCTURE		$355,376	$3.55
03 SUPERSTRUCTURE		$4,810,234	$48.10
04 EXTERIOR CLOSURE		$4,962,924	$49.63
05 ROOFING		$530,053	$5.30
06 INTERIOR CONSTRUCTION		$5,096,273	$50.96
07 CONVEYING			
08 MECHANICAL		$7,209,803	$72.10
09 ELECTRICAL		$5,792,035	$57.92
10 EQUIPMENT		$827,953	$8.28
11 SITEWORK			
NET DIRECT BUILDING COST		$29,735,234	$297.35
DESIGN CONTINGENCY	15.00%	$4,460,285	$44.60
SUBTOTAL		$34,195,519	$341.96
PHASING	1.50%	$512,933	$5.13
SUBTOTAL		$34,708,452	$347.08
CMAR CONTINGENCY	4.00%	$1,388,338	$13.88
SUBTOTAL		$36,096,790	$360.97
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$1,804,839	$18.05
SUBTOTAL		$37,901,629	$379.02
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,269,705	$12.70
SUBTOTAL		$39,171,334	$391.71
INSURANCE	1.00%	$391,713	$3.92
SUBTOTAL		$39,563,047	$395.63
BONDS: CONTRACTOR	1.00%	$395,630	$3.96
TOTAL BUILDING COST		**$39,958,678**	**$399.59**

GROSS FLOOR AREA: 100,000 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C Phase I
BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$150,583		$1.51
011 Standard Foundations	$150,583		$1.51	
012 Special Foundations				
02 SUBSTRUCTURE		$355,376		$3.55
021 Slab On Grade	$355,376		$3.55	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$4,810,234		$48.10
031 Floor and Roof Construction	$4,517,500		$45.18	
032 Stair Construction	$292,734		$2.93	
04 EXTERIOR CLOSURE		$4,962,924		$49.63
041 Exterior Walls	$1,275,680		$12.76	
042 Exterior Doors/Windows	$3,687,244		$36.87	
05 ROOFING		$530,053		$5.30
051 Roofing	$530,053		$5.30	
06 INTERIOR CONSTRUCTION		$5,096,273		$50.96
061 Partitions	$1,325,133		$13.25	
062 Interior Finishes	$2,426,733		$24.27	
063 Specialties	$380,674		$3.81	
064 Interior Doors/Windows	$963,733		$9.64	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$7,209,803		$72.10
081 Plumbing	$1,205,810		$12.06	
082 H.V.A.C.	$5,299,263		$52.99	
083 Fire Protection	$704,730		$7.05	
084 Special Mechanical				
09 ELECTRICAL		$5,792,035		$57.92
091 Standard Electrical	$5,029,481		$50.29	
092 Special Electrical	$762,554		$7.63	
10 EQUIPMENT		$827,953		$8.28
101 Fixed/Movable Equipment	$66,257		$0.66	
102 Furnishings	$761,696		$7.62	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$29,735,234**		**$297.35**	

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$44,723	$1.51
02 SUBSTRUCTURE		$105,547	$3.55
03 SUPERSTRUCTURE		$1,064,640	$35.85
04 EXTERIOR CLOSURE		$1,579,402	$53.18
05 ROOFING		$157,426	$5.30
06 INTERIOR CONSTRUCTION		$1,204,477	$40.55
07 CONVEYING		$895,670	$30.16
08 MECHANICAL		$590,589	$19.89
09 ELECTRICAL		$549,593	$18.50
10 EQUIPMENT		$194,385	$6.54
11 SITEWORK			
NET DIRECT BUILDING COST		$6,386,452	$215.03
DESIGN CONTINGENCY	15.00%	$957,968	$32.25
SUBTOTAL		$7,344,420	$247.29
PHASING	1.50%	$110,166	$3.71
SUBTOTAL		$7,454,586	$251.00
CMAR CONTINGENCY	4.00%	$298,183	$10.04
SUBTOTAL		$7,752,770	$261.04
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$387,638	$13.05
SUBTOTAL		$8,140,408	$274.09
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$272,704	$9.18
SUBTOTAL		$8,413,112	$283.27
INSURANCE	1.00%	$84,131	$2.83
SUBTOTAL		$8,497,243	$286.10
BONDS: CONTRACTOR	1.00%	$84,972	$2.86
TOTAL BUILDING COST		**$8,582,215**	**$288.96**

GROSS FLOOR AREA: 29,700 SF

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$44,723		$1.51
011 Standard Foundations	$44,723		$1.51	
012 Special Foundations				
02 SUBSTRUCTURE		$105,547		$3.55
021 Slab On Grade	$105,547		$3.55	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$1,064,640		$35.85
031 Floor and Roof Construction	$952,606		$32.07	
032 Stair Construction	$112,034		$3.77	
04 EXTERIOR CLOSURE		$1,579,402		$53.18
041 Exterior Walls	$345,823		$11.64	
042 Exterior Doors/Windows	$1,233,579		$41.53	
05 ROOFING		$157,426		$5.30
051 Roofing	$157,426		$5.30	
06 INTERIOR CONSTRUCTION		$1,204,477		$40.55
061 Partitions	$250,450		$8.43	
062 Interior Finishes	$701,773		$23.63	
063 Specialties	$162,807		$5.48	
064 Interior Doors/Windows	$89,447		$3.01	
07 CONVEYING		$895,670		$30.16
071 Elevators	$895,670		$30.16	
08 MECHANICAL		$590,589		$19.89
081 Plumbing	$286,109		$9.63	
082 H.V.A.C.	$197,144		$6.64	
083 Fire Protection	$107,336		$3.61	
084 Special Mechanical				
09 ELECTRICAL		$549,593		$18.50
091 Standard Electrical	$486,950		$16.40	
092 Special Electrical	$62,643		$2.11	
10 EQUIPMENT		$194,385		$6.54
101 Fixed/Movable Equipment	$12,047		$0.41	
102 Furnishings	$182,338		$6.14	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$6,386,452**		**$215.03**	

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$10,720	$5.00
02 SUBSTRUCTURE		$25,299	$11.80
03 SUPERSTRUCTURE		$92,981	$43.37
04 EXTERIOR CLOSURE		$252,747	$117.89
05 ROOFING		$45,457	$21.20
06 INTERIOR CONSTRUCTION		$101,217	$47.21
07 CONVEYING			
08 MECHANICAL		$2,807,593	$1,309.51
09 ELECTRICAL		$346,077	$161.42
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT BUILDING COST		$3,682,091	$1,717.39
DESIGN CONTINGENCY	15.00%	$552,314	$257.61
SUBTOTAL		$4,234,405	$1,975.00
PHASING	1.50%	$63,516	$29.63
SUBTOTAL		$4,297,921	$2,004.63
CMAR CONTINGENCY	4.00%	$171,917	$80.19
SUBTOTAL		$4,469,838	$2,084.81
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$223,492	$104.24
SUBTOTAL		$4,693,329	$2,189.05
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$157,227	$73.33
SUBTOTAL		$4,850,556	$2,262.39
INSURANCE	1.00%	$48,506	$22.62
SUBTOTAL		$4,899,062	$2,285.01
BONDS: CONTRACTOR	1.00%	$48,991	$22.85
TOTAL BUILDING COST		**$4,948,052**	**$2,307.86**

GROSS FLOOR AREA: 2,144 SF

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$10,720		$5.00
011 Standard Foundations	$10,720		$5.00	
012 Special Foundations				
02 SUBSTRUCTURE		$25,299		$11.80
021 Slab On Grade	$25,299		$11.80	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$92,981		$43.37
031 Floor and Roof Construction	$92,981		$43.37	
032 Stair Construction				
04 EXTERIOR CLOSURE		$252,747		$117.89
041 Exterior Walls	$186,922		$87.18	
042 Exterior Doors/Windows	$65,825		$30.70	
05 ROOFING		$45,457		$21.20
051 Roofing	$45,457		$21.20	
06 INTERIOR CONSTRUCTION		$101,217		$47.21
061 Partitions	$25,828		$12.05	
062 Interior Finishes	$38,337		$17.88	
063 Specialties	$28,012		$13.07	
064 Interior Doors/Windows	$9,040		$4.22	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$2,807,593		$1,309.51
081 Plumbing	$36,140		$16.86	
082 H.V.A.C.	$2,753,373		$1,284.22	
083 Fire Protection	$18,080		$8.43	
084 Special Mechanical				
09 ELECTRICAL		$346,077		$161.42
091 Standard Electrical	$309,937		$144.56	
092 Special Electrical	$36,140		$16.86	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$3,682,091**		**$1,717.39**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$4,260,699	$10.04
NET DIRECT SITE COST		$4,260,699	$10.04
DESIGN CONTINGENCY	15.00%	$639,105	$1.51
SUBTOTAL		$4,899,804	$11.55
PHASING	1.50%	$73,497	$0.17
SUBTOTAL		$4,973,301	$11.72
CMAR CONTINGENCY	4.00%	$198,932	$0.47
SUBTOTAL		$5,172,233	$12.19
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$258,612	$0.61
SUBTOTAL		$5,430,845	$12.80
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$181,933	$0.43
SUBTOTAL		$5,612,778	$13.23
INSURANCE	1.00%	$56,128	$0.13
SUBTOTAL		$5,668,906	$13.36
BONDS: CONTRACTOR	1.00%	$56,689	$0.13
TOTAL SITE COST		**$5,725,595**	**$13.50**

TOTAL SITE AREA: 424,189 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C Phase I
PHASE I SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$4,260,699		$10.04
111 Site Preparation	$1,259,532		$2.97	
112 Site Improvements	$1,530,219		$3.61	
113 Site Utilities	$1,470,948		$3.47	
114 Off-Site Work				
NET DIRECT SITE COST		**$4,260,699**		**$10.04**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING EXTENSION	$33,418,266	80,000	$417.73
02. INTERACTIVE COMMONS	$8,466,728	12,000	$705.56
03. PARKING GARAGE	$15,046,286	187,200	$80.38
04. PHASE II SITE WORK	$4,627,740	193,827	$23.88

TOTAL CONSTRUCTION COST	$61,559,020

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$1,550,557	80,000	$19.38

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$63,109,577

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING EXTENSION	$24,868,189	80,000	$310.85
02. INTERACTIVE COMMONS	$6,300,512	12,000	$525.04
03. PARKING GARAGE	$11,196,688	187,200	$59.81
04. PHASE II SITE WORK	$3,443,731	193,827	$17.77

TOTAL NET DIRECT COST	$45,809,120

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$6,871,368
PHASING	1.50%	$790,207
CMAR CONTINGENCY	4.00%	$2,138,828
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,780,476
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,956,065
INSURANCE	1.00%	$603,461
BONDS: CONTRACTOR	1.00%	$609,495

TOTAL CONSTRUCTION COST	$61,559,020

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$125,285	$1.57
02 SUBSTRUCTURE		$295,674	$3.70
03 SUPERSTRUCTURE		$4,034,107	$50.43
04 EXTERIOR CLOSURE		$4,592,836	$57.41
05 ROOFING		$441,004	$5.51
06 INTERIOR CONSTRUCTION		$4,016,787	$50.21
07 CONVEYING			
08 MECHANICAL		$5,825,826	$72.82
09 ELECTRICAL		$4,647,607	$58.10
10 EQUIPMENT		$723,107	$9.04
11 SITEWORK		$165,956	$2.07
NET DIRECT BUILDING COST		$24,868,189	$310.85
DESIGN CONTINGENCY	15.00%	$3,730,228	$46.63
SUBTOTAL		$28,598,417	$357.48
PHASING	1.50%	$428,976	$5.36
SUBTOTAL		$29,027,394	$362.84
CMAR CONTINGENCY	4.00%	$1,161,096	$14.51
SUBTOTAL		$30,188,489	$377.36
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$1,509,424	$18.87
SUBTOTAL		$31,697,914	$396.22
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,061,880	$13.27
SUBTOTAL		$32,759,794	$409.50
INSURANCE	1.00%	$327,598	$4.09
SUBTOTAL		$33,087,392	$413.59
BONDS: CONTRACTOR	1.00%	$330,874	$4.14
TOTAL BUILDING COST		**$33,418,266**	**$417.73**

GROSS FLOOR AREA: 80,000 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C Phase II
BUILDING EXTENSION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$125,285		$1.57
011 Standard Foundations	$125,285		$1.57	
012 Special Foundations				
02 SUBSTRUCTURE		$295,674		$3.70
021 Slab On Grade	$295,674		$3.70	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$4,034,107		$50.43
031 Floor and Roof Construction	$3,741,373		$46.77	
032 Stair Construction	$292,734		$3.66	
04 EXTERIOR CLOSURE		$4,592,836		$57.41
041 Exterior Walls	$1,211,289		$15.14	
042 Exterior Doors/Windows	$3,381,547		$42.27	
05 ROOFING		$441,004		$5.51
051 Roofing	$441,004		$5.51	
06 INTERIOR CONSTRUCTION		$4,016,787		$50.21
061 Partitions	$1,060,107		$13.25	
062 Interior Finishes	$1,941,386		$24.27	
063 Specialties	$244,307		$3.05	
064 Interior Doors/Windows	$770,987		$9.64	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$5,825,826		$72.82
081 Plumbing	$934,761		$11.68	
082 H.V.A.C.	$4,294,755		$53.68	
083 Fire Protection	$596,310		$7.45	
084 Special Mechanical				
09 ELECTRICAL		$4,647,607		$58.10
091 Standard Electrical	$4,033,227		$50.42	
092 Special Electrical	$614,380		$7.68	
10 EQUIPMENT		$723,107		$9.04
101 Fixed/Movable Equipment	$66,257		$0.83	
102 Furnishings	$656,850		$8.21	
103 Special Construction				
11 SITEWORK		$165,956		$2.07
111 Site Preparation	$165,956		$2.07	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$24,868,189**			**$310.85**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$72,280	$6.02
02 SUBSTRUCTURE		$170,581	$14.22
03 SUPERSTRUCTURE		$542,100	$45.18
04 EXTERIOR CLOSURE		$970,341	$80.86
05 ROOFING		$295,982	$24.67
06 INTERIOR CONSTRUCTION		$603,453	$50.29
07 CONVEYING			
08 MECHANICAL		$944,791	$78.73
09 ELECTRICAL		$778,576	$64.88
10 EQUIPMENT		$1,922,408	$160.20
11 SITEWORK			
NET DIRECT BUILDING COST		$6,300,512	$525.04
DESIGN CONTINGENCY	15.00%	$945,077	$78.76
SUBTOTAL		$7,245,589	$603.80
PHASING	1.50%	$108,684	$9.06
SUBTOTAL		$7,354,273	$612.86
CMAR CONTINGENCY	4.00%	$294,171	$24.51
SUBTOTAL		$7,648,444	$637.37
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$382,422	$31.87
SUBTOTAL		$8,030,866	$669.24
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$269,034	$22.42
SUBTOTAL		$8,299,900	$691.66
INSURANCE	1.00%	$82,999	$6.92
SUBTOTAL		$8,382,899	$698.57
BONDS: CONTRACTOR	1.00%	$83,829	$6.99
TOTAL BUILDING COST		**$8,466,728**	**$705.56**

GROSS FLOOR AREA: 12,000 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C Phase II
INTERACTIVE COMMONS
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$72,280		$6.02
011 Standard Foundations	$72,280		$6.02	
012 Special Foundations				
02 SUBSTRUCTURE		$170,581		$14.22
021 Slab On Grade	$170,581		$14.22	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$542,100		$45.18
031 Floor and Roof Construction	$542,100		$45.18	
032 Stair Construction				
04 EXTERIOR CLOSURE		$970,341		$80.86
041 Exterior Walls	$185,862		$15.49	
042 Exterior Doors/Windows	$784,479		$65.37	
05 ROOFING		$295,982		$24.67
051 Roofing	$295,982		$24.67	
06 INTERIOR CONSTRUCTION		$603,453		$50.29
061 Partitions	$159,016		$13.25	
062 Interior Finishes	$275,881		$22.99	
063 Specialties	$52,908		$4.41	
064 Interior Doors/Windows	$115,648		$9.64	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$944,791		$78.73
081 Plumbing	$308,274		$25.69	
082 H.V.A.C.	$543,155		$45.26	
083 Fire Protection	$93,362		$7.78	
084 Special Mechanical				
09 ELECTRICAL		$778,576		$64.88
091 Standard Electrical	$597,153		$49.76	
092 Special Electrical	$181,423		$15.12	
10 EQUIPMENT		$1,922,408		$160.20
101 Fixed/Movable Equipment	$1,758,814		$146.57	
102 Furnishings	$163,594		$13.63	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$6,300,512**		**$525.04**	

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$234,000	$1.25
02 SUBSTRUCTURE		$552,240	$2.95
03 SUPERSTRUCTURE		$8,424,000	$45.00
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING		$250,000	$1.34
08 MECHANICAL		$676,313	$3.61
09 ELECTRICAL		$1,060,135	$5.66
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT SITE COST		$11,196,688	$59.81
DESIGN CONTINGENCY	15.00%	$1,679,503	$8.97
SUBTOTAL		$12,876,191	$68.78
PHASING	1.50%	$193,143	$1.03
SUBTOTAL		$13,069,334	$69.81
CMAR CONTINGENCY	4.00%	$522,773	$2.79
SUBTOTAL		$13,592,107	$72.61
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$679,605	$3.63
SUBTOTAL		$14,271,713	$76.24
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$478,102	$2.55
SUBTOTAL		$14,749,815	$78.79
INSURANCE	1.00%	$147,498	$0.79
SUBTOTAL		$14,897,313	$79.58
BONDS: CONTRACTOR	1.00%	$148,973	$0.80
TOTAL SITE COST		**$15,046,286**	**$80.38**

TOTAL SITE AREA: 187,200 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C Phase II
PARKING GARAGE
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$1.25
011 Standard Foundations	$234,000		$1.25	
012 Special Foundations				
02 SUBSTRUCTURE		$552,240		$2.95
021 Slab On Grade	$552,240		$2.95	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$8,424,000		$45.00
031 Floor and Roof Construction	$8,424,000		$45.00	
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING		$250,000		$1.34
071 Elevators	$250,000		$1.34	
08 MECHANICAL		$676,313		$3.61
081 Plumbing	$251,547		$1.34	
082 H.V.A.C.	$30,117		$0.16	
083 Fire Protection	$394,649		$2.11	
084 Special Mechanical				
09 ELECTRICAL		$1,060,135		$5.66
091 Standard Electrical	$891,000		$4.76	
092 Special Electrical	$169,135		$0.90	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST	**$11,196,688**			**$59.81**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$3,443,731	$17.77
NET DIRECT SITE COST		$3,443,731	$17.77
DESIGN CONTINGENCY	15.00%	$516,560	$2.67
SUBTOTAL		$3,960,291	$20.43
PHASING	1.50%	$59,404	$0.31
SUBTOTAL		$4,019,695	$20.74
CMAR CONTINGENCY	4.00%	$160,788	$0.83
SUBTOTAL		$4,180,483	$21.57
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$209,024	$1.08
SUBTOTAL		$4,389,507	$22.65
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$147,048	$0.76
SUBTOTAL		$4,536,555	$23.41
INSURANCE	1.00%	$45,366	$0.23
SUBTOTAL		$4,581,921	$23.64
BONDS: CONTRACTOR	1.00%	$45,819	$0.24
TOTAL SITE COST		**$4,627,740**	**$23.88**

TOTAL SITE AREA: 193,827 SF

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$3,443,731		$17.77
111 Site Preparation	$1,215,135		$6.27	
112 Site Improvements	$933,816		$4.82	
113 Site Utilities	$1,294,780		$6.68	
114 Off-Site Work				
NET DIRECT SITE COST		**$3,443,731**		**$17.77**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. REPROGRAM EXISTING GRANT SAWYER BUILDING	$47,823,555	236,981	$201.80
02. CORE ELEVATORS AND CIRCULATION	$10,072,051	37,125	$271.30
03. PARKING GARAGE EXTENSION	$15,622,016	187,200	$83.45
04. PHASE III SITE WORK	$3,658,701	205,147	$17.83

TOTAL CONSTRUCTION COST	$77,176,324

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$5,312,711	274,106	$19.38

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$82,489,035

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. REPROGRAM EXISTING GRANT SAWYER BUILDING	$35,587,879	236,981	$150.17
02. CORE ELEVATORS AND CIRCULATION	$7,495,113	37,125	$201.89
03. PARKING GARAGE EXTENSION	$11,625,117	187,200	$62.10
04. PHASE III SITE WORK	$2,722,621	205,147	$13.27

TOTAL NET DIRECT COST	$57,430,730

GENERAL MARKUPS - BASE BID		
DESIGN CONTINGENCY	15.00%	$8,614,610
PHASING	1.50%	$990,680
CMAR CONTINGENCY	4.00%	$2,681,441
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$3,485,873
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$2,452,312
INSURANCE	1.00%	$756,556
BONDS: CONTRACTOR	1.00%	$764,122

TOTAL CONSTRUCTION COST	$77,176,324

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE		$58,352	$0.25
03 SUPERSTRUCTURE		$316,577	$1.34
04 EXTERIOR CLOSURE		$124,058	$0.52
05 ROOFING		$642,446	$2.71
06 INTERIOR CONSTRUCTION		$10,042,152	$42.38
07 CONVEYING		$60,187	$0.25
08 MECHANICAL		$14,650,673	$61.82
09 ELECTRICAL		$6,432,657	$27.14
10 EQUIPMENT		$1,617,147	$6.82
11 SITEWORK		$1,643,630	$6.94
NET DIRECT BUILDING COST		$35,587,879	$150.17
DESIGN CONTINGENCY	15.00%	$5,338,182	$22.53
SUBTOTAL		$40,926,061	$172.70
PHASING	1.50%	$613,891	$2.59
SUBTOTAL		$41,539,952	$175.29
CMAR CONTINGENCY	4.00%	$1,661,598	$7.01
SUBTOTAL		$43,201,550	$182.30
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$2,160,077	$9.11
SUBTOTAL		$45,361,627	$191.41
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$1,519,615	$6.41
SUBTOTAL		$46,881,242	$197.83
INSURANCE	1.00%	$468,812	$1.98
SUBTOTAL		$47,350,054	$199.81
BONDS: CONTRACTOR	1.00%	$473,501	$2.00
TOTAL BUILDING COST		**$47,823,555**	**$201.80**

GROSS FLOOR AREA: 236,981 SF

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE		$58,352		$0.25
021 Slab On Grade	$58,352		$0.25	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$316,577		$1.34
031 Floor and Roof Construction	$316,577		$1.34	
032 Stair Construction				
04 EXTERIOR CLOSURE		$124,058		$0.52
041 Exterior Walls	$124,058		$0.52	
042 Exterior Doors/Windows				
05 ROOFING		$642,446		$2.71
051 Roofing	$642,446		$2.71	
06 INTERIOR CONSTRUCTION		$10,042,152		$42.38
061 Partitions	$2,196,517		$9.27	
062 Interior Finishes	$5,320,140		$22.45	
063 Specialties	$928,028		$3.92	
064 Interior Doors/Windows	$1,597,467		$6.74	
07 CONVEYING		$60,187		$0.25
071 Elevators	$60,187		$0.25	
08 MECHANICAL		$14,650,673		$61.82
081 Plumbing	$879,115		$3.71	
082 H.V.A.C.	$13,540,496		$57.14	
083 Fire Protection	$231,062		$0.98	
084 Special Mechanical				
09 ELECTRICAL		$6,432,657		$27.14
091 Standard Electrical	$5,990,501		$25.28	
092 Special Electrical	$442,156		$1.87	
10 EQUIPMENT		$1,617,147		$6.82
101 Fixed/Movable Equipment	$424,316		$1.79	
102 Furnishings	$1,192,831		$5.03	
103 Special Construction				
11 SITEWORK		$1,643,630		$6.94
111 Site Preparation	$1,643,630		$6.94	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$35,587,879**			**$150.17**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$44,723	$1.20
02 SUBSTRUCTURE		$105,547	$2.84
03 SUPERSTRUCTURE		$1,356,907	$36.55
04 EXTERIOR CLOSURE		$2,042,267	$55.01
05 ROOFING		$157,426	$4.24
06 INTERIOR CONSTRUCTION		$1,440,545	$38.80
07 CONVEYING		$689,371	$18.57
08 MECHANICAL		$723,930	$19.50
09 ELECTRICAL		$662,297	$17.84
10 EQUIPMENT		$272,100	$7.33
11 SITEWORK			
NET DIRECT BUILDING COST		$7,495,113	$201.89
DESIGN CONTINGENCY	15.00%	$1,124,267	$30.28
SUBTOTAL		$8,619,380	$232.17
PHASING	1.50%	$129,291	$3.48
SUBTOTAL		$8,748,671	$235.65
CMAR CONTINGENCY	4.00%	$349,947	$9.43
SUBTOTAL		$9,098,617	$245.08
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$454,931	$12.25
SUBTOTAL		$9,553,548	$257.33
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$320,044	$8.62
SUBTOTAL		$9,873,592	$265.96
INSURANCE	1.00%	$98,736	$2.66
SUBTOTAL		$9,972,328	$268.61
BONDS: CONTRACTOR	1.00%	$99,723	$2.69
TOTAL BUILDING COST		**$10,072,051**	**$271.30**

GROSS FLOOR AREA: 37,125 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C Phase III
CORE ELEVATORS AND CIRCULATION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$44,723		$1.20
011 Standard Foundations	$44,723		$1.20	
012 Special Foundations				
02 SUBSTRUCTURE		$105,547		$2.84
021 Slab On Grade	$105,547		$2.84	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$1,356,907		$36.55
031 Floor and Roof Construction	$1,207,528		$32.53	
032 Stair Construction	$149,379		$4.02	
04 EXTERIOR CLOSURE		$2,042,267		$55.01
041 Exterior Walls	$432,447		$11.65	
042 Exterior Doors/Windows	$1,609,820		$43.36	
05 ROOFING		$157,426		$4.24
051 Roofing	$157,426		$4.24	
06 INTERIOR CONSTRUCTION		$1,440,545		$38.80
061 Partitions	$313,063		$8.43	
062 Interior Finishes	$877,217		$23.63	
063 Specialties	$138,457		$3.73	
064 Interior Doors/Windows	$111,808		$3.01	
07 CONVEYING		$689,371		$18.57
071 Elevators	$689,371		$18.57	
08 MECHANICAL		$723,930		$19.50
081 Plumbing	$352,365		$9.49	
082 H.V.A.C.	$237,395		$6.39	
083 Fire Protection	$134,170		$3.61	
084 Special Mechanical				
09 ELECTRICAL		$662,297		$17.84
091 Standard Electrical	$599,654		$16.15	
092 Special Electrical	$62,643		$1.69	
10 EQUIPMENT		$272,100		$7.33
101 Fixed/Movable Equipment	$12,047		$0.32	
102 Furnishings	$260,053		$7.00	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$7,495,113**		**$201.89**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$234,000	$1.25
02 SUBSTRUCTURE		$552,240	$2.95
03 SUPERSTRUCTURE		$8,603,495	$45.96
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING		$250,000	$1.34
08 MECHANICAL		$676,313	$3.61
09 ELECTRICAL		$1,060,135	$5.66
10 EQUIPMENT			
11 SITEWORK		$248,934	$1.33
NET DIRECT SITE COST		$11,625,117	$62.10
DESIGN CONTINGENCY	15.00%	$1,743,768	$9.31
SUBTOTAL		$13,368,885	$71.41
PHASING	1.50%	$200,533	$1.07
SUBTOTAL		$13,569,418	$72.49
CMAR CONTINGENCY	4.00%	$542,777	$2.90
SUBTOTAL		$14,112,195	$75.39
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$705,610	$3.77
SUBTOTAL		$14,817,804	$79.15
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$496,396	$2.65
SUBTOTAL		$15,314,201	$81.81
INSURANCE	1.00%	$153,142	$0.82
SUBTOTAL		$15,467,343	$82.62
BONDS: CONTRACTOR	1.00%	$154,673	$0.83
TOTAL SITE COST		**$15,622,016**	**$83.45**

TOTAL SITE AREA: 187,200 SF

NSPWD Grant Sawyer Office Building Reprogramming Concept R2-C Phase III
PARKING GARAGE EXTENSION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$1.25
011 Standard Foundations	$234,000		$1.25	
012 Special Foundations				
02 SUBSTRUCTURE		$552,240		$2.95
021 Slab On Grade	$552,240		$2.95	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$8,603,495		$45.96
031 Floor and Roof Construction	$8,603,495		$45.96	
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING		$250,000		$1.34
071 Elevators	$250,000		$1.34	
08 MECHANICAL		$676,313		$3.61
081 Plumbing	$251,547		$1.34	
082 H.V.A.C.	$30,117		$0.16	
083 Fire Protection	$394,649		$2.11	
084 Special Mechanical				
09 ELECTRICAL		$1,060,135		$5.66
091 Standard Electrical	$891,000		$4.76	
092 Special Electrical	$169,135		$0.90	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$248,934		$1.33
111 Site Preparation	$248,934		$1.33	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST		**$11,625,117**		**$62.10**

FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$2,722,621	$13.27
NET DIRECT SITE COST		$2,722,621	$13.27
DESIGN CONTINGENCY	15.00%	$408,393	$1.99
SUBTOTAL		$3,131,014	$15.26
PHASING	1.50%	$46,965	$0.23
SUBTOTAL		$3,177,979	$15.49
CMAR CONTINGENCY	4.00%	$127,119	$0.62
SUBTOTAL		$3,305,099	$16.11
GENERAL CONDITIONS/REQUIREMENTS	5.00%	$165,255	$0.81
SUBTOTAL		$3,470,353	$16.92
CONTRACTOR OVERHEAD AND PROFIT	3.35%	$116,257	$0.57
SUBTOTAL		$3,586,610	$17.48
INSURANCE	1.00%	$35,866	$0.17
SUBTOTAL		$3,622,476	$17.66
BONDS: CONTRACTOR	1.00%	$36,225	$0.18
TOTAL SITE COST		**$3,658,701**	**$17.83**

TOTAL SITE AREA: 205,147 SF

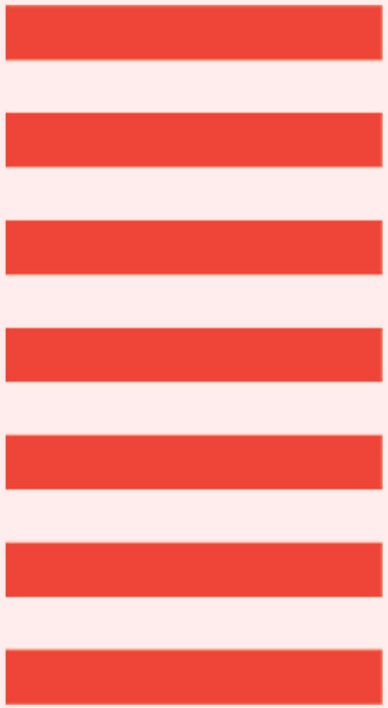
FEASIBILITY STUDY COST ESTIMATE REVISION3

OCMI JOB #: 18236.000 | 16 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$2,722,621		$13.27
111 Site Preparation	$1,081,423		$5.27	
112 Site Improvements	$1,227,376		$5.98	
113 Site Utilities	$413,822		$2.02	
114 Off-Site Work				
NET DIRECT SITE COST		**$2,722,621**		**$13.27**

Replacement | Concept R3-A

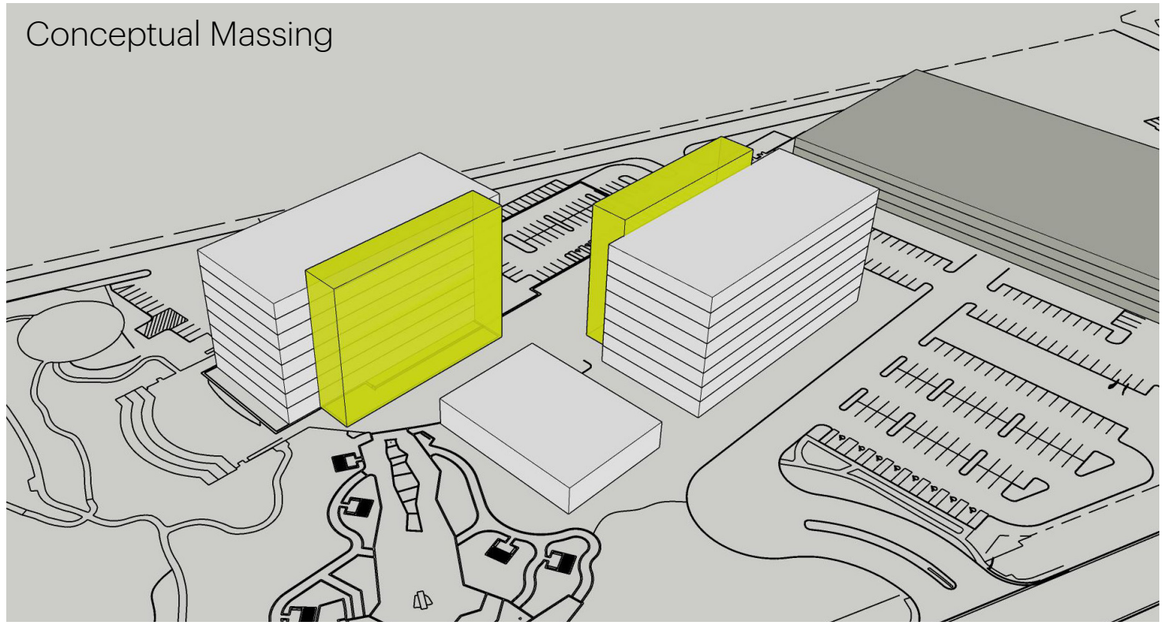


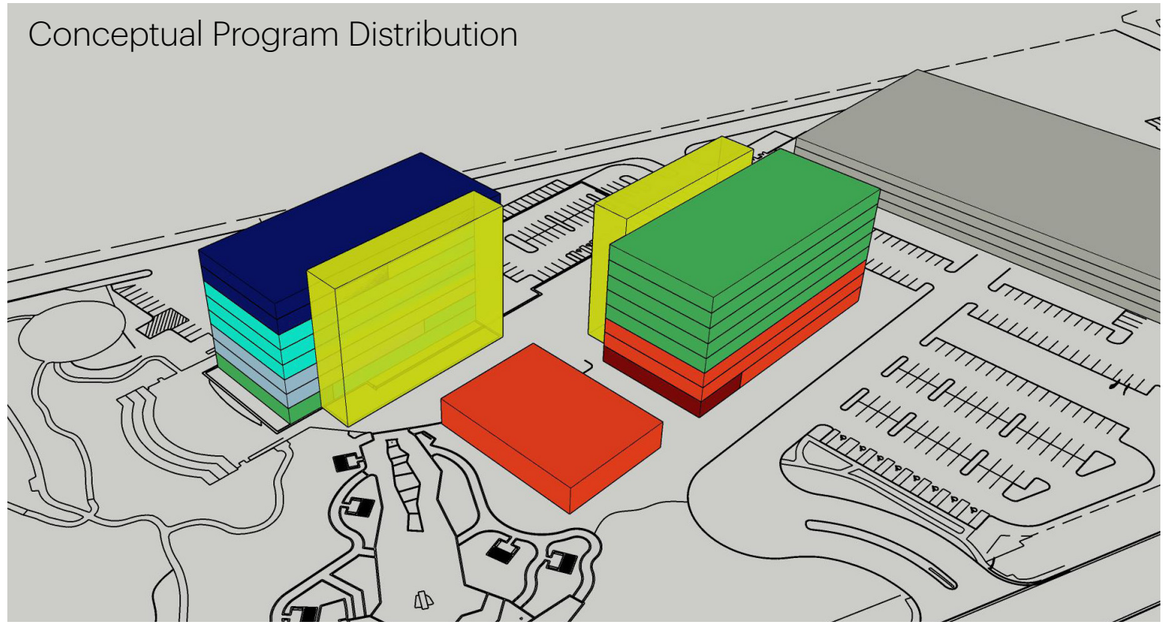
kga

Replacement | Concept R3-A

A New Phased Campus

Concept R3-A represents a complete replacement of the existing Grant Sawyer facility with a new campus. This campus conversion would occur in two major phases of construction. In the initial phase, all new structures which do not fall within the existing building footprint would be constructed, allowing existing Grant Sawyer occupants to remain in place during construction and then transfer to the new construction upon its completion. First phase construction includes an eight-level, approximately 200,000 sq.ft. office tower, an independent Innovation Center and cafeteria, and a multi-level parking garage. The second phase, to be built in place of the existing building upon its demolition, consists of a second eight-level office tower. This concept considers the possibility of taller construction than the other options in this study, allowing more surface parking in the short term and more potential future expansion area in the long term.





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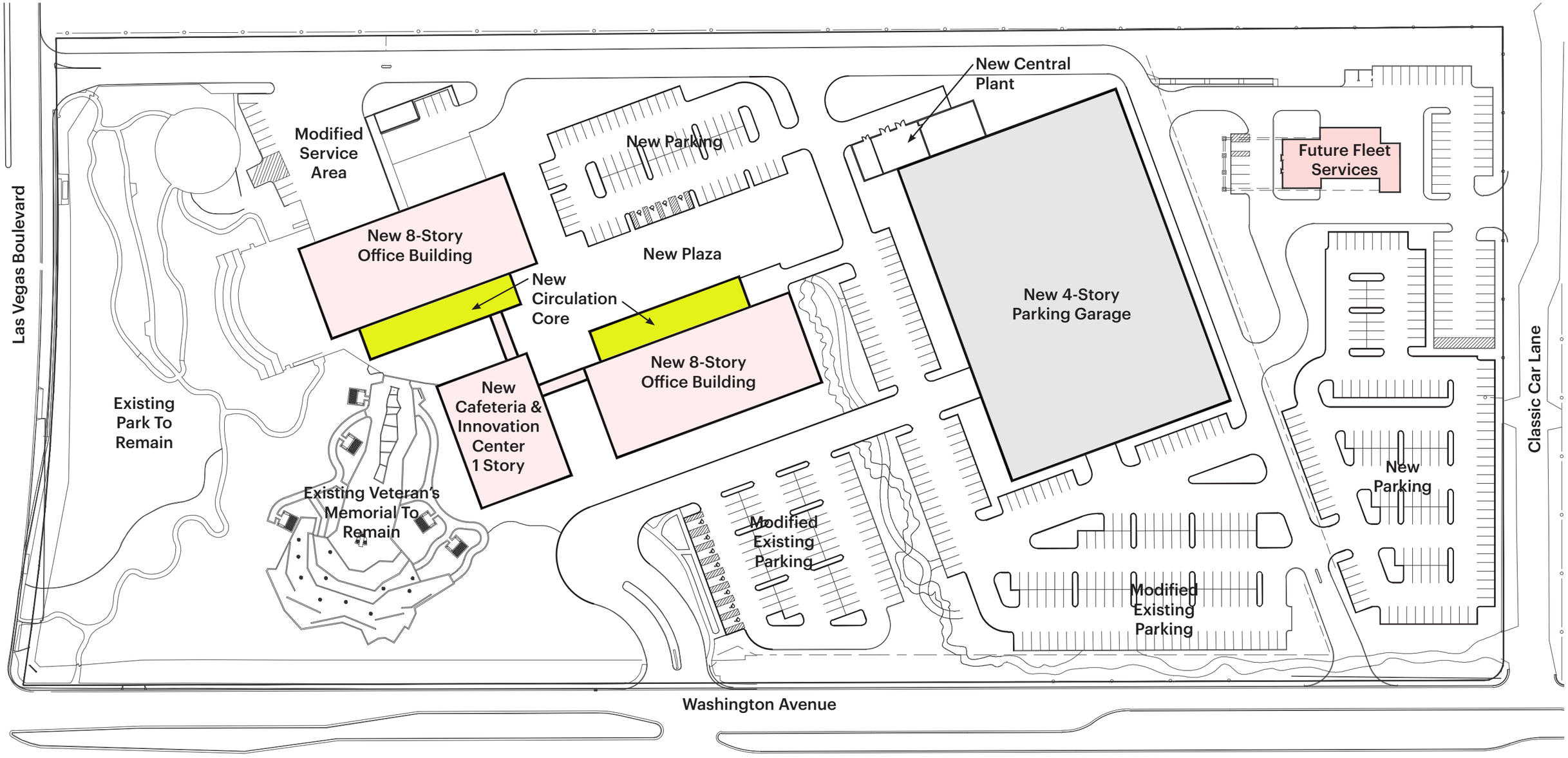
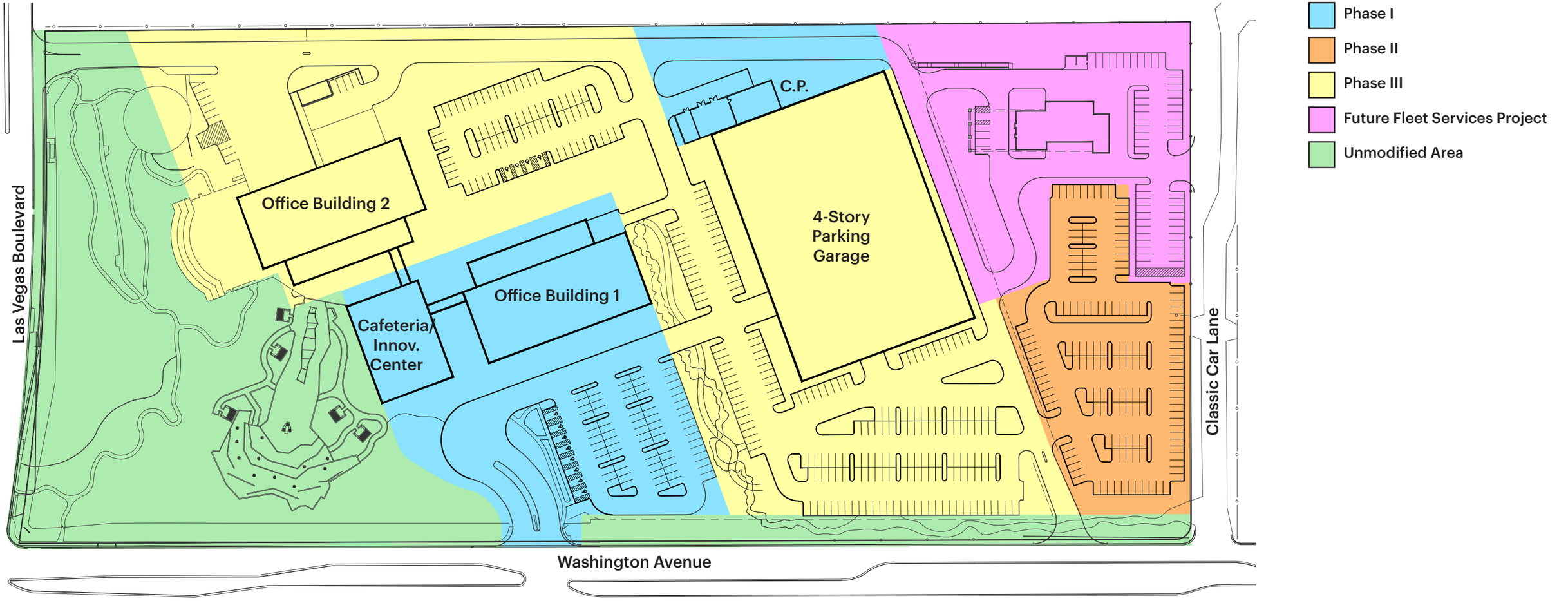
Concept R3-A | Conceptual Site Plan



Surface Parking: 521 Spaces
Garage Parking: 915 Spaces
Total Parking: 1,436 Spaces

Concept R3-A | Conceptual Phasing Plan

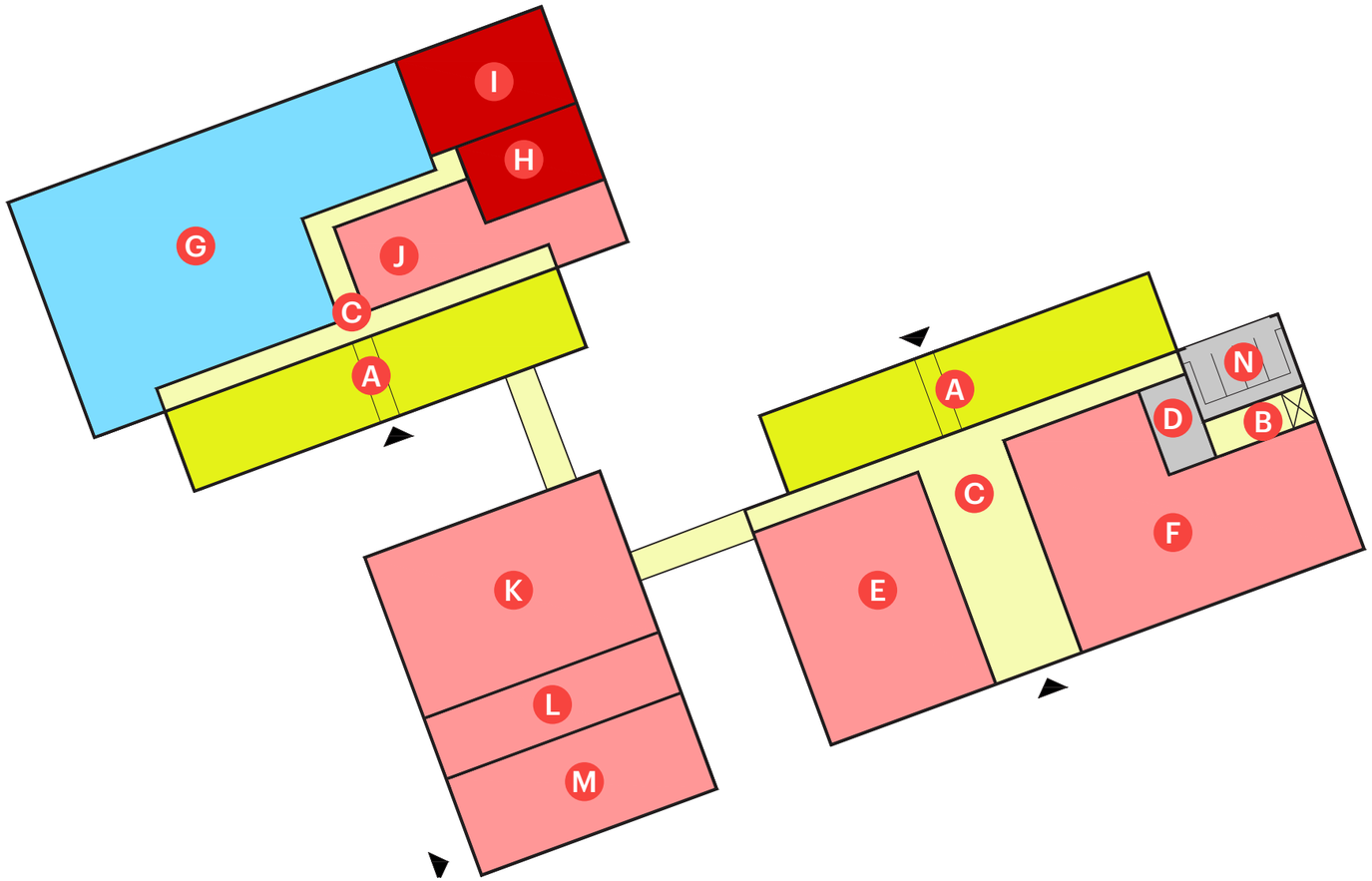


Phase I
Build a new 8-story, 196,000 S.F. Office Building 1 and 12,000 S.F. single-story Innovation Center Building on a portion of the existing parking lot to the south of the Grant Sawyer Building. Build a new Central Plant.

Phase II
Demolish the Grant Sawyer Building. Build a new parking lot at the existing Fantasy Park and solar farm.

Phase III
Build a new 8-story, 196,000 S.F. Office Building 2 on the former Grant Sawyer Building footprint, and build a 4-story parking garage over a portion of the current surface parking lot.

Concept R3-A | Conceptual Level 1 Floor Plan



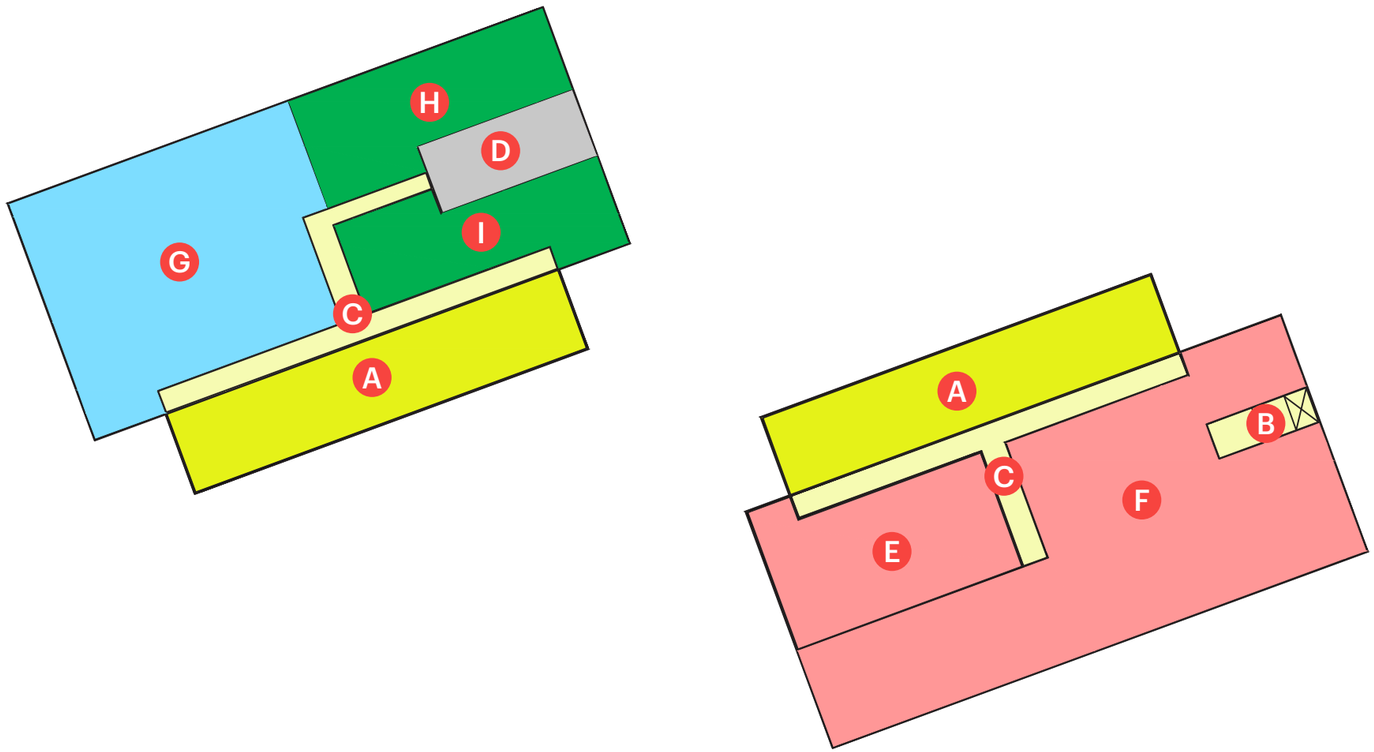
- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Dept. of Human Resources Management
- F Dept. of Taxation
- G Secretary of State
- H Mail Services
- I Dept. of Public Safety (DPS) Investigation Division
- J Capitol Police
- K Cafeteria
- L Shared Break Room
- M Innovation Center
- N Governor's Garage

The vertical circulation cores contain passenger and freight elevators, exit stairs, restrooms, lactation rooms, janitor's closets and utility spaces and shafts. The onsolidation and stacking of these repeated core elements on each level of the new construction is proposed in order to minimize intrusion of these elements into the tenant areas.

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R3-A | Conceptual Level 2 Floor Plan

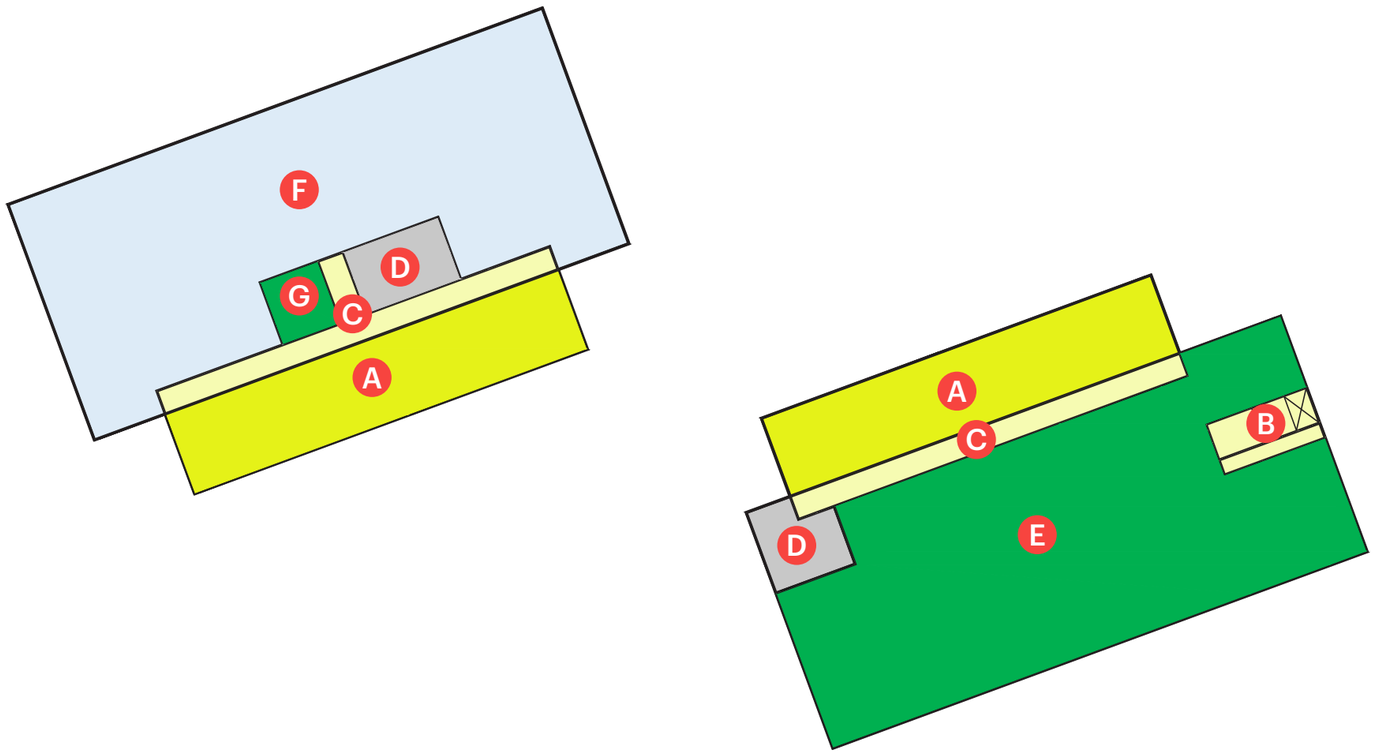


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Dept. of Human Resources Management
- F Dept. of Taxation
- G State Treasurer
- H Dept. of Veteran's Services
- I Controller's Office - Vendor Database Services

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

0' 30' 60' 120' 180'

Concept R3-A | Conceptual Level 3 Floor Plan

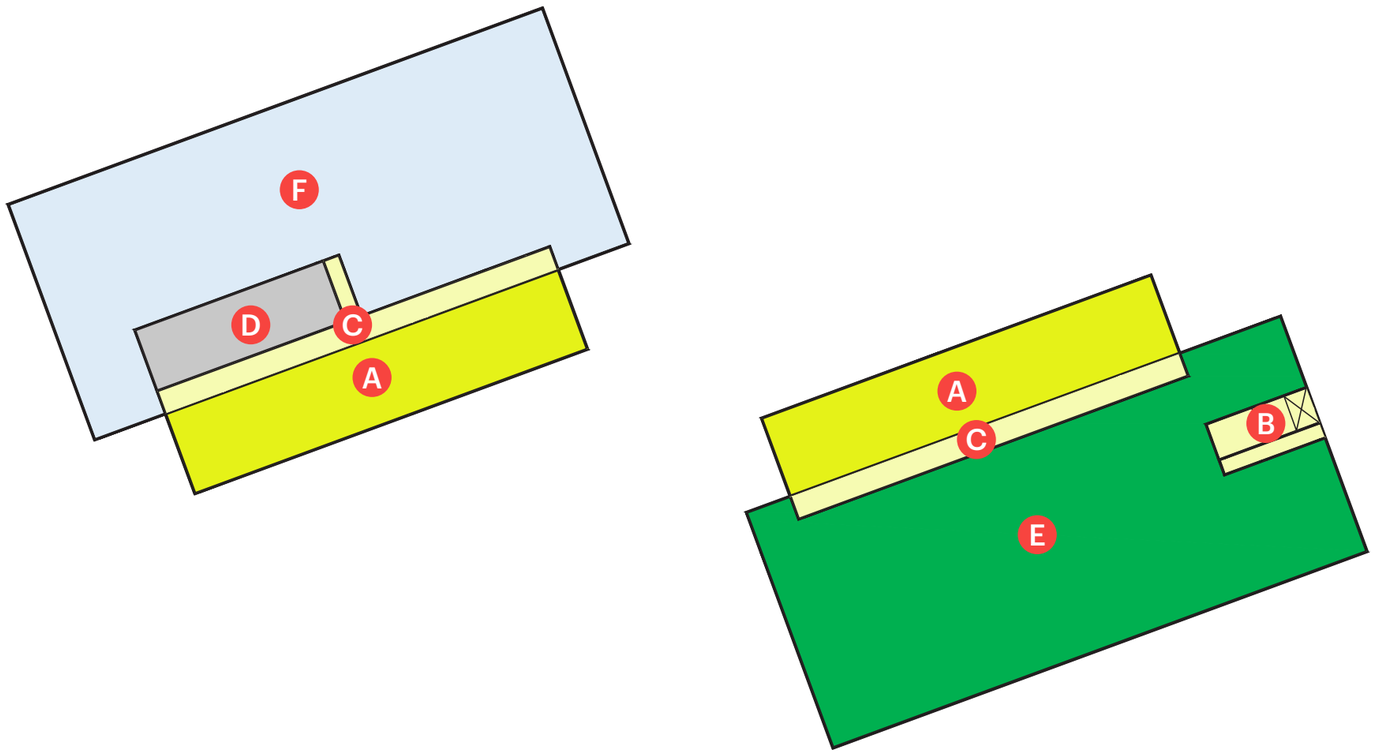


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Legislative Counsel Bureau
- G Commision on Ethics

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R3-A | Conceptual Level 4 Floor Plan

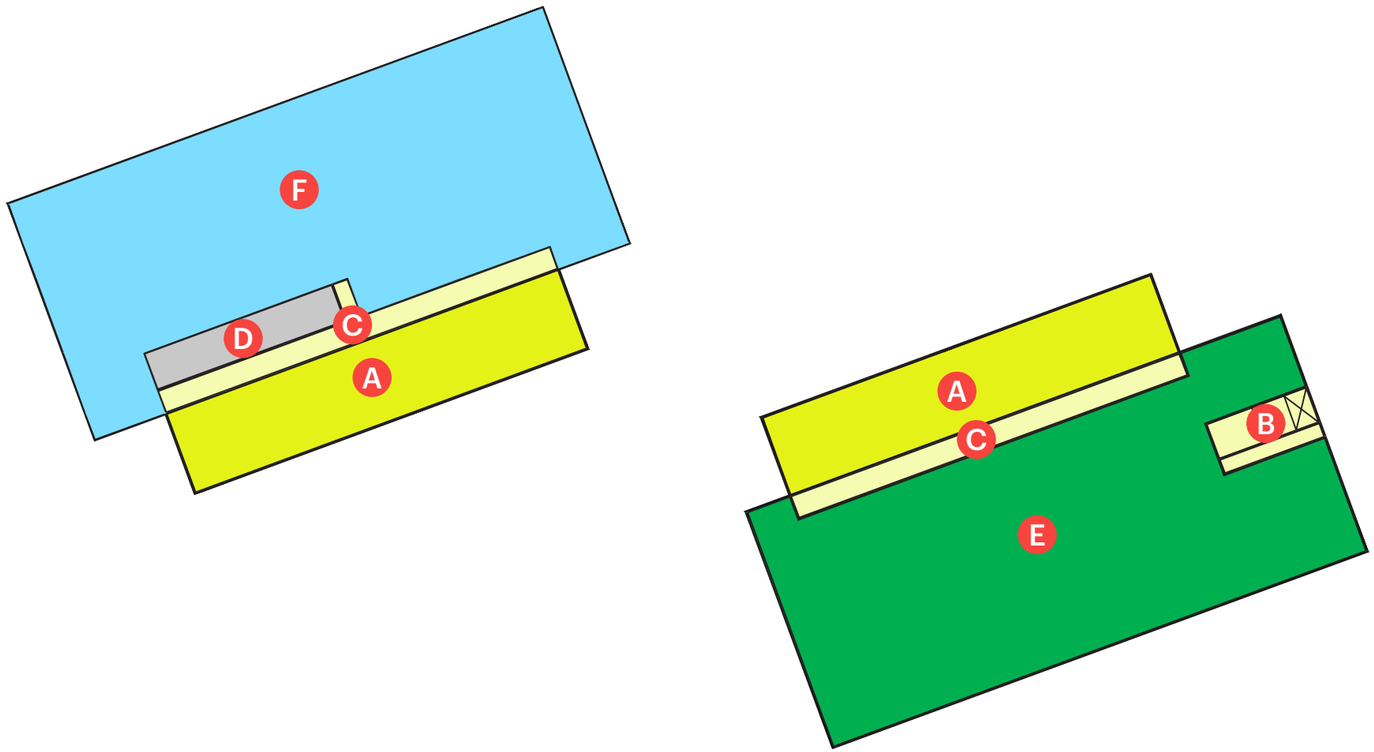


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Legislative Counsel Bureau

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

0' 30' 60' 120' 180'

Concept R3-A | Conceptual Level 5 Floor Plan

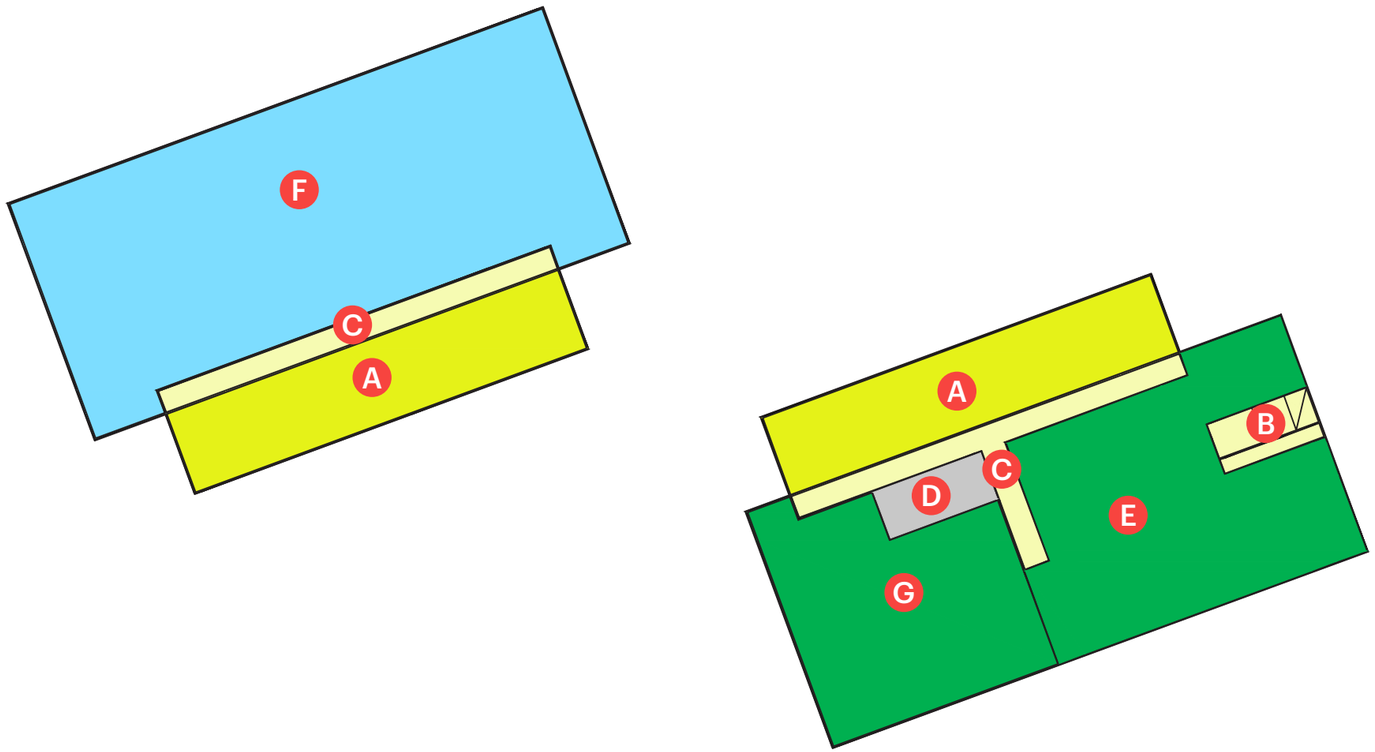


- A Core
- B Vertical Circ.
- C Horizontal Circ.
- D Support Space
- E Gaming Control Board
- F Attorney General

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R3-A | Conceptual Level 6 Floor Plan

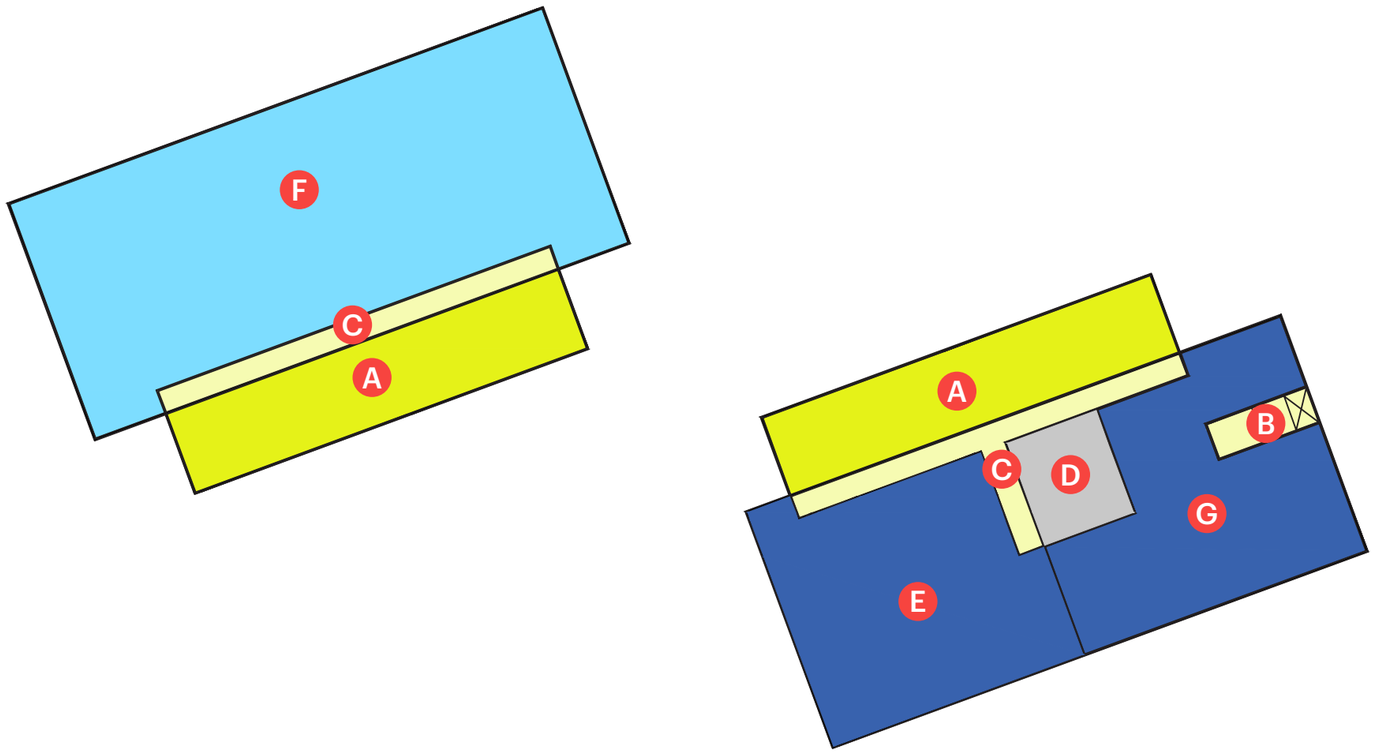


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Attorney General
- G Consumer Health Assistance Bureau

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

0' 30' 60' 120' 180'

Concept R3-A | Conceptual Level 7 Floor Plan

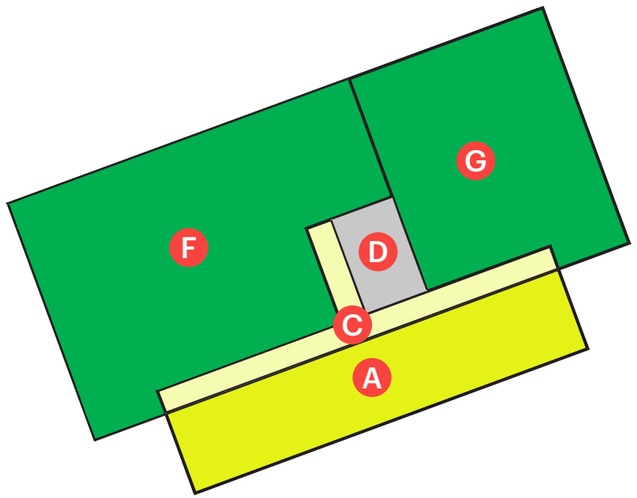


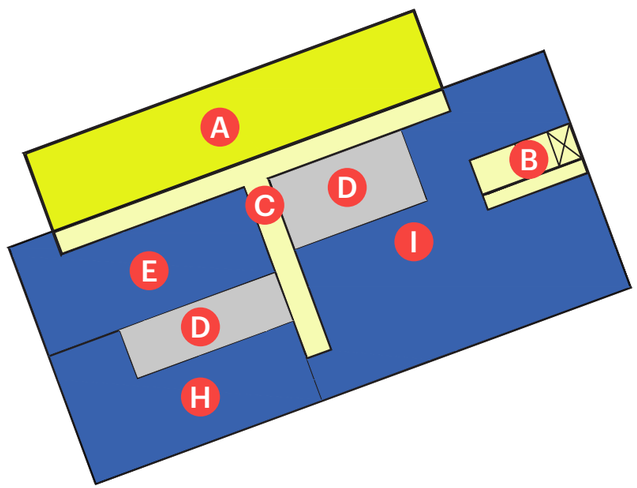
- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Governor's Office Economic Development (GOED)
- F Attorney General
- G Governor's Office of Workforce Innovation (OWINN)

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

0' 30' 60' 120' 180'

Concept R3-A | Conceptual Level 8 Floor Plan



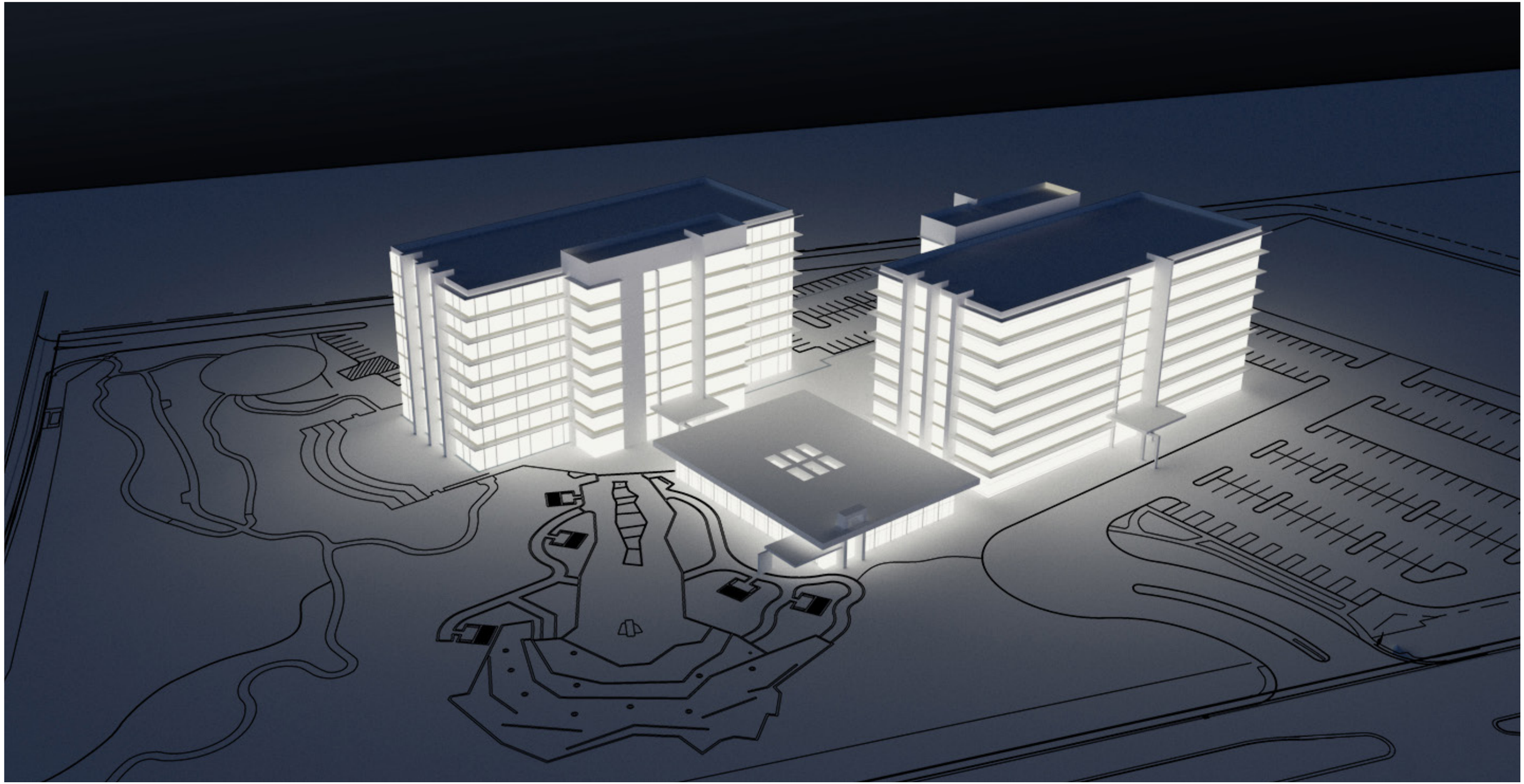


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Governor's Office Economic Development (GOED)
- F Colorado River Commission of Nevada
- G Dept. of Employment, Training & Rehabilitation
- H Office of the Lieutenant Governor
- I Office of the Governor

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

0' 30' 60' 120' 180'

Concept R3-A | Conceptual 3D View



Concept R3-A | Conceptual 3D View

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6345 S Jones Blvd, Suite 100
Las Vegas, NV 89118

REPLACEMENT

CONCEPT R3-A

1.0 General Information

Concept R3-A reflects demolition of the existing office building, constructing two new office buildings, a common use building and a garage in the east lot. It is a significant departure from previous concepts.

1.0 Drainage and Grading

This concept requires regrading all of the areas south of the existing building. Drainage control may be able to be accomplished without storm drains if landscape concepts include minor dry wash areas between each office building. The Veterans Memorial should be untouched and some grading adjustments will be required on the south side of the two southerly buildings. The north building could be established at a higher elevation which may off-set excavations for the southerly structures. Regrading of the south parking lot should be minimal. The garage area may need to be regraded to fit the garage footprint within this existing parking lot to avoid excessive first floor to second floor head heights.

Significant over excavation of existing soils under all of the new structures may be required due to undesirable soils conditions. This may be minimized by utilizing alternative structure footing types such as piles or caissons.

2.0 Utilities

The two existing combined service water meters and backflow devices must be upgraded to current LVVWD standards and the increased domestic demands as well as the potential increase in on-site fire flow due to differing construction types of proposed buildings. The existing waterline under the proposed south buildings will need to be demolished and a new waterline (10”±) will need to be looped around this building. A water loop around the proposed garage with at least 4 new fire hydrants will need to be installed around the garage for fire protection. These new loops will be fed by the existing system and the upgraded water meters and backflow devices.

The existing on-site sewer line within the east parking area will need to be relocated around the south side of the garage and extended to the new buildings. All new sewer mains will be 8-inch and will require manholes at angle points and at a maximum of 300’ spacing. The existing 8-inch sewer main should have adequate capacity for this concept.

4.0 Hardscape

New asphalt and concrete walks and curbs will be required within the project areas.

5.0 Summary

This concept can be accomplished with minimal issues and challenges except for those items noted above.

Structural Design Narrative- Concept R3-A – Two new 8-Story buildings and innovation center building – 01/02/19

John A. Martin & Associates of Nevada
STRUCTURAL ENGINEERS
John A. Martin, Jr., S.E.
Steve Schiller, S.E.
Gregory L. Clapp, S.E.
Tammy Carter, P.E.
Gordon Kuang, P.E.
Pete Padilla, P.E.

High Roof Framing

The area of the high roof which supports the mechanical equipment and electrical room will be framed using 3 ½" concrete over the flutes of 3" x 18 gage metal deck spanning between wide flanged beam spaced typically at 7'-6" on center, with few exceptions, spanning between wide flanged girders spanning between columns. Housekeeping pads should be maximum of 6" thick normal weight concrete. The roof steel will be sloped to achieve drainage and limit the use of built up roofing.

The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Core location is not adequate as a lateral element alone. Steel moment frames throughout the building would be required to keep the open nature of the plans. Steel members would be significantly heavier compared to the 4-Story. Alternate lateral system could be concrete core and additional concrete shear walls on other three sides, in one bay if necessary to keep storefront façade.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load.

Penetrations for pipes and shafts will require frames constructed of angles and channels supported on the wide flange beams. In the areas where there is concrete over metal deck, most openings shall be framed using reinforcing in the concrete slab in lieu of structural steel frames.

Typical Floor Framing

The floors will be framed using 3 ½" of concrete over the flutes of 3" x 18 gage deck, reinforced with welded wire fabric and negative reinforcing over the supports. To ensure the ability to achieve floor flatness, the framing is designed to allow for an additional ½" of concrete.

Penetrations for piping and shafts through metal deck will be accomplished using reinforcing steel at the perimeter of the openings with a formed concrete edge. The deck must remain in place until the concrete attains a compressive strength of 3,000 psi.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load. This columns will extend approximately 4' above the floor level at the splice locations. The top of the column section will be prepared for a welded column splice.

New Innovation Center

This separate 1-Story building will connect the existing building to the new building for commons area. The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Anticipate lateral system to be moment frames to allow plenty of open window storefront systems.

Foundations

Foundation design is pending completion of the geotechnical investigation and preparation of the geotechnical report. For purposes of this narrative, we are assuming the building will be supported on spread footings with strip footings required at the moment frames.

Piles may be required as alternate foundations depending on geotechnical recommendations.

The typical foundations should be placed 2' below finished floor. Footing elevations can be adjusted based on requirements of utilities. Shafts containing elevators should be placed approximate 5'-6"' below finished floor to allow for pits.

Retaining walls and dock walls will utilize conventional foundations. Retaining wall design is pending verification of grading.

Parking Garage Options

- **Precast with Shear Walls**
  Greatest savings are achieved with all precast elements (walls, beams, spandrels, tees)
  Precast shear walls at perimeter, L beams at perimeter, inverted tees at interior column lines, double tees with topping slab.
- **Cast-in place**
  Moment frames in transverse direction, shear walls in longitudinal direction, 14"/16" x 30" tapered beams at 18' on center, 5" post tensioned slab, 24" x 30" girders at transfer locations, 24" x 24" typical columns, 24" x 30" columns at transfer girders

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GRANT SAWYER OFFICE BUILDING
REPLACEMENT NARRATIVE R3-A OPTION
NV5 PROJECT NO. 018.0745.00

Prepared for:

KGA Architecture
9075 Diablo Dr, Suite 300
Las Vegas, NV 89148

Prepared by:

NV5
5155 W Patrick Ln
Las Vegas, NV 89118

Issue Date:

January 2, 2019

Revision No.	Issue Date	Prepared By	Reviewed By	Remarks
1	1/02/2019	Alex Jankovic JJ Wisdom	KGA	Replacement R3

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

When pursing this investigation, we had in mind the three RRR =Repair, Remodel, Replace and the 20 years fix of the MEP systems as our final goal.

Based on the architectural conceptual drawings for the Reprogramming and Replacement options the central utility plant (CUP) will be located in the parking garage building.

Replacement option R3-A

The Replacement option R3-A will include two new 196,000 sq.ft high-rise office buildings, and 12,000 sq.ft cafeteria & innovation center building.
The CUP plant will house the chilled water plant and heating hot water plant.
The chiller room will consist of 2 x 800 tons magnetic bearing chillers, cooling towers and associated chilled water pumps and condenser water pumps with VFD's. The proposed chilled water plant will be variable primary flow system with direct buried pre-insulated chilled water piping serving the proposed new buildings per R3 options.
The boiler plant will consist of 4 x 3000 MBH gas fired condensing boilers, combination bridge/air separator and associated boiler pumps and variable flow building pumps and a dedicated space for future expansion to serve the existing GSOB.
The heating plant will deliver 160^{0}F/130^{0}F heating hot water to the buildings via underground pre-insulated hydronic piping.
Existing 15KV Nevada Energy service shall be re-used to serve the site. New owner 15KV electrical distribution and 480V generator distribution shall be provided for the new buildings. The existing electrical infrastructure serving the GSOB shall be protected in place during construction of the first phase of new building(s) and then removed in its entirety during construction of the second phase of new building(s).
Smoke exhaust systems will be provided in each building per 2018 IBC requirements.

2. MECHANICAL SYSTEMS

2.1 GENERAL

2.1.1 New Buildings 1, 2, 3

The two new 196,0000 sq.ft high-rise buildings and Innovation Center will be designed per current SPWD design criteria, including the CUP – central utility plant to serve the new Building 1 and Building 3 Innovation center, as well as the space for future chillers and boilers serving Building 2 when it is constructed.
The HVAC design shall comply with the 2018 Uniform Mechanical Code.

2.2 REPLACEMENT – OPTION R3-A

The new CUP central plant will incorporate water chillers, cooling towers, plate and frame heat exchangers (water side economizers), variable primary flow system with chilled water pumps and appropriate ancillary equipment and systems to provide comfort and process cooling for the facility. The plant will also incorporate low pressure, 94% efficiency condensing hot water boilers, primary and secondary hot water pumps and ancillary equipment and systems to provide space heating for the facility.

Central Chilled Water Plant
The chilled water plant will be designed per SPWD requirements.
Two (2) magnetic bearing water cooled chillers at 800 tons each, with multiple compressors, with integrated refrigerant cooled VFD's and micro-processor controls system, have been selected to provide a total cooling capacity of 1,600 tons of refrigeration for new building expansion. This configuration will meet the building load and provide 20% redundancy.

The cooling tower fans, secondary flow chilled water pumps will be provided with VFD's. The chilled water distribution system will be deigned to provide a chilled water supply temperature at 44°F with a chilled water return temperature at 58°F. The system will serve air handling units and strategically located fan coil units. Cooling only fan-coil units will be provided for the MDF rooms, IDF rooms, chiller room, boiler room and elevator equipment rooms. During the winter season two dedicated jockey pumps will be employed to serve the cooling requirements for the fan-coil unit process cooling loads, utilizing the plate/frame heat exchanger. Split system DX cooling will be provided as a back-up for MDF, IDF and AV rooms, with the roof mounted VRF condensing unit.

The chilled water piping will be routed from the central plant up to fourth floor within the shaft with pipe connections to roof mounted air handling units. The pipe penetrations will be provided within the air handling unit pipe chases.

Central Heating Hot Water Plant
The heating hot water plant will be designed as a primary/secondary flow system, utilizing high efficiency low pressure, condensing gas fired boilers. The total calculated heating capacity has been estimated to be 12,000 MBH.
Four high efficiency hot water boilers with a capacity of 3000 MBH heat input have been selected with associated hot water pumps and accessories. The heating hot water system will serve all air handling unit heating coils and VAV terminal unit reheat coils.
The hot water piping will be routed in the core area shaft along with the chilled water piping.

Air Handling Systems
The following air handling units will be provided for this option:
Building 1
- System AH-R3.1 50,000 CFM (Level One & Two)
- System AH-R3.2 50,000 CFM (Level Three & Four)
- System AH-R3.3 50,000 CFM (Level Five & Six)
- System AH-R3.4 50,000 CFM (Level Seven & Eight)

Building 2
- System AH-R3.5 50,000 CFM (Level One & Two)
- System AH-R3.6 50,000 CFM (Level Three & Four)
- System AH-R3.7 50,000 CFM (Level Five & Six)
- System AH-R3.8 50,000 CFM (Level Seven & Eight)

Innovation Center
- System AH-R3.9 20,000 CFM (Cafeteria and Innovation Ctr)

Air handling systems will be designed as VAV systems providing supply air at 55° F and discharging the air through medium pressure ductwork to VAV terminal units. The air handling units will be provided with VFD's on supply and exhaust/relief fans, to facilitate 100% outside air economizer on a variable air volume basis.

The units will operate per BMS schedule. Supply fans will be plug type and exhaust/return fans will be a fan-wall type fan configuration. Variable frequency drives will provide fan volume control in response to a signal from duct mounted static pressure transmitters. Supply and return fan speeds will be modulated simultaneously as required by building load.

Fan Wall, or fan array, technology system will be considered for use on the project. The fans will meet the air flow performance specified and will not exceed the break horsepower or sound power levels specified. Fan performance will be based on testing and be in accordance with AMCA Standards 210 and 300. Completely isolated assemblies will be dynamically balanced and shall be designed for heavy-duty industrial applications. Fan assemblies that meet a dynamic balance of BV-5 (G 1.0) do not require isolation.

The supply air distribution system will consist of medium-pressure, externally insulated galvanized steel ductwork with pressure independent electrically actuated VAV terminal units with reheat coils, low pressure externally insulated ductwork downstream of terminals and diffusers. The return air distribution system will consist of externally insulated galvanized steel ductwork and return grilles. Sound attenuating flexible ductwork with woven nylon fabric type lining will be provided at the supply diffusers, grilles to control noise.

Ductwork will be constructed in accordance with SMACNA standards and duct leakage shall not exceed 2% for low-pressure ductwork. The use of sound attenuating flexible duct at diffusers and grilles will be limited to five feet in total length to minimize duct static pressure losses.

The VAV air handling units will consist of the following components: Exhaust/relief fan section, outside air economizer, 30% (MERV8) efficient pre-filter section with a reserved space for 85% (MERV13) final filters, hot water heating coil and chilled water-cooling coil, supply air fan section with discharge air attenuator and factory installed VFD's for supply and exhaust/return fans in air-conditioned enclosure. Duct mounted smoke

detectors will be provided per UMC 609. The duct detectors will be addressable type and compatible with the fire alarm system. Refer to Mechanical Site Plan-Option R3-B for details.

3. PLUMBING SYSTEMS

3.1 REPLACEMENT – OPTIONS R3-A

3.1.1 New Buildings

The plumbing systems will include the following:
Sanitary waste and vent system will be provided for the public restrooms, break rooms and mechanical rooms. Drainage piping will be sloped at 2% per UPC. Sanitary waste and vent piping will be service weight cast iron no-hub piping with no-hub 4 band type couplings with neoprene gaskets. A separate 2,000 gallon grease interceptor will be provided for the fourth floor kitchen grease waste system.

Cold water distribution piping system will be provided for the restrooms, fourth floor kitchen area, break-rooms and mechanical plant rooms. Hot water distribution in the main building will be provided by utilizing the high efficiency condensing water heaters: one located in the boiler room to serve the restrooms and the general building requirements, and one located on the fourth floor to serve the kitchen area.

Exterior hose bibs will be provided for adequate external coverage and maintenance of the facility.

Materials, equipment and systems installed shall meet all pertinent requirements of all applicable codes. The systems described herein shall be provided to serve all fixtures, equipment and areas within the building.

Plumbing Fixtures
Commercial grade water saving wall mounted water closets with electronic flush valves and wall hung sensor operated flush valve urinals will be utilized. Water closets with battery powered 1.28 GPF electronic flush valves, and battery powered 0.125 GPF electronic flush valve urinals will be utilized in the men's restrooms. Water closets with battery powered 1.28/1.1 GPF dual flush valves will be provided in the women's restrooms. Commercial grade additional plumbing fixtures including all carriers, trim, valves and traps will be provided at locations as determined by the architectural plans. Water saving plumbing fixtures shall contribute to water savings design requirements.
Roof drainage system shall be provided utilizing the roof drain/ overflow roof drains and storm drainage piping within the building.

Domestic Water Distribution:

Cold Water Systems
The domestic water service shall be provided from the site water supply. Existing domestic booster pump set will be with new triplex booster pumps and will be sized for 600 GPM @ 80 ft head.
A pressure gauge on main domestic water line serving the building downstream of main shut-off valve shall be provided.

Domestic cold water system design shall be per the Uniform Plumbing Code and ASPE Design Manuals. Pipe velocity shall not exceed 8 feet per second. Domestic cold water systems shall be sized using flush valves curves. Pressure ranges at plumbing fixtures shall be as follows: Minimum: 35 psi, Maximum: 80 psi.

Domestic Hot Water System
Domestic hot water system design shall be per ASHRAE 90.1, 2016 Standard, ASHRAE HVAC Application Handbook, Chapter 48 "Service Water Heating" and ASPE Design Manuals. Pipe velocity shall not exceed 5 feet per second.

Multiple water heaters will be provided within the water heater room serving the new building expansion. Multiple high efficiency condensing water heaters AO Smith, BTH-199 with 100 gallon storage and 288 GPH recovery capacity will be utilized to satisfy the hot water requirements.

Plumbing Fixtures Water Consumption
All plumbing fixtures shall be coordinated with SPWD and UPC guidelines. They will be low flow type as follows:

- Water Closet: 1.28 GPF @ men's restrooms
- Water Closet: 1.28/ 1.1 GPF @ women's restrooms (dual flush)
- Urinal: 0.125 GPF
- Lavatory: 0.35 GPM
- Sinks: 0.5 GPM

Domestic Water Piping
Domestic water piping shall be Type L copper. All domestic hot and hot water return piping shall be insulated with closed cell insulation. Cold water piping shall not be insulated.
All interior exposed insulation shall have PVC jacket and PVC fitting covers. All exterior exposed insulation shall have aluminum jacket and covers. Aluminum jackets shall be secured with stainless steel bands.
Condensate drain piping shall be Type M copper.

Sanitary Drainage System
Sanitary waste and vent system shall be per the 2018 Uniform Plumbing Code.
All floor drains, floor sinks, access doors, and cleanout covers shall be secured using vandal-resistant fasteners. Floor drains shall be provided in all toilet rooms. Cleanouts shall be provided every 50'-0".

Install cleanouts in sufficient number and located such that drain augers can be conveniently used on any part of the drainage system. The installation shall be made in compliance with the Cast-Iron Soil-Pipe Institute Engineering Manual.
Locate all clean-outs, devices, etc., in plumbing chases so as they are readily accessible by facility maintenance personnel.

Automatic solenoid type trap primers will be provided for all floor drains and floor sinks, including the floor sinks in mechanical rooms and fire riser room.

Sanitary Waste Piping
Sanitary waste and vent piping for all building shall be hubless cast iron pipe and fittings with heavy duty stainless steel couplings.
Sanitary sewer demand for the building based on the main building layout will require 8" building connection.

Site Utilities
All onsite utilities will be distributed underground with approximately 3 ft of backfill cover based upon regional weather conditions and applicable codes. Utility lines will be located in road right of ways per civil utility plans. A dedicated 2,000 gallon grease interceptor will be provided to serve the cafeteria and innovation center.

The 6" domestic cold water service with shut-off valve will be provided with internal shut-off within the booster pump room.
Based on the pipe size the cold water service can handle approx. 3,500 CWFU, which is equivalent to 600 GPM of total domestic water flow.

Domestic hot water has been provided via high efficiency condensing water heaters with 94% efficiency.

All sanitary sewer and storm sewer lines extend to a point 5 ft outside the building for connection by the civil. Sanitary waste and vent piping, and roof drain and overflow drain piping below grade shall be service weight cast iron no-hub piping with no-hub four (4) band type couplings with neoprene gaskets.

A rainfall rate of 1.5 in. per hour will be utilized in accordance with UPC Appendix B, Rate of Rainfall for Various Cities.

Natural gas consumption has been estimated to be 13,500 kBtu/h for R3 Options.
Medium pressure gas service will be provided by Southwest Gas Corporation per site plan.

4. ELECTRICAL SYSTEMS

4.1 GENERAL

4.1.1 Nevada Energy Service

Existing Nevada Energy infrastructure appears to be sized to accommodate a 15KV 10MVA maximum service. The existing service originates from a pole at the Southeast corner of the property, transitions underground and is routed along the East property line to the North property line and then into the existing building medium voltage switchgear 'MVS1'. The underground Nevada Energy feeder route appears to include several manholes which should allow connection to the existing service at both the East and North property lines as required by existing conditions and/or construction phasing.

Estimated total calculated load for this replacement option is 6996KVA with an estimated utility demand load of 2798KVA. The new electrical load is approximately double that of the existing building. This load increase will need to be submitted to Nevada Energy to determine if there are any required modifications to the Nevada Energy systems.

New 600A, 15KV switchgear with a primary Nevada Energy meter will be required. The switchgear will be located at the central plant and will serve the other buildings on the site via 15KV radial feeders.

4.1.2 Emergency/Legally Required Standby/Optional Standby Generator

A 1500KW, 480Y/277 volt, 3 phase, 4 wire generator will be provided to serve building emergency/legally required standby and optional standby loads. The generator will be located at the central plant and will serve the other buildings on the site via 480V radial feeders. Two (2) automatic transfer switches per building will be provided, one (1) for emergency loads and one (1) optional standby loads.

Emergency loads include:
- Fire pump and booster pump
- Fire alarm system
- Egress and exit lighting
- Cooling for emergency electrical room(s)
- Smoke control/purge equipment (if applicable)
- Elevator per bank
- Elevator cab lights

Optional Standby (owner selected) loads include:
- Telecommunications and security / surveillance equipment in MDF and IDF's
- Cooling for MDF's, IDF's and electrical rooms containing optional standby electrical equipment
- Cafeteria walk-in coolers / freezers
- Domestic water booster pump
- Mission critical spaces and associated infrastructure including:
  - Governor's Space
  - Capital Police Space
- Select central plant equipment to support space conditioning for the areas noted above

4.1.3 New Work Requirements

References
The electrical and auxiliary system design will adhere to the following codes, standards, and criteria in the preparation of the Project Electrical Design Documents.

IBC	International Building Code; 2018 Edition
NEC	National Electrical Code (NFPA 70); 2017 Edition
NESC	National Electrical Safety Code; 2018 Edition
NFPA 72	National Fire Alarm Code; 2018 Edition
NFPA 101	Life Safety Code; 2018 Edition
NFPA 110	Emergency and Standby Power Systems; 2018 Edition
IEEE	Institute of Electrical and Electronics Engineers Standard 142; Grounding of Industrial & Commercial Power Systems
ADA	Americans with Disabilities Act
ANSI	American National Standard Institute
IECC	International Energy Conservation Code; 2018 Edition
IESNA	Illumination Engineering Society of North America Handbook – 10th Edition

Electrical Systems
New 15KV main switchgear and generator shall be located at the central plant/garage and shall serve the other buildings via radial feeders as noted above. Estimated capacities for each building are as follows:
- Central Plant/Garage – 2000KVA
- Building Expansion – 8 Stories with New Circulation Core – 2000KVA
- Building Expansion – 8 Stories with New Circulation Core – 2000KVA
- Cafeteria/Innovation Center – 1 Story – 500KVA

The existing Grant Sawyer Building normal power electrical service will be protected in place until it can be back-fed from the new 15KV electrical distribution system and the existing generator system will also be protected in place until the replacement of the existing building takes place.

The main electrical room for each building will be 1 hour rated, located with exterior access, and will house the main electrical service switchboard.

Grounding
The service shall be provided with a grounding electrode system in accordance with NEC Article 250, NEC Article 517 and IEEE green book. In order to ensure the facility is effectively grounded and bonded throughout, grounding bonds will be configured in star topology. This grounding system, from a power standpoint, will serve primarily as a bonding point for the required safety/equipment grounding for separately derived systems; however, the system is also being designed to serve as an effective performance ground for telecommunications and other building auxiliary systems. Insulated equipment grounding conductors will be provided in all raceways for power systems. A lightning protection system is not anticipated at this point.

Surge Suppression (SPD)
Suppression will be provided at the service entrance equipment for each building to minimize the impact of electrical line disturbances.

Distribution
Site distribution will include 15KV service to each building and, depending on final load calculations, to main electrical rooms within each building. Exterior pad mounted, interior dry-type unit substation and/or step down transformers shall be used for 480Y/277 volt, 3 phase, 4 wire and 208Y/120 volt, 3 phase, 4 wire service.

Lighting, HVAC and other large utilization equipment will be supplied from the 480Y/277 volt distribution system. Large loads will be served from the main switchboard.

Receptacles and other miscellaneous loads shall be served from the 208Y/120 volt, 3 phase, 4 wire service.

All electrical panel boards and step down transformers will be located in designated electrical rooms / closets.

Distribution equipment will be sized for 25% spare capacity. Equipment shall contain a minimum of 10% space for addition of over-current devices.
Transformers shall comply with CSL-3 energy standards.

Building systems, HVAC, power and lighting shall be independently metered, metering shall be connected to the BMCS system. The building service entrance shall be metered independently of the utility. Meters shall be connected to a sitewide metering system.

Feeders
15KV feeders will be concrete encased below grade and installed in galvanized rigid steel conduit (RGS) above grade.

480Y/277 volt and 208Y/120 volt feeders will conform to NEC Article 215. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All feeder conductors will be PVC insulated type THHN/THWN or XHHN. Feeders shall be copper.

Branch Circuits
Branch circuits will conform to NEC Article 210. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All branch circuit conductors will be copper, PVC insulated type THHN/THWN or XHHN. Minimum conductor size shall be #12 AWG. MC, AC, or other cable type wiring systems are not acceptable.

Receptacles
All 20A-125V convenience receptacles will be grounding type mounted in 4-inch square boxes at 18 inches above finish floor. Ground Fault Circuit Interrupter (GFCI) receptacles will be used in locations as required by NEC 210.8(B). Double duplex receptacles will be provided at each office workstation. Convenience receptacles located in corridors and common areas will be spaced at maximum 50' apart.

General Lighting
Interior lighting will consist primarily of 277V LED fixtures. Fixture types will be coordinated with the individual space requirements to provide the fixture selections that are suitable to the space. Fixture types and proposed lighting layout will be coordinated with the design team prior to commencement of lighting design. Light levels will be per IES recommendations. The lighting power density will be designed to exceed the minimum requirements of IECC by at least 20%.

Space	Type of Fixture	Average Lighting Level
Offices	2x4 Direct/Indirect LED Lay-In	50FC
Meeting Rooms	LED Pendant and Downlights	40FC
Lobby/Waiting	LED Downlights and Pendants	40FC
Restrooms	1x4 LED Flanged Troffer and LED Downlights	30FC
Cafeteria	LED 2X4 Direct/Indirect	50FC

Exterior lighting shall be LED lamp sources. LED lighting will provide quality color rendition from an energy efficient source. Exterior lighting will be controlled by a combination astronomical time clock / photocell and/or building energy management system. Fixture mounted occupancy sensor shall be provided at parking areas and pedestrian walkways for further energy reductions.

Lighting Control
Due to IECC requirements a lighting control system will be provided. Local room controllers will be provided for normally occupied rooms. These local room controllers will integrate with room occupancy / daylight sensors and dimmers. Normally unoccupied rooms will utilize occupancy sensors with local switching.

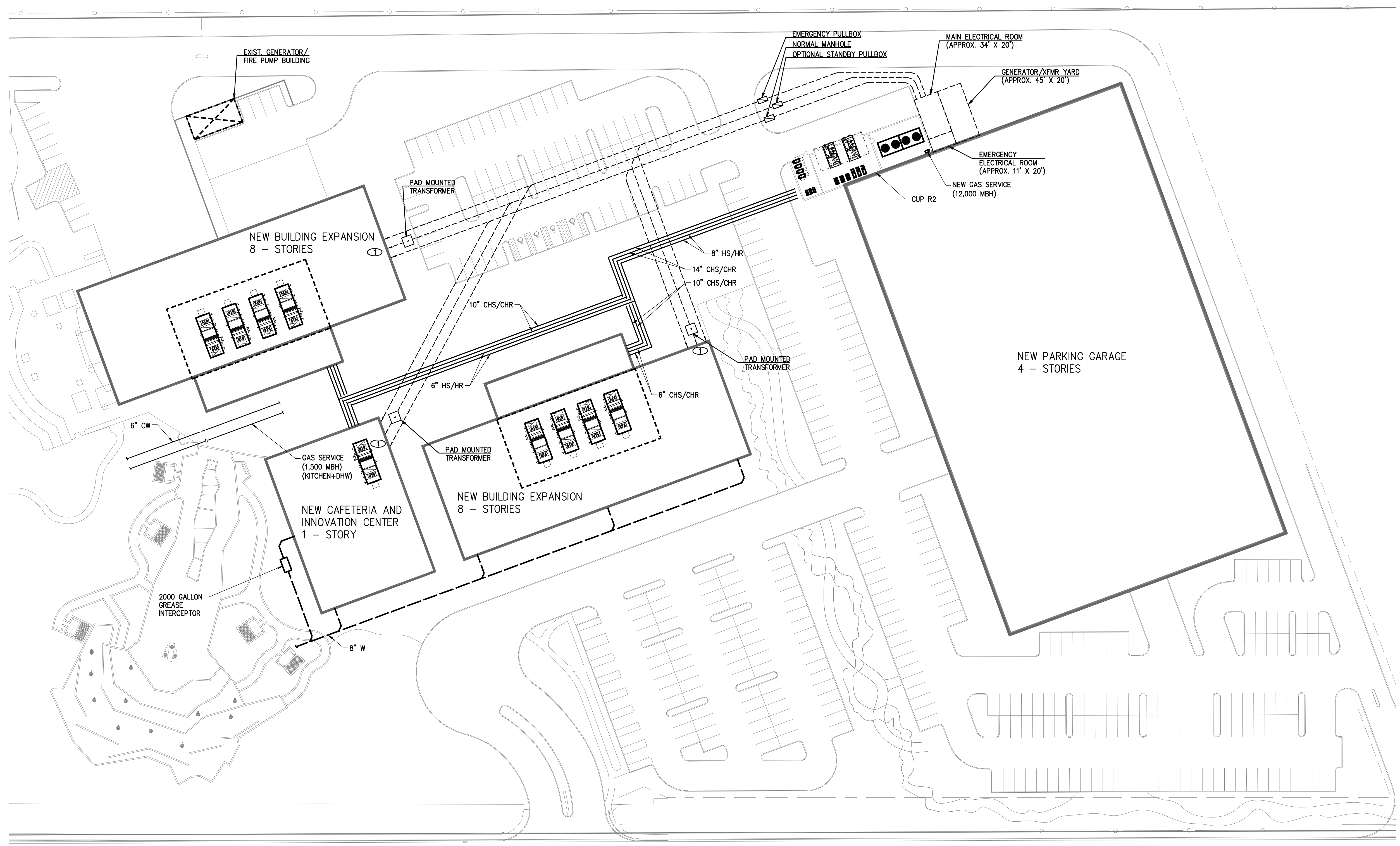
Lightning Protection
An early streamer emission lightning protection system shall be used.

5. APPENDIX – DRAWINGS

MPE-R3A – Mechanical, Plumbing & Electrical Site Plan – Option R3-A
MCUP_R3 - Central Utility Plant – Options R3-A, R3-B
MFD_R3 - Mechanical Flow Diagram
E-R3A – Electrical Single Line Diagram – Option R3-A
END
J:\18.0745\Docs\Other Reports\2018-12-11 R2, R3 Narrative\R3-A Option\2018-12-11 GSOB - R3-A Narrative.docx

NOTES

(1) TO NEW BUILDING ELECTRICAL INFRASTRUCTURE.



MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R3-A

NO SCALE

1 / M4

DRAWN BY: – | CHECKED BY: – | DATE: –

REVISIONS

NV5

MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R3-A

GRANT SAWYER OFFICE BUILDING

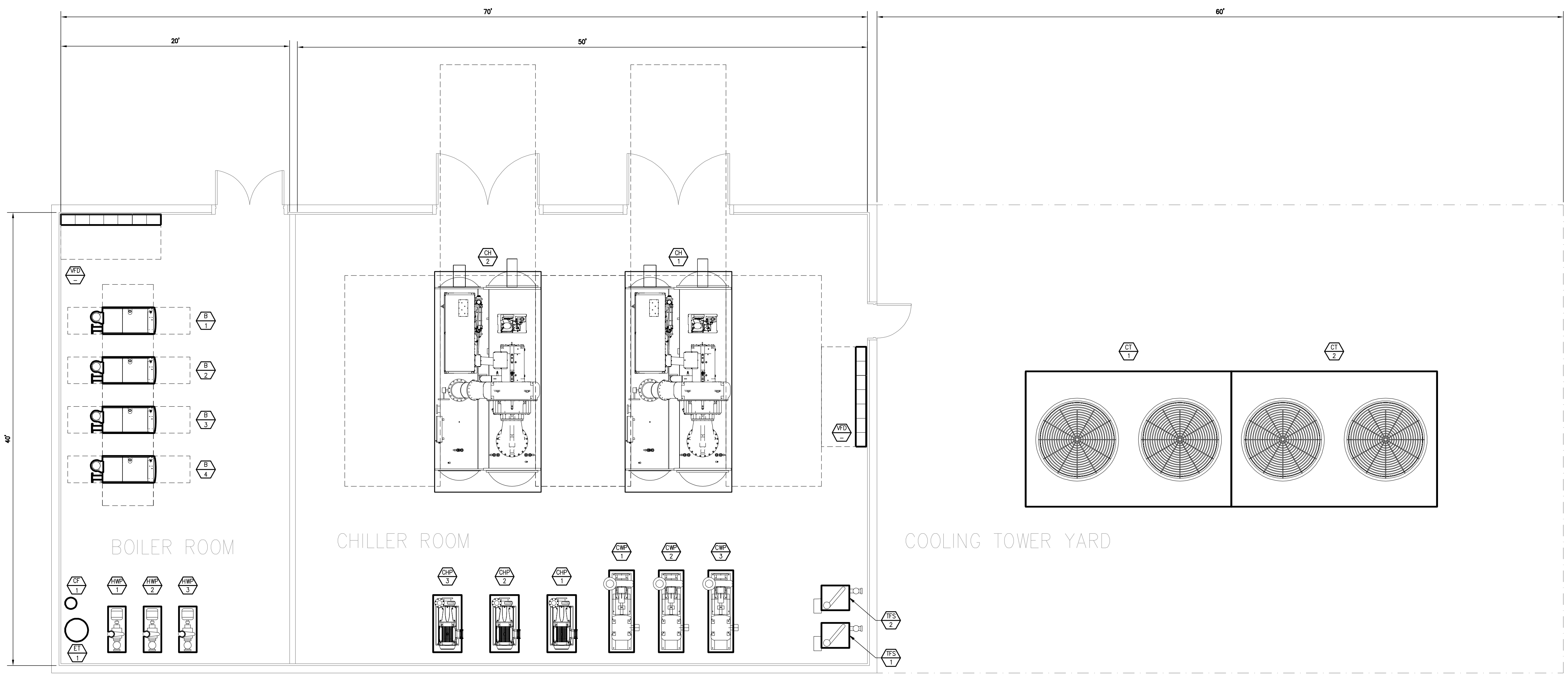
REMODEL REPORT - R3-A

SHEET NUMBER:

MPE-R3A

SCALE: –

JOB NUMBER: R3–A



CENTRAL UTILITY PLANT - MECHANICAL R3 DESIGN OPTIONS
NO SCALE

1
M8

DRAWN BY: - CHECKED BY: - DATE: -

REVISIONS

DATE BY

NV5

CENTRAL UTILITY PLANT - MECHANICAL R3 DESIGN OPTIONS

GRANT SAWYER OFFICE BUILDING

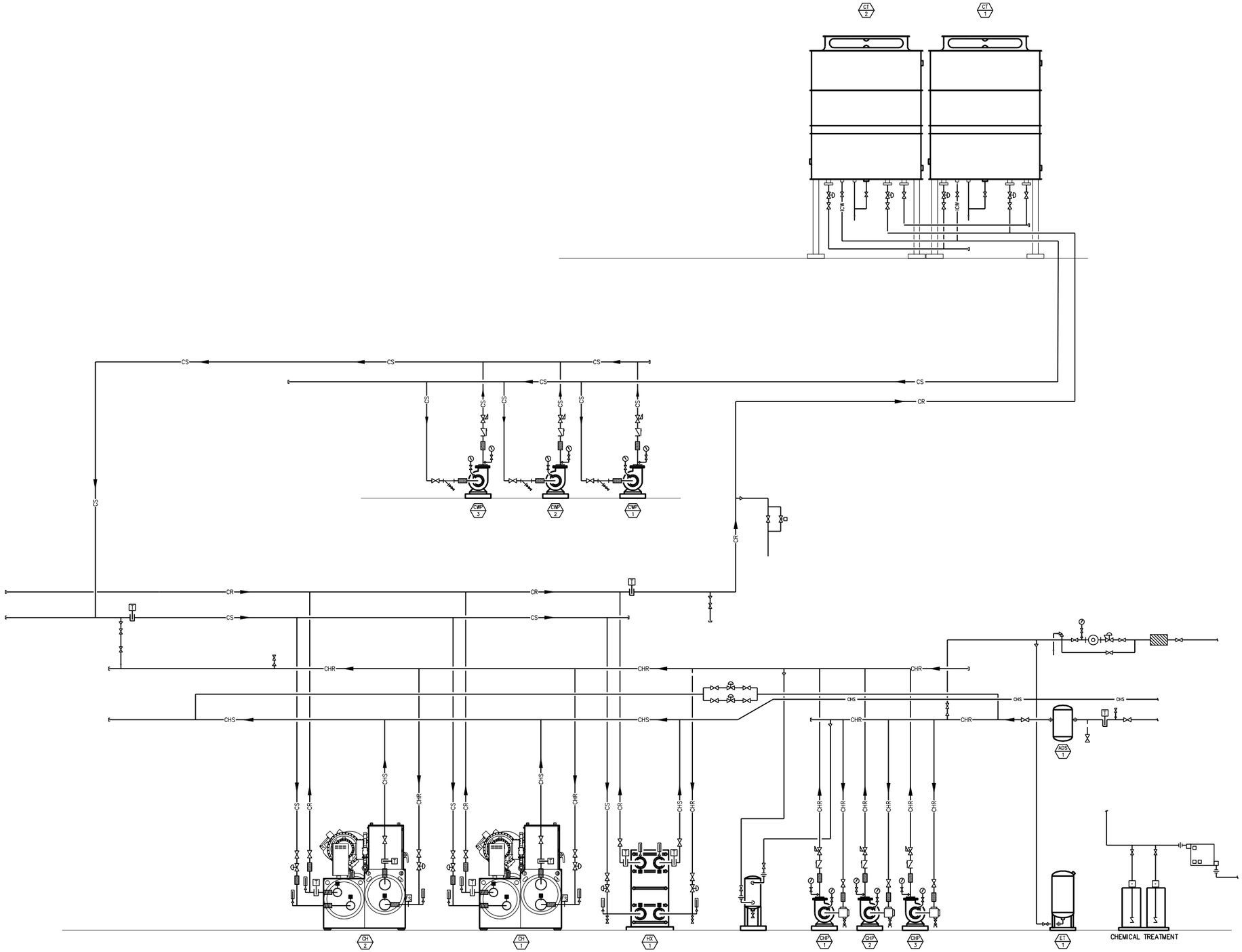
REPLACEMENT REPORT - R3

SHEET NUMBER:

MCUP-R3

SCALE: -

JOB NUMBER: 18.0745



CHILLED / CONDENSER WATER FLOW DIAGRAM - R3

NO SCALE

1
M9

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DATE:	BY:	REVISIONS

MECHANICAL FLOW DIAGRAM

GRANT SAWYER OFFICE BUILDING

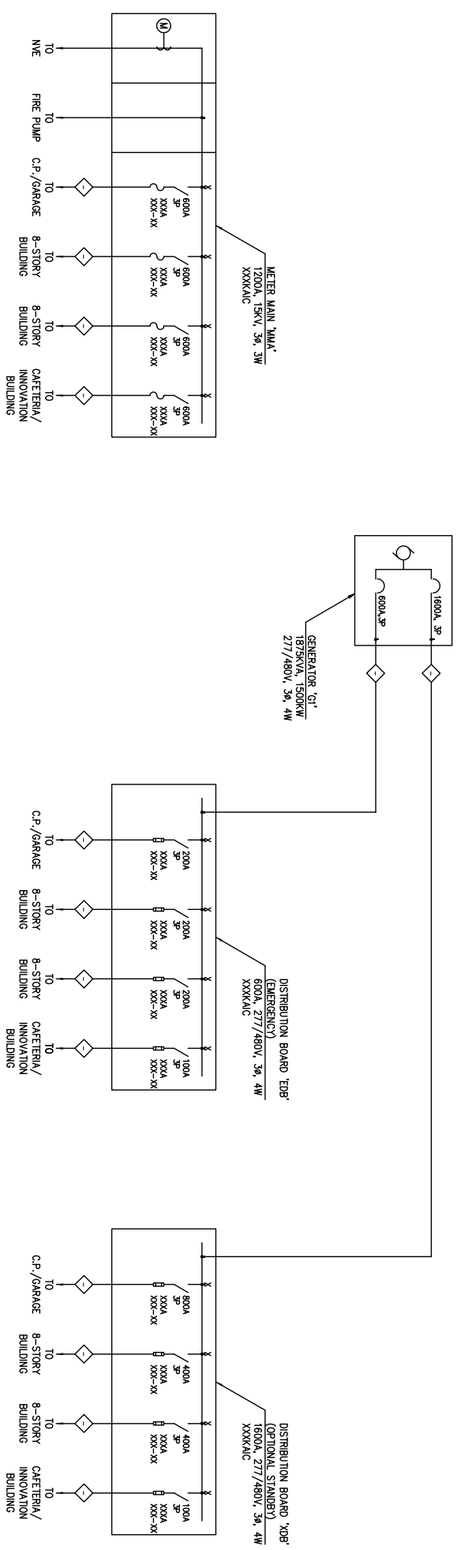
REMODEL REPORT - R3

SHEET NUMBER:

MFD-R3

SCALE: -

JOB NUMBER: 18.0745



ELECTRICAL SINGLE LINE - OPTION R3-A

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R3-A

SHEET NUMBER: **E-R3A**

SCALE: -

JOB NUMBER: 18.0745

DRAWN BY: -
CHECKED BY: -
DATE: -

DATE	BY	REVISIONS
		1

NV5
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HKA
Elevator Consulting, Inc.

January 02, 2019

Brian Henley
Partner, Architect
KGA ARCHITECTURE
9075 West Diablo Drive, Suite 300
Las Vegas, Nevada 89148

Reference: GRANT SAWYER STATE OFFICE BUILDING R3-A

Dear Brian:

NEW ELEVATOR CORE STUDY AND RESULTS:

Office Passenger Elevator Criteria:

Average Interval: 27-30 Seconds or Less
Estimated Demand: 12.5% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and UP Peak
Population Density: 1200 end of 2040
Density: 80%
Occupancy: 100%

NEW CD STUDY - Office Passenger Elevator Results:

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-A	2 Way	5	4 MRL	200	1200	6.0 / 6.0	25.8	16.8	139 / 13.9	Excellent
R2-A	UP	5	4 MRL	200	1200	8.3	18.8	12.4	135 / 13.5	Excellent
R2-A	2 Way	5	3 MRL	350	1200	7.0 / 7.0	34.1	22.3	123 / 12.3	Fair
R2-B/C	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	33	21.5	67 / 12.0	Good
R2-B/C	UP	4	2 MRL ea.	350	600	7.1	29.8	19.4	71 / 12.5	Excellent
R3-A	2 Way	8	3 MRL ea.	350	600	4.1 / 4.1	29.9	19.4	80 / 14.4	Excellent
R3-A	UP	8	3 MRL ea.	350	600	6.5	24.7	16.0	79 / 14.2	Excellent
R3-A	2 Way	8	2 MRL ea.	350	600	5.3 / 5.3	52.3	34.0	60 / 10.8	Poor
R3-A	UP	8	2 MRL ea.	350	600	11	45.6	29.6	69 / 12.3	Poor
R3-B	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	32.2	20.9	68 / 13.0	Good
R3-B	UP	4	2 MRL ea.	350	600	5.2	23.0	15.0	68 / 13.0	Excellent

Summary Elevators:

- R3-A – Provide 3 new passengers in each central core. Add 1 new dedicated service elevator 4500# at 200 FPM in new core or near a new loading dock elsewhere in each building. Governor's access so destination dispatching may be a consideration. VIP service can be a destination feature that can offer a private express elevator ride. Cost: $3.8M. Destination dispatch - add $200k.

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R3-A	2 Way	8	3 MRL ea.	350	600	4.1 / 4.1	29.9	19.4	80 / 14.4	Excellent
R3-A	UP	8	3 MRL ea.	350	600	6.5	24.7	16.0	79 / 14.2	Excellent

Parking Garages Passenger Elevator Criteria:

Average Interval: 45-50 Seconds or Less
Estimated Demand: 9-10% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and DN Peak (morning)
Population: 1200 end of 2040
Occupancy: 100%
No People per Car (Avg.) 1.2
Stalls: R2A, R3A: **1057**
Stalls: R2B, R2C, R3B: **1233**
First floor- no users, assume 25% on floor 2 take stairs

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2A, R3A	2 Way	4	2 MRL ea.	200	1268	6.0 / 6.0	40.4	26.3	10.2	Excellent
R2A, R3A	DN	4	2 MRL ea.	200	1268	8.0	26.6	17.3	10.4	Excellent
R2B, R2C, R3B	2 Way	4	2 MRL ea.	200	1480	7.0 / 7.0	43.5	28.3	9.5	Good
R2B, R2C, R3B	DN	4	2 MRL ea.	200	1480	10.0	28.5	18.5	10.3	Excellent

END OF REPORT

NSPWD Grant Sawyer Office Building Replace Concept R3-A

Las Vegas

KGA
FEASIBILITY STUDY COST ESTIMATE REVISION2
Job No. 18236.000
11 January 2019

OC INSIGHT

COST ESTIMATE

INTRODUCTORY NOTES

This estimate is based on verbal direction from the client and the following items, received 17 December 2018 & 20 December 2018

The following items are excluded from this estimate:

- Escalation.
- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Furniture, fixtures & equipment, unless noted otherwise.
- Temporary office facilities.
- Moving, storage and installation of owner furnished equipment.
- Relocation of personnel to offsite offices.
- Photovoltaic system.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

Phase I Project Timeline

The midpoint of construction of April 2022 is based on:

- Construction start date of July 2021
- Estimated construction duration of 18 months

Phase II Project Timeline

The midpoint of construction of April 2024 is based on:

- Construction start date of July 2023
- Estimated construction duration of 18 months

Phase III Project Timeline

The midpoint of construction of April 2026 is based on:

- Construction start date of July 2025
- Estimated construction duration of 18 months

- This estimate is based on a CMAR delivery method.
- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$76,334,922	196,000	$389.46
02. INTERACTIVE COMMONS	$8,413,289	12,000	$701.11
03. CORE ELEVATORS AND CIRCULATION	$14,702,154	43,560	$337.52
04. CENTRAL PLANT AND BUILDING EQUIPMENT	$8,027,385	2,144	$3,744.12
05. PHASE I SITE WORK	$5,590,978	411,745	$13.58

TOTAL CONSTRUCTION COST	$113,068,728

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$4,008,229	208,000	$19.27

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$117,076,957

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase I

Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$57,133,659	196,000	$291.50
02. INTERACTIVE COMMONS	$6,297,013	12,000	$524.75
03. CORE ELEVATORS AND CIRCULATION	$11,003,979	43,560	$252.62
04. CENTRAL PLANT AND BUILDING EQUIPMENT	$6,008,179	2,144	$2,802.32
05. PHASE I SITE WORK	$4,184,625	411,745	$10.16

TOTAL NET DIRECT COST		$84,627,455
GENERAL MARKUPS - BASE BID		
DESIGN CONTINGENCY	15.00%	$12,694,118
PHASING	1.50%	$1,459,824
CMAR CONTINGENCY	4.00%	$3,951,256
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$4,879,801
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$3,228,374
INSURANCE	1.00%	$1,108,408
BONDS: CONTRACTOR	1.00%	$1,119,492
TOTAL CONSTRUCTION COST		**$113,068,728**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$235,984	$1.20
02 SUBSTRUCTURE		$348,076	$1.78
03 SUPERSTRUCTURE		$9,310,833	$47.50
04 EXTERIOR CLOSURE		$10,327,433	$52.69
05 ROOFING		$519,165	$2.65
06 INTERIOR CONSTRUCTION		$9,818,072	$50.09
07 CONVEYING			
08 MECHANICAL		$13,605,593	$69.42
09 ELECTRICAL		$11,291,111	$57.61
10 EQUIPMENT		$1,677,392	$8.56
11 SITEWORK			
NET DIRECT BUILDING COST		$57,133,659	$291.50
DESIGN CONTINGENCY	15.00%	$8,570,049	$43.72
SUBTOTAL		$65,703,708	$335.22
PHASING	1.50%	$985,556	$5.03
SUBTOTAL		$66,689,263	$340.25
CMAR CONTINGENCY	4.00%	$2,667,571	$13.61
SUBTOTAL		$69,356,834	$353.86
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$3,294,450	$16.81
SUBTOTAL		$72,651,284	$370.67
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$2,179,539	$11.12
SUBTOTAL		$74,830,822	$381.79
INSURANCE	1.00%	$748,308	$3.82
SUBTOTAL		$75,579,130	$385.61
BONDS: CONTRACTOR	1.00%	$755,791	$3.86
TOTAL BUILDING COST		**$76,334,922**	**$389.46**

GROSS FLOOR AREA: 196,000 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase I
BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$235,984		$1.20
011 Standard Foundations	$235,984		$1.20	
012 Special Foundations				
02 SUBSTRUCTURE		$348,076		$1.78
021 Slab On Grade	$348,076		$1.78	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$9,310,833		$47.50
031 Floor and Roof Construction	$8,628,165		$44.02	
032 Stair Construction	$682,668		$3.48	
04 EXTERIOR CLOSURE		$10,327,433		$52.69
041 Exterior Walls	$2,021,952		$10.32	
042 Exterior Doors/Windows	$8,305,481		$42.37	
05 ROOFING		$519,165		$2.65
051 Roofing	$519,165		$2.65	
06 INTERIOR CONSTRUCTION		$9,818,072		$50.09
061 Partitions	$2,595,824		$13.24	
062 Interior Finishes	$4,753,614		$24.25	
063 Specialties	$580,762		$2.96	
064 Interior Doors/Windows	$1,887,872		$9.63	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$13,605,593		$69.42
081 Plumbing	$2,062,922		$10.53	
082 H.V.A.C.	$10,300,143		$52.55	
083 Fire Protection	$1,242,528		$6.34	
084 Special Mechanical				
09 ELECTRICAL		$11,291,111		$57.61
091 Standard Electrical	$9,818,137		$50.09	
092 Special Electrical	$1,472,974		$7.52	
10 EQUIPMENT		$1,677,392		$8.56
101 Fixed/Movable Equipment	$66,220		$0.34	
102 Furnishings	$1,611,172		$8.22	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$57,133,659**		**$291.50**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$72,240	$6.02
02 SUBSTRUCTURE		$170,486	$14.21
03 SUPERSTRUCTURE		$541,800	$45.15
04 EXTERIOR CLOSURE		$969,801	$80.82
05 ROOFING		$295,818	$24.65
06 INTERIOR CONSTRUCTION		$603,112	$50.26
07 CONVEYING			
08 MECHANICAL		$944,268	$78.69
09 ELECTRICAL		$778,145	$64.85
10 EQUIPMENT		$1,921,343	$160.11
11 SITEWORK			
NET DIRECT BUILDING COST		$6,297,013	$524.75
DESIGN CONTINGENCY	15.00%	$944,552	$78.71
SUBTOTAL		$7,241,565	$603.46
PHASING	1.50%	$108,623	$9.05
SUBTOTAL		$7,350,188	$612.52
CMAR CONTINGENCY	4.00%	$294,008	$24.50
SUBTOTAL		$7,644,196	$637.02
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$363,099	$30.26
SUBTOTAL		$8,007,295	$667.27
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$240,219	$20.02
SUBTOTAL		$8,247,514	$687.29
INSURANCE	1.00%	$82,475	$6.87
SUBTOTAL		$8,329,989	$694.17
BONDS: CONTRACTOR	1.00%	$83,300	$6.94
TOTAL BUILDING COST		**$8,413,289**	**$701.11**

GROSS FLOOR AREA: 12,000 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase I
INTERACTIVE COMMONS
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$72,240		$6.02
011 Standard Foundations	$72,240		$6.02	
012 Special Foundations				
02 SUBSTRUCTURE		$170,486		$14.21
021 Slab On Grade	$170,486		$14.21	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$541,800		$45.15
031 Floor and Roof Construction	$541,800		$45.15	
032 Stair Construction				
04 EXTERIOR CLOSURE		$969,801		$80.82
041 Exterior Walls	$185,756		$15.48	
042 Exterior Doors/Windows	$784,045		$65.34	
05 ROOFING		$295,818		$24.65
051 Roofing	$295,818		$24.65	
06 INTERIOR CONSTRUCTION		$603,112		$50.26
061 Partitions	$158,928		$13.24	
062 Interior Finishes	$275,720		$22.98	
063 Specialties	$52,880		$4.41	
064 Interior Doors/Windows	$115,584		$9.63	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$944,268		$78.69
081 Plumbing	$308,103		$25.68	
082 H.V.A.C.	$542,855		$45.24	
083 Fire Protection	$93,310		$7.78	
084 Special Mechanical				
09 ELECTRICAL		$778,145		$64.85
091 Standard Electrical	$596,823		$49.74	
092 Special Electrical	$181,322		$15.11	
10 EQUIPMENT		$1,921,343		$160.11
101 Fixed/Movable Equipment	$1,757,840		$146.49	
102 Furnishings	$163,503		$13.63	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$6,297,013**			**$524.75**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$32,779	$0.75
02 SUBSTRUCTURE		$77,359	$1.78
03 SUPERSTRUCTURE		$1,706,817	$39.18
04 EXTERIOR CLOSURE		$3,305,679	$75.89
05 ROOFING		$104,892	$2.41
06 INTERIOR CONSTRUCTION		$1,758,596	$40.37
07 CONVEYING		$1,774,299	$40.73
08 MECHANICAL		$980,297	$22.50
09 ELECTRICAL		$822,158	$18.87
10 EQUIPMENT		$441,103	$10.13
11 SITEWORK			
NET DIRECT BUILDING COST		$11,003,979	$252.62
DESIGN CONTINGENCY	15.00%	$1,650,597	$37.89
SUBTOTAL		$12,654,576	$290.51
PHASING	1.50%	$189,819	$4.36
SUBTOTAL		$12,844,394	$294.87
CMAR CONTINGENCY	4.00%	$513,776	$11.79
SUBTOTAL		$13,358,170	$306.66
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$634,513	$14.57
SUBTOTAL		$13,992,683	$321.23
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$419,781	$9.64
SUBTOTAL		$14,412,464	$330.86
INSURANCE	1.00%	$144,125	$3.31
SUBTOTAL		$14,556,588	$334.17
BONDS: CONTRACTOR	1.00%	$145,566	$3.34
TOTAL BUILDING COST		**$14,702,154**	**$337.52**

GROSS FLOOR AREA: 43,560 SF

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$32,779		$0.75
011 Standard Foundations	$32,779		$0.75	
012 Special Foundations				
02 SUBSTRUCTURE		$77,359		$1.78
021 Slab On Grade	$77,359		$1.78	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$1,706,817		$39.18
031 Floor and Roof Construction	$1,445,549		$33.19	
032 Stair Construction	$261,268		$6.00	
04 EXTERIOR CLOSURE		$3,305,679		$75.89
041 Exterior Walls	$609,335		$13.99	
042 Exterior Doors/Windows	$2,696,344		$61.90	
05 ROOFING		$104,892		$2.41
051 Roofing	$104,892		$2.41	
06 INTERIOR CONSTRUCTION		$1,758,596		$40.37
061 Partitions	$367,124		$8.43	
062 Interior Finishes	$1,028,664		$23.61	
063 Specialties	$257,916		$5.92	
064 Interior Doors/Windows	$104,892		$2.41	
07 CONVEYING		$1,774,299		$40.73
071 Elevators	$1,774,299		$40.73	
08 MECHANICAL		$980,297		$22.50
081 Plumbing	$550,830		$12.65	
082 H.V.A.C.	$272,128		$6.25	
083 Fire Protection	$157,339		$3.61	
084 Special Mechanical				
09 ELECTRICAL		$822,158		$18.87
091 Standard Electrical	$696,942		$16.00	
092 Special Electrical	$125,216		$2.87	
10 EQUIPMENT		$441,103		$10.13
101 Fixed/Movable Equipment	$12,040		$0.28	
102 Furnishings	$429,063		$9.85	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$11,003,979**		**$252.62**	

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$10,720	$5.00
02 SUBSTRUCTURE		$25,299	$11.80
03 SUPERSTRUCTURE		$92,929	$43.34
04 EXTERIOR CLOSURE		$109,832	$51.23
05 ROOFING		$45,432	$21.19
06 INTERIOR CONSTRUCTION		$101,162	$47.18
07 CONVEYING			
08 MECHANICAL		$5,173,665	$2,413.09
09 ELECTRICAL		$449,140	$209.49
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT BUILDING COST		$6,008,179	$2,802.32
DESIGN CONTINGENCY	15.00%	$901,227	$420.35
SUBTOTAL		$6,909,406	$3,222.67
PHASING	1.50%	$103,641	$48.34
SUBTOTAL		$7,013,047	$3,271.01
CMAR CONTINGENCY	4.00%	$280,522	$130.84
SUBTOTAL		$7,293,569	$3,401.85
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$346,445	$161.59
SUBTOTAL		$7,640,013	$3,563.44
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$229,200	$106.90
SUBTOTAL		$7,869,214	$3,670.34
INSURANCE	1.00%	$78,692	$36.70
SUBTOTAL		$7,947,906	$3,707.05
BONDS: CONTRACTOR	1.00%	$79,479	$37.07
TOTAL BUILDING COST		**$8,027,385**	**$3,744.12**

GROSS FLOOR AREA: 2,144 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase I
CENTRAL PLANT AND BUILDING EQUIPMENT
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$10,720		$5.00
011 Standard Foundations	$10,720		$5.00	
012 Special Foundations				
02 SUBSTRUCTURE		$25,299		$11.80
021 Slab On Grade	$25,299		$11.80	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$92,929		$43.34
031 Floor and Roof Construction	$92,929		$43.34	
032 Stair Construction				
04 EXTERIOR CLOSURE		$109,832		$51.23
041 Exterior Walls	$86,609		$40.40	
042 Exterior Doors/Windows	$23,223		$10.83	
05 ROOFING		$45,432		$21.19
051 Roofing	$45,432		$21.19	
06 INTERIOR CONSTRUCTION		$101,162		$47.18
061 Partitions	$25,814		$12.04	
062 Interior Finishes	$38,316		$17.87	
063 Specialties	$27,997		$13.06	
064 Interior Doors/Windows	$9,035		$4.21	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$5,173,665		$2,413.09
081 Plumbing	$54,180		$25.27	
082 H.V.A.C.	$5,101,415		$2,379.39	
083 Fire Protection	$18,070		$8.43	
084 Special Mechanical				
09 ELECTRICAL		$449,140		$209.49
091 Standard Electrical	$413,020		$192.64	
092 Special Electrical	$36,120		$16.85	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$6,008,179**		**$2,802.32**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$4,184,625	$10.16
NET DIRECT SITE COST		$4,184,625	$10.16
DESIGN CONTINGENCY	15.00%	$627,694	$1.52
SUBTOTAL		$4,812,319	$11.69
PHASING	1.50%	$72,185	$0.18
SUBTOTAL		$4,884,504	$11.86
CMAR CONTINGENCY	4.00%	$195,380	$0.47
SUBTOTAL		$5,079,884	$12.34
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$241,294	$0.59
SUBTOTAL		$5,321,178	$12.92
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$159,635	$0.39
SUBTOTAL		$5,480,813	$13.31
INSURANCE	1.00%	$54,808	$0.13
SUBTOTAL		$5,535,622	$13.44
BONDS: CONTRACTOR	1.00%	$55,356	$0.13
TOTAL SITE COST		**$5,590,978**	**$13.58**

TOTAL SITE AREA: 411,745 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase I
PHASE I SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$4,184,625		$10.16
111 Site Preparation	$1,281,893		$3.11	
112 Site Improvements	$1,235,478		$3.00	
113 Site Utilities	$1,667,254		$4.05	
114 Off-Site Work				
NET DIRECT SITE COST		**$4,184,625**		**$10.16**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. PHASE II SITEWORK	$1,814,432	76,230	$23.80
02. DEMOLITION OF EXISTING GRANT SAWYER BUILDING	$1,899,748	236,981	$8.02
TOTAL CONSTRUCTION COST	**$3,714,180**		

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. PHASE II SITEWORK	$1,358,030	76,230	$17.81
02. DEMOLITION OF EXISTING GRANT SAWYER BUILDING	$1,421,886	236,981	$6.00
TOTAL NET DIRECT COST	**$2,779,916**		

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$416,987
PHASING	1.50%	$47,954
CMAR CONTINGENCY	4.00%	$129,794
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$160,296
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$106,048
INSURANCE	1.00%	$36,410
BONDS: CONTRACTOR	1.00%	$36,774
TOTAL CONSTRUCTION COST		**$3,714,180**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$1,358,030	$17.81
NET DIRECT SITE COST		$1,358,030	$17.81
DESIGN CONTINGENCY	15.00%	$203,705	$2.67
SUBTOTAL		$1,561,735	$20.49
PHASING	1.50%	$23,426	$0.31
SUBTOTAL		$1,585,161	$20.79
CMAR CONTINGENCY	4.00%	$63,406	$0.83
SUBTOTAL		$1,648,567	$21.63
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$78,307	$1.03
SUBTOTAL		$1,726,874	$22.65
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$51,806	$0.68
SUBTOTAL		$1,778,680	$23.33
INSURANCE	1.00%	$17,787	$0.23
SUBTOTAL		$1,796,467	$23.57
BONDS: CONTRACTOR	1.00%	$17,965	$0.24
TOTAL SITE COST		**$1,814,432**	**$23.80**

TOTAL SITE AREA: 76,230 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase II
PHASE II SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$1,358,030		$17.81
111 Site Preparation	$367,124		$4.82	
112 Site Improvements	$734,247		$9.63	
113 Site Utilities	$256,659		$3.37	
114 Off-Site Work				
NET DIRECT SITE COST		**$1,358,030**		**$17.81**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$1,421,886	$6.00
NET DIRECT SITE COST		$1,421,886	$6.00
DESIGN CONTINGENCY	15.00%	$213,283	$0.90
SUBTOTAL		$1,635,169	$6.90
PHASING	1.50%	$24,528	$0.10
SUBTOTAL		$1,659,696	$7.00
CMAR CONTINGENCY	4.00%	$66,388	$0.28
SUBTOTAL		$1,726,084	$7.28
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$81,989	$0.35
SUBTOTAL		$1,808,073	$7.63
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$54,242	$0.23
SUBTOTAL		$1,862,315	$7.86
INSURANCE	1.00%	$18,623	$0.08
SUBTOTAL		$1,880,939	$7.94
BONDS: CONTRACTOR	1.00%	$18,809	$0.08
TOTAL SITE COST		**$1,899,748**	**$8.02**

TOTAL SITE AREA: 236,981 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase II
DEMOLITION OF EXISTING GRANT SAWYER BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$1,421,886		$6.00
111 Site Preparation	$1,421,886		$6.00	
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST		**$1,421,886**		**$6.00**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$76,957,464	196,000	$392.64
02. CORE ELEVATORS AND CIRCULATION	$14,415,963	43,560	$330.94
03. PARKING GARAGE	$28,390,228	374,400	$75.83
04. PHASE III SITE WORK	$8,668,865	402,023	$21.56

TOTAL CONSTRUCTION COST	$128,432,519

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$3,776,985	196,000	$19.27

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$132,209,504

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$57,599,607	196,000	$293.88
02. CORE ELEVATORS AND CIRCULATION	$10,789,776	43,560	$247.70
03. PARKING GARAGE	$21,248,959	374,400	$56.75
04. PHASE III SITE WORK	$6,488,301	402,023	$16.14

TOTAL NET DIRECT COST	$96,126,643

GENERAL MARKUPS - BASE BID		
DESIGN CONTINGENCY	15.00%	$14,418,996
PHASING	1.50%	$1,658,185
CMAR CONTINGENCY	4.00%	$4,488,153
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$5,542,869
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$3,667,045
INSURANCE	1.00%	$1,259,019
BONDS: CONTRACTOR	1.00%	$1,271,609

TOTAL CONSTRUCTION COST	$128,432,519

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$235,984	$1.20
02 SUBSTRUCTURE		$348,076	$1.78
03 SUPERSTRUCTURE		$9,310,833	$47.50
04 EXTERIOR CLOSURE		$10,628,433	$54.23
05 ROOFING		$519,165	$2.65
06 INTERIOR CONSTRUCTION		$9,983,020	$50.93
07 CONVEYING			
08 MECHANICAL		$13,605,593	$69.42
09 ELECTRICAL		$11,291,111	$57.61
10 EQUIPMENT		$1,677,392	$8.56
11 SITEWORK			
NET DIRECT BUILDING COST		$57,599,607	$293.88
DESIGN CONTINGENCY	15.00%	$8,639,941	$44.08
SUBTOTAL		$66,239,548	$337.96
PHASING	1.50%	$993,593	$5.07
SUBTOTAL		$67,233,141	$343.03
CMAR CONTINGENCY	4.00%	$2,689,326	$13.72
SUBTOTAL		$69,922,467	$356.75
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$3,321,317	$16.95
SUBTOTAL		$73,243,784	$373.69
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$2,197,314	$11.21
SUBTOTAL		$75,441,098	$384.90
INSURANCE	1.00%	$754,411	$3.85
SUBTOTAL		$76,195,509	$388.75
BONDS: CONTRACTOR	1.00%	$761,955	$3.89
TOTAL BUILDING COST		**$76,957,464**	**$392.64**

GROSS FLOOR AREA: 196,000 SF

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$235,984		$1.20
011 Standard Foundations	$235,984		$1.20	
012 Special Foundations				
02 SUBSTRUCTURE		$348,076		$1.78
021 Slab On Grade	$348,076		$1.78	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$9,310,833		$47.50
031 Floor and Roof Construction	$8,628,165		$44.02	
032 Stair Construction	$682,668		$3.48	
04 EXTERIOR CLOSURE		$10,628,433		$54.23
041 Exterior Walls	$2,322,952		$11.85	
042 Exterior Doors/Windows	$8,305,481		$42.37	
05 ROOFING		$519,165		$2.65
051 Roofing	$519,165		$2.65	
06 INTERIOR CONSTRUCTION		$9,983,020		$50.93
061 Partitions	$2,595,824		$13.24	
062 Interior Finishes	$4,753,614		$24.25	
063 Specialties	$745,710		$3.80	
064 Interior Doors/Windows	$1,887,872		$9.63	
07 CONVEYING				
071 Elevators				
08 MECHANICAL		$13,605,593		$69.42
081 Plumbing	$2,062,922		$10.53	
082 H.V.A.C.	$10,300,143		$52.55	
083 Fire Protection	$1,242,528		$6.34	
084 Special Mechanical				
09 ELECTRICAL		$11,291,111		$57.61
091 Standard Electrical	$9,818,137		$50.09	
092 Special Electrical	$1,472,974		$7.52	
10 EQUIPMENT		$1,677,392		$8.56
101 Fixed/Movable Equipment	$66,220		$0.34	
102 Furnishings	$1,611,172		$8.22	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST		**$57,599,607**		**$293.88**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$32,779	$0.75
02 SUBSTRUCTURE		$77,359	$1.78
03 SUPERSTRUCTURE		$1,706,817	$39.18
04 EXTERIOR CLOSURE		$3,164,208	$72.64
05 ROOFING		$104,892	$2.41
06 INTERIOR CONSTRUCTION		$1,784,820	$40.97
07 CONVEYING		$1,694,329	$38.90
08 MECHANICAL		$980,297	$22.50
09 ELECTRICAL		$822,158	$18.87
10 EQUIPMENT		$422,117	$9.69
11 SITEWORK			
NET DIRECT BUILDING COST		$10,789,776	$247.70
DESIGN CONTINGENCY	15.00%	$1,618,466	$37.15
SUBTOTAL		$12,408,242	$284.85
PHASING	1.50%	$186,124	$4.27
SUBTOTAL		$12,594,366	$289.13
CMAR CONTINGENCY	4.00%	$503,775	$11.57
SUBTOTAL		$13,098,141	$300.69
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$622,162	$14.28
SUBTOTAL		$13,720,302	$314.97
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$411,609	$9.45
SUBTOTAL		$14,131,911	$324.42
INSURANCE	1.00%	$141,319	$3.24
SUBTOTAL		$14,273,231	$327.67
BONDS: CONTRACTOR	1.00%	$142,732	$3.28
TOTAL BUILDING COST		**$14,415,963**	**$330.94**

GROSS FLOOR AREA: 43,560 SF

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$32,779		$0.75
011 Standard Foundations	$32,779		$0.75	
012 Special Foundations				
02 SUBSTRUCTURE		$77,359		$1.78
021 Slab On Grade	$77,359		$1.78	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$1,706,817		$39.18
031 Floor and Roof Construction	$1,445,549		$33.19	
032 Stair Construction	$261,268		$6.00	
04 EXTERIOR CLOSURE		$3,164,208		$72.64
041 Exterior Walls	$589,921		$13.54	
042 Exterior Doors/Windows	$2,574,287		$59.10	
05 ROOFING		$104,892		$2.41
051 Roofing	$104,892		$2.41	
06 INTERIOR CONSTRUCTION		$1,784,820		$40.97
061 Partitions	$367,124		$8.43	
062 Interior Finishes	$1,028,664		$23.61	
063 Specialties	$257,916		$5.92	
064 Interior Doors/Windows	$131,116		$3.01	
07 CONVEYING		$1,694,329		$38.90
071 Elevators	$1,694,329		$38.90	
08 MECHANICAL		$980,297		$22.50
081 Plumbing	$550,830		$12.65	
082 H.V.A.C.	$272,128		$6.25	
083 Fire Protection	$157,339		$3.61	
084 Special Mechanical				
09 ELECTRICAL		$822,158		$18.87
091 Standard Electrical	$696,942		$16.00	
092 Special Electrical	$125,216		$2.87	
10 EQUIPMENT		$422,117		$9.69
101 Fixed/Movable Equipment	$12,040		$0.28	
102 Furnishings	$410,077		$9.41	
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT BUILDING COST	**$10,789,776**		**$247.70**	

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS		$234,000	$0.63
02 SUBSTRUCTURE		$552,240	$1.48
03 SUPERSTRUCTURE		$16,848,000	$45.00
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING		$250,000	$0.67
08 MECHANICAL		$1,307,026	$3.49
09 ELECTRICAL		$2,057,693	$5.50
10 EQUIPMENT			
11 SITEWORK			
NET DIRECT SITE COST		$21,248,959	$56.75
DESIGN CONTINGENCY	15.00%	$3,187,344	$8.51
SUBTOTAL		$24,436,303	$65.27
PHASING	1.50%	$366,545	$0.98
SUBTOTAL		$24,802,847	$66.25
CMAR CONTINGENCY	4.00%	$992,114	$2.65
SUBTOTAL		$25,794,961	$68.90
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$1,225,261	$3.27
SUBTOTAL		$27,020,222	$72.17
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$810,607	$2.17
SUBTOTAL		$27,830,829	$74.33
INSURANCE	1.00%	$278,308	$0.74
SUBTOTAL		$28,109,137	$75.08
BONDS: CONTRACTOR	1.00%	$281,091	$0.75
TOTAL SITE COST		**$28,390,228**	**$75.83**

TOTAL SITE AREA: 374,400 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase III
PARKING GARAGE
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$0.63
011 Standard Foundations	$234,000		$0.63	
012 Special Foundations				
02 SUBSTRUCTURE		$552,240		$1.48
021 Slab On Grade	$552,240		$1.48	
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE		$16,848,000		$45.00
031 Floor and Roof Construction	$16,848,000		$45.00	
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING		$250,000		$0.67
071 Elevators	$250,000		$0.67	
08 MECHANICAL		$1,307,026		$3.49
081 Plumbing	$488,065		$1.30	
082 H.V.A.C.	$30,100		$0.08	
083 Fire Protection	$788,861		$2.11	
084 Special Mechanical				
09 ELECTRICAL		$2,057,693		$5.50
091 Standard Electrical	$1,719,610		$4.59	
092 Special Electrical	$338,083		$0.90	
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK				
111 Site Preparation				
112 Site Improvements				
113 Site Utilities				
114 Off-Site Work				
NET DIRECT SITE COST	**$21,248,959**			**$56.75**

FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST	$/SF AREA
01 FOUNDATIONS			
02 SUBSTRUCTURE			
03 SUPERSTRUCTURE			
04 EXTERIOR CLOSURE			
05 ROOFING			
06 INTERIOR CONSTRUCTION			
07 CONVEYING			
08 MECHANICAL			
09 ELECTRICAL			
10 EQUIPMENT			
11 SITEWORK		$6,488,301	$16.14
NET DIRECT SITE COST		$6,488,301	$16.14
DESIGN CONTINGENCY	15.00%	$973,245	$2.42
SUBTOTAL		$7,461,546	$18.56
PHASING	1.50%	$111,923	$0.28
SUBTOTAL		$7,573,469	$18.84
CMAR CONTINGENCY	4.00%	$302,939	$0.75
SUBTOTAL		$7,876,408	$19.59
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$374,129	$0.93
SUBTOTAL		$8,250,538	$20.52
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$247,516	$0.62
SUBTOTAL		$8,498,054	$21.14
INSURANCE	1.00%	$84,981	$0.21
SUBTOTAL		$8,583,034	$21.35
BONDS: CONTRACTOR	1.00%	$85,830	$0.21
TOTAL SITE COST		**$8,668,865**	**$21.56**

TOTAL SITE AREA: 402,023 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-A Phase III
PHASE III SITE WORK
Las Vegas

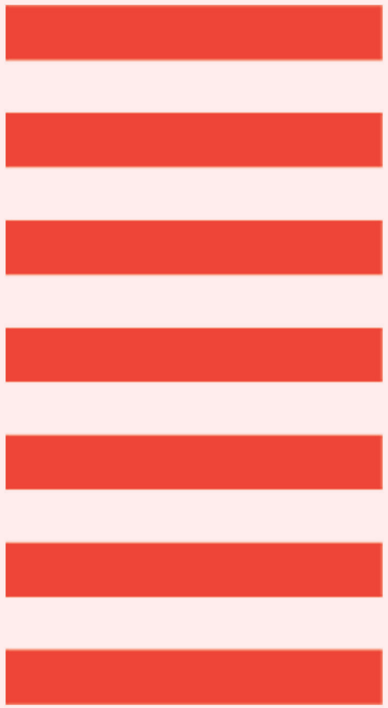
FEASIBILITY STUDY COST ESTIMATE REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS				
011 Standard Foundations				
012 Special Foundations				
02 SUBSTRUCTURE				
021 Slab On Grade				
022 Basement Excavation				
023 Basement Walls				
03 SUPERSTRUCTURE				
031 Floor and Roof Construction				
032 Stair Construction				
04 EXTERIOR CLOSURE				
041 Exterior Walls				
042 Exterior Doors/Windows				
05 ROOFING				
051 Roofing				
06 INTERIOR CONSTRUCTION				
061 Partitions				
062 Interior Finishes				
063 Specialties				
064 Interior Doors/Windows				
07 CONVEYING				
071 Elevators				
08 MECHANICAL				
081 Plumbing				
082 H.V.A.C.				
083 Fire Protection				
084 Special Mechanical				
09 ELECTRICAL				
091 Standard Electrical				
092 Special Electrical				
10 EQUIPMENT				
101 Fixed/Movable Equipment				
102 Furnishings				
103 Special Construction				
11 SITEWORK		$6,488,301		$16.14
111 Site Preparation	$2,234,703		$5.56	
112 Site Improvements	$2,622,224		$6.52	
113 Site Utilities	$1,631,374		$4.06	
114 Off-Site Work				
NET DIRECT SITE COST		**$6,488,301**		**$16.14**

Replacement | Concept R3-B



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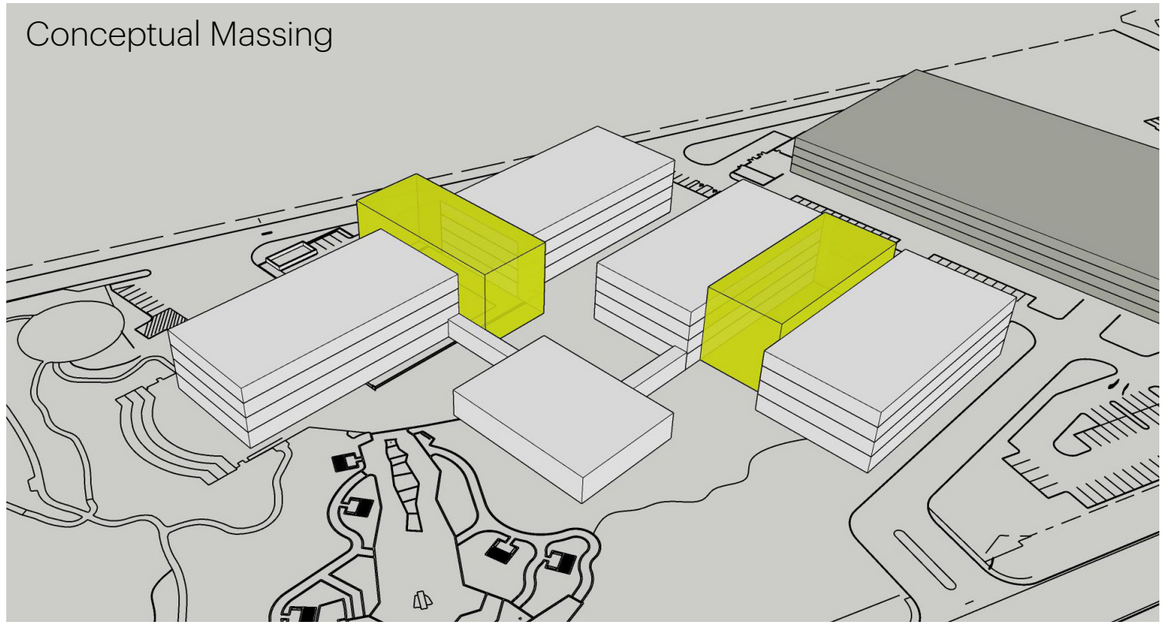
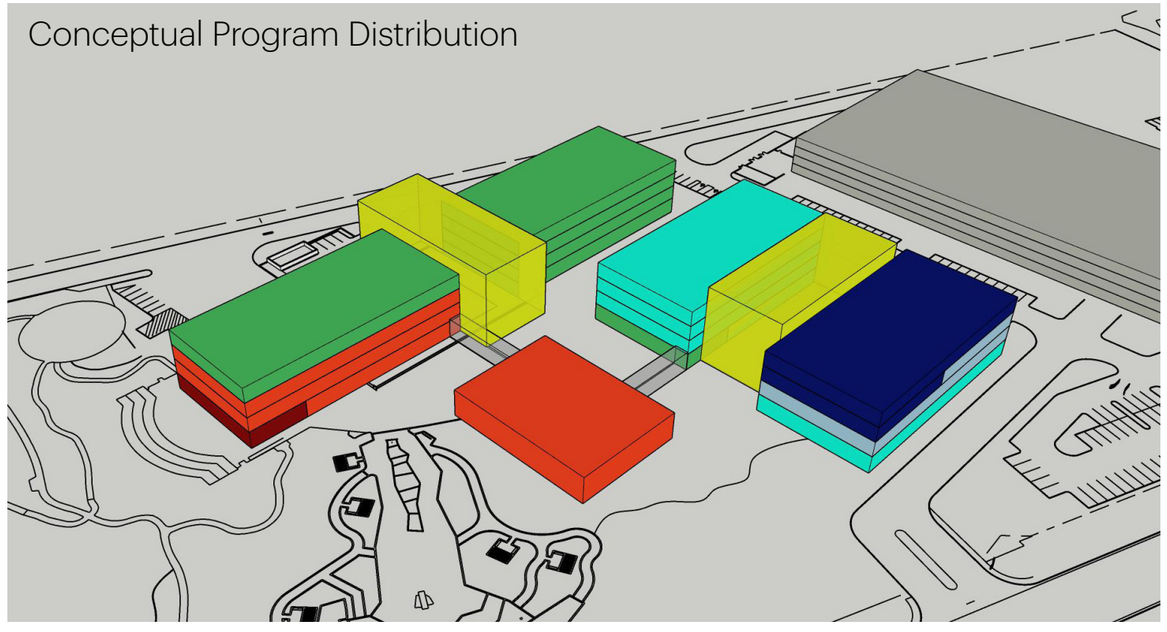
Replacement | Concept R3-B

Flexibility in Up to Four Phases

Concept R3-B aims to provide flexibility by allowing for a more gradual phasing of a Grant Sawyer replacement campus which can grow over time to meet the projected 2040 program area need. In addition to an independent Innovation Center and cafeteria, four new four-story office buildings of approximately 100,000 sq.ft. each would be built in up to four phases as additional space becomes needed. The first two office buildings and the Innovation Center fall outside of the current Sawyer footprint, allowing for transfer of that building's occupants prior to demolition of the existing facility. To maximize efficiency of elevators, restrooms and other vertical circulation items, the four office buildings share two vertical cores, which would be built with the first and third buildings. In addition to phasing flexibility, the complete campus layout also results in floor plates with good access to natural light and potential for quality interstitial outdoor spaces.





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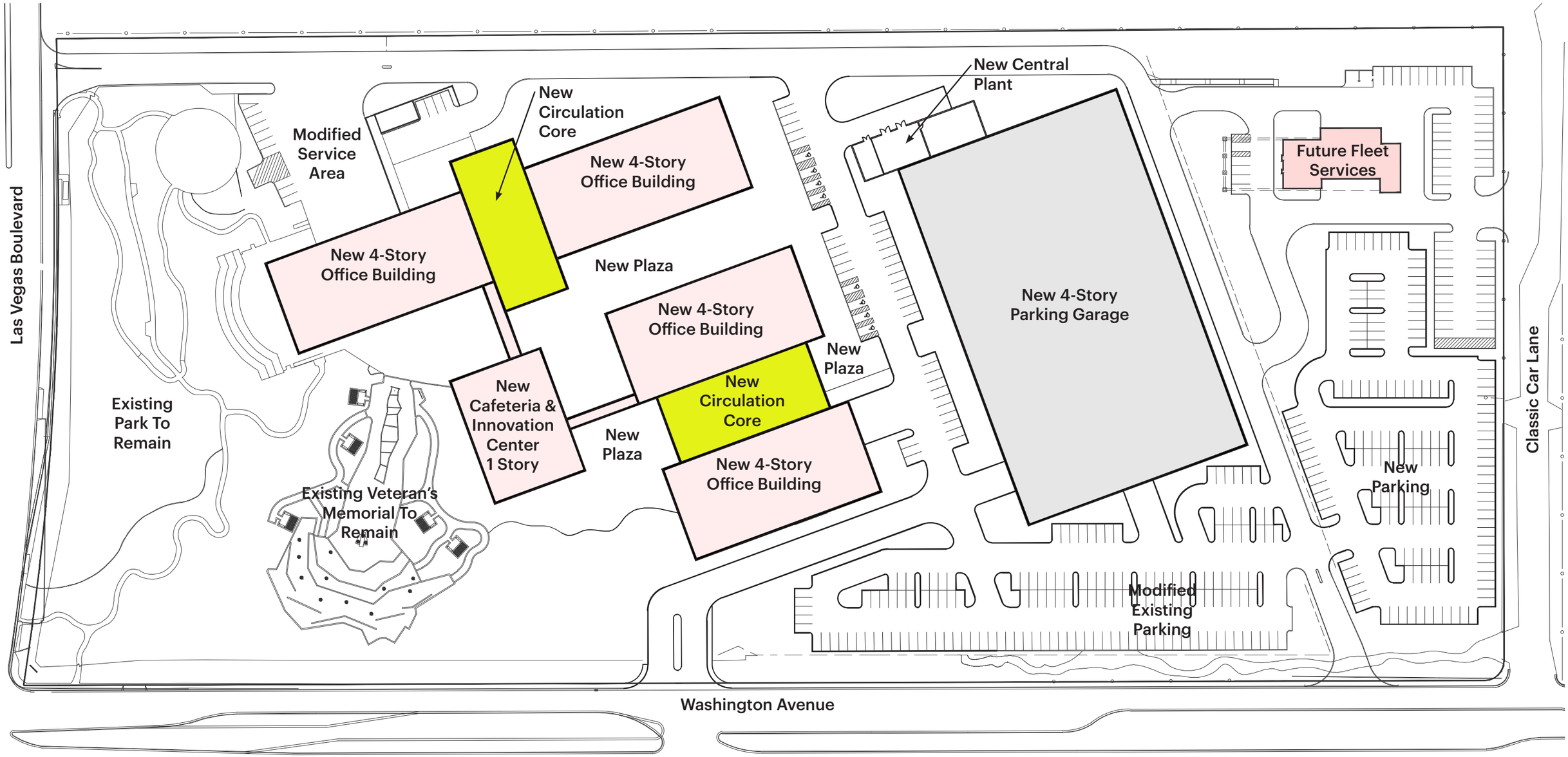
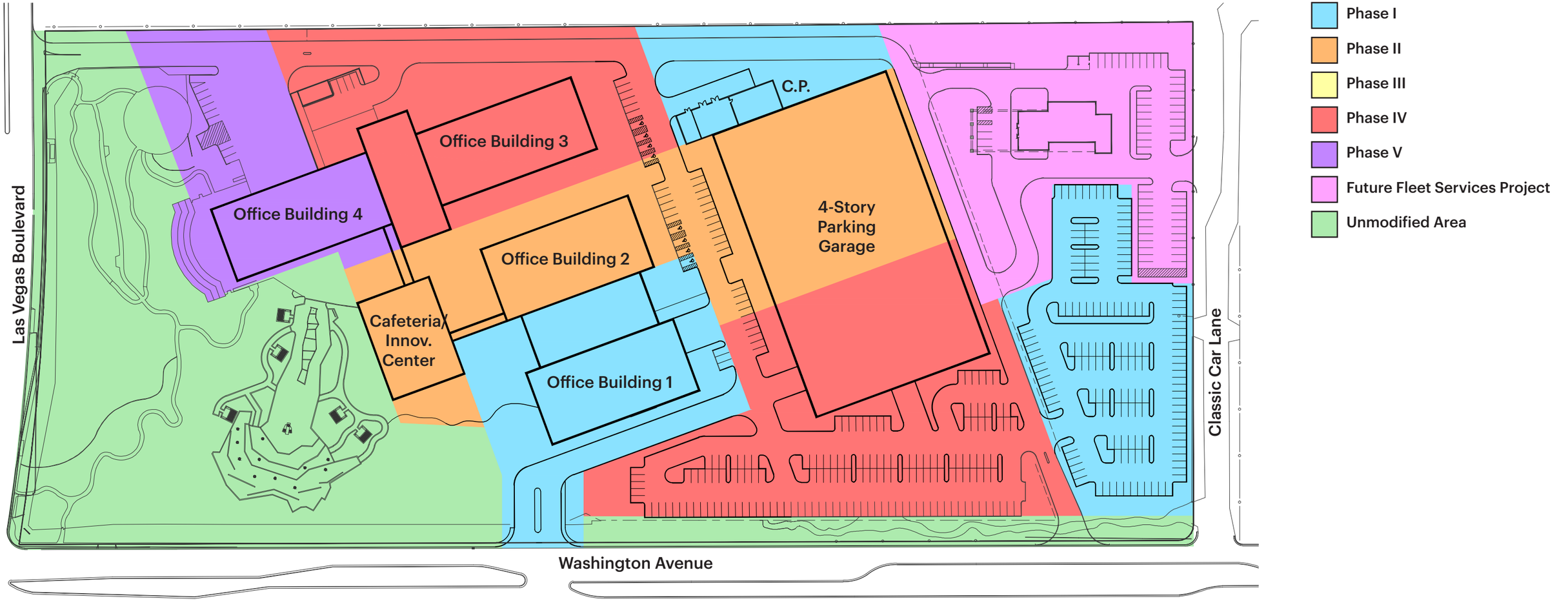
Concept R3-B | Conceptual Site Plan



Surface Parking: 366 Spaces
Garage Parking: 1,041 Spaces
Total Parking: 1,407 Spaces

Concept R3-B | Conceptual Phasing Plan



Phase I
Build a new 4-story, 104,000 S.F. Office Building 1 on a portion of the existing parking lot to the south of the Grant Sawyer Building. Build a new Central Plant. Build a new parking lot at the existing Fantasy Park and solar farm.

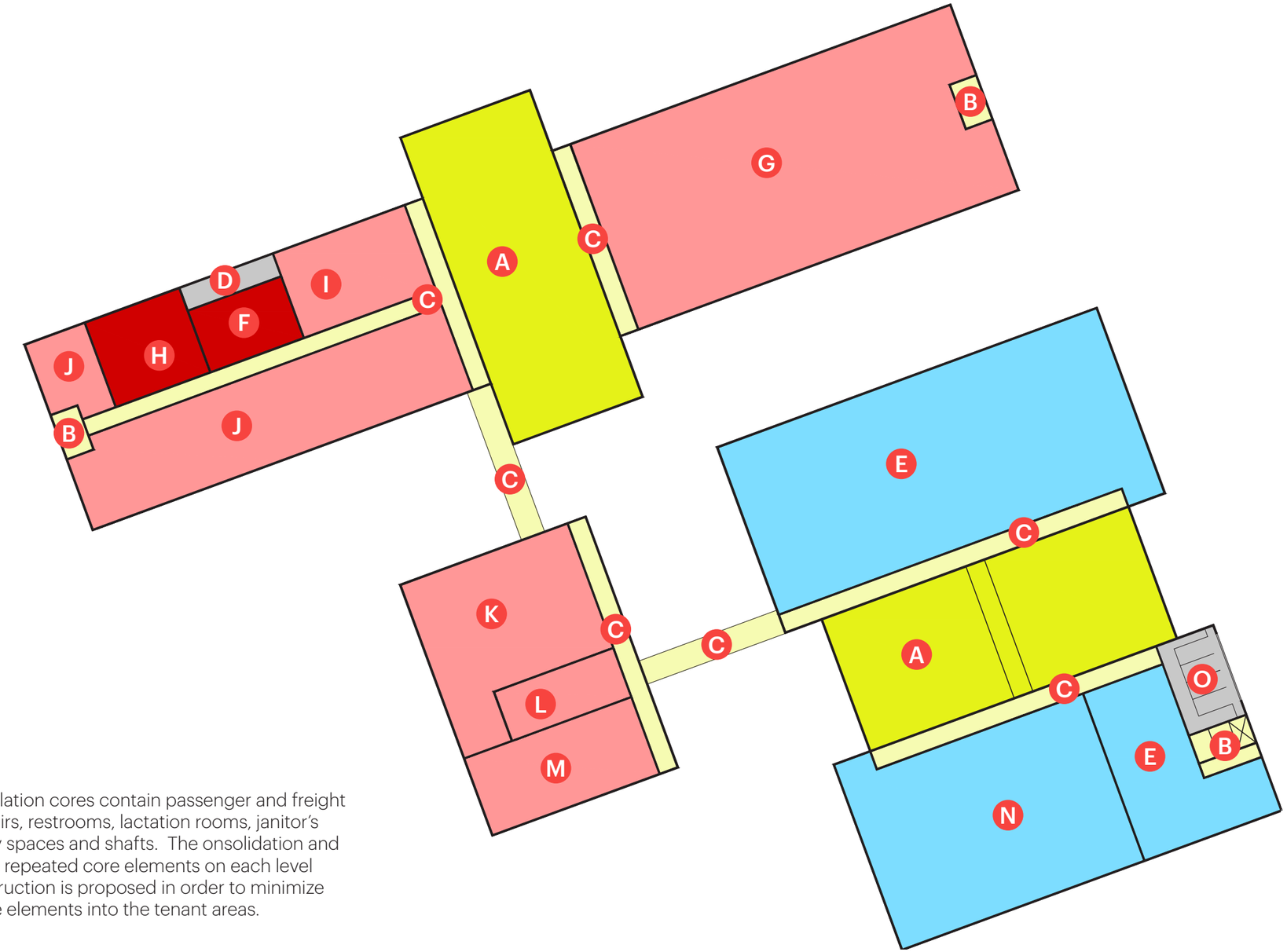
Phase II
Build a new 4-story, 92,000 S.F. Office Building 2 and a 12,000 S.F. single-story Innovation Center Building on a portion of the existing parking lot to the south of the Grant Sawyer Building. Office Building 2 will attach to Office Building 1 and will utilize its vertical circulation and utility core already in place. Build the north half of the 4-story parking garage over a portion of the current surface parking lot.

Phase III
Demolish the Grant Sawyer Building.

Phase IV
Build a new 4-story, 104,000 S.F. Office Building 3 on a portion of the former Grant Sawyer Building footprint. Build the south half of the 4-story parking garage.

Phase IV
Build a new 4-story, 92,000 S.F. Office Building 4 on the remaining portion of the former Grant Sawyer Building footprint. Office Building 4 will attach to Office Building 3 and will utilize its vertical circulation and utility core already in place.

Concept R3-B | Conceptual Level 1 Floor Plan

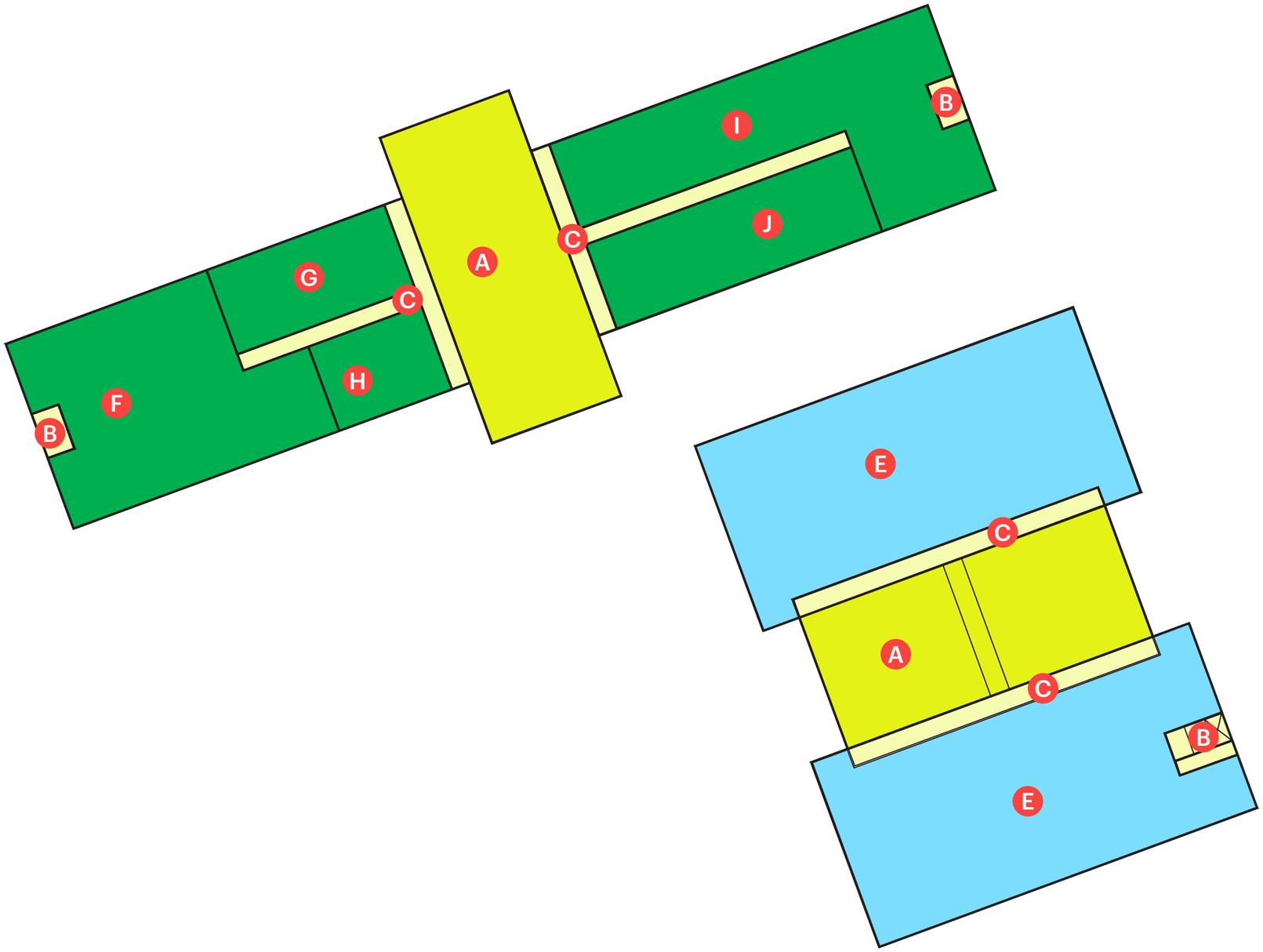


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Attorney General
- F Mail Services
- G Dept. of Taxation
- H Dept. of Public Safety (DPS) Investigation Division
- I Capitol Police
- J Dept. of Human Resources Management
- K Cafeteria
- L Shared Break Room
- M Innovation Center
- N Secretary of State
- O Governor's Garage

The vertical circulation cores contain passenger and freight elevators, exit stairs, restrooms, lactation rooms, janitor's closets and utility spaces and shafts. The onsolidation and stacking of these repeated core elements on each level of the new construction is proposed in order to minimize intrusion of these elements into the tenant areas.

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

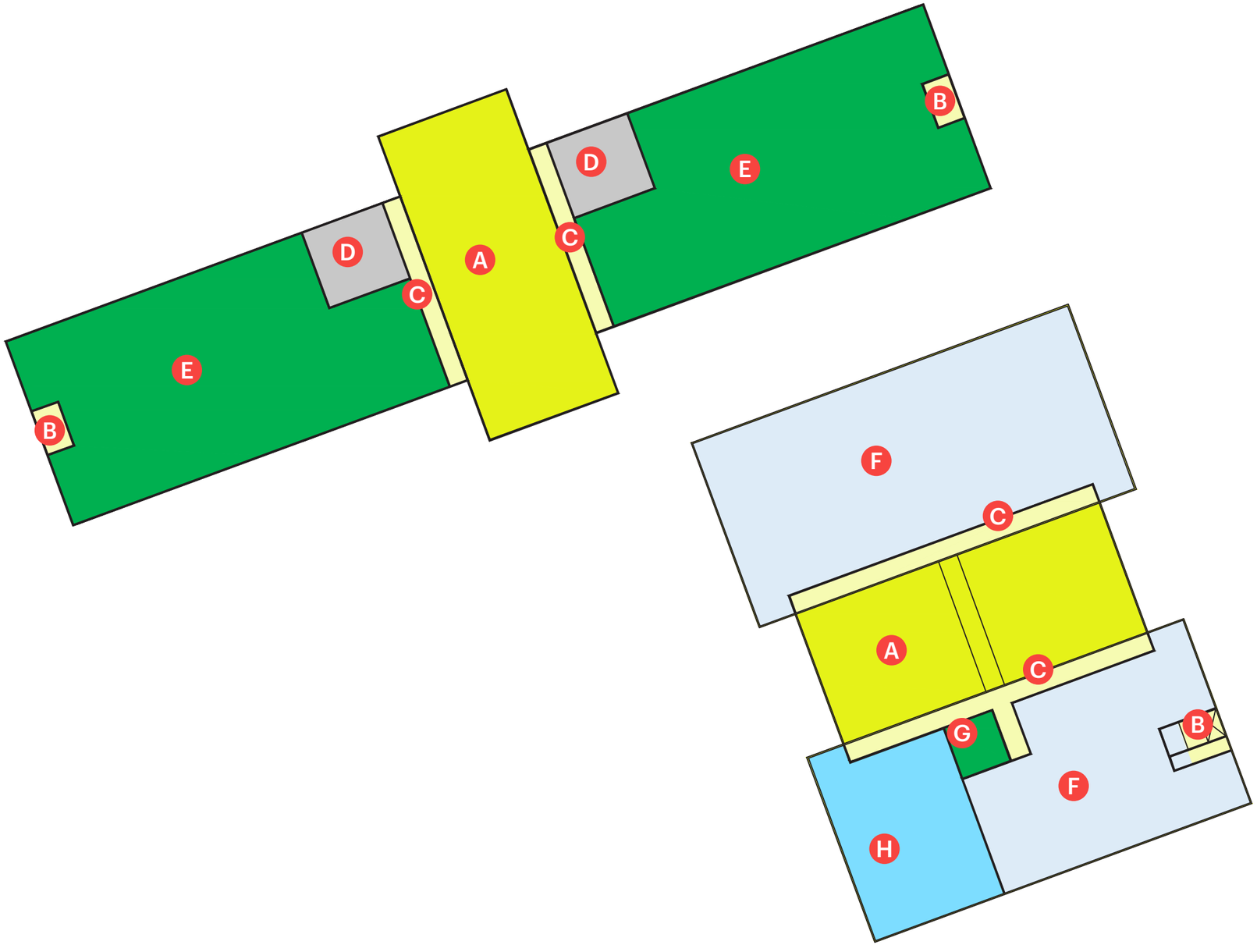


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Attorney General
- F Dept. of Employment, Training & Rehabilitation
- G Dept. of Veteran's Services
- H Controller's Office - Vendor Database Services
- I Colorado River Commission of Nevada
- J Consumer Health Assistance Bureau

0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

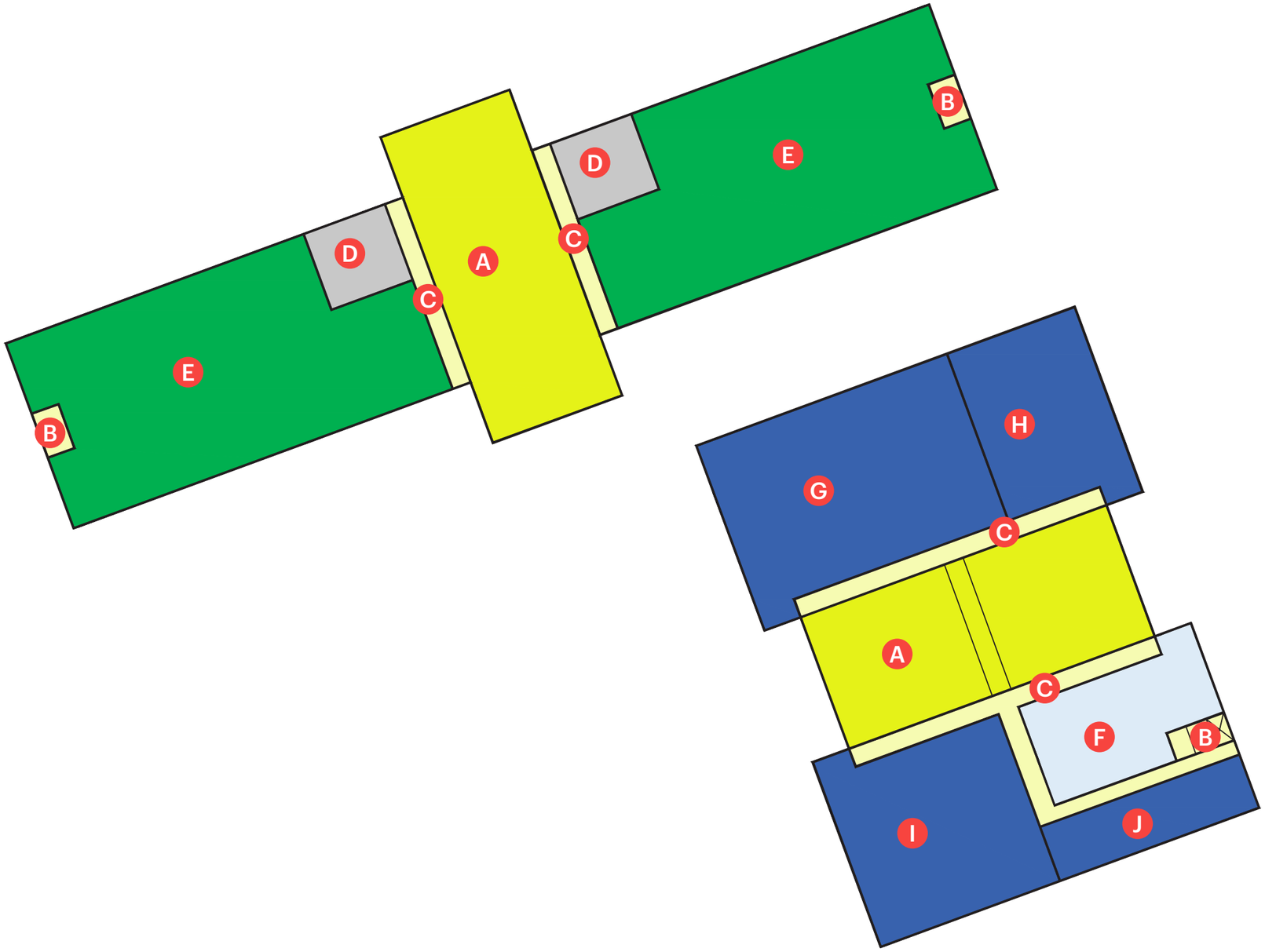
Concept R3-B | Conceptual Level 3 Floor Plan



- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Legislative Counsel Bureau
- G Commision on Ethics
- H State Treasurer

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R3-B | Conceptual Level 4 Floor Plan

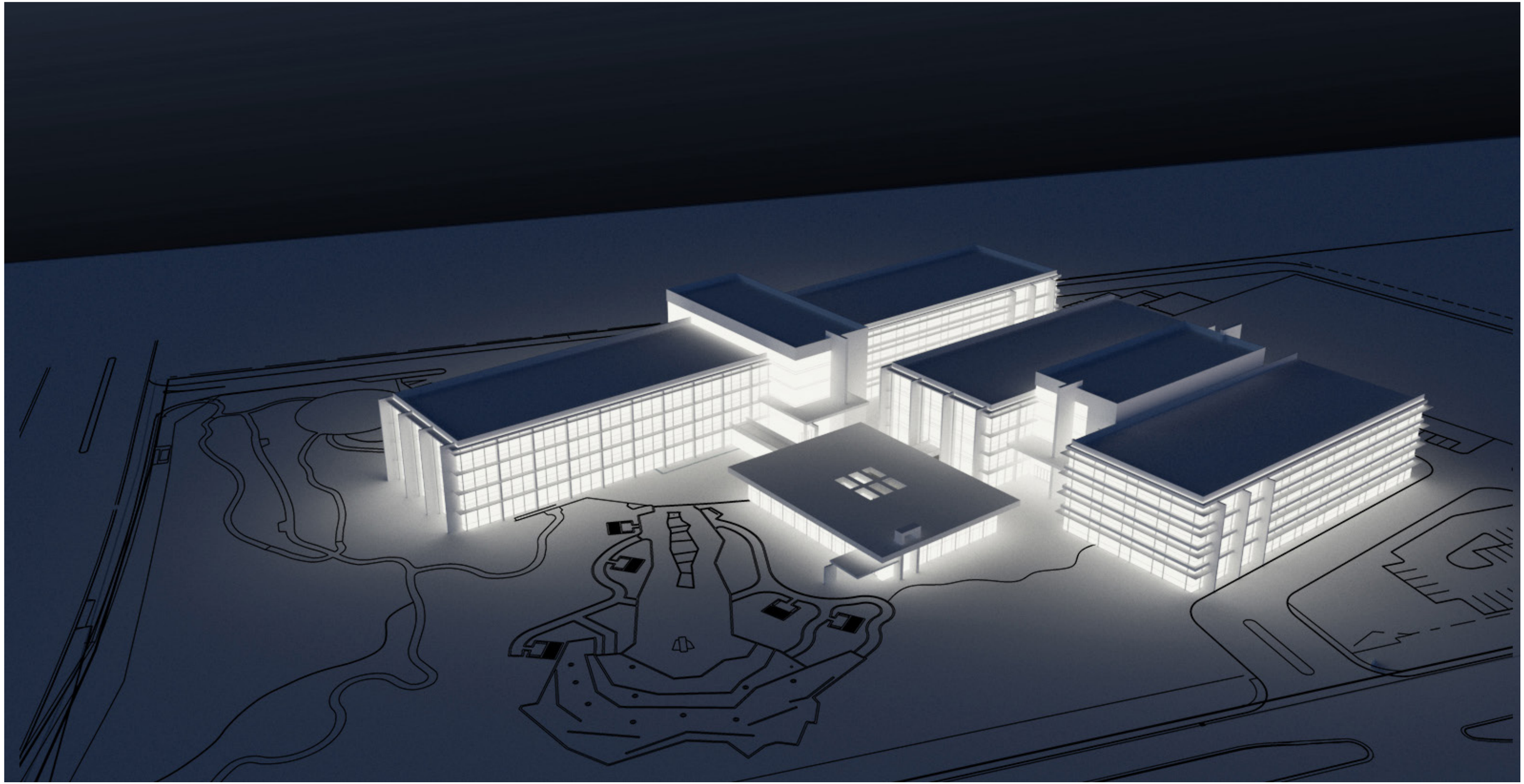


- A Core
- B Vertical Circulation
- C Horizontal Circulation
- D Support Space
- E Gaming Control Board
- F Legislative Counsel Bureau
- G Governor's Office Economic Development (GOED)
- H Governor's Office of Workforce Innovation (OWINN)
- I Office of the Governor
- J Office of the Lieutenant Governor

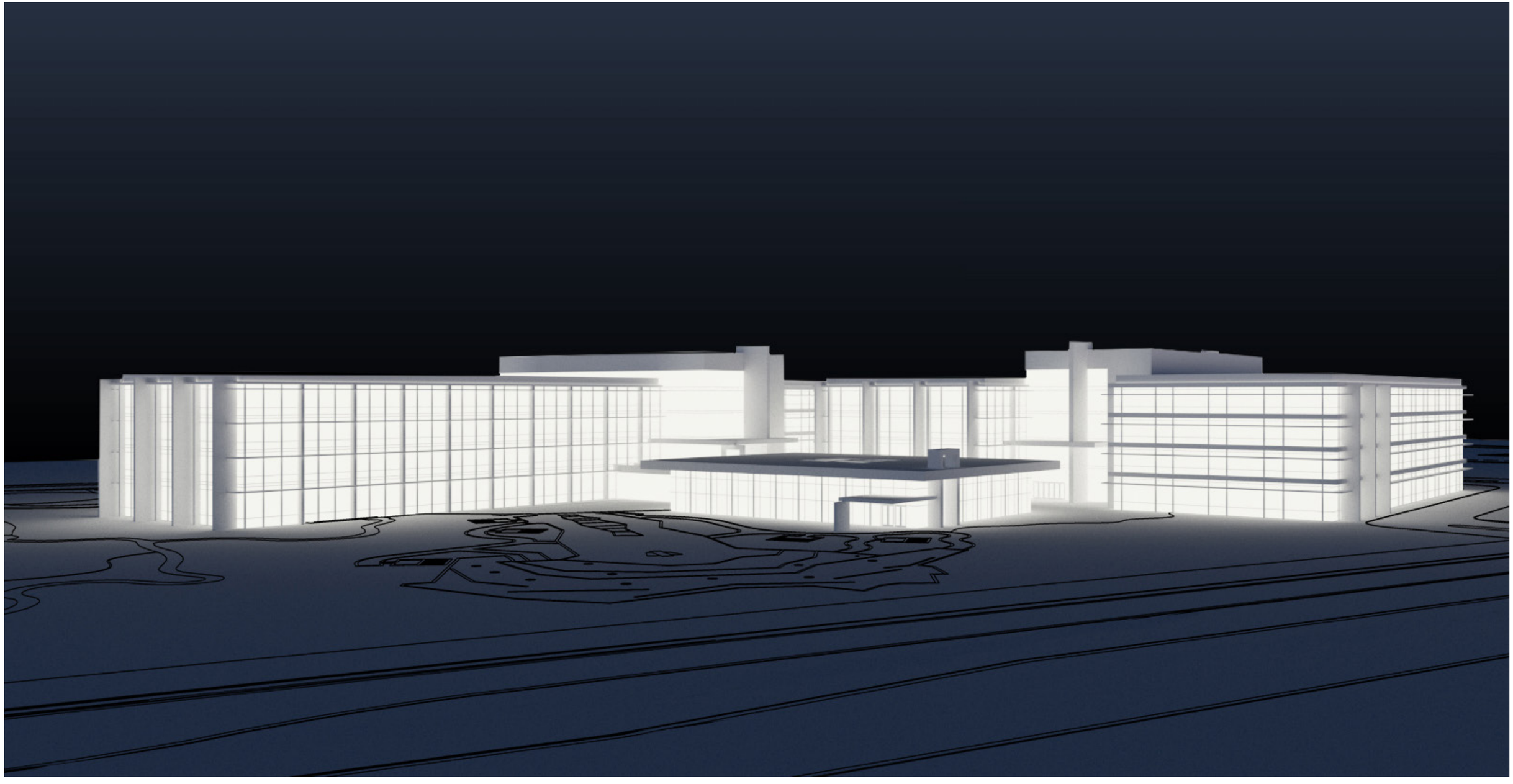
0' 30' 60' 120' 180'

- Core (Elevators, Stairs, Restrooms, Utility)
- Top Level Mandatory: Governor and Associated
- Upper Level Preferred: Associated with Elected Officials
- Upper Level Preferred: Legislative Branch
- No Specific Level Requirement
- Ground or Lower Level Preferred for Shared or Public Access
- Ground Level Mandatory

Concept R3-B | Conceptual 3D View



Concept R3-B | Conceptual 3D View



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Lochsa engineering

REPLACEMENT

CONCEPT R3-B

1.0 General Information

Concept R3-B reflects demolition of the existing office building, constructing four new office buildings, a common use building, connecting cores/hallways and a garage in the east lot. It is a significant departure from previous concepts.

2.0 Drainage and Grading

This concept requires regrading all of the areas south of the existing building. Drainage control will be accomplished with a significant storm system to drain areas cut off by buildings. The Veterans Memorial should be untouched but significant grading adjustments will be required on the south side of the existing building and east of the Memorial. The north building could be established at a higher elevation which may off-set excavations for the southerly structures. Regrading of the south parking lot should be significant. The garage area may need to be regraded to fit the garage footprint within this existing parking lot to avoid excessive first floor to second floor head heights.

Significant over excavation of existing soils under all of the new structures may be required due to undesirable soils conditions. This may be minimized by utilizing alternative structure footing types such as piles or caissons.

3.0 Utilities

The two existing combined service water meters and backflow devices must be upgraded to current LVVWD standards and the increased domestic demands as well as the potential increase in on-site fire flow due to differing construction types of proposed buildings. The existing waterline under the proposed south buildings may need to be demolished and a new waterline (10”±) will need to be looped around the south buildings. A water loop around the proposed garage with at least 4 new fire hydrants will need to be installed around the garage for fire protection. These new loops will be fed by the existing system and the upgraded water meters and backflow devices.

The existing on-site sewer line within the east parking area will need to be relocated around the south side of the garage and extended to the new buildings. All new sewer mains will be 8-inch and will require manholes at angle points and at a maximum of 300’ spacing. The existing 8-inch sewer main should have adequate capacity for this concept.

4.0 Hardscape

New asphalt and concrete walks and curbs will be required within the project areas.

5.0 Summary

This concept can be accomplished with minimal issues and challenges except for those items noted above.

Structural Design Narrative- Concept R3-B –

Four new 4-Story buildings with shared cores new innovation center building – 01/02/19

John A. Martin & Associates of Nevada
STRUCTURAL ENGINEERS

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Gordon Kuang, P.E.
Pete Padilla, P.E.

High Roof Framing

The area of the high roof which supports the mechanical equipment and electrical room will be framed using 3 ½" concrete over the flutes of 3" x 18 gage metal deck spanning between wide flanged beam spaced typically at 7'-6" on center, with few exceptions, spanning between wide flanged girders spanning between columns. Housekeeping pads should be maximum of 6" thick normal weight concrete. The roof steel will be sloped to achieve drainage and limit the use of built up roofing.

The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Core location is not adequate as a lateral element alone. Steel moment frames throughout the building would be required to keep the open nature of the plans.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load.

Penetrations for pipes and shafts will require frames constructed of angles and channels supported on the wide flange beams. In the areas where there is concrete over metal deck, most openings shall be framed using reinforcing in the concrete slab in lieu of structural steel frames.

Typical Floor Framing

The floors will be framed using 3 ½" of concrete over the flutes of 3" x 18 gage deck, reinforced with welded wire fabric and negative reinforcing over the supports. To ensure the ability to achieve floor flatness, the framing is designed to allow for an additional ½" of concrete.

Penetrations for piping and shafts through metal deck will be accomplished using reinforcing steel at the perimeter of the openings with a formed concrete edge. The deck must remain in place until the concrete attains a compressive strength of 3,000 psi.

All beam to girder connections are anticipated to be bolted single shear plate connectors. Girder to column connections will be single shear plates typically and double angles where required based on load. This columns will extend approximately 4' above the floor level at the splice locations. The top of the column section will be prepared for a welded column splice.

New Innovation Center

This separate 1-Story building will connect the existing building to the new building for commons area. The typical high roof will be framed using 1 ½" x 18 gage metal deck spanning between wide flanged beams spaced at 7' 6" on center spanning between wide flange girders spanning between columns. The steel will be sloped to achieve drainage.

Anticipate lateral system to be moment frames to allow plenty of open window storefront systems.

Foundations

Foundation design is pending completion of the geotechnical investigation and preparation of the geotechnical report. For purposes of this narrative, we are assuming the building will be supported on spread footings with strip footings required at the moment frames.

Piles may be required as alternate foundations depending on geotechnical recommendations.

The typical foundations should be placed 2' below finished floor. Footing elevations can be adjusted based on requirements of utilities. Shafts containing elevators should be placed approximate 5'-6"' below finished floor to allow for pits.

Retaining walls and dock walls will utilize conventional foundations. Retaining wall design is pending verification of grading.

Parking Garage Options

- **Precast with Shear Walls**
  Greatest savings are achieved with all precast elements (walls, beams, spandrels, tees)
  Precast shear walls at perimeter, L beams at perimeter, inverted tees at interior column lines, double tees with topping slab.
- **Cast-in place**
  Moment frames in transverse direction, shear walls in longitudinal direction, 14"/16" x 30" tapered beams at 18' on center, 5" post tensioned slab, 24" x 30" girders at transfer locations, 24" x 24" typical columns, 24" x 30" columns at transfer girders

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GRANT SAWYER OFFICE BUILDING
REPLACEMENT NARRATIVE R3-B
NV5 PROJECT NO. 018.0745.00

Prepared for:

KGA Architecture
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Issue Date:

January 2, 2019

Revision No.	Issue Date	Prepared By	Reviewed By	Remarks
1	1/02/2019	Alex Jankovic JJ Wisdom	KGA	Replacement R3

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

When pursing this investigation, we had in mind the three RRR =Repair, Remodel, Replace and the 20 years fix of the MEP systems as our final goal.

Based on the architectural conceptual drawings for the Reprogramming and Replacement options the central utility plant (CUP) will be located in the parking garage building.

Replacement option R3-B

The Replacement option R3-B will include two new 104,000 sq.ft low-rise office buildings, two new 92,000 sq.ft low-rise office buildings with 12,000 sq.ft cafeteria & innovation center building.
The CUP plant will house the chilled water plant and heating hot water plant.
The chiller room will consist of 2 x 800 tons magnetic bearing chillers, cooling towers and associated chilled water pumps and condenser water pumps with VFD's. The proposed chilled water plant will be variable primary flow system with direct buried pre-insulated chilled water piping serving the proposed new buildings per R3 options.
The boiler plant will consist of 4 x 3000 MBH gas fired condensing boilers, combination bridge/air separator and associated boiler pumps and variable flow building pumps and a dedicated space for future expansion to serve the existing GSOB.
The heating plant will deliver 160^{0}F/130^{0}F heating hot water to the buildings via underground pre-insulated hydronic piping.
Existing 15KV Nevada Energy service shall be re-used to serve the site. New owner 15KV electrical distribution and 480V generator distribution shall be provided for the new buildings. The existing electrical infrastructure serving the GSOB shall be protected in place during construction of the first phase of new building(s) and then removed in its entirety during construction of the second phase of new building(s).

2. MECHANICAL SYSTEMS

2.1 GENERAL

2.1.1 New Buildings

The new low-rise (2) 104,000 sq.ft and (2) 92,000 sq.ft buildings and Innovation center will be designed per current SPWD design criteria, including the CUP – central utility plant to serve the new buildings per proposed site plan.
The HVAC design shall be in compliance with 2018 Uniform Mechanical Code.

2.2 REPLACEMENT – OPTION R3-B

The new CUP central plant will incorporate water chillers, cooling towers, plate and frame heat exchangers (water side economizers), variable primary flow system with chilled water pumps and appropriate ancillary equipment and systems to provide comfort and process cooling for the facility. The plant will also incorporate low pressure, 94% efficiency condensing hot water boilers, primary and secondary hot water pumps and ancillary equipment and systems to provide space heating for the facility.

Central Chilled Water Plant
The chilled water plant will be designed per SPWD requirements.
Two (2) magnetic bearing water cooled chillers at 800 tons each, with multiple compressors, with integrated refrigerant cooled VFD's and micro-processor controls system, have been selected to provide a total cooling capacity of 1,600 tons of refrigeration for new building expansion. This configuration will meet the building load and provide 20% redundancy.

The cooling tower fans, secondary flow chilled water pumps will be provided with VFD's. The chilled water distribution system will be deigned to provide a chilled water supply temperature at 44°F with a chilled water return temperature at 58°F. The system will serve air handling units and strategically located fan coil units. Cooling only fan-coil units will be provided for the MDF rooms, IDF rooms, chiller room, boiler room and elevator equipment rooms. During the winter season two dedicated jockey pumps will be employed to serve the cooling requirements for the fan-coil unit process cooling loads, utilizing the plate/frame heat exchanger. Split system DX cooling will be provided as a back-up for MDF, IDF and AV rooms, with the roof mounted VRF condensing unit.

The chilled water piping will be routed from the central plant up to fourth floor within the shaft with pipe connections to roof mounted air handling units. The pipe penetrations will be provided within the air handling unit pipe chases.

Central Heating Hot Water Plant
The heating hot water plant will be designed as a primary/secondary flow system, utilizing high efficiency low pressure, condensing gas fired boilers. The total calculated heating capacity has been estimated to be 12,000 MBH.

Four high efficiency hot water boilers with a capacity of 3000 MBH heat input have been selected with associated hot water pumps and accessories. The heating hot water system will serve all air handling unit heating coils and VAV terminal unit reheat coils.
The hot water piping will be routed in the core area shaft along with the chilled water piping.

Air Handling Systems
The following air handling units will be provided for this facility:
Building 1
- System AH-R3.1 50,000 CFM (Level One & Two)
- System AH-R3.2 50,000 CFM (Levels Three & Four)

Building 2
- System AH-R3.3 45,000 CFM (Level One & Two)
- System AH-R3.4 45,000 CFM (Level Three & Four)

Building 3
- System AH-R3.5 50,000 CFM (Level One & Two)
- System AH-R3.6 50,000 CFM (Level Three & Four)

Building 4
- System AH-R3.7 45,000 CFM (Level One & Two)
- System AH-R3.8 45,000 CFM (Level Three & Four)

Innovation Center
- System AH-R3.9 20,000 CFM (Cafeteria and Innovation Ctr)

Air handling systems will be designed as VAV systems providing supply air at 55° F and discharging the air through medium pressure ductwork to VAV terminal units. The air handling units will be provided with VFD's on supply and exhaust/relief fans, to facilitate 100% outside air economizer on a variable air volume basis.

The units will operate per BMS schedule. Supply fans will be plug type and exhaust/return fans will be a fan-wall type fan configuration. Variable frequency drives will provide fan volume control in response to a signal from duct mounted static pressure transmitters. Supply and return fan speeds will be modulated simultaneously as required by building load.

Fan Wall, or fan array, technology system will be considered for use on the project. The fans will meet the air flow performance specified and will not exceed the break horsepower or sound power levels specified. Fan performance will be based on testing and be in accordance with AMCA Standards 210 and 300. Completely isolated assemblies will be dynamically balanced and shall be designed for heavy-duty industrial applications. Fan assemblies that meet a dynamic balance of BV-5 (G 1.0) do not require isolation.

The supply air distribution system will consist of medium-pressure, externally insulated galvanized steel ductwork with pressure independent electrically actuated VAV terminal units with reheat coils, low pressure externally insulated ductwork downstream of terminals and diffusers. The return air distribution system will consist of externally insulated galvanized steel ductwork and return grilles. Sound attenuating flexible ductwork with woven nylon fabric type lining will be provided at the supply diffusers and return grilles to control noise.

Ductwork will be constructed in accordance with SMACNA standards and duct leakage shall not exceed 2% for low-pressure ductwork. The use of sound attenuating flexible duct at diffusers and grilles will be limited to five feet in total length to minimize duct static pressure losses.

The VAV air handling units will consist of the following components: Exhaust/relief fan section, outside air economizer, 30% (MERV8) efficient pre-filter section with a reserved space for 85% (MERV13) final filters, hot water heating coil and chilled water-cooling coil, supply air fan section with discharge air attenuator and factory installed VFD's for supply and exhaust/return fans in air-conditioned enclosure. Duct mounted smoke detectors will be provided per UMC 609. The duct detectors will be addressable type and compatible with the fire alarm system.
Refer to Mechanical Site Plan-Option R3-B for details.

3. PLUMBING SYSTEMS

3.1 REPLACEMENT – OPTION R3-B

3.1.1 New Building Expansion

The plumbing systems will include the following:
Sanitary waste and vent system will be provided for the public restrooms, break rooms and mechanical rooms. Drainage piping will be sloped at 2% per UPC. Sanitary waste and vent piping will be service weight cast iron no-hub piping with no-hub 4 band type couplings with neoprene gaskets. A separate 2,000 gallon grease interceptor will be provided for the fourth floor kitchen grease waste system.

Cold water distribution piping system will be provided for the restrooms, fourth floor kitchen area, break-rooms and mechanical plant rooms. Hot water distribution in the main building will be provided by utilizing the high efficiency condensing water heaters: one located in the boiler room to serve the restrooms and the general building requirements, and one located on the fourth floor to serve the kitchen area.

Exterior hose bibs will be provided for adequate external coverage and maintenance of the facility.

Materials, equipment and systems installed shall meet all pertinent requirements of all applicable codes. The systems described herein shall be provided to serve all fixtures, equipment and areas within the building.

Plumbing Fixtures
Commercial grade water saving wall mounted water closets with electronic flush valves and wall hung sensor operated flush valve urinals will be utilized. Water closets with battery powered 1.28 GPF electronic flush valves, and battery powered 0.125 GPF electronic flush valve urinals will be utilized in the men's restrooms. Water closets with battery powered 1.28/1.1 GPF dual flush valves will be provided in the women's restrooms. Commercial grade additional plumbing fixtures including all carriers, trim, valves and traps will be provided at locations as determined by the architectural plans. Water saving plumbing fixtures shall contribute to water savings design requirements.
Roof drainage system shall be provided utilizing the roof drain/ overflow roof drains and storm drainage piping within the building.

Domestic Water Distribution:

Cold Water Systems
The domestic water service shall be provided from the site water supply. Existing domestic booster pump set will be with new triplex booster pumps and will be sized for 600 GPM @ 80 ft head.
A pressure gauge on main domestic water line serving the building downstream of main shut-off valve shall be provided.

Domestic cold water system design shall be per the Uniform Plumbing Code and ASPE Design Manuals. Pipe velocity shall not exceed 8 feet per second. Domestic cold water systems shall be sized using flush valves curves. Pressure ranges at plumbing fixtures shall be as follows: Minimum: 35 psi, Maximum: 80 psi.

Domestic Hot Water System
Domestic hot water system design shall be per ASHRAE 90.1, 2016 Standard, ASHRAE HVAC Application Handbook, Chapter 48 "Service Water Heating" and ASPE Design Manuals. Pipe velocity shall not exceed 5 feet per second.

Multiple water heaters will be provided within the water heater room serving the new building expansion. Multiple high efficiency condensing water heaters AO Smith, BTH-199 with 100 gallon storage and 288 GPH recovery capacity will be utilized to satisfy the hot water requirements.

Plumbing Fixtures Water Consumption
All plumbing fixtures shall be coordinated with SPWD and UPC guidelines. They will be low flow type as follows:
- Water Closet: 1.28 GPF @ men's restrooms
- Water Closet: 1.28/ 1.1 GPF @ women's restrooms (dual flush)
- Urinal: 0.125 GPF
- Lavatory: 0.35 GPM
- Sinks: 0.5 GPM

Domestic Water Piping
Domestic water piping shall be Type L copper. All domestic hot and hot water return piping shall be insulated with closed cell insulation. Cold water piping shall not be insulated.
All interior exposed insulation shall have PVC jacket and PVC fitting covers. All exterior exposed insulation shall have aluminum jacket and covers. Aluminum jackets shall be secured with stainless steel bands.
Condensate drain piping shall be Type M copper.

Sanitary Drainage System
Sanitary waste and vent system shall be per the 2018 Uniform Plumbing Code.
All floor drains, floor sinks, access doors, and cleanout covers shall be secured using vandal-resistant fasteners. Floor drains shall be provided in all toilet rooms. Cleanouts shall be provided every 50'-0".

Install cleanouts in sufficient number and located such that drain augers can be conveniently used on any part of the drainage system. The installation shall be made in compliance with the Cast-Iron Soil-Pipe Institute Engineering Manual.
Locate all clean-outs, devices, etc., in plumbing chases so as they are readily accessible by facility maintenance personnel.

Automatic solenoid type trap primers will be provided for all floor drains and floor sinks, including the floor sinks in mechanical rooms and fire riser room.

Sanitary Waste Piping
Sanitary waste and vent piping for all building shall be hubless cast iron pipe and fittings with heavy duty stainless steel couplings.
Sanitary sewer demand for the building based on the main building layout will require 8" building connection.

Site Utilities
All onsite utilities will be distributed underground with approximately 3 ft of backfill cover based upon regional weather conditions and applicable codes. Utility lines will be located in road right of ways per civil utility plans. A dedicated 2,000 gallon grease interceptor will be provided to serve the cafeteria and innovation center.

The 6" domestic cold water service with shut-off valve will be provided with internal shut-off within the booster pump room.
Based on the pipe size the cold water service can handle approx. 3,500 CWFU, which is equivalent to 600 GPM of total domestic water flow.

Domestic hot water has been provided via high efficiency condensing water heaters with 94% efficiency.

All sanitary sewer and storm sewer lines extend to a point 5 ft outside the building for connection by the civil. Sanitary waste and vent piping, and roof drain and overflow drain piping below grade shall be service weight cast iron no-hub piping with no-hub four (4) band type couplings with neoprene gaskets.

A rainfall rate of 1.5 in. per hour will be utilized in accordance with UPC Appendix B, Rate of Rainfall for Various Cities.
Natural gas consumption has been estimated to be 13,500 kBtu/h for R3 Options.
Medium pressure gas service will be provided by Southwest Gas Corporation per site plan.

4. ELECTRICAL SYSTEMS

4.1 GENERAL

4.1.1 Nevada Energy Service

Existing Nevada Energy infrastructure appears to be sized to accommodate a 15KV 10MVA maximum service. The existing service originates from a pole at the Southeast corner of the property, transitions underground and is routed along the East property line to the North property line and then into the existing building medium voltage switchgear 'MVS1'. The underground Nevada Energy feeder route appears to include several manholes which should allow connection to the existing service at both the East and North property lines as required by existing conditions and/or construction phasing.

Estimated total calculated load for this replacement option is 6996KVA with an estimated utility demand load of 2798KVA. The new electrical load is approximately double that of the existing building. This load increase will need to be submitted to Nevada Energy to determine if there are any required modifications to the Nevada Energy systems.

New 600A, 15KV switchgear with a primary Nevada Energy meter will be required. The switchgear will be located at the central plant and will serve the other buildings on the site via 15KV radial feeders.

4.1.2 Emergency/Legally Required Standby/Optional Standby Generator

A 1500KW, 480Y/277 volt, 3 phase, 4 wire generator will be provided to serve building emergency/legally required standby and optional standby loads. The generator will be located at the central plant and will serve the other buildings on the site via 480V radial feeders. Two (2) automatic transfer switches per building will be provided, one (1) for emergency loads and one (1) optional standby loads.

Emergency loads include:

- Fire pump and booster pump
- Fire alarm system
- Egress and exit lighting
- Cooling for emergency electrical room(s)
- Smoke control/purge equipment (if applicable)
- Elevator per bank
- Elevator cab lights

Optional Standby (owner selected) loads include:

- Telecommunications and security / surveillance equipment in MDF and IDF's
- Cooling for MDF's, IDF's and electrical rooms containing optional standby electrical equipment
- Cafeteria walk-in coolers / freezers
- Domestic water booster pump
- Mission critical spaces and associated infrastructure including:
  - Governor's Space
  - Capital Police Space
- Select central plant equipment to support space conditioning for the areas noted above

4.1.3 New Work Requirements

References
The electrical and auxiliary system design will adhere to the following codes, standards, and criteria in the preparation of the Project Electrical Design Documents.

IBC	International Building Code; 2018 Edition
NEC	National Electrical Code (NFPA 70); 2017 Edition
NESC	National Electrical Safety Code; 2018 Edition
NFPA 72	National Fire Alarm Code; 2018 Edition
NFPA 101	Life Safety Code; 2018 Edition
NFPA 110	Emergency and Standby Power Systems; 2018 Edition
IEEE	Institute of Electrical and Electronics Engineers Standard 142; Grounding of Industrial & Commercial Power Systems
ADA	Americans with Disabilities Act
ANSI	American National Standard Institute
IECC	International Energy Conservation Code; 2018 Edition
IESNA	Illumination Engineering Society of North America Handbook – 10th Edition

Electrical Systems
New 15KV main switchgear and generator shall be located at the central plant/garage and shall serve the other buildings via radial feeders as noted above. Estimated capacities for each building are as follows:

- Central Plant/Garage – 2000KVA
- Building Expansion – 4 Stories with New Shared Circulation Core – 1000KVA
- Building Expansion – 4 Stories with New Shared Circulation Core – 1500KVA
  - Includes Cafeteria/Innovation Center – Will be served from 480V feeder(s) from Building Expansion electrical infrastructure
- Building Expansion – 4 Stories with New Shared Circulation Core – 1000KVA
- Building Expansion – 4 Stories with New Shared Circulation Core – 1000KVA

The existing Grant Sawyer Building normal power electrical service will be protected in place until it can be back-fed from the new 15KV electrical distribution system and the existing generator system will also be protected in place until the replacement of the existing building takes place.

The main electrical room for each building will be 1 hour rated, located with exterior access, and will house the main electrical service switchboard.

Grounding
The service shall be provided with a grounding electrode system in accordance with NEC Article 250, NEC Article 517 and IEEE green book. In order to ensure the facility is effectively grounded and bonded throughout, grounding bonds will be configured in star topology. This grounding system, from a power standpoint, will serve primarily as a bonding point for the required safety/equipment grounding for separately derived systems; however, the system is also being designed to serve as an effective performance ground for telecommunications and other building auxiliary systems. Insulated equipment grounding conductors will be provided in all raceways for power systems. A lightning protection system is not anticipated at this point.

Surge Suppression (SPD)
Suppression will be provided at the service entrance equipment for each building to minimize the impact of electrical line disturbances.

Distribution
Site distribution will include 15KV service to each building and, depending on final load calculations, to main electrical rooms within each building. Exterior pad mounted, interior dry-type unit substation and/or step down transformers shall be used for 480Y/277 volt, 3 phase, 4 wire and 208Y/120 volt, 3 phase, 4 wire service.

Lighting, HVAC and other large utilization equipment will be supplied from the 480Y/277 volt distribution system. Large loads will be served from the main switchboard.

Receptacles and other miscellaneous loads shall be served from the 208Y/120 volt, 3 phase, 4 wire service.

All electrical panel boards and step down transformers will be located in designated electrical rooms / closets.

Distribution equipment will be sized for 25% spare capacity. Equipment shall contain a minimum of 10% space for addition of over-current devices.
Transformers shall comply with CSL-3 energy standards.

Building systems, HVAC, power and lighting shall be independently metered, metering shall be connected to the BMCS system. The building service entrance shall be metered independently of the utility. Meters shall be connected to a sitewide metering system.

Feeders
15KV feeders will be concrete encased below grade and installed in galvanized rigid steel conduit (RGS) above grade.

480Y/277 volt and 208Y/120 volt feeders will conform to NEC Article 215. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All feeder conductors will be PVC insulated type THHN/THWN or XHHN. Feeders shall be copper.

Branch Circuits
Branch circuits will conform to NEC Article 210. Conduit below grade will be poly-vinyl chloride (PVC). Conduit above grade will be electrical metallic tubing (EMT). All branch circuit conductors will be copper, PVC insulated type THHN/THWN or XHHN. Minimum conductor size shall be #12 AWG. MC, AC, or other cable type wiring systems are not acceptable.

Receptacles
All 20A-125V convenience receptacles will be grounding type mounted in 4-inch square boxes at 18 inches above finish floor. Ground Fault Circuit Interrupter (GFCI) receptacles will be used in locations as required by NEC 210.8(B). Double duplex receptacles will be provided at each office workstation. Convenience receptacles located in corridors and common areas will be spaced at maximum 50' apart.

General Lighting
Interior lighting will consist primarily of 277V LED fixtures. Fixture types will be coordinated with the individual space requirements to provide the fixture selections that are suitable to the space. Fixture types and proposed lighting layout will be coordinated with the design team prior to commencement of lighting design. Light levels will be per IES recommendations. The lighting power density will be designed to exceed the minimum requirements of IECC by at least 20%.

Space	Type of Fixture	Average Lighting Level
Offices	2x4 Direct/Indirect LED Lay-In	50FC
Meeting Rooms	LED Pendant and Downlights	40FC
Lobby/Waiting	LED Downlights and Pendants	40FC
Restrooms	1x4 LED Flanged Troffer and LED Downlights	30FC
Cafeteria	LED 2X4 Direct/Indirect	50FC

Exterior lighting shall be LED lamp sources. LED lighting will provide quality color rendition from an energy efficient source. Exterior lighting will be controlled by a combination astronomical time clock / photocell and/or building energy management system. Fixture mounted occupancy sensor shall be provided at parking areas and pedestrian walkways for further energy reductions.

Lighting Control
Due to IECC requirements a lighting control system will be provided. Local room controllers will be provided for normally occupied rooms. These local room controllers will integrate with room occupancy / daylight sensors and dimmers. Normally unoccupied rooms will utilize occupancy sensors with local switching.

Lightning Protection
An early streamer emission lightning protection system shall be used.

5. APPENDIX – DRAWINGS

MPE-R3B - Mechanical, Plumbing & Electrical Site Plan – Option R3-B
MCUP_R3 - Central Utility Plant – Options R3-A, R3-B
MFD_R3 - Mechanical Flow Diagram
E-R3B - Electrical Single Line Diagram – Option R3-B
END

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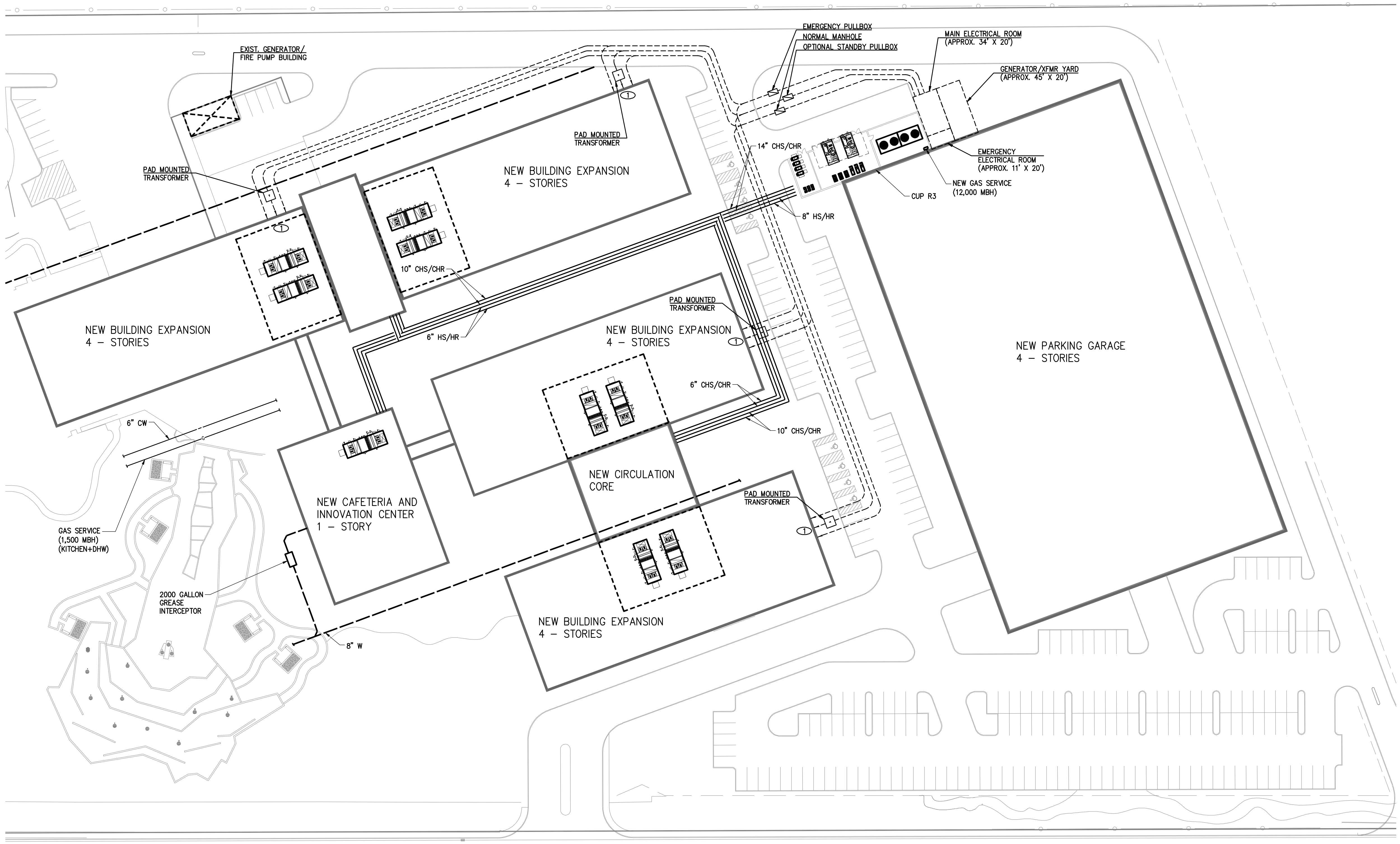
NOTES

1. TO NEW BUILDING ELECTRICAL INFRASTRUCTURE.



MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R3-B
NO SCALE

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REVISIONS

NV5

MECHANICAL, PLUMBING & ELECTRICAL SITE PLAN - OPTION R3-B

GRANT SAWYER OFFICE BUILDING

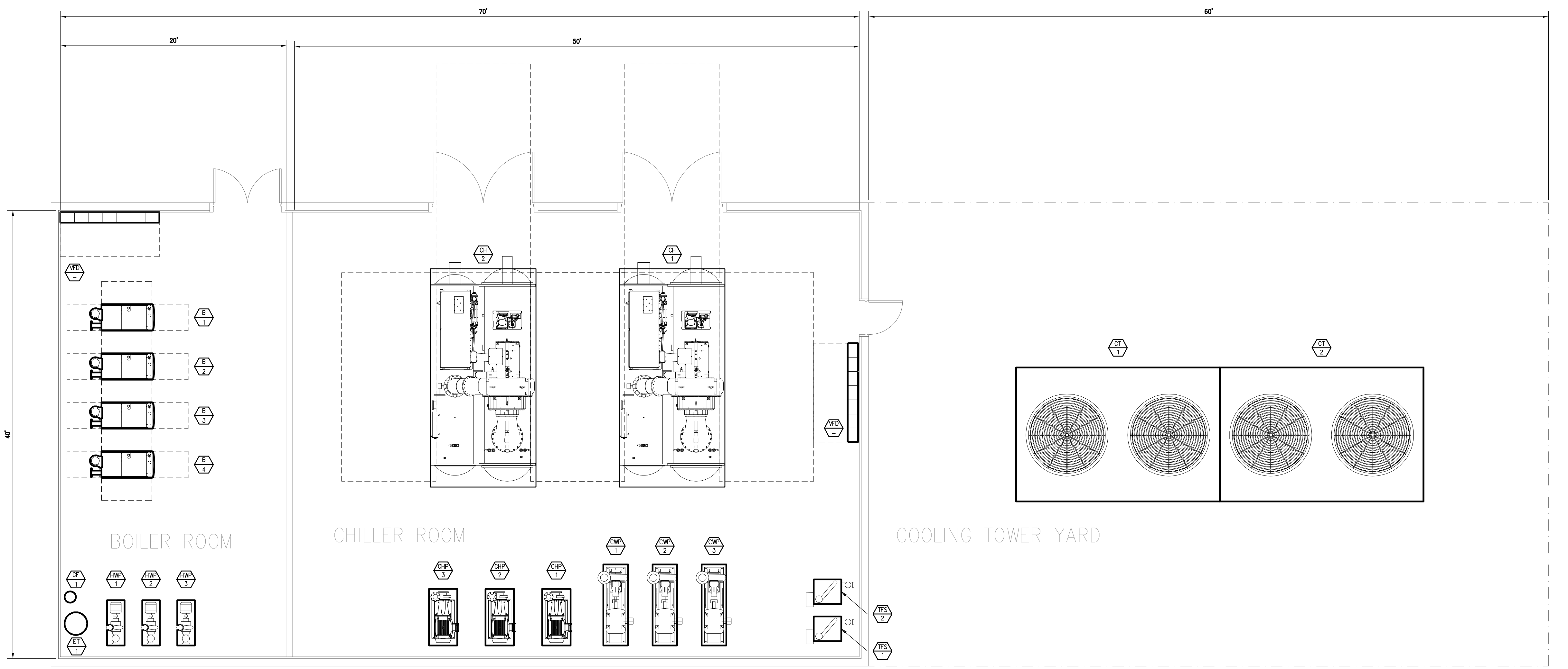
REMODEL REPORT - R3-B

SHEET NUMBER:

MPE-R3B

SCALE: –

JOB NUMBER: 18.0745



CENTRAL UTILITY PLANT - MECHANICAL R3 DESIGN OPTIONS
NO SCALE

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CENTRAL UTILITY PLANT - MECHANICAL R3 DESIGN OPTIONS

GRANT SAWYER OFFICE BUILDING

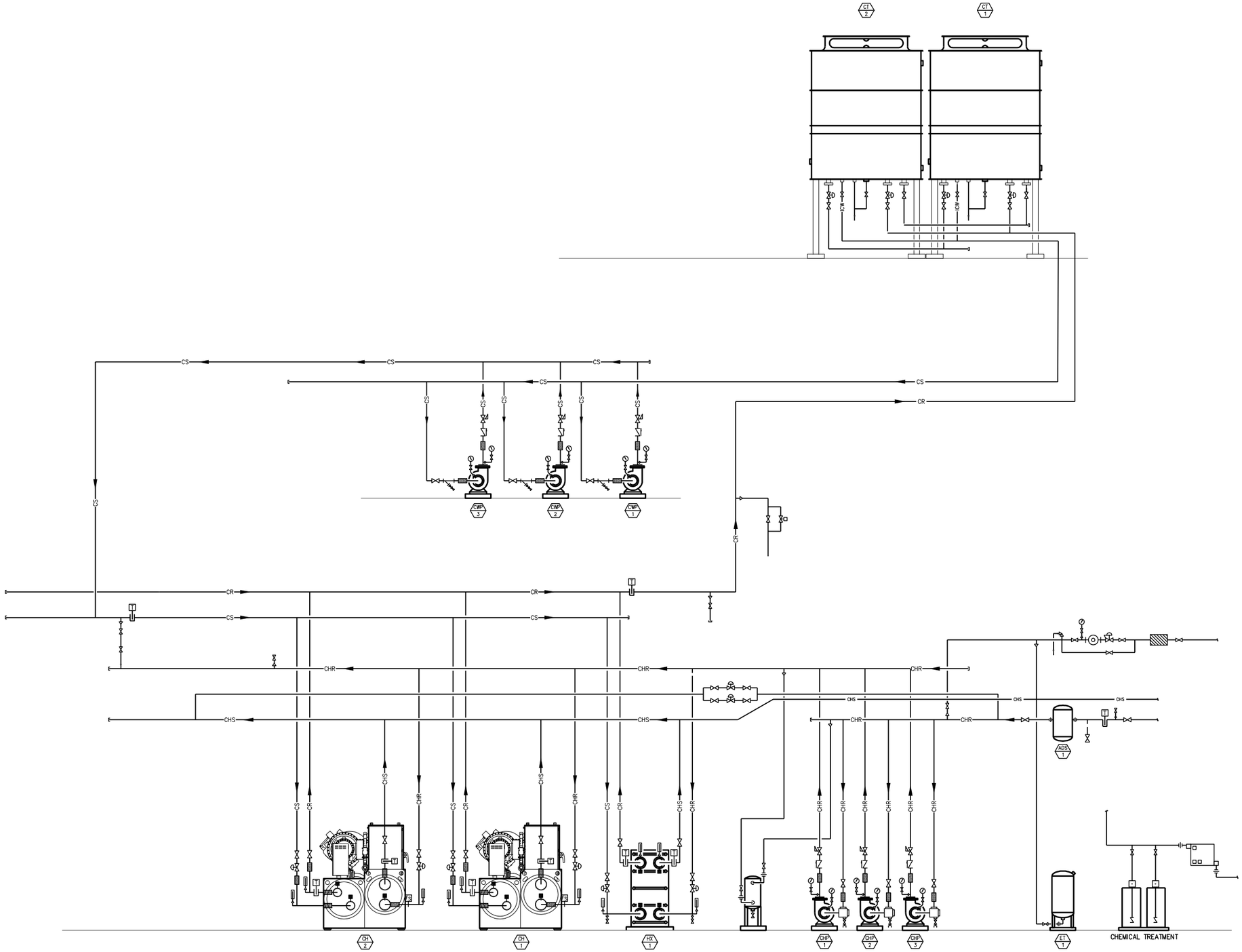
REPLACEMENT REPORT - R3

SHEET NUMBER:

MCUP-R3

SCALE: -

JOB NUMBER: 18.0745



CHILLED / CONDENSER WATER FLOW DIAGRAM - R3

NO SCALE

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DATE:	BY:	REVISIONS

MECHANICAL FLOW DIAGRAM

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R3

SHEET NUMBER:

MFD-R3

SCALE: -

JOB NUMBER: 18.0745

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DATE	BY	REVISIONS

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ELECTRICAL SINGLE LINE - OPTION R3-B

GRANT SAWYER OFFICE BUILDING

REMODEL REPORT - R3-B

SHEET NUMBER:

E-R3B

SCALE: -

JOB NUMBER: 18.0745

HKA
Elevator Consulting, Inc.

January 02, 2019

Brian Henley
Partner, Architect
KGA ARCHITECTURE
9075 West Diablo Drive, Suite 300
Las Vegas, Nevada 89148

Reference: GRANT SAWYER STATE OFFICE BUILDING R3-B

Dear Brian:

NEW ELEVATOR CORE STUDY AND RESULTS:

Office Passenger Elevator Criteria:

Average Interval: 27-30 Seconds or Less
Estimated Demand: 12.5% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and UP Peak
Population Density: 1200 end of 2040
Density: 80%
Occupancy: 100%

NEW CD STUDY - Office Passenger Elevator Results:

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2-A	2 Way	5	4 MRL	200	1200	6.0 / 6.0	25.8	16.8	139 / 13.9	Excellent
R2-A	UP	5	4 MRL	200	1200	8.3	18.8	12.4	135 / 13.5	Excellent
R2-A	2 Way	5	3 MRL	350	1200	7.0 / 7.0	34.1	22.3	123 / 12.3	Fair
R2-B/C	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	33	21.5	67 / 12.0	Good
R2-B/C	UP	4	2 MRL ea.	350	600	7.1	29.8	19.4	71 / 12.5	Excellent
R3-A	2 Way	8	3 MRL ea.	350	600	4.1 / 4.1	29.9	19.4	80 / 14.4	Excellent
R3-A	UP	8	3 MRL ea.	350	600	6.5	24.7	16.0	79 / 14.2	Excellent
R3-A	2 Way	8	2 MRL ea.	350	600	5.3 / 5.3	52.3	34.0	60 / 10.8	Poor
R3-A	UP	8	2 MRL ea.	350	600	11	45.6	29.6	69 / 12.3	Poor
R3-B	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	32.2	20.9	68 / 13.0	Good
R3-B	UP	4	2 MRL ea.	350	600	5.2	23.0	15.0	68 / 13.0	Excellent

Summary Elevators:

- R3-B – Provide 2 new passengers in each central core. Add 1 new dedicated service elevator

4500# at 200 FPM in new core or near a new loading dock elsewhere in each building. Governor's access can be gained via a card reader. Cost: $2.6M.

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R3-B	2 Way	4	2 MRL ea.	350	600	3.7 / 3.7	32.2	20.9	68 / 13.0	Good
R3-B	UP	4	2 MRL ea.	350	600	5.2	23.0	15.0	68 / 13.0	Excellent

Parking Garages Passenger Elevator Criteria:

Average Interval: 45-50 Seconds or Less
Estimated Demand: 9-10% of the Population in Five Minutes
Peak Traffic Condition: Afternoon Two-Way and DN Peak (morning)
Population: 1200 end of 2040
Occupancy: 100%
No People per Car (Avg.) 1.2
Stalls: R2A, R3A: **1057**
Stalls: R2B, R2C, R3B: **1233**
First floor- no users, assume 25% on floor 2 take stairs

Scheme	Peak	Floors Served	Elevator Quantity	Speed	Population Served	Loading	Interval Seconds	Waiting Time Seconds	Handling Capacity / %	Level of Service
R2A, R3A	2 Way	4	2 MRL ea.	200	1268	6.0 / 6.0	40.4	26.3	10.2	Excellent
R2A, R3A	DN	4	2 MRL ea.	200	1268	8.0	26.6	17.3	10.4	Excellent
R2B, R2C, R3B	2 Way	4	2 MRL ea.	200	1480	7.0 / 7.0	43.5	28.3	9.5	Good
R2B, R2C, R3B	DN	4	2 MRL ea.	200	1480	10.0	28.5	18.5	10.3	Excellent

END OF REPORT

NSPWD Grant Sawyer Office Building Replace Concept R3-B

Las Vegas

KGA
FEASIBILITY STUDY COST ESTIMATE - REVISION2
Job No. 18236.000
11 January 2019

OC INSIGHT

COST ESTIMATE

INTRODUCTORY NOTES

This estimate is based on verbal direction from the client and the following items, received 17 December 2018 & 20 December 2018

The following items are excluded from this estimate:

- Escalation
- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Furniture, fixtures & equipment, unless noted otherwise.
- Temporary office facilities.
- Moving, storage and installation of owner furnished equipment.
- Relocation of personnel to offsite offices.
- Photovoltaic system.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

Phase I Project Timeline

The midpoint of construction of April 2022 is based on:

- Construction start date of July 2021
- Estimated construction duration of 18 months

Phase II Project Timeline

The midpoint of construction of April 2024 is based on:

- Construction start date of July 2023
- Estimated construction duration of 06 months

Phase III Project Timeline

The midpoint of construction of April 2025 is based on:

- Construction start date of January 2025
- Estimated construction duration of 06 months

Phase IV Project Timeline

The midpoint of construction of April 2026 is based on:

- Construction start date of July 2025
- Estimated construction duration of 18 months

Phase V Project Timeline

The midpoint of construction of April 2028 is based on:

- Construction start date of July 2027
- Estimated construction duration of 18 months

- This estimate is based on a CMAR delivery method.

COST ESTIMATE

- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$41,073,960	104,000	$394.94
02. CORE ELEVATORS AND CIRCULATION	$10,105,400	46,200	$218.73
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$8,233,468	2,114	$3,894.73
04. PHASE I SITE WORK	$5,828,109	415,721	$14.02
TOTAL CONSTRUCTION COST	**$65,240,937**		

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$2,894,404	150,200	$19.27
TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	**$68,135,341**		

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$30,742,229	104,000	$295.60
02. CORE ELEVATORS AND CIRCULATION	$7,563,491	46,200	$163.71
03. CENTRAL PLANT BUILDING AND EQUIPMENT	$6,162,424	2,114	$2,915.05
04. PHASE I SITE WORK	$4,362,108	415,721	$10.49
TOTAL NET DIRECT COST	**$48,830,252**		

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$7,324,538
PHASING	1.50%	$842,322
CMAR CONTINGENCY	4.00%	$2,279,884
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$2,815,657
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,862,780
INSURANCE	1.00%	$639,554
BONDS: CONTRACTOR	1.00%	$645,950
TOTAL CONSTRUCTION COST		**$65,240,937**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$156,520		$1.51
02 SUBSTRUCTURE		$369,387		$3.55
03 SUPERSTRUCTURE		$4,753,392		$45.71
04 EXTERIOR CLOSURE		$5,353,901		$51.48
05 ROOFING		$550,950		$5.30
06 INTERIOR CONSTRUCTION		$5,215,240		$50.15
07 CONVEYING		$0		$0.00
08 MECHANICAL		$7,446,021		$71.60
09 ELECTRICAL		$6,017,593		$57.86
10 EQUIPMENT		$879,225		$8.45
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$30,742,229		$295.60
DESIGN CONTINGENCY	15.00%	$4,611,334	0	$44.34
SUBTOTAL		$35,353,563		$339.94
PHASING	1.50%	$530,303	0	$5.10
SUBTOTAL		$35,883,867		$345.04
CMAR CONTINGENCY	4.00%	$1,435,355	0	$13.80
SUBTOTAL		$37,319,221		$358.84
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$1,772,663	0	$17.04
SUBTOTAL		$39,091,884		$375.88
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,172,757	0	$11.28
SUBTOTAL		$40,264,641		$387.16
INSURANCE	1.00%	$402,646	0	$3.87
SUBTOTAL		$40,667,287		$391.03
BONDS: CONTRACTOR	1.00%	$406,673	0	$3.91
TOTAL BUILDING COST		**$41,073,960**		**$394.94**

GROSS FLOOR AREA: 104,000 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase I
BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$156,520		$1.51
011 Standard Foundations	$156,520		$1.51	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$369,387		$3.55
021 Slab On Grade	$369,387		$3.55	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$4,753,392		$45.71
031 Floor and Roof Construction	$4,460,820		$42.89	
032 Stair Construction	$292,572		$2.81	
04 EXTERIOR CLOSURE		$5,353,901		$51.48
041 Exterior Walls	$1,327,845		$12.77	
042 Exterior Doors/Windows	$4,026,056		$38.71	
05 ROOFING		$550,950		$5.30
051 Roofing	$550,950		$5.30	
06 INTERIOR CONSTRUCTION		$5,215,240		$50.15
061 Partitions	$1,377,376		$13.24	
062 Interior Finishes	$2,522,326		$24.25	
063 Specialties	$313,810		$3.02	
064 Interior Doors/Windows	$1,001,728		$9.63	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$7,446,021		$71.60
081 Plumbing	$1,221,373		$11.74	
082 H.V.A.C.	$5,498,636		$52.87	
083 Fire Protection	$726,012		$6.98	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$6,017,593		$57.86
091 Standard Electrical	$5,225,843		$50.25	
092 Special Electrical	$791,750		$7.61	
10 EQUIPMENT		$879,225		$8.45
101 Fixed/Movable Equipment	$66,220		$0.64	
102 Furnishings	$813,005		$7.82	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST	**$30,742,229**			**$295.60**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$69,531		$1.51
02 SUBSTRUCTURE		$164,093		$3.55
03 SUPERSTRUCTURE		$1,592,983		$34.48
04 EXTERIOR CLOSURE		$1,175,089		$25.43
05 ROOFING		$244,749		$5.30
06 INTERIOR CONSTRUCTION		$1,763,396		$38.17
07 CONVEYING		$895,174		$19.38
08 MECHANICAL		$725,410		$15.70
09 ELECTRICAL		$790,570		$17.11
10 EQUIPMENT		$142,496		$3.08
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$7,563,491		$163.71
DESIGN CONTINGENCY	15.00%	$1,134,524	0	$24.56
SUBTOTAL		$8,698,015		$188.27
PHASING	1.50%	$130,470	0	$2.82
SUBTOTAL		$8,828,485		$191.09
CMAR CONTINGENCY	4.00%	$353,139	0	$7.64
SUBTOTAL		$9,181,624		$198.74
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$436,127	0	$9.44
SUBTOTAL		$9,617,751		$208.18
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$288,533	0	$6.25
SUBTOTAL		$9,906,284		$214.42
INSURANCE	1.00%	$99,063	0	$2.14
SUBTOTAL		$10,005,347		$216.57
BONDS: CONTRACTOR	1.00%	$100,053	0	$2.17
TOTAL BUILDING COST		**$10,105,400**		**$218.73**

GROSS FLOOR AREA: 46,200 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase I
CORE ELEVATORS AND CIRCULATION
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$69,531		$1.51
011 Standard Foundations	$69,531		$1.51	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$164,093		$3.55
021 Slab On Grade	$164,093		$3.55	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$1,592,983		$34.48
031 Floor and Roof Construction	$1,481,011		$32.06	
032 Stair Construction	$111,972		$2.42	
04 EXTERIOR CLOSURE		$1,175,089		$25.43
041 Exterior Walls	$312,062		$6.75	
042 Exterior Doors/Windows	$863,027		$18.68	
05 ROOFING		$244,749		$5.30
051 Roofing	$244,749		$5.30	
06 INTERIOR CONSTRUCTION		$1,763,396		$38.17
061 Partitions	$389,374		$8.43	
062 Interior Finishes	$1,091,008		$23.61	
063 Specialties	$143,952		$3.12	
064 Interior Doors/Windows	$139,062		$3.01	
07 CONVEYING		$895,174		$19.38
071 Elevators	$895,174		$19.38	
08 MECHANICAL		$725,410		$15.70
081 Plumbing	$281,134		$6.09	
082 H.V.A.C.	$277,402		$6.00	
083 Fire Protection	$166,874		$3.61	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$790,570		$17.11
091 Standard Electrical	$727,962		$15.76	
092 Special Electrical	$62,608		$1.36	
10 EQUIPMENT		$142,496		$3.08
101 Fixed/Movable Equipment	$12,040		$0.26	
102 Furnishings	$130,456		$2.82	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST		**$7,563,491**		**$163.71**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$10,570		$5.00
02 SUBSTRUCTURE		$24,945		$11.80
03 SUPERSTRUCTURE		$91,629		$43.34
04 EXTERIOR CLOSURE		$269,037		$127.26
05 ROOFING		$44,797		$21.19
06 INTERIOR CONSTRUCTION		$100,049		$47.33
07 CONVEYING		$0		$0.00
08 MECHANICAL		$5,172,257		$2,446.67
09 ELECTRICAL		$449,140		$212.46
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$6,162,424		$2,915.05
DESIGN CONTINGENCY	15.00%	$924,364	0	$437.26
SUBTOTAL		$7,086,788		$3,352.31
PHASING	1.50%	$106,302	0	$50.28
SUBTOTAL		$7,193,089		$3,402.60
CMAR CONTINGENCY	4.00%	$287,724	0	$136.10
SUBTOTAL		$7,480,813		$3,538.70
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$355,339	0	$168.09
SUBTOTAL		$7,836,152		$3,706.79
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$235,085	0	$111.20
SUBTOTAL		$8,071,236		$3,817.99
INSURANCE	1.00%	$80,712	0	$38.18
SUBTOTAL		$8,151,949		$3,856.17
BONDS: CONTRACTOR	1.00%	$81,519	0	$38.56
TOTAL BUILDING COST		**$8,233,468**		**$3,894.73**

GROSS FLOOR AREA: 2,114 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase I
CENTRAL PLANT BUILDING AND EQUIPMENT
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$10,570		$5.00
011 Standard Foundations	$10,570		$5.00	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$24,945		$11.80
021 Slab On Grade	$24,945		$11.80	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$91,629		$43.34
031 Floor and Roof Construction	$91,629		$43.34	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$269,037		$127.26
041 Exterior Walls	$209,050		$98.89	
042 Exterior Doors/Windows	$59,987		$28.38	
05 ROOFING		$44,797		$21.19
051 Roofing	$44,797		$21.19	
06 INTERIOR CONSTRUCTION		$100,049		$47.33
061 Partitions	$25,453		$12.04	
062 Interior Finishes	$37,778		$17.87	
063 Specialties	$27,909		$13.20	
064 Interior Doors/Windows	$8,909		$4.21	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$5,172,257		$2,446.67
081 Plumbing	$54,180		$25.63	
082 H.V.A.C.	$5,100,260		$2,412.61	
083 Fire Protection	$17,817		$8.43	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$449,140		$212.46
091 Standard Electrical	$413,020		$195.37	
092 Special Electrical	$36,120		$17.09	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST		**$6,162,424**		**$2,915.05**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$0		$0.00
02 SUBSTRUCTURE		$0		$0.00
03 SUPERSTRUCTURE		$0		$0.00
04 EXTERIOR CLOSURE		$0		$0.00
05 ROOFING		$0		$0.00
06 INTERIOR CONSTRUCTION		$0		$0.00
07 CONVEYING		$0		$0.00
08 MECHANICAL		$0		$0.00
09 ELECTRICAL		$0		$0.00
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$4,362,108		$10.49
NET DIRECT SITE COST		$4,362,108		$10.49
DESIGN CONTINGENCY	15.00%	$654,316	0	$1.57
SUBTOTAL		$5,016,424		$12.07
PHASING	1.50%	$75,246	0	$0.18
SUBTOTAL		$5,091,671		$12.25
CMAR CONTINGENCY	4.00%	$203,667	0	$0.49
SUBTOTAL		$5,295,337		$12.74
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$251,529	0	$0.61
SUBTOTAL		$5,546,866		$13.34
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$166,406	0	$0.40
SUBTOTAL		$5,713,272		$13.74
INSURANCE	1.00%	$57,133	0	$0.14
SUBTOTAL		$5,770,405		$13.88
BONDS: CONTRACTOR	1.00%	$57,704	0	$0.14
TOTAL SITE COST		**$5,828,109**		**$14.02**

TOTAL SITE AREA: 415,721 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase I
PHASE I SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$0		$0.00
011 Standard Foundations	$0		$0.00	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$0		$0.00
021 Slab On Grade	$0		$0.00	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$0		$0.00
031 Floor and Roof Construction	$0		$0.00	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$0		$0.00
041 Exterior Walls	$0		$0.00	
042 Exterior Doors/Windows	$0		$0.00	
05 ROOFING		$0		$0.00
051 Roofing	$0		$0.00	
06 INTERIOR CONSTRUCTION		$0		$0.00
061 Partitions	$0		$0.00	
062 Interior Finishes	$0		$0.00	
063 Specialties	$0		$0.00	
064 Interior Doors/Windows	$0		$0.00	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$0		$0.00
081 Plumbing	$0		$0.00	
082 H.V.A.C.	$0		$0.00	
083 Fire Protection	$0		$0.00	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$0		$0.00
091 Standard Electrical	$0		$0.00	
092 Special Electrical	$0		$0.00	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$4,362,108		$10.49
111 Site Preparation	$1,254,559		$3.02	
112 Site Improvements	$1,403,013		$3.37	
113 Site Utilities	$1,704,536		$4.10	
114 Off-Site Work	$0		$0.00	
NET DIRECT SITE COST		**$4,362,108**		**$10.49**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$37,420,221	92,000	$406.74
02. INTERACTIVE COMMONS	$11,873,391	12,000	$989.45
03. PARKING GARAGE	$15,040,385	187,200	$80.34
04. PHASE II SITE WORK	$3,426,291	144,597	$23.70

TOTAL CONSTRUCTION COST	$67,760,288

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$1,759,628	104,000	$16.92

TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	$69,519,916

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase II

Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$28,007,550	92,000	$304.43
02. INTERACTIVE COMMONS	$8,886,762	12,000	$740.56
03. PARKING GARAGE	$11,257,131	187,200	$60.13
04. PHASE II SITE WORK	$2,564,443	144,597	$17.74

TOTAL NET DIRECT COST	$50,715,886

GENERAL MARKUPS - BASE BID		
DESIGN CONTINGENCY	15.00%	$7,607,383
PHASING	1.50%	$874,849
CMAR CONTINGENCY	4.00%	$2,367,925
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$2,924,387
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,934,713
INSURANCE	1.00%	$664,251
BONDS: CONTRACTOR	1.00%	$670,894

TOTAL CONSTRUCTION COST	$67,760,288

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$140,868		$1.53
02 SUBSTRUCTURE		$332,449		$3.61
03 SUPERSTRUCTURE		$4,235,070		$46.03
04 EXTERIOR CLOSURE		$5,346,616		$58.12
05 ROOFING		$495,855		$5.39
06 INTERIOR CONSTRUCTION		$4,614,870		$50.16
07 CONVEYING		$0		$0.00
08 MECHANICAL		$6,673,512		$72.54
09 ELECTRICAL		$5,331,311		$57.95
10 EQUIPMENT		$836,999		$9.10
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$28,007,550		$304.43
DESIGN CONTINGENCY	15.00%	$4,201,133	0	$45.66
SUBTOTAL		$32,208,683		$350.09
PHASING	1.50%	$483,130	0	$5.25
SUBTOTAL		$32,691,813		$355.35
CMAR CONTINGENCY	4.00%	$1,307,673	0	$14.21
SUBTOTAL		$33,999,485		$369.56
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$1,614,976	0	$17.55
SUBTOTAL		$35,614,461		$387.11
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,068,434	0	$11.61
SUBTOTAL		$36,682,895		$398.73
INSURANCE	1.00%	$366,829	0	$3.99
SUBTOTAL		$37,049,724		$402.71
BONDS: CONTRACTOR	1.00%	$370,497	0	$4.03
TOTAL BUILDING COST		**$37,420,221**		**$406.74**

GROSS FLOOR AREA: 92,000 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase II
BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$140,868		$1.53
011 Standard Foundations	$140,868		$1.53	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$332,449		$3.61
021 Slab On Grade	$332,449		$3.61	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$4,235,070		$46.03
031 Floor and Roof Construction	$3,942,498		$42.85	
032 Stair Construction	$292,572		$3.18	
04 EXTERIOR CLOSURE		$5,346,616		$58.12
041 Exterior Walls	$1,316,171		$14.31	
042 Exterior Doors/Windows	$4,030,445		$43.81	
05 ROOFING		$495,855		$5.39
051 Roofing	$495,855		$5.39	
06 INTERIOR CONSTRUCTION		$4,614,870		$50.16
061 Partitions	$1,218,448		$13.24	
062 Interior Finishes	$2,231,288		$24.25	
063 Specialties	$278,990		$3.03	
064 Interior Doors/Windows	$886,144		$9.63	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$6,673,512		$72.54
081 Plumbing	$1,117,011		$12.14	
082 H.V.A.C.	$4,895,505		$53.21	
083 Fire Protection	$660,996		$7.18	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$5,331,311		$57.95
091 Standard Electrical	$4,628,416		$50.31	
092 Special Electrical	$702,895		$7.64	
10 EQUIPMENT		$836,999		$9.10
101 Fixed/Movable Equipment	$66,220		$0.72	
102 Furnishings	$770,779		$8.38	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST		**$28,007,550**		**$304.43**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$72,240		$6.02
02 SUBSTRUCTURE		$170,486		$14.21
03 SUPERSTRUCTURE		$541,800		$45.15
04 EXTERIOR CLOSURE		$3,559,550		$296.63
05 ROOFING		$295,818		$24.65
06 INTERIOR CONSTRUCTION		$603,112		$50.26
07 CONVEYING		$0		$0.00
08 MECHANICAL		$944,268		$78.69
09 ELECTRICAL		$778,145		$64.85
10 EQUIPMENT		$1,921,343		$160.11
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$8,886,762		$740.56
DESIGN CONTINGENCY	15.00%	$1,333,014	0	$111.08
SUBTOTAL		$10,219,776		$851.65
PHASING	1.50%	$153,297	0	$12.77
SUBTOTAL		$10,373,073		$864.42
CMAR CONTINGENCY	4.00%	$414,923	0	$34.58
SUBTOTAL		$10,787,996		$899.00
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$512,430	0	$42.70
SUBTOTAL		$11,300,426		$941.70
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$339,013	0	$28.25
SUBTOTAL		$11,639,438		$969.95
INSURANCE	1.00%	$116,394	0	$9.70
SUBTOTAL		$11,755,833		$979.65
BONDS: CONTRACTOR	1.00%	$117,558	0	$9.80
TOTAL BUILDING COST		**$11,873,391**		**$989.45**

GROSS FLOOR AREA: 12,000 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase II
INTERACTIVE COMMONS
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$72,240		$6.02
011 Standard Foundations	$72,240		$6.02	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$170,486		$14.21
021 Slab On Grade	$170,486		$14.21	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$541,800		$45.15
031 Floor and Roof Construction	$541,800		$45.15	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$3,559,550		$296.63
041 Exterior Walls	$510,059		$42.50	
042 Exterior Doors/Windows	$3,049,491		$254.12	
05 ROOFING		$295,818		$24.65
051 Roofing	$295,818		$24.65	
06 INTERIOR CONSTRUCTION		$603,112		$50.26
061 Partitions	$158,928		$13.24	
062 Interior Finishes	$275,720		$22.98	
063 Specialties	$52,880		$4.41	
064 Interior Doors/Windows	$115,584		$9.63	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$944,268		$78.69
081 Plumbing	$308,103		$25.68	
082 H.V.A.C.	$542,855		$45.24	
083 Fire Protection	$93,310		$7.78	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$778,145		$64.85
091 Standard Electrical	$596,823		$49.74	
092 Special Electrical	$181,322		$15.11	
10 EQUIPMENT		$1,921,343		$160.11
101 Fixed/Movable Equipment	$1,757,840		$146.49	
102 Furnishings	$163,503		$13.63	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST		**$8,886,762**		**$740.56**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$234,000		$1.25
02 SUBSTRUCTURE		$552,240		$2.95
03 SUPERSTRUCTURE		$8,424,000		$45.00
04 EXTERIOR CLOSURE		$0		$0.00
05 ROOFING		$0		$0.00
06 INTERIOR CONSTRUCTION		$0		$0.00
07 CONVEYING		$250,000		$1.34
08 MECHANICAL		$675,937		$3.61
09 ELECTRICAL		$1,120,954		$5.99
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$0		$0.00
NET DIRECT SITE COST		$11,257,131		$60.13
DESIGN CONTINGENCY	15.00%	$1,688,570	0	$9.02
SUBTOTAL		$12,945,701		$69.15
PHASING	1.50%	$194,186	0	$1.04
SUBTOTAL		$13,139,886		$70.19
CMAR CONTINGENCY	4.00%	$525,595	0	$2.81
SUBTOTAL		$13,665,482		$73.00
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$649,110	0	$3.47
SUBTOTAL		$14,314,592		$76.47
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$429,438	0	$2.29
SUBTOTAL		$14,744,030		$78.76
INSURANCE	1.00%	$147,440	0	$0.79
SUBTOTAL		$14,891,470		$79.55
BONDS: CONTRACTOR	1.00%	$148,915	0	$0.80
TOTAL SITE COST		**$15,040,385**		**$80.34**

TOTAL SITE AREA: 187,200 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase II
PARKING GARAGE
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$1.25
011 Standard Foundations	$234,000		$1.25	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$552,240		$2.95
021 Slab On Grade	$552,240		$2.95	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$8,424,000		$45.00
031 Floor and Roof Construction	$8,424,000		$45.00	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$0		$0.00
041 Exterior Walls	$0		$0.00	
042 Exterior Doors/Windows	$0		$0.00	
05 ROOFING		$0		$0.00
051 Roofing	$0		$0.00	
06 INTERIOR CONSTRUCTION		$0		$0.00
061 Partitions	$0		$0.00	
062 Interior Finishes	$0		$0.00	
063 Specialties	$0		$0.00	
064 Interior Doors/Windows	$0		$0.00	
07 CONVEYING		$250,000		$1.34
071 Elevators	$250,000		$1.34	
08 MECHANICAL		$675,937		$3.61
081 Plumbing	$251,407		$1.34	
082 H.V.A.C.	$30,100		$0.16	
083 Fire Protection	$394,430		$2.11	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$1,120,954		$5.99
091 Standard Electrical	$951,912		$5.09	
092 Special Electrical	$169,042		$0.90	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT SITE COST	**$11,257,131**			**$60.13**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$0		$0.00
02 SUBSTRUCTURE		$0		$0.00
03 SUPERSTRUCTURE		$0		$0.00
04 EXTERIOR CLOSURE		$0		$0.00
05 ROOFING		$0		$0.00
06 INTERIOR CONSTRUCTION		$0		$0.00
07 CONVEYING		$0		$0.00
08 MECHANICAL		$0		$0.00
09 ELECTRICAL		$0		$0.00
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$2,564,443		$17.74
NET DIRECT SITE COST		$2,564,443		$17.74
DESIGN CONTINGENCY	15.00%	$384,666	0	$2.66
SUBTOTAL		$2,949,109		$20.40
PHASING	1.50%	$44,237	0	$0.31
SUBTOTAL		$2,993,346		$20.70
CMAR CONTINGENCY	4.00%	$119,734	0	$0.83
SUBTOTAL		$3,113,080		$21.53
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$147,871	0	$1.02
SUBTOTAL		$3,260,951		$22.55
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$97,829	0	$0.68
SUBTOTAL		$3,358,780		$23.23
INSURANCE	1.00%	$33,588	0	$0.23
SUBTOTAL		$3,392,368		$23.46
BONDS: CONTRACTOR	1.00%	$33,924	0	$0.23
TOTAL SITE COST		**$3,426,291**		**$23.70**

TOTAL SITE AREA: 144,597 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase II
PHASE II SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$0		$0.00
011 Standard Foundations	$0		$0.00	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$0		$0.00
021 Slab On Grade	$0		$0.00	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$0		$0.00
031 Floor and Roof Construction	$0		$0.00	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$0		$0.00
041 Exterior Walls	$0		$0.00	
042 Exterior Doors/Windows	$0		$0.00	
05 ROOFING		$0		$0.00
051 Roofing	$0		$0.00	
06 INTERIOR CONSTRUCTION		$0		$0.00
061 Partitions	$0		$0.00	
062 Interior Finishes	$0		$0.00	
063 Specialties	$0		$0.00	
064 Interior Doors/Windows	$0		$0.00	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$0		$0.00
081 Plumbing	$0		$0.00	
082 H.V.A.C.	$0		$0.00	
083 Fire Protection	$0		$0.00	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$0		$0.00
091 Standard Electrical	$0		$0.00	
092 Special Electrical	$0		$0.00	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$2,564,443		$17.74
111 Site Preparation	$988,485		$6.84	
112 Site Improvements	$519,176		$3.59	
113 Site Utilities	$1,056,782		$7.31	
114 Off-Site Work	$0		$0.00	
NET DIRECT SITE COST		**$2,564,443**		**$17.74**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. DEMOLITION OF EXISTING GRANT SAWYER BUILDING	$1,899,748	236,981	$8.02
TOTAL CONSTRUCTION COST	**$1,899,748**		

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase III

Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. DEMOLITION OF EXISTING GRANT SAWYER BUILDING	$1,421,886	236,981	$6.00
TOTAL NET DIRECT COST	**$1,421,886**		

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$213,283
PHASING	1.50%	$24,528
CMAR CONTINGENCY	4.00%	$66,388
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$81,989
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$54,242
INSURANCE	1.00%	$18,623
BONDS: CONTRACTOR	1.00%	$18,809
TOTAL CONSTRUCTION COST		**$1,899,748**

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$0		$0.00
02 SUBSTRUCTURE		$0		$0.00
03 SUPERSTRUCTURE		$0		$0.00
04 EXTERIOR CLOSURE		$0		$0.00
05 ROOFING		$0		$0.00
06 INTERIOR CONSTRUCTION		$0		$0.00
07 CONVEYING		$0		$0.00
08 MECHANICAL		$0		$0.00
09 ELECTRICAL		$0		$0.00
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$1,421,886		$6.00
NET DIRECT SITE COST		$1,421,886		$6.00
DESIGN CONTINGENCY	15.00%	$213,283	0	$0.90
SUBTOTAL		$1,635,169		$6.90
PHASING	1.50%	$24,528	0	$0.10
SUBTOTAL		$1,659,696		$7.00
CMAR CONTINGENCY	4.00%	$66,388	0	$0.28
SUBTOTAL		$1,726,084		$7.28
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$81,989	0	$0.35
SUBTOTAL		$1,808,073		$7.63
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$54,242	0	$0.23
SUBTOTAL		$1,862,315		$7.86
INSURANCE	1.00%	$18,623	0	$0.08
SUBTOTAL		$1,880,939		$7.94
BONDS: CONTRACTOR	1.00%	$18,809	0	$0.08
TOTAL SITE COST		**$1,899,748**		**$8.02**

TOTAL SITE AREA: 236,981 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase III
DEMOLITION OF EXISTING GRANT SAWYER BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE REVISION1

OCMI JOB #: 18236.000 | 09 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$0		$0.00
011 Standard Foundations	$0		$0.00	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$0		$0.00
021 Slab On Grade	$0		$0.00	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$0		$0.00
031 Floor and Roof Construction	$0		$0.00	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$0		$0.00
041 Exterior Walls	$0		$0.00	
042 Exterior Doors/Windows	$0		$0.00	
05 ROOFING		$0		$0.00
051 Roofing	$0		$0.00	
06 INTERIOR CONSTRUCTION		$0		$0.00
061 Partitions	$0		$0.00	
062 Interior Finishes	$0		$0.00	
063 Specialties	$0		$0.00	
064 Interior Doors/Windows	$0		$0.00	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$0		$0.00
081 Plumbing	$0		$0.00	
082 H.V.A.C.	$0		$0.00	
083 Fire Protection	$0		$0.00	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$0		$0.00
091 Standard Electrical	$0		$0.00	
092 Special Electrical	$0		$0.00	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$1,421,886		$6.00
111 Site Preparation	$1,421,886		$6.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT SITE COST		**$1,421,886**		**$6.00**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$41,474,446	104,000	$398.79
02. CORE ELEVATORS AND CIRCULATION	$10,867,433	46,200	$235.23
03. PARKING GARAGE EXTENSION	$2,409,091	187,200	$12.87
04. PHASE IV SITE WORK	$4,871,781	235,752	$20.66
TOTAL CONSTRUCTION COST	**$59,622,752**		

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$5,611,520	291,200	$19.27
TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	**$65,234,272**		

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$31,041,977	104,000	$298.48
02. CORE ELEVATORS AND CIRCULATION	$8,133,842	46,200	$176.06
03. PARKING GARAGE EXTENSION	$1,803,109	187,200	$9.63
04. PHASE IV SITE WORK	$3,646,335	235,752	$15.47
TOTAL NET DIRECT COST	**$44,625,263**		

GENERAL MARKUPS - BASE BID		
DESIGN CONTINGENCY	15.00%	$6,693,789
PHASING	1.50%	$769,786
CMAR CONTINGENCY	4.00%	$2,083,554
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$2,573,189
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,702,367
INSURANCE	1.00%	$584,479
BONDS: CONTRACTOR	1.00%	$590,324
TOTAL CONSTRUCTION COST		**$59,622,752**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$156,520		$1.51
02 SUBSTRUCTURE		$369,387		$3.55
03 SUPERSTRUCTURE		$4,753,392		$45.71
04 EXTERIOR CLOSURE		$5,654,901		$54.37
05 ROOFING		$550,950		$5.30
06 INTERIOR CONSTRUCTION		$5,215,240		$50.15
07 CONVEYING		$0		$0.00
08 MECHANICAL		$7,444,769		$71.58
09 ELECTRICAL		$6,017,593		$57.86
10 EQUIPMENT		$879,225		$8.45
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$31,041,977		$298.48
DESIGN CONTINGENCY	15.00%	$4,656,297	0	$44.77
SUBTOTAL		$35,698,274		$343.25
PHASING	1.50%	$535,474	0	$5.15
SUBTOTAL		$36,233,748		$348.40
CMAR CONTINGENCY	4.00%	$1,449,350	0	$13.94
SUBTOTAL		$37,683,098		$362.34
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$1,789,947	0	$17.21
SUBTOTAL		$39,473,045		$379.55
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,184,191	0	$11.39
SUBTOTAL		$40,657,236		$390.93
INSURANCE	1.00%	$406,572	0	$3.91
SUBTOTAL		$41,063,808		$394.84
BONDS: CONTRACTOR	1.00%	$410,638	0	$3.95
TOTAL BUILDING COST		**$41,474,446**		**$398.79**

GROSS FLOOR AREA: 104,000 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase IV
BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$156,520		$1.51
011 Standard Foundations	$156,520		$1.51	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$369,387		$3.55
021 Slab On Grade	$369,387		$3.55	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$4,753,392		$45.71
031 Floor and Roof Construction	$4,460,820		$42.89	
032 Stair Construction	$292,572		$2.81	
04 EXTERIOR CLOSURE		$5,654,901		$54.37
041 Exterior Walls	$1,628,845		$15.66	
042 Exterior Doors/Windows	$4,026,056		$38.71	
05 ROOFING		$550,950		$5.30
051 Roofing	$550,950		$5.30	
06 INTERIOR CONSTRUCTION		$5,215,240		$50.15
061 Partitions	$1,377,376		$13.24	
062 Interior Finishes	$2,522,326		$24.25	
063 Specialties	$313,810		$3.02	
064 Interior Doors/Windows	$1,001,728		$9.63	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$7,444,769		$71.58
081 Plumbing	$1,220,121		$11.73	
082 H.V.A.C.	$5,498,636		$52.87	
083 Fire Protection	$726,012		$6.98	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$6,017,593		$57.86
091 Standard Electrical	$5,225,843		$50.25	
092 Special Electrical	$791,750		$7.61	
10 EQUIPMENT		$879,225		$8.45
101 Fixed/Movable Equipment	$66,220		$0.64	
102 Furnishings	$813,005		$7.82	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST	**$31,041,977**			**$298.48**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$69,531		$1.51
02 SUBSTRUCTURE		$164,093		$3.55
03 SUPERSTRUCTURE		$1,592,983		$34.48
04 EXTERIOR CLOSURE		$1,873,000		$40.54
05 ROOFING		$222,499		$4.82
06 INTERIOR CONSTRUCTION		$1,763,396		$38.17
07 CONVEYING		$680,260		$14.72
08 MECHANICAL		$725,410		$15.70
09 ELECTRICAL		$790,570		$17.11
10 EQUIPMENT		$252,100		$5.46
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$8,133,842		$176.06
DESIGN CONTINGENCY	15.00%	$1,220,076	0	$26.41
SUBTOTAL		$9,353,918		$202.47
PHASING	1.50%	$140,309	0	$3.04
SUBTOTAL		$9,494,227		$205.50
CMAR CONTINGENCY	4.00%	$379,769	0	$8.22
SUBTOTAL		$9,873,996		$213.72
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$469,015	0	$10.15
SUBTOTAL		$10,343,011		$223.87
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$310,290	0	$6.72
SUBTOTAL		$10,653,301		$230.59
INSURANCE	1.00%	$106,533	0	$2.31
SUBTOTAL		$10,759,834		$232.90
BONDS: CONTRACTOR	1.00%	$107,598	0	$2.33
TOTAL BUILDING COST		**$10,867,433**		**$235.23**

GROSS FLOOR AREA: 46,200 SF

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$69,531		$1.51
011 Standard Foundations	$69,531		$1.51	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$164,093		$3.55
021 Slab On Grade	$164,093		$3.55	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$1,592,983		$34.48
031 Floor and Roof Construction	$1,481,011		$32.06	
032 Stair Construction	$111,972		$2.42	
04 EXTERIOR CLOSURE		$1,873,000		$40.54
041 Exterior Walls	$391,675		$8.48	
042 Exterior Doors/Windows	$1,481,325		$32.06	
05 ROOFING		$222,499		$4.82
051 Roofing	$222,499		$4.82	
06 INTERIOR CONSTRUCTION		$1,763,396		$38.17
061 Partitions	$389,374		$8.43	
062 Interior Finishes	$1,091,008		$23.61	
063 Specialties	$143,952		$3.12	
064 Interior Doors/Windows	$139,062		$3.01	
07 CONVEYING		$680,260		$14.72
071 Elevators	$680,260		$14.72	
08 MECHANICAL		$725,410		$15.70
081 Plumbing	$281,134		$6.09	
082 H.V.A.C.	$277,402		$6.00	
083 Fire Protection	$166,874		$3.61	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$790,570		$17.11
091 Standard Electrical	$727,962		$15.76	
092 Special Electrical	$62,608		$1.36	
10 EQUIPMENT		$252,100		$5.46
101 Fixed/Movable Equipment	$12,040		$0.26	
102 Furnishings	$240,060		$5.20	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST	**$8,133,842**			**$176.06**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$234,000		$234,000.00
02 SUBSTRUCTURE		$552,240		$552,240.00
03 SUPERSTRUCTURE		$179,441		$179,441.00
04 EXTERIOR CLOSURE		$0		$0.00
05 ROOFING		$0		$0.00
06 INTERIOR CONSTRUCTION		$0		$0.00
07 CONVEYING		$250,000		$250,000.00
08 MECHANICAL		$44,852		$44,852.00
09 ELECTRICAL		$293,779		$293,779.00
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$248,797		$248,797.00
NET DIRECT SITE COST		$1,803,109		$1,803,109.00
DESIGN CONTINGENCY	15.00%	$270,466	0	$270,466.35
SUBTOTAL		$2,073,575		$2,073,575.35
PHASING	1.50%	$31,104	0	$31,103.63
SUBTOTAL		$2,104,679		$2,104,678.98
CMAR CONTINGENCY	4.00%	$84,187	0	$84,187.16
SUBTOTAL		$2,188,866		$2,188,866.14
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$103,971	0	$103,971.14
SUBTOTAL		$2,292,837		$2,292,837.28
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$68,785	0	$68,785.12
SUBTOTAL		$2,361,622		$2,361,622.40
INSURANCE	1.00%	$23,616	0	$23,616.22
SUBTOTAL		$2,385,239		$2,385,238.62
BONDS: CONTRACTOR	1.00%	$23,852	0	$23,852.39
TOTAL SITE COST		**$2,409,091**		**$2,409,091.01**

TOTAL SITE AREA: 1 SF

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$234,000		$234,000.00
011 Standard Foundations	$234,000		$234,000.00	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$552,240		$552,240.00
021 Slab On Grade	$552,240		$552,240.00	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$179,441		$179,441.00
031 Floor and Roof Construction	$179,441		$179,441.00	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$0		$0.00
041 Exterior Walls	$0		$0.00	
042 Exterior Doors/Windows	$0		$0.00	
05 ROOFING		$0		$0.00
051 Roofing	$0		$0.00	
06 INTERIOR CONSTRUCTION		$0		$0.00
061 Partitions	$0		$0.00	
062 Interior Finishes	$0		$0.00	
063 Specialties	$0		$0.00	
064 Interior Doors/Windows	$0		$0.00	
07 CONVEYING		$250,000		$250,000.00
071 Elevators	$250,000		$250,000.00	
08 MECHANICAL		$44,852		$44,852.00
081 Plumbing	$14,750		$14,750.00	
082 H.V.A.C.	$30,100		$30,100.00	
083 Fire Protection	$2		$2.00	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$293,779		$293,779.00
091 Standard Electrical	$293,778		$293,778.00	
092 Special Electrical	$1		$1.00	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$248,797		$248,797.00
111 Site Preparation	$248,797		$248,797.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT SITE COST		**$1,803,109**		**$1,803,109.00**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$0		$0.00
02 SUBSTRUCTURE		$0		$0.00
03 SUPERSTRUCTURE		$0		$0.00
04 EXTERIOR CLOSURE		$0		$0.00
05 ROOFING		$0		$0.00
06 INTERIOR CONSTRUCTION		$0		$0.00
07 CONVEYING		$0		$0.00
08 MECHANICAL		$0		$0.00
09 ELECTRICAL		$0		$0.00
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$3,646,335		$15.47
NET DIRECT SITE COST		$3,646,335		$15.47
DESIGN CONTINGENCY	15.00%	$546,950	0	$2.32
SUBTOTAL		$4,193,285		$17.79
PHASING	1.50%	$62,899	0	$0.27
SUBTOTAL		$4,256,185		$18.05
CMAR CONTINGENCY	4.00%	$170,247	0	$0.72
SUBTOTAL		$4,426,432		$18.78
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$210,256	0	$0.89
SUBTOTAL		$4,636,687		$19.67
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$139,101	0	$0.59
SUBTOTAL		$4,775,788		$20.26
INSURANCE	1.00%	$47,758	0	$0.20
SUBTOTAL		$4,823,546		$20.46
BONDS: CONTRACTOR	1.00%	$48,235	0	$0.20
TOTAL SITE COST		**$4,871,781**		**$20.66**

TOTAL SITE AREA: 235,752 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase IV
PHASE IV SITE WORK
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$0		$0.00
011 Standard Foundations	$0		$0.00	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$0		$0.00
021 Slab On Grade	$0		$0.00	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$0		$0.00
031 Floor and Roof Construction	$0		$0.00	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$0		$0.00
041 Exterior Walls	$0		$0.00	
042 Exterior Doors/Windows	$0		$0.00	
05 ROOFING		$0		$0.00
051 Roofing	$0		$0.00	
06 INTERIOR CONSTRUCTION		$0		$0.00
061 Partitions	$0		$0.00	
062 Interior Finishes	$0		$0.00	
063 Specialties	$0		$0.00	
064 Interior Doors/Windows	$0		$0.00	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$0		$0.00
081 Plumbing	$0		$0.00	
082 H.V.A.C.	$0		$0.00	
083 Fire Protection	$0		$0.00	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$0		$0.00
091 Standard Electrical	$0		$0.00	
092 Special Electrical	$0		$0.00	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$3,646,335		$15.47
111 Site Preparation	$1,460,385		$6.19	
112 Site Improvements	$1,231,216		$5.22	
113 Site Utilities	$954,734		$4.05	
114 Off-Site Work	$0		$0.00	
NET DIRECT SITE COST		**$3,646,335**		**$15.47**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$37,767,976	92,000	$410.52
02. PHASE V SITE WORK	$3,637,487	65,177	$55.81
TOTAL CONSTRUCTION COST	**$41,405,464**		

ADDITIVE ELEMENTS	TOTAL COST	GFA	$/SF AREA
01. FF&E, ALLOWANCE	$1,772,870	92,000	$19.27
TOTAL CONSTRUCTION COST INCLUDING ALTERNATES	**$43,178,334**		

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED PROJECT SUMMARY

ELEMENT	TOTAL COST	GFA	$/SF AREA
01. BUILDING	$28,267,831	92,000	$307.26
02. PHASE V SITE WORK	$2,722,515	65,177	$41.77
TOTAL NET DIRECT COST	**$30,990,346**		

GENERAL MARKUPS - BASE BID

DESIGN CONTINGENCY	15.00%	$4,648,552
PHASING	1.50%	$534,583
CMAR CONTINGENCY	4.00%	$1,446,939
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$1,786,970
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,182,222
INSURANCE	1.00%	$405,896
BONDS: CONTRACTOR	1.00%	$409,955
TOTAL CONSTRUCTION COST	**$41,405,464**	

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

BUILDING SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$143,276		$1.56
02 SUBSTRUCTURE		$338,132		$3.68
03 SUPERSTRUCTURE		$4,231,458		$45.99
04 EXTERIOR CLOSURE		$5,647,616		$61.39
05 ROOFING		$458,483		$4.98
06 INTERIOR CONSTRUCTION		$4,614,870		$50.16
07 CONVEYING		$0		$0.00
08 MECHANICAL		$6,665,686		$72.45
09 ELECTRICAL		$5,331,311		$57.95
10 EQUIPMENT		$836,999		$9.10
11 SITEWORK		$0		$0.00
NET DIRECT BUILDING COST		$28,267,831		$307.26
DESIGN CONTINGENCY	15.00%	$4,240,175	0	$46.09
SUBTOTAL		$32,508,006		$353.35
PHASING	1.50%	$487,620	0	$5.30
SUBTOTAL		$32,995,626		$358.65
CMAR CONTINGENCY	4.00%	$1,319,825	0	$14.35
SUBTOTAL		$34,315,451		$372.99
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$1,629,984	0	$17.72
SUBTOTAL		$35,945,435		$390.71
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$1,078,363	0	$11.72
SUBTOTAL		$37,023,798		$402.43
INSURANCE	1.00%	$370,238	0	$4.02
SUBTOTAL		$37,394,036		$406.46
BONDS: CONTRACTOR	1.00%	$373,940	0	$4.06
TOTAL BUILDING COST		**$37,767,976**		**$410.52**

GROSS FLOOR AREA: 92,000 SF

NSPWD Grant Sawyer Office Building Replace Concept R3-B Phase V
BUILDING
Las Vegas

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED BUILDING SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$143,276		$1.56
011 Standard Foundations	$143,276		$1.56	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$338,132		$3.68
021 Slab On Grade	$338,132		$3.68	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$4,231,458		$45.99
031 Floor and Roof Construction	$3,938,886		$42.81	
032 Stair Construction	$292,572		$3.18	
04 EXTERIOR CLOSURE		$5,647,616		$61.39
041 Exterior Walls	$1,617,171		$17.58	
042 Exterior Doors/Windows	$4,030,445		$43.81	
05 ROOFING		$458,483		$4.98
051 Roofing	$458,483		$4.98	
06 INTERIOR CONSTRUCTION		$4,614,870		$50.16
061 Partitions	$1,218,448		$13.24	
062 Interior Finishes	$2,231,288		$24.25	
063 Specialties	$278,990		$3.03	
064 Interior Doors/Windows	$886,144		$9.63	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$6,665,686		$72.45
081 Plumbing	$1,117,011		$12.14	
082 H.V.A.C.	$4,887,679		$53.13	
083 Fire Protection	$660,996		$7.18	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$5,331,311		$57.95
091 Standard Electrical	$4,628,416		$50.31	
092 Special Electrical	$702,895		$7.64	
10 EQUIPMENT		$836,999		$9.10
101 Fixed/Movable Equipment	$66,220		$0.72	
102 Furnishings	$770,779		$8.38	
103 Special Construction	$0		$0.00	
11 SITEWORK		$0		$0.00
111 Site Preparation	$0		$0.00	
112 Site Improvements	$0		$0.00	
113 Site Utilities	$0		$0.00	
114 Off-Site Work	$0		$0.00	
NET DIRECT BUILDING COST		**$28,267,831**		**$307.26**

FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

SITE SUMMARY

ELEMENT		TOTAL COST		$/SF AREA
01 FOUNDATIONS		$0		$0.00
02 SUBSTRUCTURE		$0		$0.00
03 SUPERSTRUCTURE		$0		$0.00
04 EXTERIOR CLOSURE		$0		$0.00
05 ROOFING		$0		$0.00
06 INTERIOR CONSTRUCTION		$0		$0.00
07 CONVEYING		$0		$0.00
08 MECHANICAL		$0		$0.00
09 ELECTRICAL		$0		$0.00
10 EQUIPMENT		$0		$0.00
11 SITEWORK		$2,722,515		$41.77
NET DIRECT SITE COST		$2,722,515		$41.77
DESIGN CONTINGENCY	15.00%	$408,377	0	$6.27
SUBTOTAL		$3,130,892		$48.04
PHASING	1.50%	$46,963	0	$0.72
SUBTOTAL		$3,177,856		$48.76
CMAR CONTINGENCY	4.00%	$127,114	0	$1.95
SUBTOTAL		$3,304,970		$50.71
GENERAL CONDITIONS/REQUIREMENTS	4.75%	$156,986	0	$2.41
SUBTOTAL		$3,461,956		$53.12
CONTRACTOR OVERHEAD AND PROFIT	3.00%	$103,859	0	$1.59
SUBTOTAL		$3,565,815		$54.71
INSURANCE	1.00%	$35,658	0	$0.55
SUBTOTAL		$3,601,473		$55.26
BONDS: CONTRACTOR	1.00%	$36,015	0	$0.55
TOTAL SITE COST		**$3,637,487**		**$55.81**

TOTAL SITE AREA: 65,177 SF

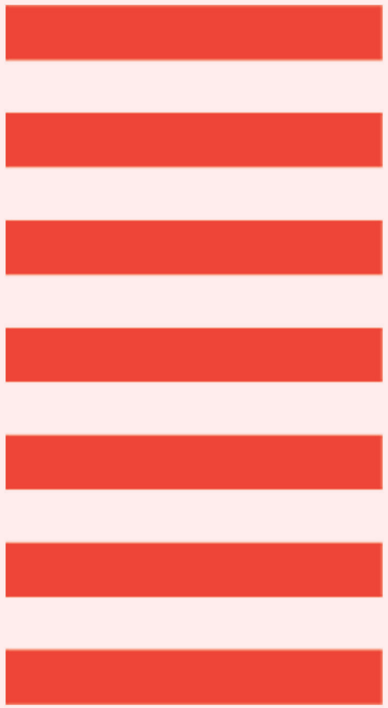
FEASIBILITY STUDY COST ESTIMATE - REVISION2

OCMI JOB #: 18236.000 | 11 January 2019

DETAILED SITE SUMMARY

ELEMENT	AMOUNT	TOTAL COST	$/SF AREA	TOTAL $/SF AREA
01 FOUNDATIONS		$0		$0.00
011 Standard Foundations	$0		$0.00	
012 Special Foundations	$0		$0.00	
02 SUBSTRUCTURE		$0		$0.00
021 Slab On Grade	$0		$0.00	
022 Basement Excavation	$0		$0.00	
023 Basement Walls	$0		$0.00	
03 SUPERSTRUCTURE		$0		$0.00
031 Floor and Roof Construction	$0		$0.00	
032 Stair Construction	$0		$0.00	
04 EXTERIOR CLOSURE		$0		$0.00
041 Exterior Walls	$0		$0.00	
042 Exterior Doors/Windows	$0		$0.00	
05 ROOFING		$0		$0.00
051 Roofing	$0		$0.00	
06 INTERIOR CONSTRUCTION		$0		$0.00
061 Partitions	$0		$0.00	
062 Interior Finishes	$0		$0.00	
063 Specialties	$0		$0.00	
064 Interior Doors/Windows	$0		$0.00	
07 CONVEYING		$0		$0.00
071 Elevators	$0		$0.00	
08 MECHANICAL		$0		$0.00
081 Plumbing	$0		$0.00	
082 H.V.A.C.	$0		$0.00	
083 Fire Protection	$0		$0.00	
084 Special Mechanical	$0		$0.00	
09 ELECTRICAL		$0		$0.00
091 Standard Electrical	$0		$0.00	
092 Special Electrical	$0		$0.00	
10 EQUIPMENT		$0		$0.00
101 Fixed/Movable Equipment	$0		$0.00	
102 Furnishings	$0		$0.00	
103 Special Construction	$0		$0.00	
11 SITEWORK		$2,722,515		$41.77
111 Site Preparation	$504,385		$7.74	
112 Site Improvements	$373,166		$5.73	
113 Site Utilities	$1,844,964		$28.31	
114 Off-Site Work	$0		$0.00	
NET DIRECT SITE COST		**$2,722,515**		**$41.77**

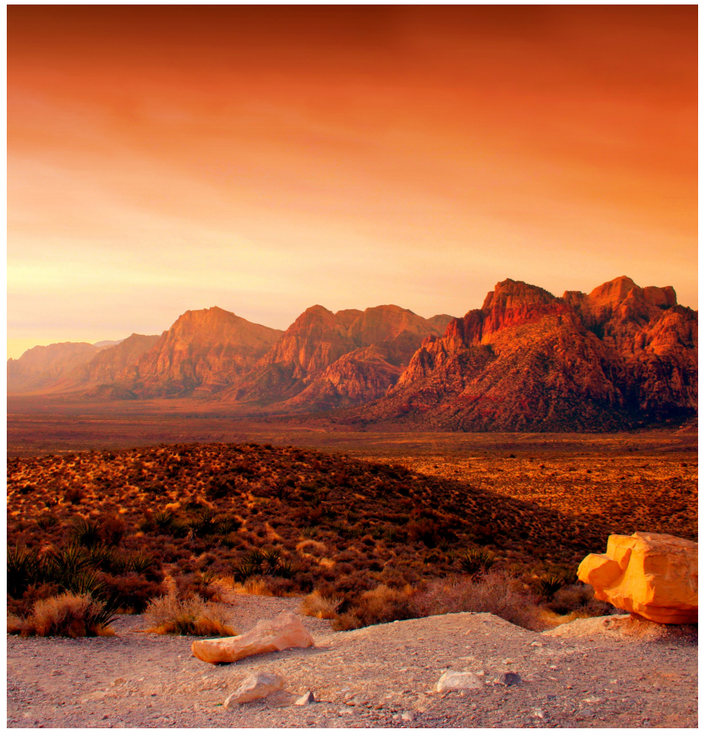
Interior Design Concepts

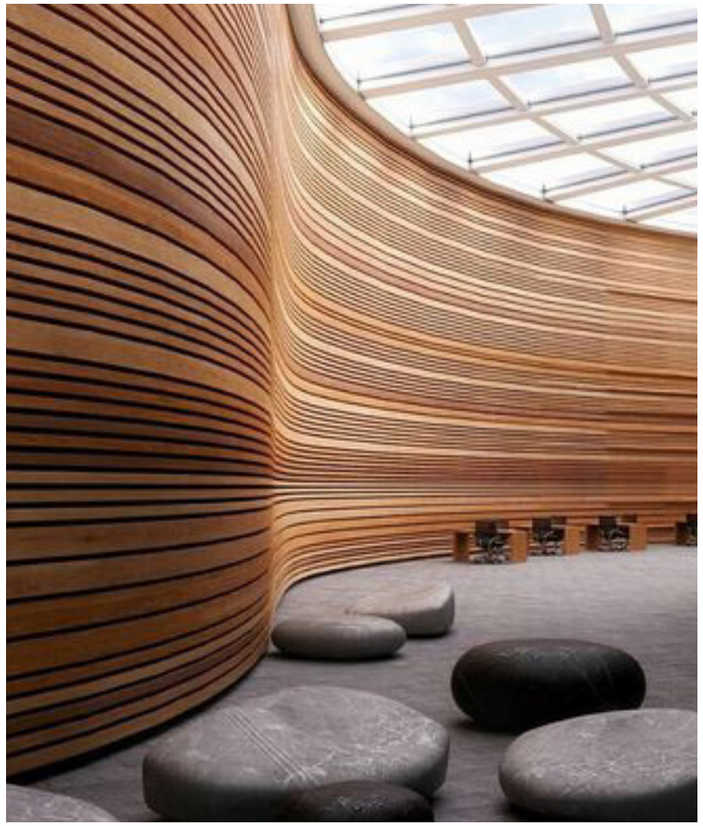


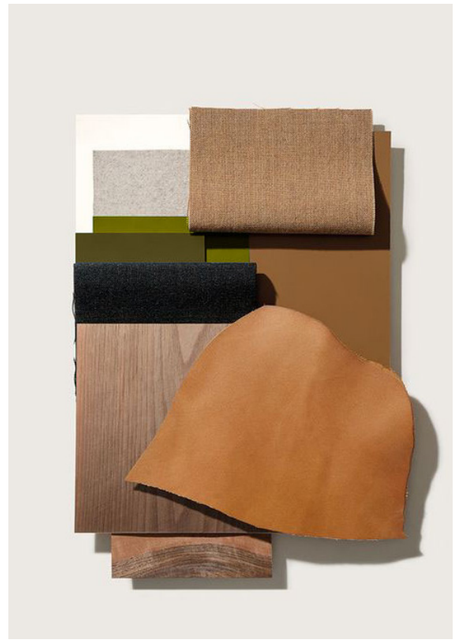
kga

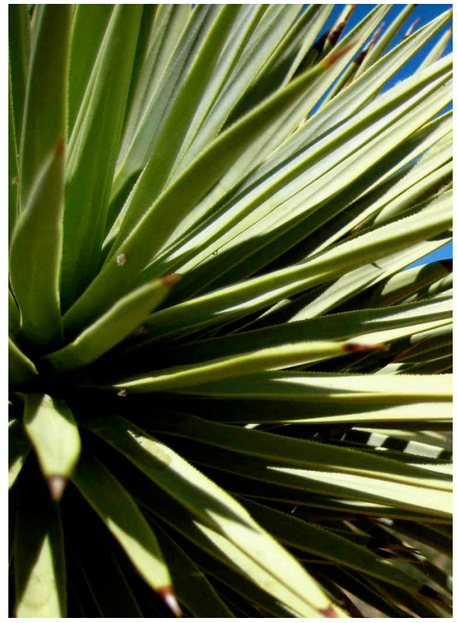
The overall design is meant to convey a cohesive warmth that mirrors the southern Nevada landscape and hospitality.
With the use of natural finishes, warmer colors and textures, we will form an inviting atmosphere inspiring both visitors and employees alike.

OVERALL DESIGN CONCEPT

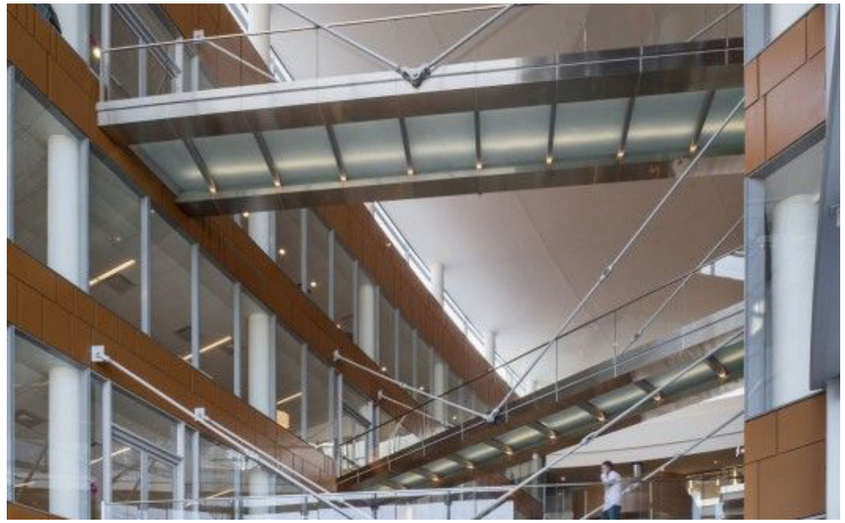


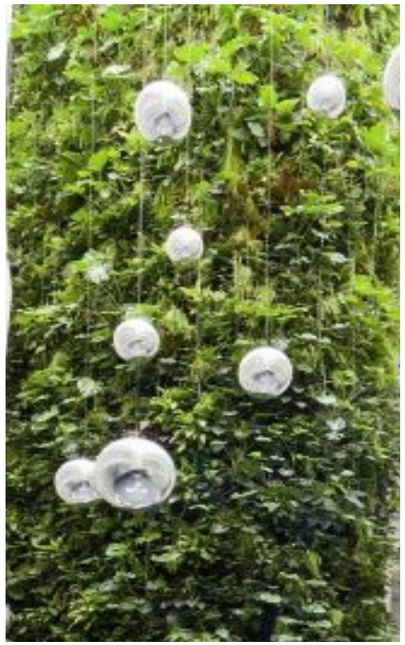


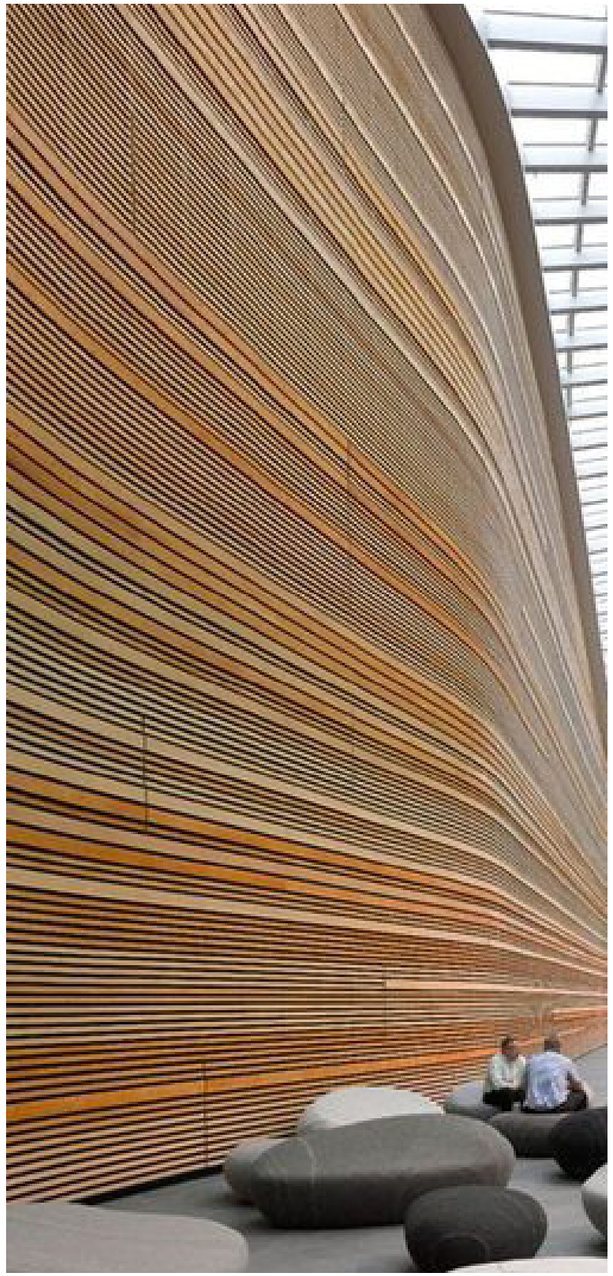


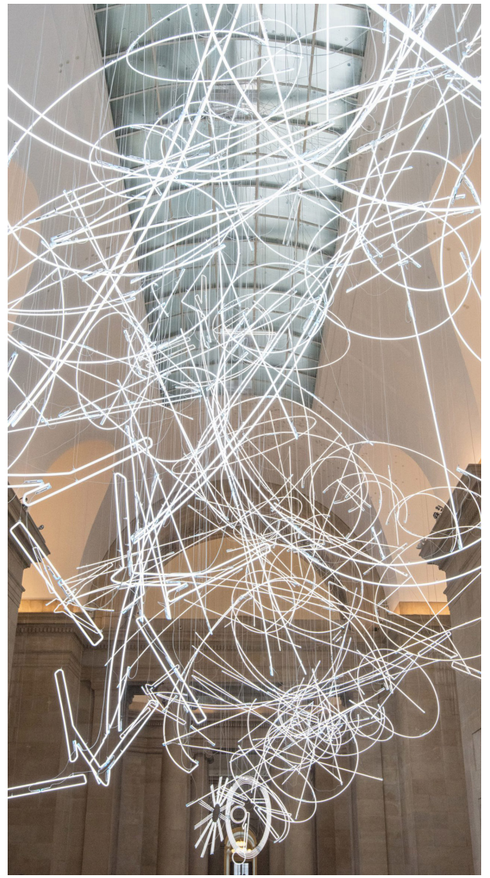


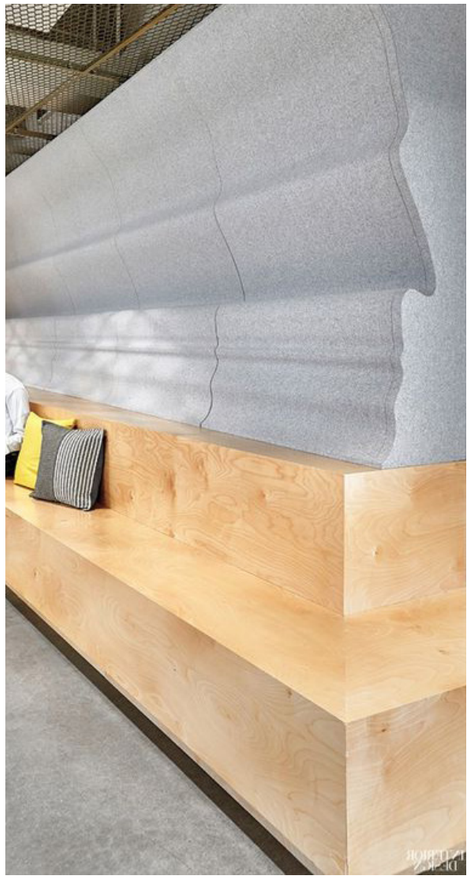
MAIN LOBBY CONCEPT IMAGES



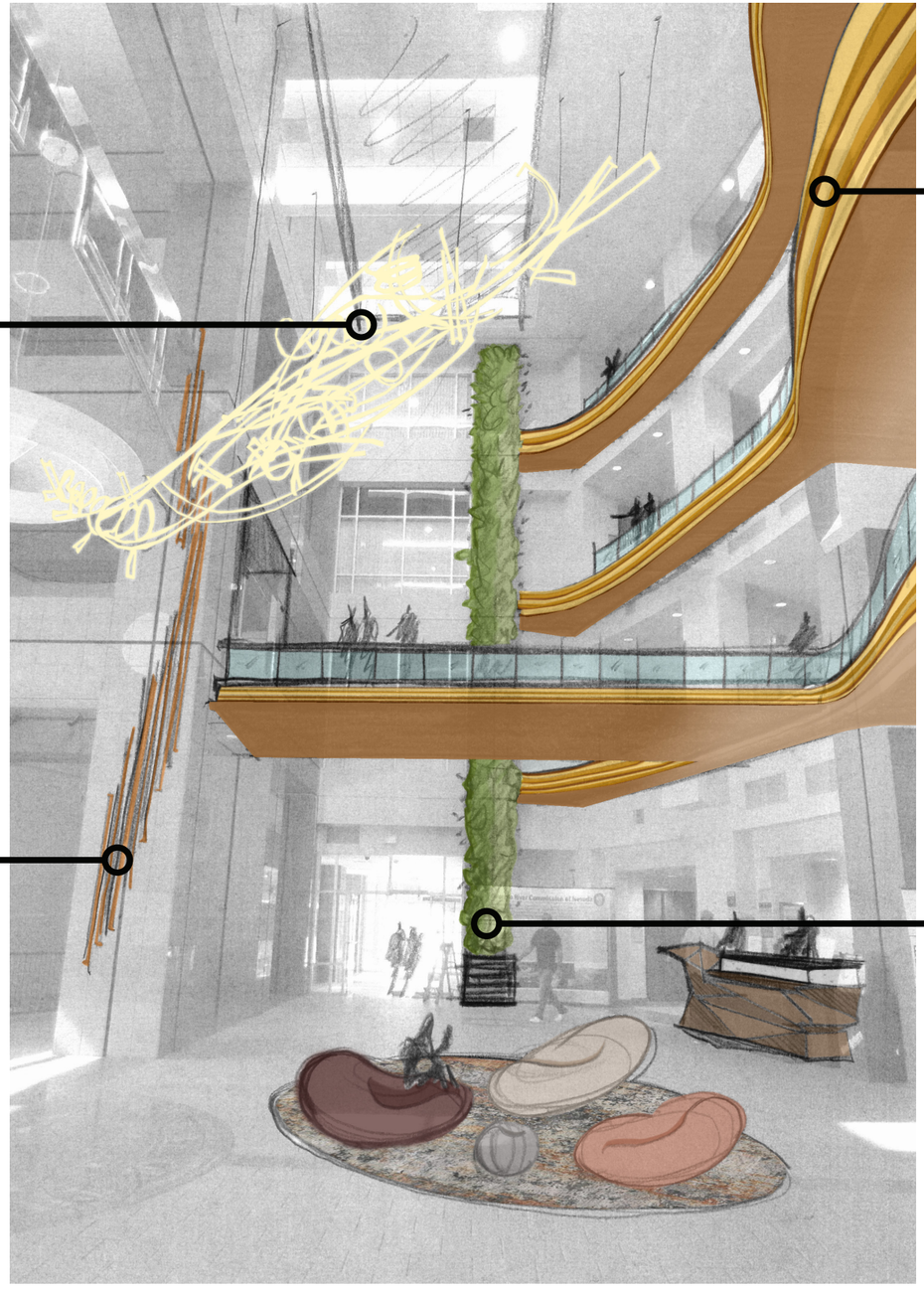






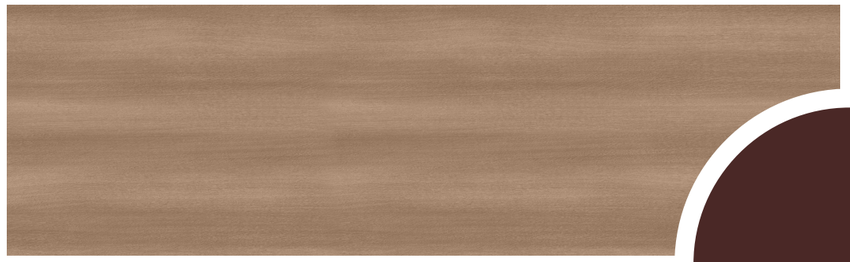


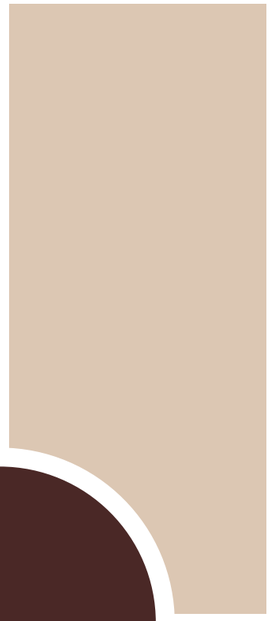
MAIN LOBBY

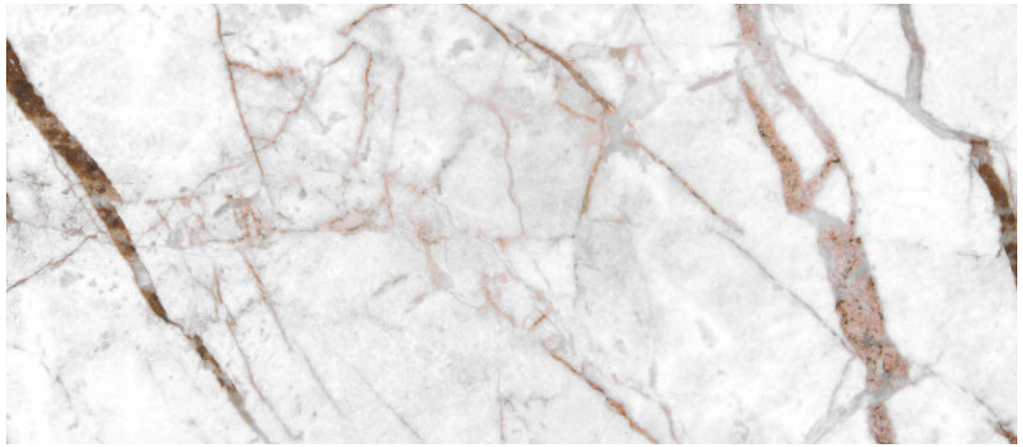


Sketch of lobby design.

MAIN LOBBY FINISHES

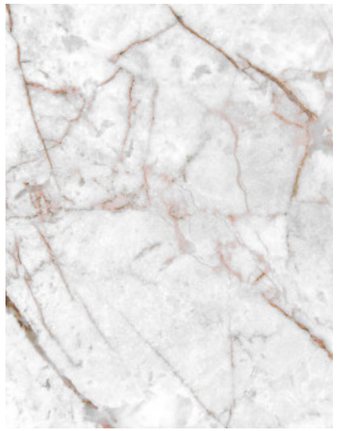


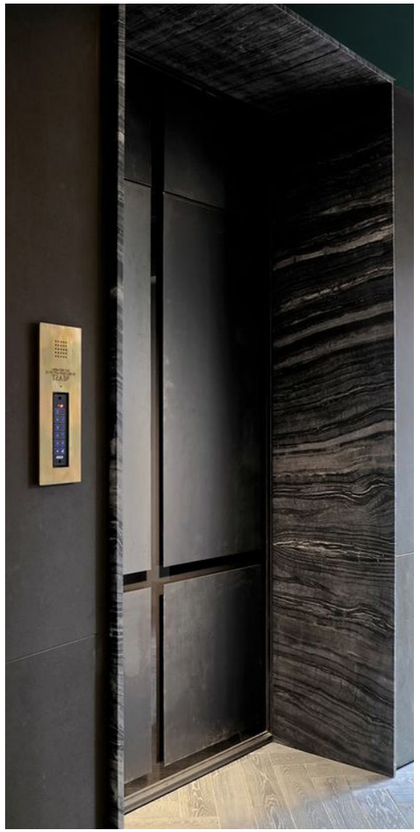




RESTROOM CONCEPT IMAGES & FINISHES

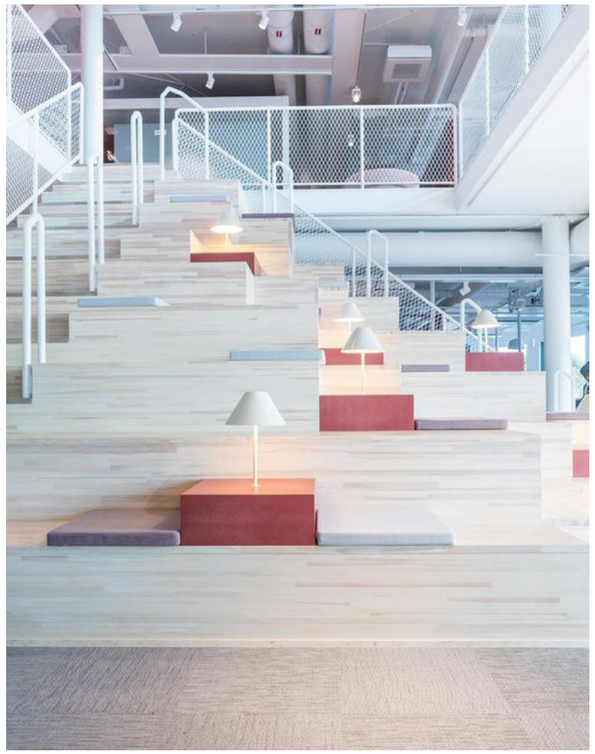
CORRIDOR & ELEVATOR LOBBY
CONCEPT IMAGES & FINISHES





The Innovation Center is an extension of the aesthetic of the surrounding spaces, but with a fresh pop of colors. The space is more vibrant in its scheme, transitional in overall design, and collaborative in spirit.

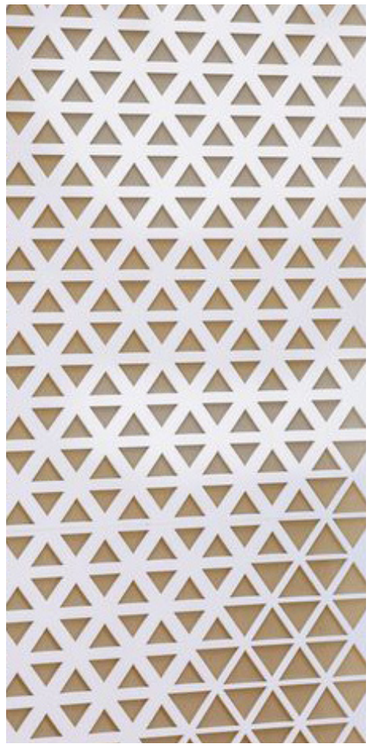
INNOVATION CENTER CONCEPT IMAGES

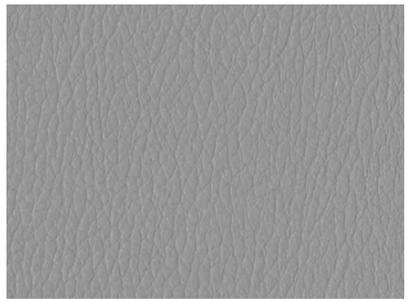


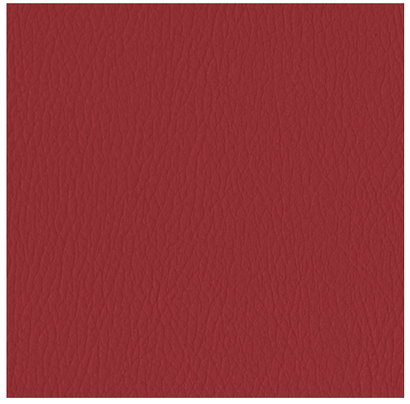
INNOVATION CENTER

Sketch showcasing collaborative work areas.

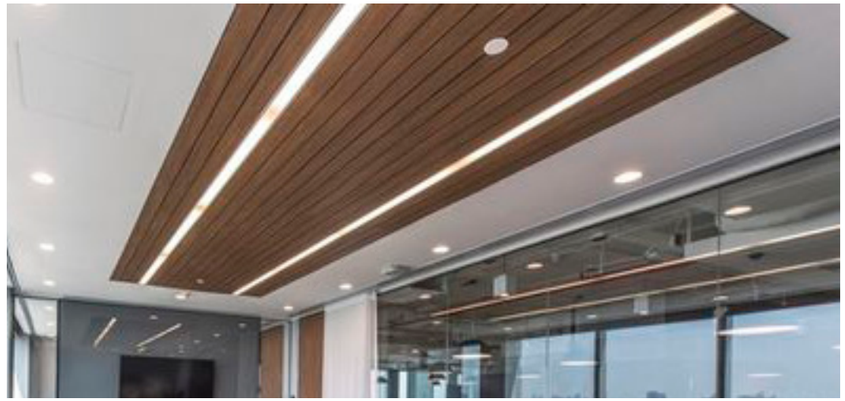
INNOVATION CENTER FINISHES

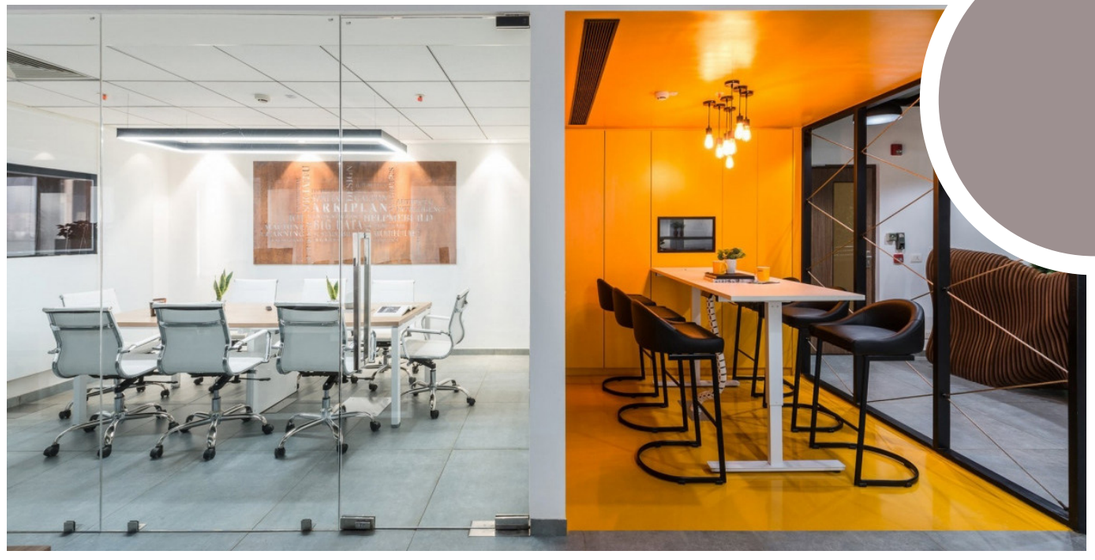






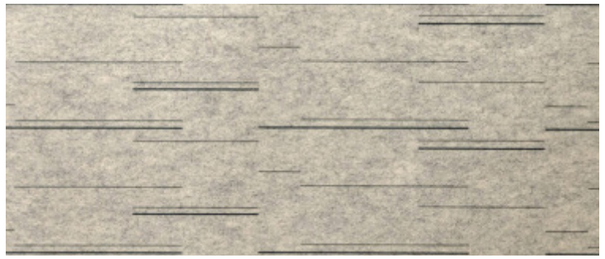
INNOVATION CENTER MEETING ROOMS

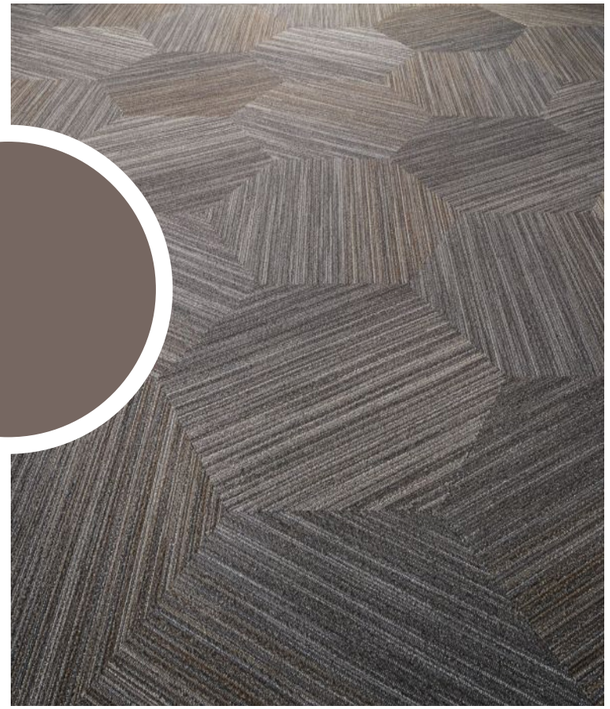




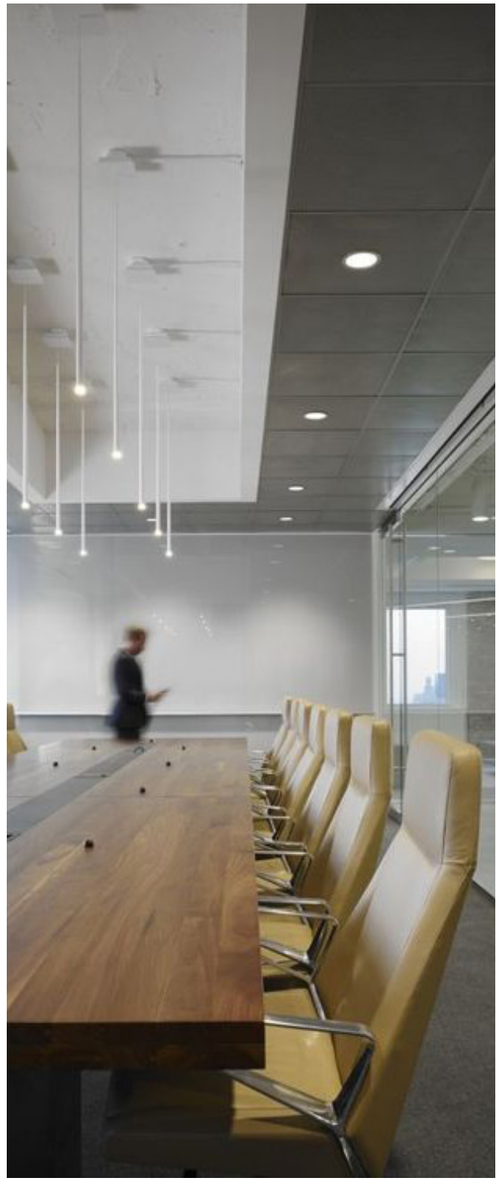
Employees want to feel safe, comfortable, and motivated within their work space. The aim of the new design is to create that desired sense with warm, neutral tones and bright pops of color.

TYPICAL & EXECUTIVE OPEN OFFICE
CONCEPT IMAGES & FINISHES





TYPICAL & EXECUTIVE MEETING ROOM
CONCEPT IMAGES & FINISHES



TYPICAL & EXECUTIVE PRIVATE OFFICES
CONCEPT IMAGES & FINISHES

End of Volume Three