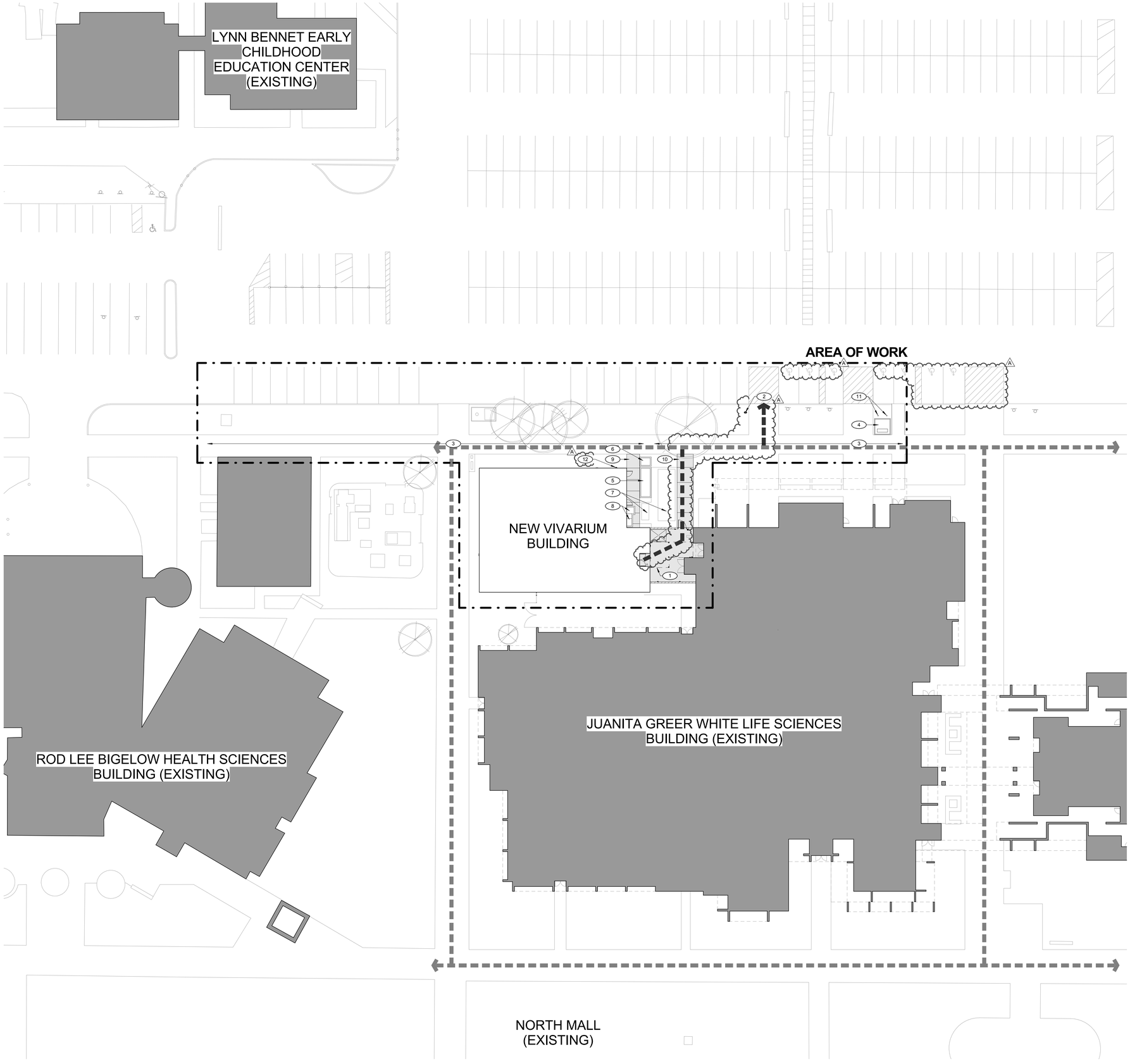


1 SITE PLAN
SCALE: 1" = 20'-0"

NORTH

EXISTING ACCESSIBLE ROUTES ESTABLISHED BY THE UNIVERSITY INDICATED.

**GENERAL NOTES**

1. REFER TO CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK NOT SHOWN ON THIS DRAWING.

**KEYNOTES**

1. CANOPY - REFER TO ROOF PLAN
2. NEW FIRE HYDRANT - REFER TO CIVIL DRAWINGS
3. DEMOLISH AND REPLACE EXISTING SIDEWALK AS REQUIRED FOR NEW UTILITIES - REFER TO CIVIL DRAWINGS
4. NEW TRANSFORMER ON NVE APPROVED CONCRETE PAD - REFER TO ELECTRICAL DRAWINGS
5. NEW GENERATOR ON CONCRETE PAD - REFER TO ELECTRICAL DRAWINGS
6. NEW RPDA - REFER TO CIVIL DRAWINGS
7. EXISTING GENERATORS - PROTECT IN PLACE
8. NEW ELECTRICAL SWITCHGEAR ON CONCRETE PAD - REFER TO ELECTRICAL DRAWINGS
9. NEW SIDEWALK - REFER TO CIVIL DRAWINGS
10. REPLACEMENT SIDEWALK - REFER TO CIVIL DRAWINGS
11. BOLLARD - REFER TO DETAIL 13/A2.50
12. FIRE DEPARTMENT CONNECTION - REFER TO CIVIL DRAWINGS

**LEGEND**

- NEW ACCESSIBLE ROUTE
- EXISTING ACCESSIBLE ROUTE

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Consultant

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Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

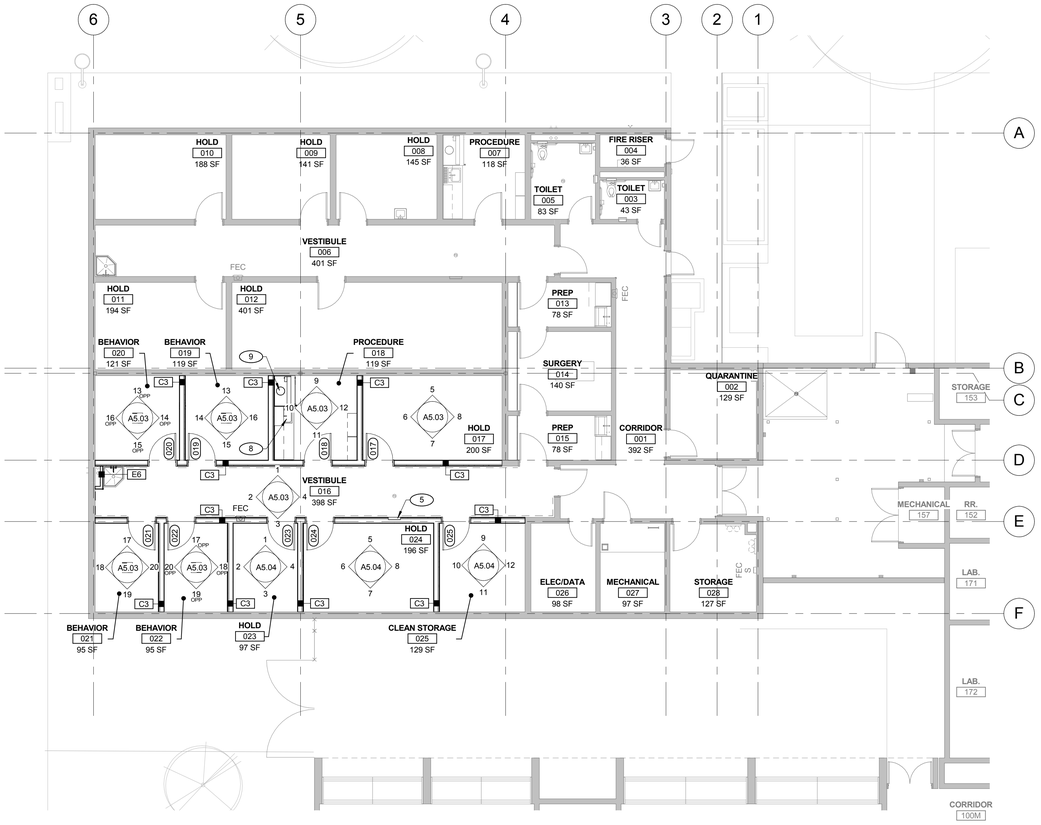
Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

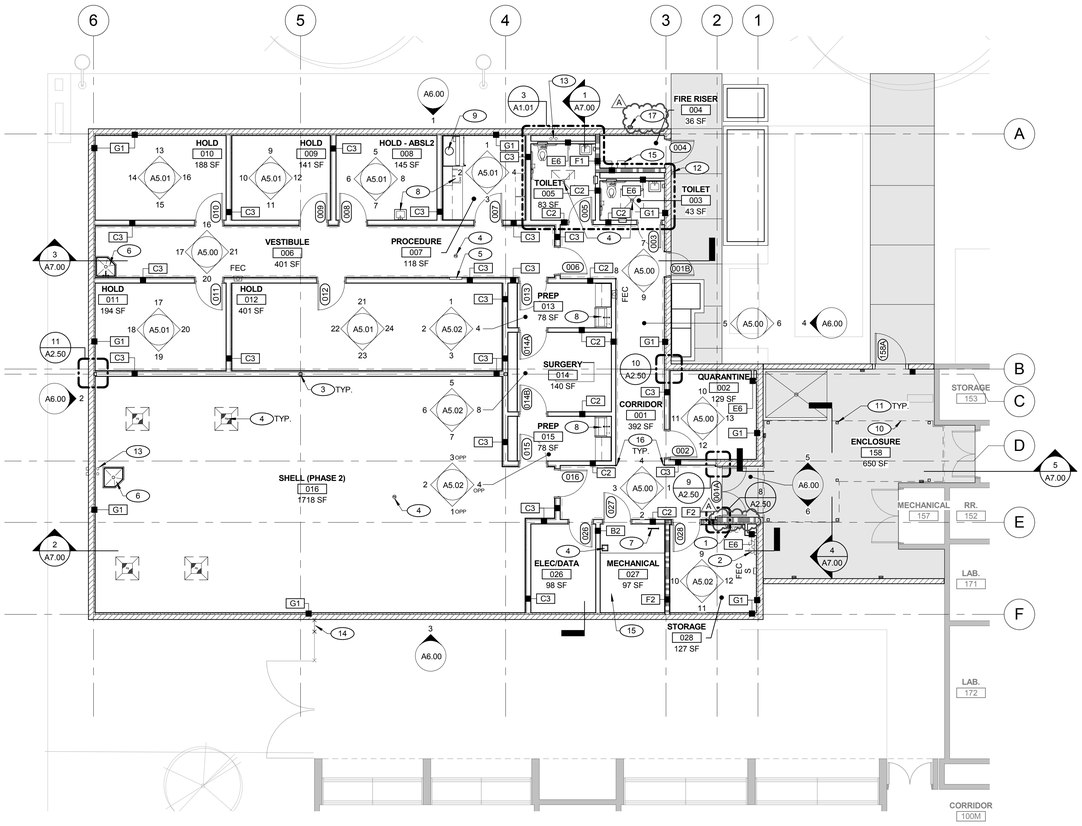
Sheet Title
**SITE PLAN**

Date: 06/17/2016
Sheet No:
**AS1.01**



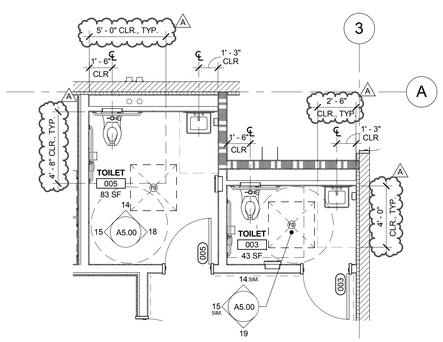

2 FLOOR PLAN - PHASE 2
SCALE: 1/8" = 1'-0"

NORTH




1 FLOOR PLAN - PHASE 1
SCALE: 1/8" = 1'-0"

NORTH




3 ENLARGED RESTROOM PLAN
SCALE: 1/4" = 1'-0"

NORTH

## GENERAL NOTES

1. ALL DIMENSIONS ARE TAKEN FROM FACE OF STUD, MASONRY, OR CONCRETE UNLESS NOTED OTHERWISE.
2. REFER TO CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR ADDITIONAL WORK NOT SHOWN ON THIS DRAWING.
3. REFER TO A2.30 FOR PARTITION TYPES.
4. FIELD VERIFY ALL DIMENSIONS PRIOR TO MANUFACTURING ALL CASEWORK.
5. DOOR JAMB AT HINGE SIDE SHALL BE A MINIMUM OF 4" FROM FACE OF PERPENDICULAR WALL U.N.O.
6. PROVIDE ACOUSTICAL SEALANT AT ALL PENETRATIONS THROUGH ACOUSTICAL PARTITIONS AND CEILINGS.
7. PROVIDE FIRESTOP SEALANT AT ALL PENETRATIONS THROUGH RATED WALLS.

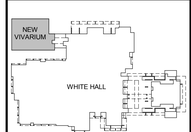
## KEYNOTES

1. OFOI CARBON DIOXIDE CYLINDERS (2) AND CFCI GAS MANIFOLDS AND RESTRAINTS
2. OFOI OXYGEN CYLINDERS (2) AND CFCI GAS MANIFOLDS AND RESTRAINTS
3. STRUCTURAL COLUMN - REFER TO STRUCTURAL DRAWINGS
4. FLOOR DRAIN/FLOOR SINK - REFER TO PLUMBING DRAWINGS
5. SAFETY SHOWER/EYEWASH WITH SIGNAGE - REFER TO PLUMBING DRAWINGS. MOUNT SIGN PER A1.01
6. MOP SINK - REFER TO PLUMBING DRAWINGS
7. ROOF ACCESS LADDER - PROVIDE METAL BACKING AS REQUIRED - REFER TO DETAIL 10/A4.10
8. SINK - REFER TO PLUMBING DRAWINGS
9. CHEMICAL FUME HOOD - CFCI
10. CORRUGATED METAL CANOPY ABOVE, REFER TO ROOF PLAN
11. TUBE STEEL COLUMN FOR CANOPY ABOVE - REFER TO STRUCTURAL DRAWINGS
12. KNOX BOX 3200 SERIES, RECESS MOUNT WITH ALUMINUM FINISH - REFER TO BUILDING ELEVATIONS
13. ROOF DRAINS - REFER TO ROOF PLAN AND PLUMBING DRAWINGS
14. EXTEND EXISTING CHAINLINK FENCE TO NEW VIVARIUM BUILDING - MATCH EXISTING HEIGHT
15. HOUSEKEEPING PAD - REFER TO SLAB PLAN, MECHANICAL AND STRUCTURAL DRAWINGS
16. CORNER GUARD CG-1 - REFER TO MATERIAL SCHEDULE
17. FIRE DEPARTMENT CONNECTION - REFER TO CIVIL DRAWINGS

## LEGEND

- ALUMINUM CRASH RAIL
- CMU WALL
- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- 2 HR FIRE BARRIER
- FEC — FIRE EXTINGUISHER

## KEYPLAN

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## PERMIT SET

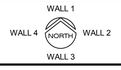
| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**PHASED FLOOR PLANS**

Date: 06/17/2016
Sheet No:
**A1.01**

## MATERIAL SCHEDULE

| KEY | DESCRIPTION | MANUFACTURER (BASIS OF DESIGN) | MODEL NUMBER | COLOR | REMARKS: |
|---|---|---|---|---|---|
| FLOORING | | | | | |
| F-1 | RESINOUS FLOORING | STONHARD | STONTEC XPRESS | SANTA CRUZ | |
| F-2 | SEALED CONCRETE | | | | |
| BASE | | | | | |
| B-1 | INTEGRAL RESINOUS COVE | STONHARD | STONTEC XPRESS | SANTA CRUZ | REFER TO 12/A2.50 |
| CEILING | | | | | SEE REFLECTED CEILING PLANS |
| C-1 | GYPSUM BOARD | | | SEE PAINT COLOR SCHEDULE | |
| C-2 | GYPSUM BOARD | | | SEE PAINT COLOR SCHEDULE | STC 62 - REFER TO 7/A3.10 |
| C-3 | GYPSUM BOARD | | | SEE PAINT COLOR SCHEDULE | 2 HOUR RATED - REFER TO 4/A3.10 |
| C-4 | CEILING TILE | ARMSTRONG | CLEAN ROOM VL | WHITE | PROVIDE UNIVERSAL HOLD DOWN CLIPS PER MANUFACTURER |
| C-5 | EXPOSED STRUCTURE | | | SEE PAINT COLOR SCHEDULE | |
| WALLS | | | | | |
| W-1 | PAINTED FIBERGLASS FACED GYPSUM BOARD | | | SEE PAINT COLOR SCHEDULE | |
| CMU | GROUT COLOR: MATCH ADJACENT | | | | W/ ANTI-GRAFFITI COATING |
| CMU-1 | EXTERIOR CMU | CIND-R-LITE | STANDARD - 8" x 8" x 16" | GRAY | |
| CMU-2 | EXTERIOR CMU | CIND-R-LITE | SPLIT FACE - 8" x 8" x 16" | GRAY | |
| METAL DECK | | | | | |
| MD-1 | METAL DECK | | | SEE PAINT COLOR SCHEDULE | COORDINATE SIZE WITH STRUCTURAL DRAWINGS |
| COPING | | | | | |
| CP-1 | METAL COPING | HICKMAN | PERMASNAP | DOVE GRAY | @CMU-1 |
| CORNER GUARDS | | | | | @ OUTSIDE CORNERS |
| CG-1 | CORNER GUARD | CS GROUP | CO-8 | STAINLESS STEEL | ADHESIVE MOUNT |
| CRASH RAILS | | | | | @ CORRIDOR, VESTIBULES |
| CR-1 | CRASH RAIL | CS GROUP | ECR-32A | ALUMINUM | NON-EXPOSED FASTENERS |




## PAINT COLOR SCHEDULE

| KEY | DESCRIPTION | COLOR | LOCATION |
|---|---|---|---|
| PC-1 | WHITE | SW 7008 ALABASTER (EPOXY) | INTERIOR WALLS AND CEILINGS (FINISHED AND EXPOSED) |
| PC-2 | MEDIUM GRAY | SW 7016 MINDFUL GRAY (EPOXY) | DOORS AND FRAMES |
| PC-3 | LIGHT GRAY | SW 7008 ALABASTER | CANOPY METAL DECK AND FASCIA, ROOFTOP MECHANICAL UNIT |
| PC-4 | MEDIUM GRAY | SW 7016 MINDFUL GRAY | CANOPY STRUCTURAL FRAMING |

## ROOM FINISH SCHEDULE - PHASE 1

| ROOM NO. | ROOM NAME | FLOORING MAT'L | FLOORING BASE | CEILING MAT'L | WALL NORTH MAT'L | WALL EAST MAT'L | WALL SOUTH MAT'L | WALL WEST MAT'L | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| LEVEL 1 | | | | | | | | | |
| 001 | CORRIDOR | F-1 | B-1 | C-4 | W-1 | W-1 | W-1 | W-1 | |
| 002 | QUARANTINE | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 003 | TOILET | F-1 | B-1 | C-1 | W-1 | W-1 | W-1 | W-1 | |
| 004 | FIRE RISER | F-2 | - | C-5 | W-1 | W-1 | W-1 | W-1 | |
| 005 | TOILET | F-1 | B-1 | C-1 | W-1 | W-1 | W-1 | W-1 | |
| 006 | VESTIBULE | F-1 | B-1 | C-4 | W-1 | W-1 | W-1 | W-1 | |
| 007 | PROCEDURE | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 008 | HOLD - ABSL2 | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 009 | HOLD | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 010 | HOLD | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 011 | HOLD | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 012 | HOLD | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 013 | PREP | F-1 | B-1 | C-1 | W-1 | W-1 | W-1 | W-1 | |
| 014 | SURGERY | F-1 | B-1 | C-1 | W-1 | W-1 | W-1 | W-1 | |
| 015 | PREP | F-1 | B-1 | C-1 | W-1 | W-1 | W-1 | W-1 | |
| 016 | SHELL (PHASE 2) | - | - | - | - | - | - | - | |
| 026 | ELEC/DATA | F-1 | B-1 | C-5 | W-1 | W-1 | W-1 | W-1 | |
| 027 | MECHANICAL | F-1 | B-1 | C-5 | W-1 | W-1 | W-1 | W-1 | |
| 028 | STORAGE | F-1 | B-1 | C-3 | W-1 | W-1 | W-1 | W-1 | |

## ROOM FINISH SCHEDULE - PHASE 2

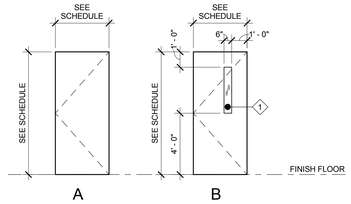
| ROOM NO. | ROOM NAME | FLOORING MAT'L | FLOORING BASE | CEILING MAT'L | WALL NORTH MAT'L | WALL EAST MAT'L | WALL SOUTH MAT'L | WALL WEST MAT'L | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| LEVEL 1 | | | | | | | | | |
| 016 | VESTIBULE | F-1 | B-1 | C-4 | W-1 | W-1 | W-1 | W-1 | |
| 017 | HOLD | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 018 | PROCEDURE | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 019 | BEHAVIOR | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 020 | BEHAVIOR | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 021 | BEHAVIOR | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 022 | BEHAVIOR | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 023 | HOLD | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 024 | HOLD | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |
| 025 | CLEAN STORAGE | F-1 | B-1 | C-2 | W-1 | W-1 | W-1 | W-1 | |

## DOOR SCHEDULE - PHASE 1

| DR. NO. | RM. NO. | PR | PANEL SIZE W | PANEL SIZE H | PANEL T | PANEL TYPE | PANEL MAT'L | FRAME TYPE | FRAME MAT'L | FRAME HEAD DTL | FRAME JAMB DTL LATCH | FRAME JAMB DTL HINGE | HDWR | LABEL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 001A | 001 | PR | 3' - 2" | 7' - 10" | 1 3/4" | A | HM | A | HM | 1/A2.50 | 2/A2.50 | 2/A2.50 | 01 | | CARD READER ACCESS |
| 001B | 001 | | 3' - 0" | 7' - 10" | 1 3/4" | A | HM | A | HM | 1/A2.50 | 2/A2.50 | 2/A2.50 | 02 | | |
| 002 | 002 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 003 | 003 | | 3' - 0" | 8' - 0" | 1 3/4" | A | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 07 | | |
| 004 | 004 | | 3' - 0" | 7' - 10" | 1 3/4" | A | HM | A | HM | 1/A2.50 | 2/A2.50 | 2/A2.50 | 04 | | |
| 005 | 005 | | 3' - 0" | 8' - 0" | 1 3/4" | A | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 07 | | |
| 006 | 006 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 007 | 007 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 008 | 008 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 009 | 009 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 010 | 010 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 011 | 011 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 012 | 012 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 013 | 013 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 014A | 014 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 06 | | |
| 014B | 014 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 06 | | |
| 015 | 015 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 016 | 016 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 026 | 026 | | 3' - 0" | 8' - 0" | 1 3/4" | A | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 03 | | CARD READER ACCESS |
| 027 | 027 | | 3' - 6" | 8' - 0" | 1 3/4" | A | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05 A | | CARD READER ACCESS |
| 028 | 028 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 09 | 90 MIN. | CARD READER ACCESS |
| 158A | 158 | | 4' - 0" | 7' - 0" | 1 3/4" | A | HM | B | HM | 5/A2.50 | - | 6/A2.50 | 08 | | UNDERCUT DOOR 1-1/2" FOR DRAINAGE - REFER TO CIVIL DRAWINGS |

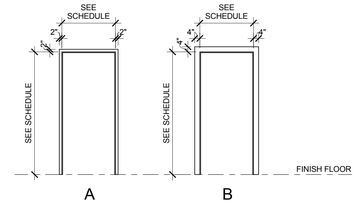
## DOOR SCHEDULE - PHASE 2

| DR. NO. | RM. NO. | PR | PANEL SIZE W | PANEL SIZE H | PANEL T | PANEL TYPE | PANEL MAT'L | FRAME TYPE | FRAME MAT'L | FRAME HEAD DTL | FRAME JAMB DTL LATCH | FRAME JAMB DTL HINGE | HDWR | LABEL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 017 | 017 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 018 | 018 | | 3' - 6" A | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 019 | 019 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 020 | 020 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 021 | 021 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 022 | 022 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 023 | 023 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 024 | 024 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |
| 025 | 025 | | 3' - 6" | 8' - 0" | 1 3/4" | B | HM | A | HM | 3/A2.50 | 4/A2.50 | 4/A2.50 | 05.1 | | CARD READER ACCESS |




PANEL TYPES
SCALE: 1/4" = 1'-0"

# GLASS TYPE, REFER TO SPECIFICATIONS




FRAME TYPES
SCALE: 1/4" = 1'-0"

## GENERAL NOTES

1 VERIFY ALL FRAME AND OPENING DIMENSIONS PRIOR TO FABRICATION.

## KEYNOTES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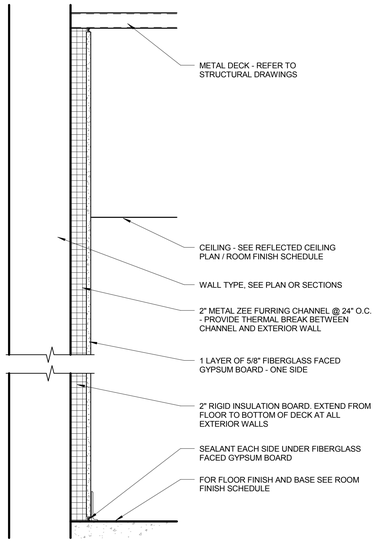
**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**ROOM FINISH/ MATERIAL/DOOR SCHEDULE**

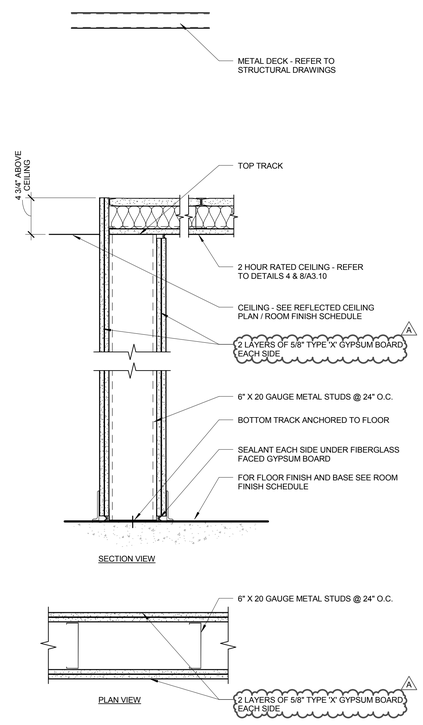
Date: 06/17/2016

Sheet No:
**A2.00**




PARTITION TYPE G1

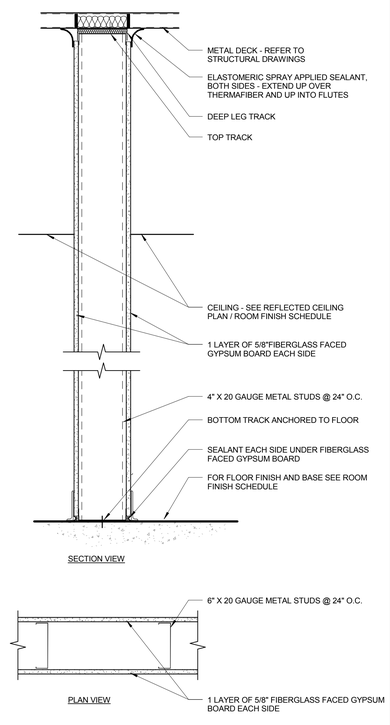
SCALE : 1 1/2" = 1'-0"




PARTITION TYPE F2

UL NO. U425 2 HOUR RATED PARTITION

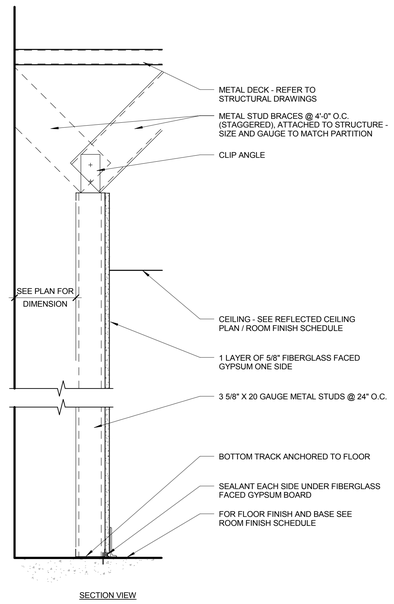
SCALE : 1 1/2" = 1'-0"




PARTITION TYPE F1

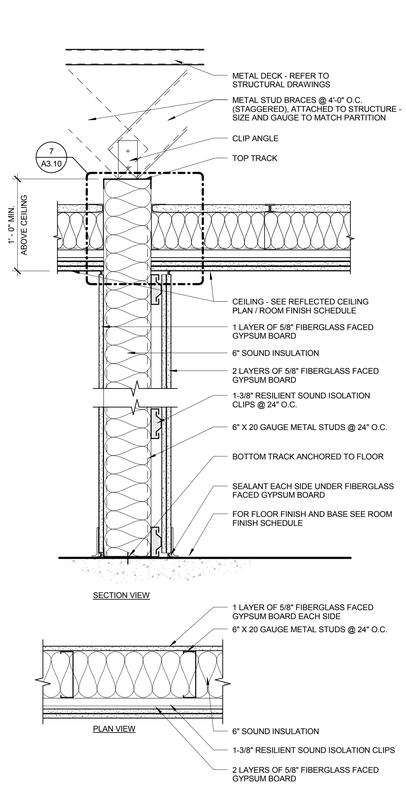
A UL NO. U425 1 HOUR RATED PARTITION
UL NO. CJ-D-0004 HEAD OF WALL

SCALE : 1 1/2" = 1'-0"




PARTITION TYPE E6

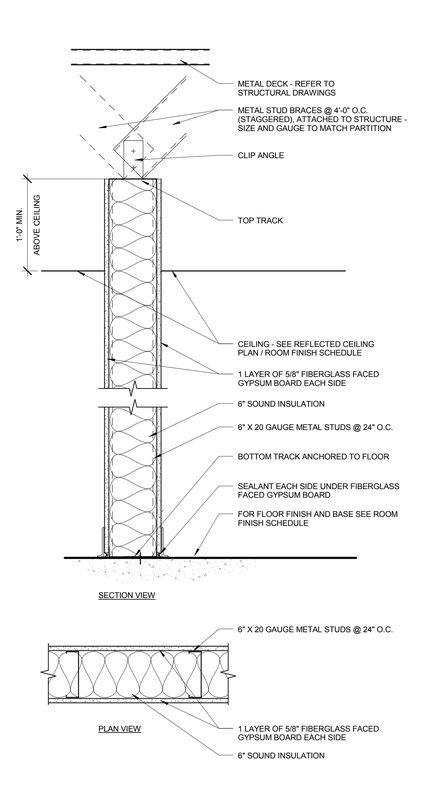
SCALE : 1 1/2" = 1'-0"




PARTITION TYPE C3

ACOUSTICAL PARTITION STC RATING: 62

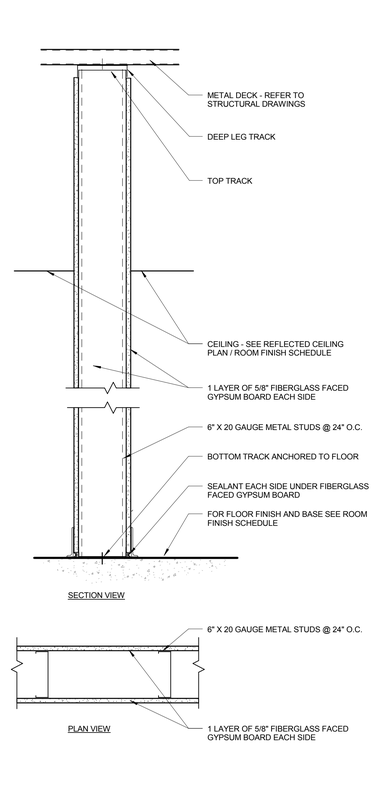
SCALE : 1 1/2" = 1'-0"




PARTITION TYPE C2

ACOUSTICAL PARTITION

SCALE : 1 1/2" = 1'-0"




PARTITION TYPE B2

SCALE : 1 1/2" = 1'-0"

## GENERAL NOTES

## KEYNOTES

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| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

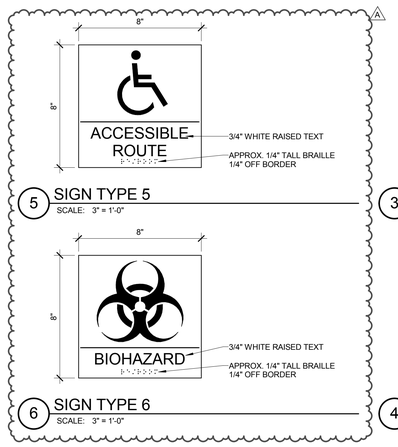
Sheet Title

**PARTITION TYPES**

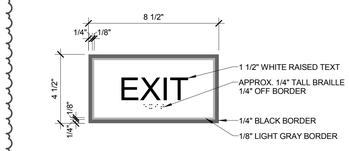
Date: 06/17/2016

Sheet No:

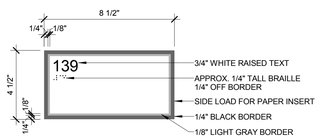
**A2.30**




5 SIGN TYPE 5
SCALE: 3" = 1'-0"



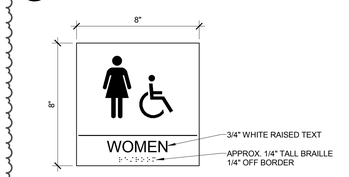

3 SIGN TYPE 3
SCALE: 3" = 1'-0"



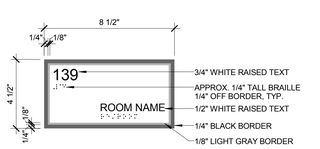

1 SIGN TYPE 1
SCALE: 3" = 1'-0"




6 SIGN TYPE 6
SCALE: 3" = 1'-0"




4 SIGN TYPE 4
SCALE: 3" = 1'-0"




2 SIGN TYPE 2
SCALE: 3" = 1'-0"

SIGNAGE SCHEDULE

| DOOR | | | SIGNAGE | | | |
|---|---|---|---|---|---|---|
| DR NO | RM NO | NAME | NO | TEXT | TYPE | NOTES |
| 001A | 001 | CORRIDOR | - | - | 3/5 A | |
| 001B | 001 | CORRIDOR | - | - | 3 A | |
| 002 | 002 | QUARANTINE | 126 | - | 1/6 | |
| 003 | 003 | TOILET | 125 | MEN | 4 | |
| 004 | 004 | FIRE RISER | - | - | - | REFER TO PLAN |
| 005 | 005 | TOILET | 124 | WOMEN | 4 A | |
| 006 | 006 | VESTIBULE | 119 | VESTIBULE | 2/3 | |
| 007 | 007 | PROCEDURE | 123 | PROCEDURE | 2/6 | |
| 008 | 008 | HOLD | 122 | - | 1/6 | |
| 009 | 009 | HOLD | 121 | - | 1 | |
| 010 | 010 | HOLD | 120 | - | 1 | |
| 011 | 011 | HOLD | 118 | - | 1 | |
| 012 | 012 | HOLD | 117 | - | 1 | |
| 013 | 013 | PREP | 116 | PREP | 2 | |
| 014A | 014 | SURGERY | 115 | SURGERY | 2 | |
| 014B | 014 | SURGERY | 115 | SURGERY | 2 | |
| 015 | 015 | PREP | 114 | PREP | 2 A | |
| 016 | 016 | VESTIBULE | 109 | VESTIBULE | 2/3 | |
| 017 | 017 | HOLD | 113 | - | A | |
| 018 | 018 | PROCEDURE | 112 | PROCEDURE | 2/6 | |
| 019 | 019 | BEHAVIOR | 111 | - | 1 | |
| 020 | 020 | BEHAVIOR | 110 | - | 1 | |
| 021 | 021 | BEHAVIOR | 108 | - | 1 | |
| 022 | 022 | BEHAVIOR | 107 | - | 1 | |
| 023 | 023 | HOLD | 106 | - | 1 | |
| 024 | 024 | HOLD | 105 | - | 1 | |
| 025 | 025 | CLEAN STORAGE | 104 | - | 1 | |
| 026 | 026 | ELEC/DATA | 103 | ELECTRICAL/DATA ROOM | 2 | |
| 027 | 027 | MECHANICAL | 102 | MECHANICAL ROOM | 2 | |
| 028 | 028 | STORAGE | 101 | STORAGE | 2 | |




A SIGNAGE PLAN
SCALE: 1/8" = 1'-0"

NORTH

## GENERAL NOTES

1. REFER TO SPECIFICATIONS SECTION 10 14 00 FOR ADDITIONAL SIGNAGE REQUIREMENTS.
2. INTERNATIONAL SYMBOL PICTOGRAM MUST BE PROVIDED AT ALL ACCESSIBLE RESTROOMS.

## KEYNOTES

1. FIRE RISER ROOM IDENTIFICATION SIGNAGE
2. CODE REQUIRED ELECTRICAL ROOM IDENTIFICATION SIGNAGE
3. CODE REQUIRED MECHANICAL ROOM IDENTIFICATION SIGNAGE
4. CODE REQUIRED (NFPA 704) SIGNAGE FOR OXYGEN/CARBON DIOXIDE STORAGE

## LEGEND

INDICATES PHASE 2

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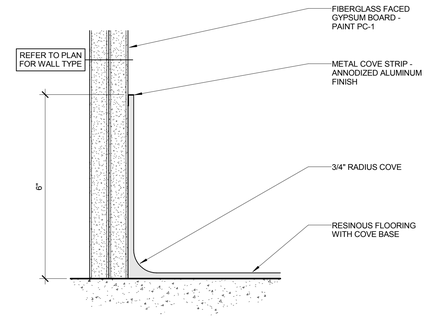
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

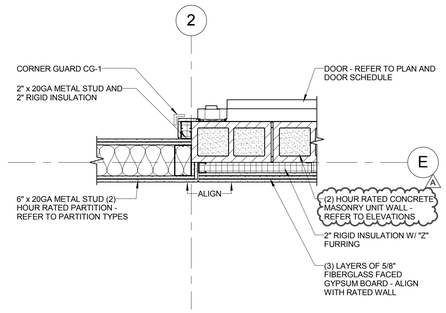
Sheet Title
**SIGNAGE PLAN, SCHEDULE, AND DETAILS**

Date: 06/17/2016

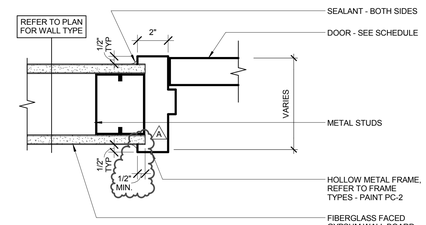
Sheet No:
**A2.40**



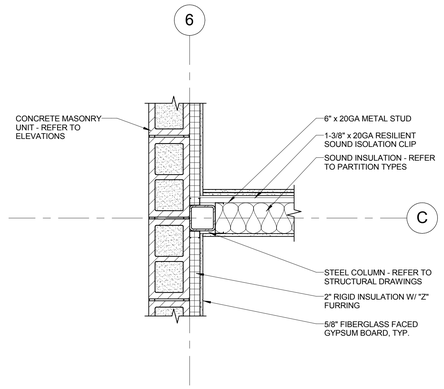

12 COVE BASE DETAIL
SCALE: 6" = 1'-0"



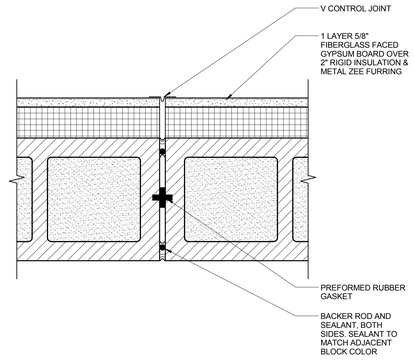

8 PARTITION DETAIL
SCALE: 1" = 1'-0"



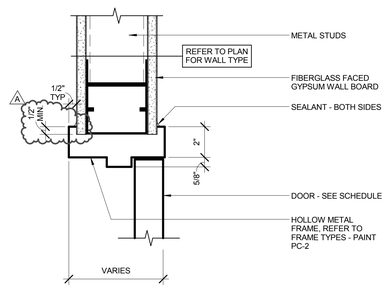

4 JAMB
SCALE: 3" = 1'-0"



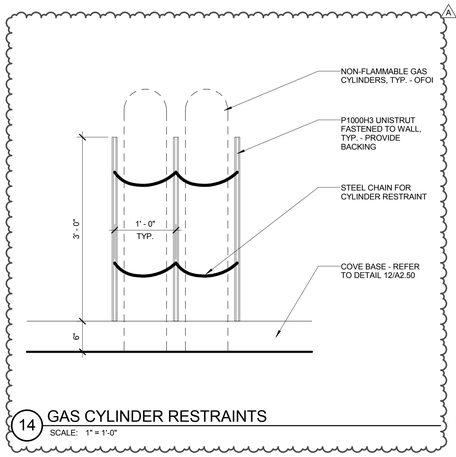

11 PARTITION DETAIL
SCALE: 1" = 1'-0"



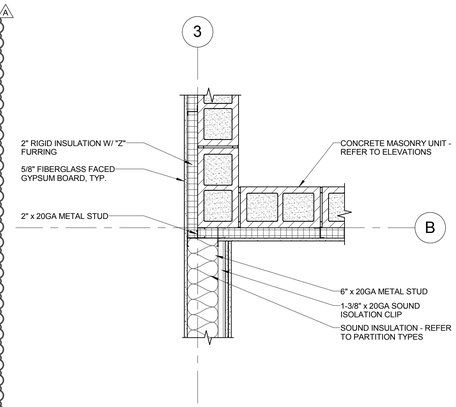

7 MASONRY/GYPSUM BOARD CONTROL JOINT
SCALE: 3" = 1'-0"



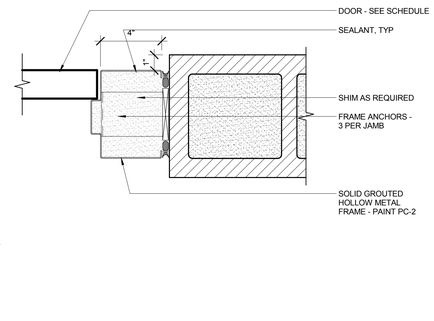

3 HEAD
SCALE: 3" = 1'-0"



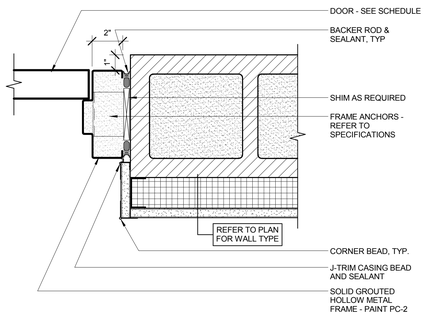

14 GAS CYLINDER RESTRAINTS
SCALE: 1" = 1'-0"



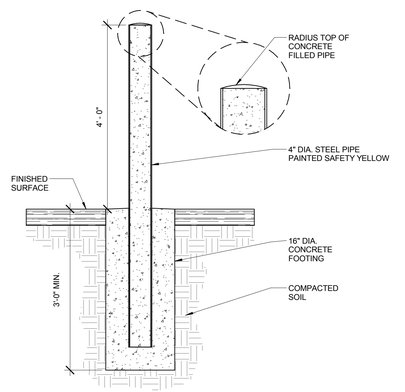

10 PARTITION DETAIL
SCALE: 1" = 1'-0"



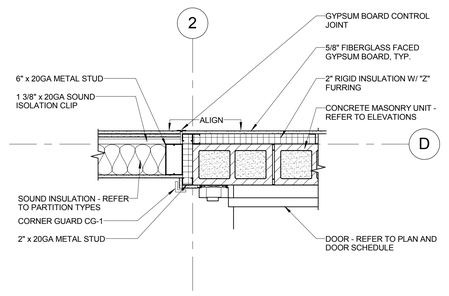

6 JAMB
SCALE: 3" = 1'-0"



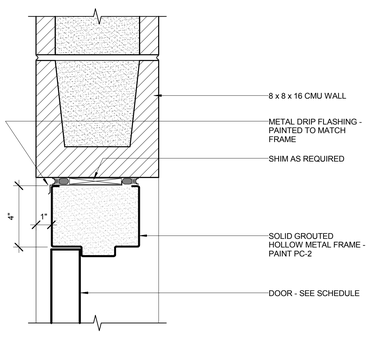

2 JAMB
SCALE: 3" = 1'-0"



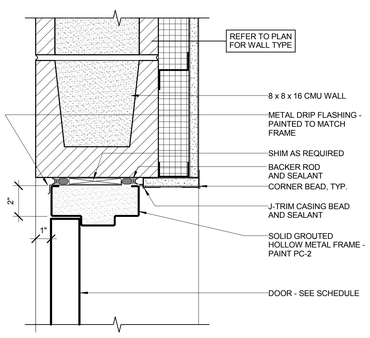

13 BOLLARD DETAIL
SCALE: 3/4" = 1'-0"




9 PARTITION DETAIL
SCALE: 1" = 1'-0"




5 HEAD
SCALE: 3" = 1'-0"




1 HEAD
SCALE: 3" = 1'-0"

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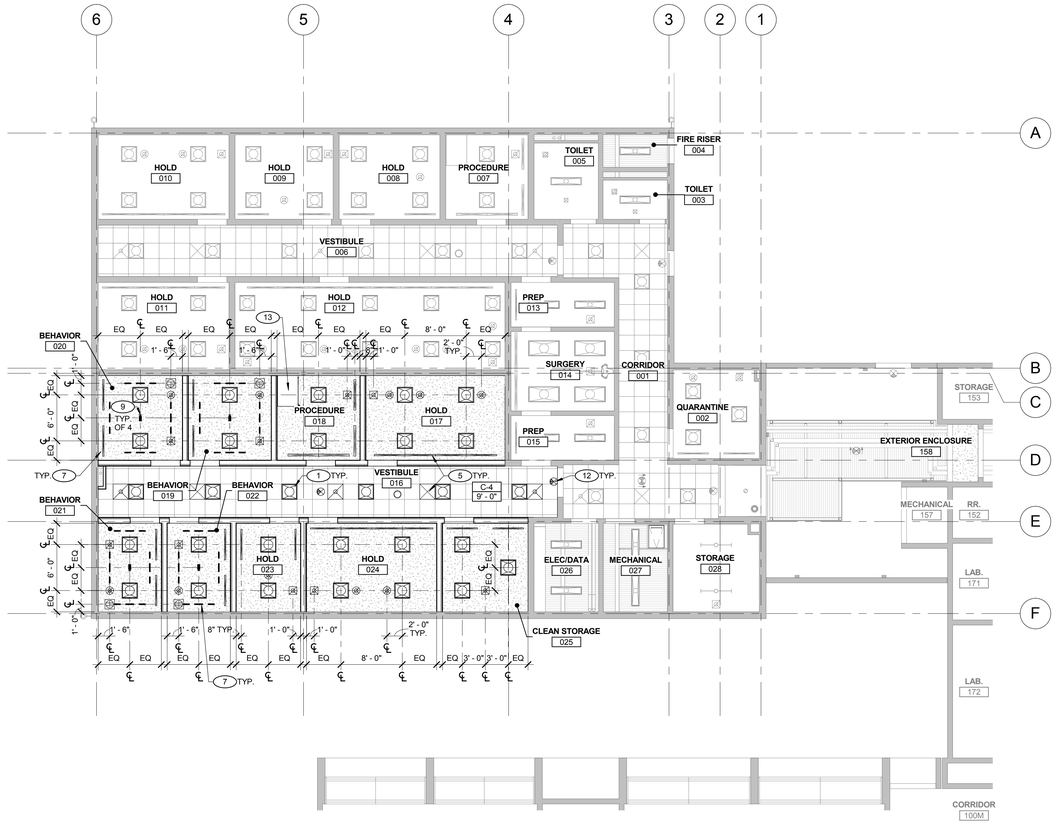
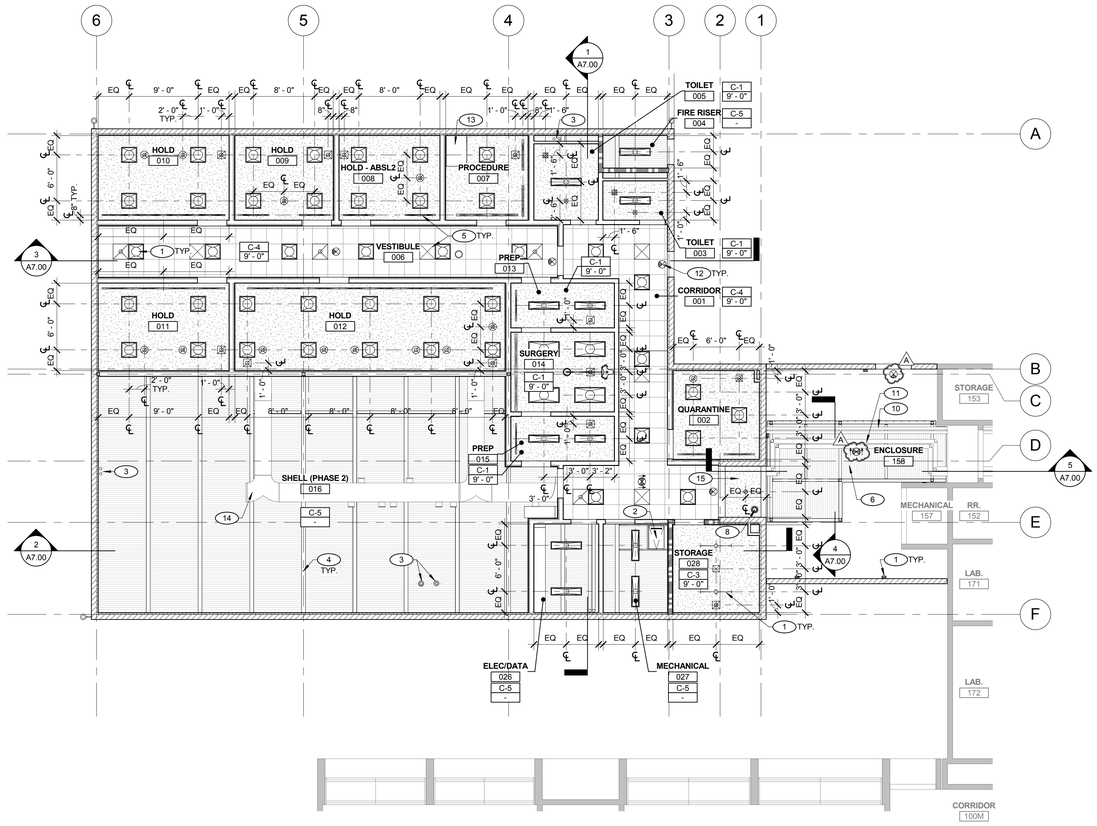
Sheet Title
**MISCELLANEOUS DETAILS**

Date: 06/17/2016

Sheet No:
**A2.50**




2 REFLECTED CEILING PLAN - PHASE 2
SCALE: 1/8" = 1'-0"




1 REFLECTED CEILING PLAN - PHASE 1
SCALE: 1/8" = 1'-0"

## GENERAL NOTES

1. REFER TO MATERIAL SCHEDULE FOR CEILING COLOR AND FINISH.
2. CEILING HEIGHTS ARE BASED ON FINISH FLOOR ELEVATIONS.
3. MAINTAIN MINIMUM 6" CLEAR BETWEEN LIGHT FIXTURES, DIFFUSERS, ETC.
4. CEILINGS ARE TYPE C-2, WITH A HEIGHT OF 9'-0", U.N.O.
5. PROVIDE ACOUSTICAL SEALANT AT ALL PENETRATIONS THROUGH ACOUSTICAL PARTITIONS AND CEILINGS.
6. PROVIDE FIRESTOP SEALANT AT ALL PENETRATIONS THROUGH RATED WALLS AND CEILINGS.
7. ALL CEILING EQUIPMENT/DIFFUSERS TO BE AT LEAST 6" FROM WALLS.

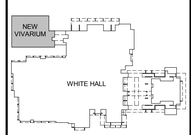
## KEYNOTES

1. LIGHT FIXTURE - REFER TO ELECTRICAL DRAWINGS
2. ROOF HATCH - REFER TO ROOF PLAN
3. ROOF DRAIN - REFER TO ROOF PLAN AND PLUMBING DRAWINGS
4. STRUCTURE - REFER TO STRUCTURAL DRAWINGS
5. SUPPLY/EXHAUST REGISTER - REFER TO MECHANICAL DRAWINGS
6. SHADE CANOPY - REFER TO STRUCTURAL DRAWINGS AND SECTIONS
7. 4'-0" UNISTRUT - REFER TO DETAIL 9/A3.10
8. CEILING MOUNTED SECURITY CAMERA - COLOR TO MATCH ADJACENT FINISH - REFER TO ELECTRICAL DRAWINGS
9. OFOI CAMERA - REFER TO DETAIL 10/A3.10 - PROVIDE BLOCKING
10. CONDUIT - RUN TIGHT TO BOTTOM OF BEAMS, SUPPORT HANGERS FROM BEAMS AT CANOPY - REFER TO ELECTRICAL DRAWINGS
11. HYDRONIC PIPING - RUN TIGHT TO BOTTOM OF BEAMS, SUPPORT HANGERS FROM BEAMS AT CANOPY - REFER TO MECHANICAL DRAWINGS
12. EXIT SIGN - REFER TO ELECTRICAL DRAWINGS
13. FUME HOOD, CFCI
14. DUCTWORK - REFER TO MECHANICAL DRAWINGS
15. PLASTER SOFFIT, PAINT PC-3 - REFER TO DETAIL 11/A3.10

## LEGEND

- GYPSUM BOARD CEILING
- CEILING TILE (C-4), REFER TO 6/A3.10
- 1' x 4' SURFACE MOUNTED LIGHT W/ LENS
- 1' x 4' TROFFER LIGHT
- 2' x 2' TROFFER LIGHT
- 2' x 4' TROFFER LIGHT
- SAFETY SHOWER HEAD
- MECHANICAL SUPPLY DIFFUSER
- MECHANICAL EXHAUST REGISTER
- MECHANICAL THIMBLE EXHAUST CONNECTION
- SURGERY LIGHT
- 4'-0" UNISTRUT

## KEYPLAN

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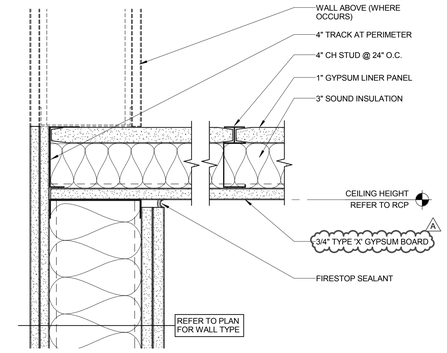
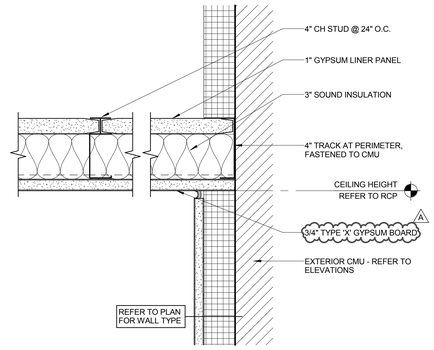
Sheet Title
**PHASED REFLECTED CEILING PLANS**

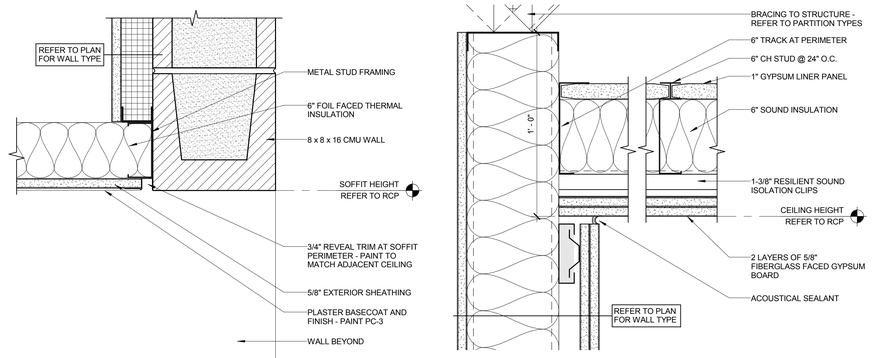
Date: 06/17/2016
Sheet No:
**A3.01**



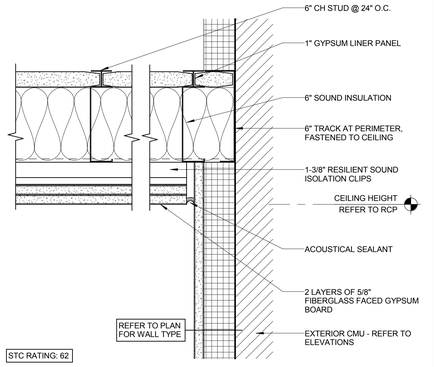

8 2 HOUR RATED CEILING DETAIL AT INTERIOR WALL(U492)
SCALE: 3" = 1'-0"




4 2 HOUR RATED CEILING DETAIL AT CMU (U492)
SCALE: 3" = 1'-0"



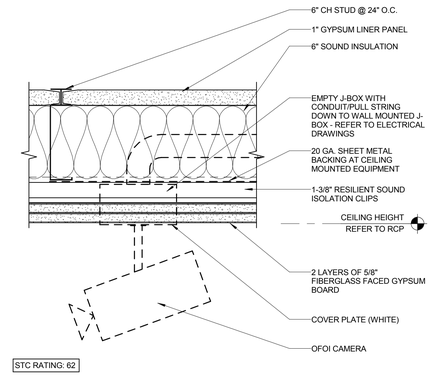

7 GYPSUM BOARD CEILING DETAIL AT INTERIOR WALL
SCALE: 3" = 1'-0"



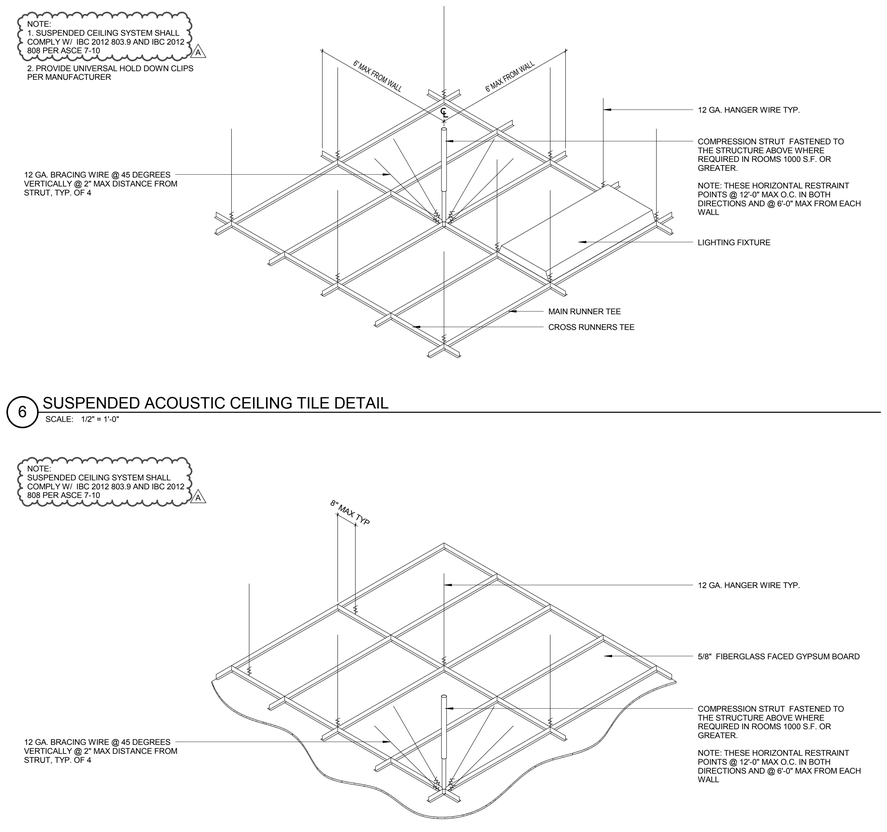

3 GYPSUM BOARD CEILING DETAIL AT CMU
SCALE: 3" = 1'-0"



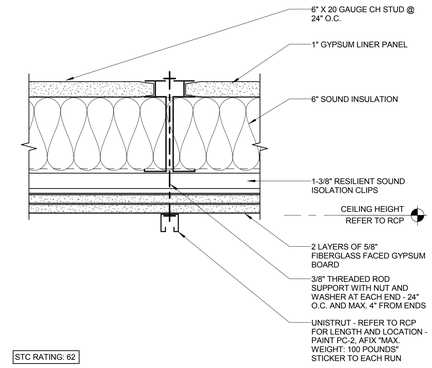

11 EXTERIOR SOFFIT DETAIL
SCALE: 3" = 1'-0"




10 CEILING MOUNTED CAMERAS
SCALE: 3" = 1'-0"




6 SUSPENDED ACOUSTIC CEILING TILE DETAIL
SCALE: 1/2" = 1'-0"




9 CEILING MOUNTED UNISTRUT
SCALE: 3" = 1'-0"




5 SUSPENDED GYPSUM BOARD CEILING DETAIL
SCALE: 1/2" = 1'-0"

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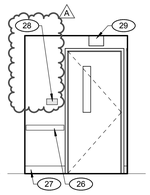
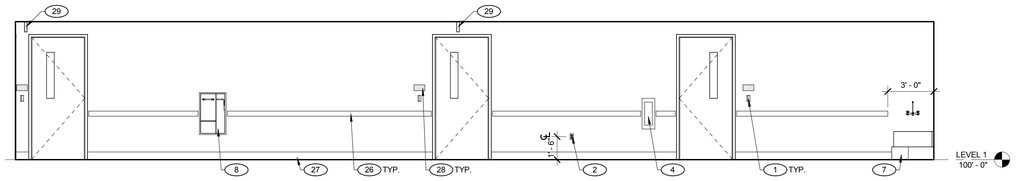
Sheet Title
**CEILING DETAILS**

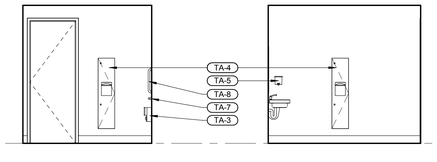
Date: 06/17/2016
Sheet No:
**A3.10**



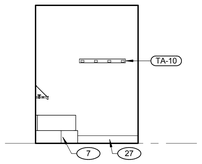

21 VESTIBULE 006 - EAST
SCALE: 1/4" = 1'-0"



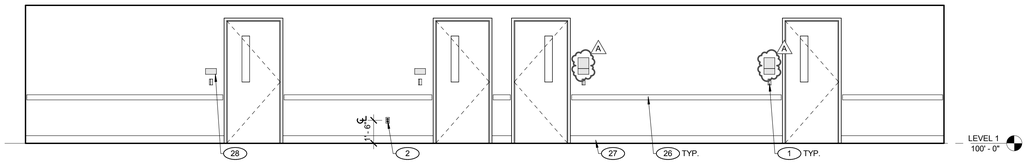

20 VESTIBULE 006 - SOUTH
SCALE: 1/4" = 1'-0"




19 TOILET 003 - SOUTH
SCALE: 1/4" = 1'-0"

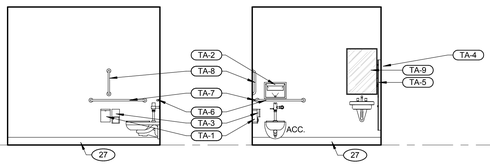



17 VESTIBULE 006 - WEST
SCALE: 1/4" = 1'-0"



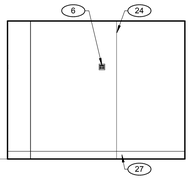

16 VESTIBULE 006 - NORTH
SCALE: 1/4" = 1'-0"

18 TOILET 005 - EAST
SCALE: 1/4" = 1'-0"

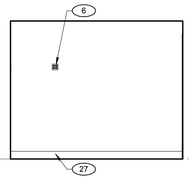



15 TOILET 005 - WEST
SCALE: 1/4" = 1'-0"

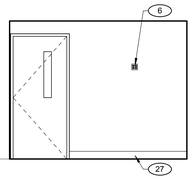
14 TOILET 005 - NORTH
SCALE: 1/4" = 1'-0"



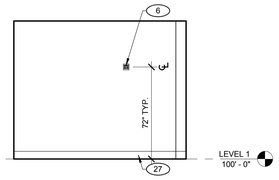

13 QUARANTINE 002 - EAST
SCALE: 1/4" = 1'-0"




12 QUARANTINE 002 - SOUTH
SCALE: 1/4" = 1'-0"




11 QUARANTINE 002 - WEST
SCALE: 1/4" = 1'-0"

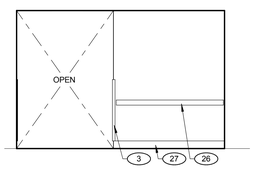



10 QUARANTINE 002 - NORTH
SCALE: 1/4" = 1'-0"

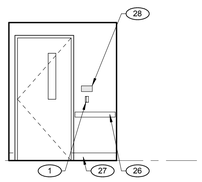
**TOILET ACCESSORIES SCHEDULE**

| SYMBOL | DESCRIPTION | MANUFACTURER | MFR. NO. | MOUNTING HEIGHT |
|---|---|---|---|---|
| TA-1 | SANITARY NAPKIN RECEPTACLE | BOBRICK | B-270 | 2'-0" A.F.F. |
| TA-2 | TOILET SEAT COVER DISPENSER | BOBRICK | B-301 | 3'-6" A.F.F. |
| TA-3 | TOILET TISSUE ROLL DISPENSER | BOBRICK | B-2888 | 2'-0" A.F.F. |
| TA-4 | PAPER TOWEL DISPENSER/ WASTE RECEPTACLE | BOBRICK | B-38032 | 3'-6" A.F.F. TO OPERABLE PORTION OF UNIT |
| TA-5 | LIQUID SOAP DISPENSER | BOBRICK | B-818615 | 3'-10" A.F.F. |
| TA-6 | 36" 1-1/2" DIA. S.S. GRAB BAR W/ CONCEALED MOUNTING | BOBRICK | B-6806x36 | 2'-11" A.F.F. |
| TA-7 | 42" 1-1/2" DIA. S.S. GRAB BAR W/ CONCEALED MOUNTING | BOBRICK | B-6806x42 | 2'-11" A.F.F. |
| TA-8 | 18" 1-1/2" DIA. S.S. GRAB BAR W/ CONCEALED MOUNTING | BOBRICK | B6806x18 | 2'-11" A.F.F. |
| TA-9 | MIRROR W/ S.S. ANGLE FRAME | BOBRICK | B-165 2436 | 3'-4" A.F.F. TO REFLECTIVE SURFACE |
| TA-10 | MOP/BROOM HOLDER | | | 5'-6" A.F.F. |

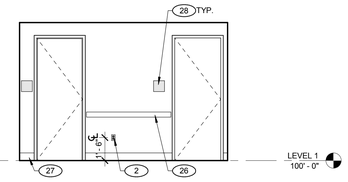
NOTES:
1. ALL ELEVATIONS ARE TO TOP OF UNIT (UNLESS NOTED OTHERWISE)
2. MOUNTING HEIGHTS PER SCHEDULE (UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS)




9 CORRIDOR 001 - J
SCALE: 1/4" = 1'-0"




8 CORRIDOR 001 - H
SCALE: 1/4" = 1'-0"




7 CORRIDOR 001 - G
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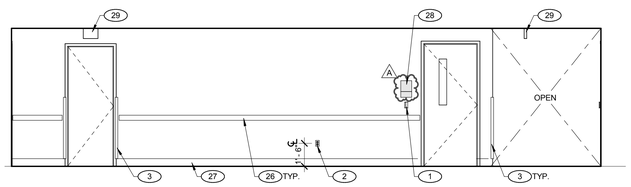
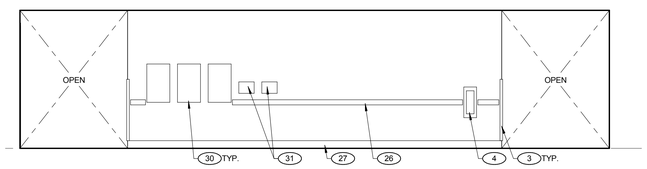
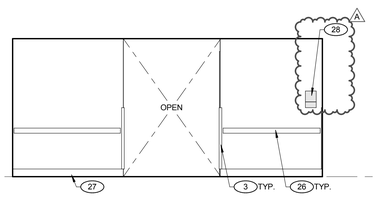


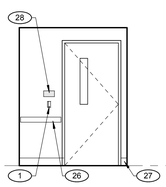

6 CORRIDOR 001 - F
SCALE: 1/4" = 1'-0"



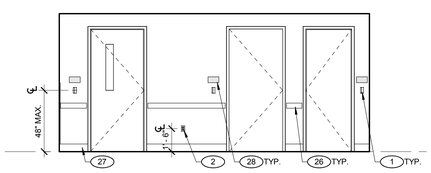

5 CORRIDOR 001 - E
SCALE: 1/4" = 1'-0"




4 CORRIDOR 001 - D
SCALE: 1/4" = 1'-0"




3 CORRIDOR 001 - C
SCALE: 1/4" = 1'-0"




2 CORRIDOR 001 - B
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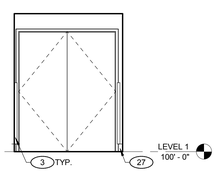



1 CORRIDOR 001 - A
SCALE: 1/4" = 1'-0"

**GENERAL NOTES**

1. REFERENCE G1.00 FOR TYPICAL ADA FIXTURE ELEVATIONS.
2. "ACC." DENOTES FIXTURES THAT NEED TO COMPLY WITH ADA STANDARDS.
3. FIELD VERIFY ALL DIMENSIONS PRIOR TO MANUFACTURING ALL CASEWORK.
4. ALL CASEWORK TO BE LOCKABLE.

**KEYNOTES**

1. CARD READER DEVICE
2. DUPLEX RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
3. CORNER GUARD CG-1 - REFER TO MATERIAL SCHEDULE
4. FIRE EXTINGUISHER CABINET - MOUNT T.O. CABINET AT +48" A.F.F.
5. STAINLESS STEEL COUNTERTOP
6. QUAD RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
7. MOP SINK - REFER TO PLUMBING DRAWINGS
8. SAFETY SHOWER/EYE WASH WITH SIGNAGE - MOUNT PER MFR INSTRUCTIONS SO THAT HANDLES ARE AT +48" A.F.F. - REFER TO PLUMBING DRAWINGS
9. CHEMICAL FUME HOOD
10. LAB PEGBOARD, CFCI
11. ADJUSTABLE STAINLESS STEEL SHELVING, CFCI
12. STAINLESS STEEL CASEWORK, CFCI - REFER TO CASEWORK DETAILS AND SPECIFICATIONS
13. TELE/DATA RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
14. SINK - REFER TO PLUMBING DRAWINGS
15. PREP SINK - REFER TO PLUMBING DRAWINGS
16. SURGERY LIGHT - REFER TO ELECTRICAL DRAWINGS
17. OXYGEN AND CARBON DIOXIDE BALL VALVES
18. OFOI CARBON DIOXIDE GAS CYLINDER
19. OFOI OXYGEN GAS CYLINDER
20. GAS CYLINDER RESTRAINTS, CFCI
21. GAS MANIFOLD, CFCI, REFER TO PLUMBING DRAWINGS
22. HOT AND COLD WATER HOSE BIB - REFER TO PLUMBING DRAWINGS
23. HOSE AND HOSE REEL, CFCI
24. CONTROL JOINT - REFER TO DETAIL 7/A2.50
25. COUNTER SUPPORT BRACKET - PAINT TO MATCH ADJACENT WALL
26. ALUMINIUM CRASH RAIL CR-1 - MOUNT AT 3'-0" A.F.F. - REFER TO MATERIAL SCHEDULE
27. 6" INTEGRAL RESINOUS COVE BASE - REFER TO MATERIAL SCHEDULE
28. INTERIOR SIGNAGE, REFER TO SIGNAGE PLAN
29. EXIT SIGN - REFER TO ELECTRICAL DRAWINGS
30. ELECTRICAL PANEL - REFER TO ELECTRICAL DRAWINGS
31. LIGHTING AND MECHANICAL CONTROL TABLETS - COORDINATE WITH ELECTRICAL AND MECHANICAL DRAWINGS
32. STAINLESS STEEL FILLER PANEL, AS REQUIRED

**LEGEND**

SIGNAGE

CARD READER

RECEPTACLE

tsk
303 South Water Street,
Suite 230
Henderson, NV 89015
phone: 702.456.3000
fax: 702.898.6209
www.tska.com



Consultant

PLEASE RECYCLE

Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

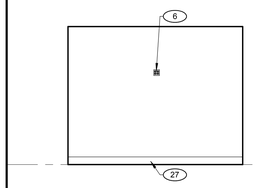
**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

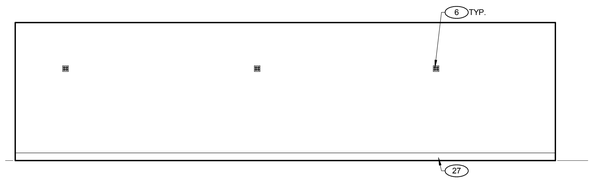
Sheet Title
**INTERIOR ELEVATIONS - PHASE 1**

Date: 06/17/2016

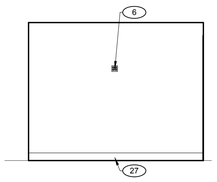
Sheet No:
**A5.00**



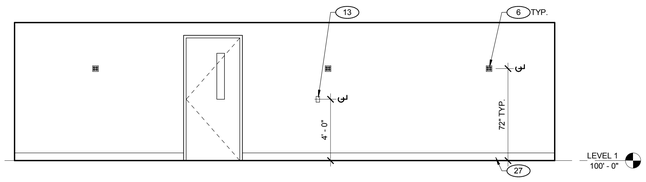

24 HOLD 012 - EAST
SCALE: 1/4" = 1'-0"



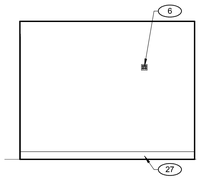

23 HOLD 012 - SOUTH
SCALE: 1/4" = 1'-0"



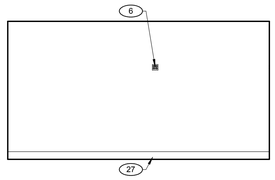

22 HOLD 012 - WEST
SCALE: 1/4" = 1'-0"



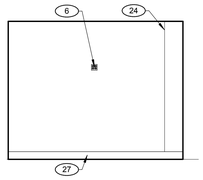

21 HOLD 012 - NORTH
SCALE: 1/4" = 1'-0"




20 HOLD 011 - EAST
SCALE: 1/4" = 1'-0"




19 HOLD 011 - SOUTH
SCALE: 1/4" = 1'-0"




18 HOLD 011 - WEST
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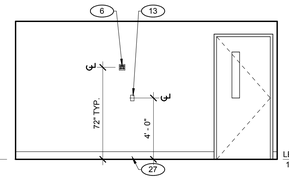
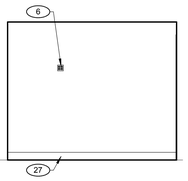
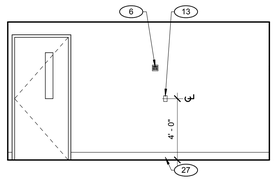


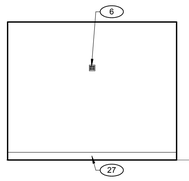

17 HOLD 011 - NORTH
SCALE: 1/4" = 1'-0"



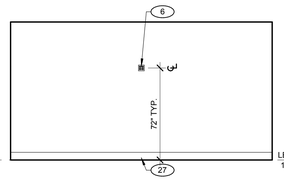

16 HOLD 010 - EAST
SCALE: 1/4" = 1'-0"



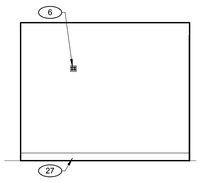

15 HOLD 010 - SOUTH
SCALE: 1/4" = 1'-0"



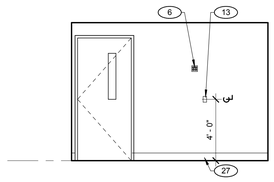

14 HOLD 010 - WEST
SCALE: 1/4" = 1'-0"



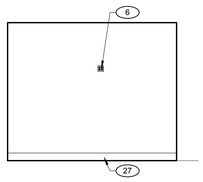

13 HOLD 010 - NORTH
SCALE: 1/4" = 1'-0"



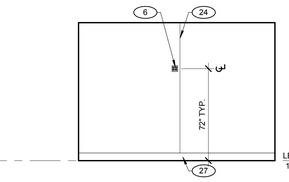

12 HOLD 009 - EAST
SCALE: 1/4" = 1'-0"



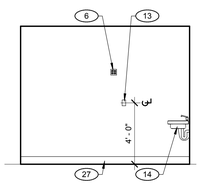

11 HOLD 009 - SOUTH
SCALE: 1/4" = 1'-0"



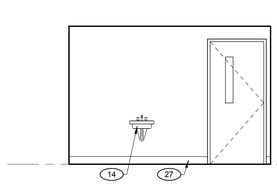

10 HOLD 009 - WEST
SCALE: 1/4" = 1'-0"



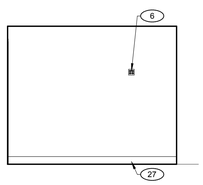

9 HOLD 009 - NORTH
SCALE: 1/4" = 1'-0"



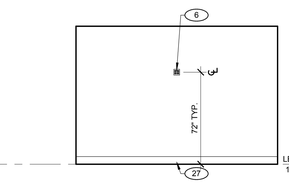

8 HOLD - ABSL2 008 - EAST
SCALE: 1/4" = 1'-0"



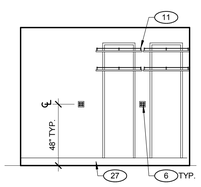

7 HOLD - ABSL2 008 - SOUTH
SCALE: 1/4" = 1'-0"



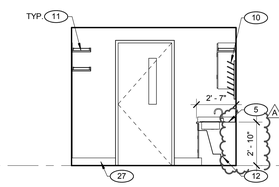

6 HOLD 008 - WEST
SCALE: 1/4" = 1'-0"



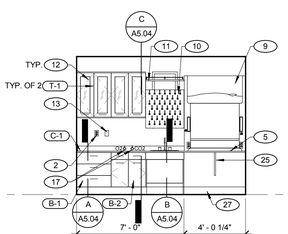

5 HOLD - ABSL2 008 - NORTH
SCALE: 1/4" = 1'-0"



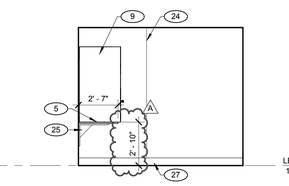

4 PROCEDURE 007 - EAST
SCALE: 1/4" = 1'-0"




3 PROCEDURE 007 - SOUTH
SCALE: 1/4" = 1'-0"




2 PROCEDURE 007 - WEST
SCALE: 1/4" = 1'-0"




1 PROCEDURE 007 - NORTH
SCALE: 1/4" = 1'-0"

| CASEWORK SCHEDULE | | |
|---|---|---|
| CAB. NO. | W x H x D | CAB. DESCRIPTION |
| B-1 | 27" x 33" x 30" | 3 DRAWERS |
| B-2 | 27" x 33" x 30" | 2 DR, 2 DRAWERS, 1 ADJ. SHELF |
| B-3 | 36" x 33" x 24" | 2 DR, 2 DRAWERS, 1 ADJ. SHELF |
| B-4 | 34" x 60" x 15" | 2 DR, 3 ADJ. SHELVES |
| B-5 | 17" x 60" x 15" | 1 DR, 3 ADJ. SHELVES |
| T-1 | 27" x 36" x 15" | 2 DR W/ GLASS, 2 ADJ. SHELVES |
| T-2 | 36" x 36" x 15" | 2 DR W/ GLASS, 2 ADJ. SHELVES |
| T-3 | 34" x 36" x 15" | 2 DR W/ GLASS, 2 ADJ. SHELVES |
| T-4 | 17" x 36" x 15" | 1 DR W/ GLASS, 2 ADJ. SHELVES |

| COUNTERTOP SCHEDULE | |
|---|---|
| CO. NO. | CO. DESCRIPTION |
| C-1 | 31" STAINLESS STEEL |
| C-2 | 25" STAINLESS STEEL |

## GENERAL NOTES

1. REFERENCE G1.00 FOR TYPICAL ADA FIXTURE ELEVATIONS.
2. "ACC." DENOTES FIXTURES THAT NEED TO COMPLY WITH ADA STANDARDS.
3. FIELD VERIFY ALL DIMENSIONS PRIOR TO MANUFACTURING ALL CASEWORK.
4. ALL CASEWORK TO BE LOCKABLE.

## KEYNOTES

1. CARD READER DEVICE
2. DUPLEX RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
3. CORNER GUARD CG-1 - REFER TO MATERIAL SCHEDULE
4. FIRE EXTINGUISHER CABINET - MOUNT T.O. CABINET AT +48" A.F.F.
5. STAINLESS STEEL COUNTERTOP
6. QUAD RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
7. MOP SINK - REFER TO PLUMBING DRAWINGS
8. SAFETY SHOWER/EYE WASH WITH SIGNAGE - MOUNT PER MFR INSTRUCTIONS SO THAT HANDLES ARE AT +48" A.F.F. - REFER TO PLUMBING DRAWINGS
9. CHEMICAL FUME HOOD
10. LAB PEGBOARD, CFCI
11. ADJUSTABLE STAINLESS STEEL SHELVING, CFCI
12. STAINLESS STEEL CASEWORK, CFCI - REFER TO CASEWORK DETAILS AND SPECIFICATIONS
13. TELE/DATA RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
14. SINK - REFER TO PLUMBING DRAWINGS
15. PREP SINK - REFER TO PLUMBING DRAWINGS
16. SURGERY LIGHT - REFER TO ELECTRICAL DRAWINGS
17. OXYGEN AND CARBON DIOXIDE BALL VALVES
18. OFOI CARBON DIOXIDE GAS CYLINDER
19. OFOI OXYGEN GAS CYLINDER
20. GAS CYLINDER RESTRAINTS, CFCI
21. GAS MANIFOLD, CFCI, REFER TO PLUMBING DRAWINGS
22. HOT AND COLD WATER HOSE BIB - REFER TO PLUMBING DRAWINGS
23. HOSE AND HOSE REEL, CFCI
24. CONTROL JOINT - REFER TO DETAIL 7/A2.50
25. COUNTER SUPPORT BRACKET - PAINT TO MATCH ADJACENT WALL
26. ALUMINIUM CRASH RAIL CR-1 - MOUNT AT 3'-0" A.F.F. - REFER TO MATERIAL SCHEDULE
27. 6" INTEGRAL RESINOUS COVE BASE - REFER TO MATERIAL SCHEDULE
28. INTERIOR SIGNAGE, REFER TO SIGNAGE PLAN
29. EXIT SIGN - REFER TO ELECTRICAL DRAWINGS
30. ELECTRICAL PANEL - REFER TO ELECTRICAL DRAWINGS
31. LIGHTING AND MECHANICAL CONTROL TABLETS - COORDINATE WITH ELECTRICAL AND MECHANICAL DRAWINGS
32. STAINLESS STEEL FILLER PANEL, AS REQUIRED

## LEGEND

SIGNAGE

CARD READER

RECEPTACLE

tsk
303 South Water Street,
Suite 230
Henderson, NV 89015
phone: 702.456.3000
fax: 702.898.6209
www.tska.com



Consultant

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Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**INTERIOR ELEVATIONS - PHASE 1**

Date: 06/17/2016
Sheet No:
**A5.01**

## GENERAL NOTES

1. REFERENCE G1.00 FOR TYPICAL ADA FIXTURE ELEVATIONS.
2. "ACC." DENOTES FIXTURES THAT NEED TO COMPLY WITH ADA STANDARDS.
3. FIELD VERIFY ALL DIMENSIONS PRIOR TO MANUFACTURING ALL CASEWORK.
4. ALL CASEWORK TO BE LOCKABLE.

## KEYNOTES

1. CARD READER DEVICE
2. DUPLEX RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
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4. FIRE EXTINGUISHER CABINET - MOUNT T.O. CABINET AT +48" A.F.F.
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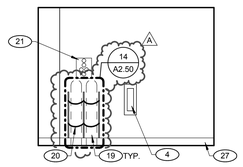
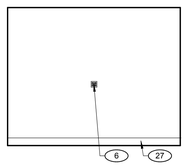
32. STAINLESS STEEL FILLER PANEL, AS REQUIRED

## LEGEND

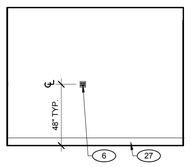
- SIGNAGE
- CARD READER
- RECEPTACLE



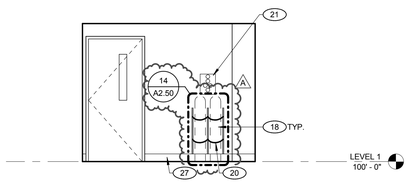

12 STORAGE 028 - EAST
SCALE: 1/4" = 1'-0"



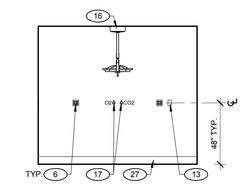

11 STORAGE 028 - SOUTH
SCALE: 1/4" = 1'-0"



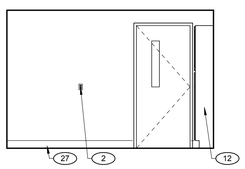

10 STORAGE 028 - WEST
SCALE: 1/4" = 1'-0"



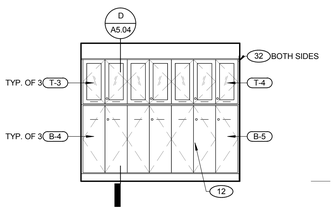

9 STORAGE 028 - NORTH
SCALE: 1/4" = 1'-0"



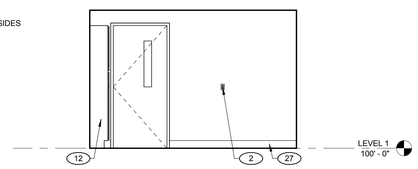

8 SURGERY 014 - EAST
SCALE: 1/4" = 1'-0"



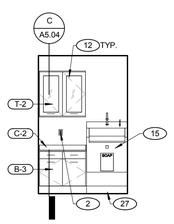

7 SURGERY 014 - SOUTH
SCALE: 1/4" = 1'-0"



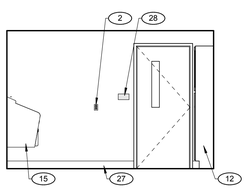

6 SURGERY 014 - WEST
SCALE: 1/4" = 1'-0"



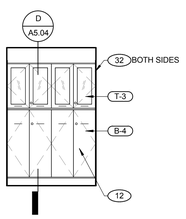

5 SURGERY 014 - NORTH
SCALE: 1/4" = 1'-0"



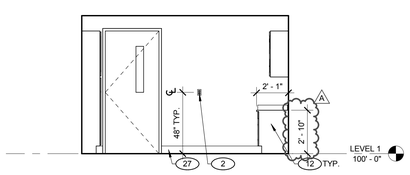

4 PREP 013 - EAST
SCALE: 1/4" = 1'-0"




3 PREP 013 - SOUTH
SCALE: 1/4" = 1'-0"




2 PREP 013 - WEST
SCALE: 1/4" = 1'-0"




1 PREP 013 - NORTH
SCALE: 1/4" = 1'-0"

| CASEWORK SCHEDULE | | |
|---|---|---|
| CAB. NO. | W x H x D | CAB. DESCRIPTION |
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|---|---|
| CO. NO. | CO. DESCRIPTION |
| C-1 | 31" STAINLESS STEEL |
| C-2 | 25" STAINLESS STEEL |


tsk
303 South Water Street,
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phone: 702.456.3000
fax: 702.898.6209
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Consultant

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Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

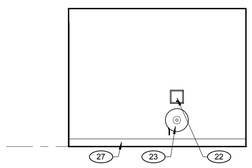
Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

**PERMIT SET**

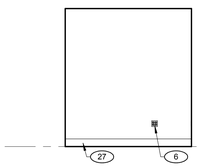
| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**INTERIOR ELEVATIONS - PHASE 1**

Date: 06/17/2016
Sheet No:
**A5.02**




20 BEHAVIOR 021 - EAST
SCALE: 1/4" = 1'-0"




19 BEHAVIOR 021 - SOUTH
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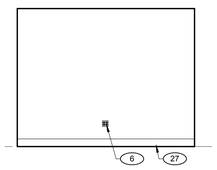
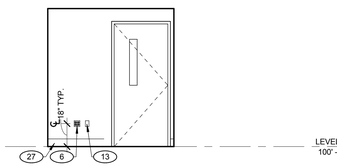
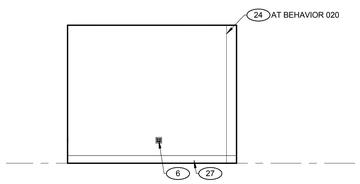


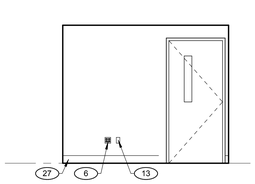

18 BEHAVIOR 021 - WEST
SCALE: 1/4" = 1'-0"



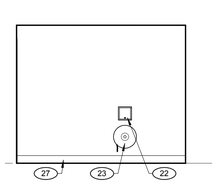

17 BEHAVIOR 021 - NORTH
SCALE: 1/4" = 1'-0"



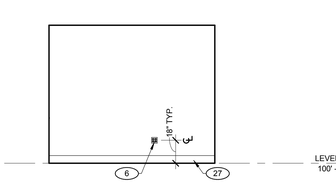

16 BEHAVIOR 019 - EAST
SCALE: 1/4" = 1'-0"



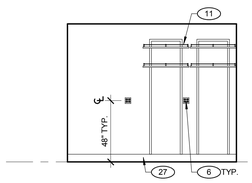

15 BEHAVIOR 019 - SOUTH
SCALE: 1/4" = 1'-0"



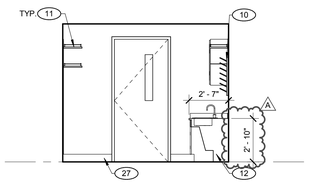

14 BEHAVIOR 019 - WEST
SCALE: 1/4" = 1'-0"



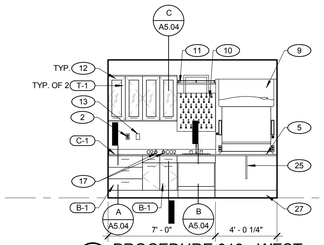

13 BEHAVIOR 019 - NORTH
SCALE: 1/4" = 1'-0"




12 PROCEDURE 018 - EAST
SCALE: 1/4" = 1'-0"




11 PROCEDURE 018 - SOUTH
SCALE: 1/4" = 1'-0"




10 PROCEDURE 018 - WEST
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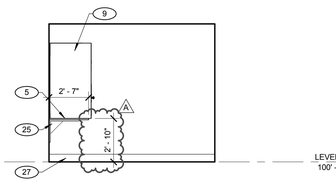
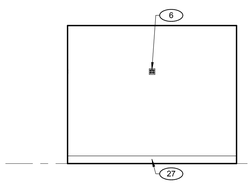
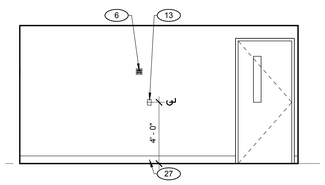


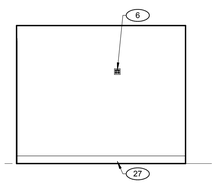

9 PROCEDURE 018 - NORTH
SCALE: 1/4" = 1'-0"



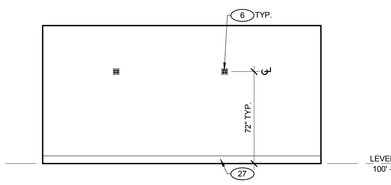

8 HOLD 017 - EAST
SCALE: 1/4" = 1'-0"



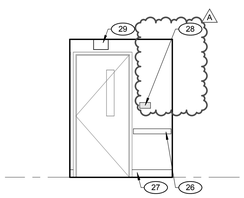

7 HOLD 017 - SOUTH
SCALE: 1/4" = 1'-0"



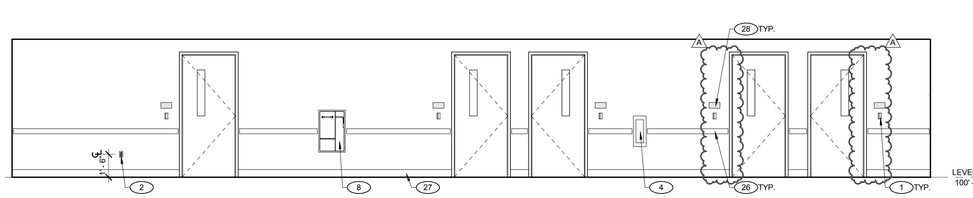

6 HOLD 017 - WEST
SCALE: 1/4" = 1'-0"




5 HOLD 017 - NORTH
SCALE: 1/4" = 1'-0"




4 VESTIBULE 016 - EAST
SCALE: 1/4" = 1'-0"




3 VESTIBULE 016 - SOUTH
SCALE: 1/4" = 1'-0"

| CASEWORK SCHEDULE | | |
|---|---|---|
| CAB. NO. | W x H x D | CAB. DESCRIPTION |
| B-1 | 27" x 33" x 30" | 3 DRAWERS |
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| B-4 | 34" x 60" x 15" | 2 DR, 3 ADJ. SHELVES |
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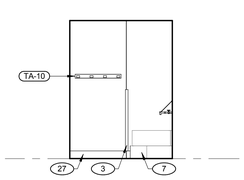
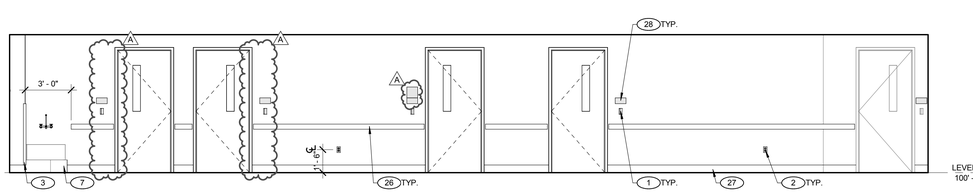
| COUNTERTOP SCHEDULE | |
|---|---|
| CO. NO. | CO. DESCRIPTION |
| C-1 | 31" STAINLESS STEEL |
| C-2 | 25" STAINLESS STEEL |




2 VESTIBULE 016 - WEST
SCALE: 1/4" = 1'-0"




1 VESTIBULE 016 - NORTH
SCALE: 1/4" = 1'-0"

## GENERAL NOTES

1. REFERENCE G1.00 FOR TYPICAL ADA FIXTURE ELEVATIONS.
2. "ACC." DENOTES FIXTURES THAT NEED TO COMPLY WITH ADA STANDARDS.
3. FIELD VERIFY ALL DIMENSIONS PRIOR TO MANUFACTURING ALL CASEWORK.
4. ALL CASEWORK TO BE LOCKABLE.

## KEYNOTES

1. CARD READER DEVICE
2. DUPLEX RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
3. CORNER GUARD CG-1 - REFER TO MATERIAL SCHEDULE
4. FIRE EXTINGUISHER CABINET - MOUNT T.O. CABINET AT +48" A.F.F.
5. STAINLESS STEEL COUNTERTOP
6. QUAD RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
7. MOP SINK - REFER TO PLUMBING DRAWINGS
8. SAFETY SHOWER/EYE WASH WITH SIGNAGE - MOUNT PER MFR INSTRUCTIONS SO THAT HANDLES ARE AT +48" A.F.F. - REFER TO PLUMBING DRAWINGS
9. CHEMICAL FUME HOOD
10. LAB PEGBOARD, CFCI
11. ADJUSTABLE STAINLESS STEEL SHELVING, CFCI
12. STAINLESS STEEL CASEWORK, CFCI - REFER TO CASEWORK DETAILS AND SPECIFICATIONS
13. TELE/DATA RECEPTACLE - REFER TO ELECTRICAL DRAWINGS
14. SINK - REFER TO PLUMBING DRAWINGS
15. PREP SINK - REFER TO PLUMBING DRAWINGS
16. SURGERY LIGHT - REFER TO ELECTRICAL DRAWINGS
17. OXYGEN AND CARBON DIOXIDE BALL VALVES
18. OFOI CARBON DIOXIDE GAS CYLINDER
19. OFOI OXYGEN GAS CYLINDER
20. GAS CYLINDER RESTRAINTS, CFCI
21. GAS MANIFOLD, CFCI, REFER TO PLUMBING DRAWINGS
22. HOT AND COLD WATER HOSE BIB - REFER TO PLUMBING DRAWINGS
23. HOSE AND HOSE REEL, CFCI
24. CONTROL JOINT - REFER TO DETAIL 7/A2.50
25. COUNTER SUPPORT BRACKET - PAINT TO MATCH ADJACENT WALL
26. ALUMINIUM CRASH RAIL CR-1 - MOUNT AT 3'-0" A.F.F. - REFER TO MATERIAL SCHEDULE
27. 6" INTEGRAL RESINOUS COVE BASE - REFER TO MATERIAL SCHEDULE
28. INTERIOR SIGNAGE, REFER TO SIGNAGE PLAN
29. EXIT SIGN - REFER TO ELECTRICAL DRAWINGS
30. ELECTRICAL PANEL - REFER TO ELECTRICAL DRAWINGS
31. LIGHTING AND MECHANICAL CONTROL TABLETS - COORDINATE WITH ELECTRICAL AND MECHANICAL DRAWINGS
32. STAINLESS STEEL FILLER PANEL, AS REQUIRED

## LEGEND

SIGNAGE

CARD READER

RECEPTACLE

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Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

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| REVISIONS | | |
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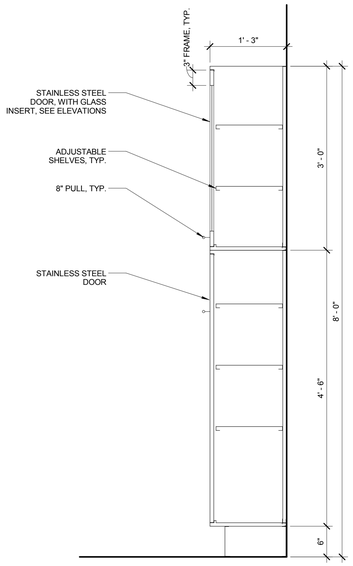
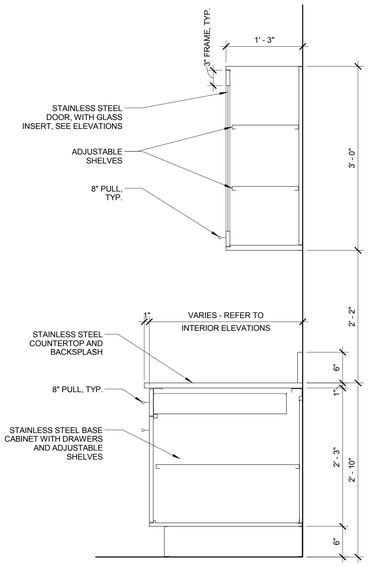
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**INTERIOR ELEVATIONS - PHASE 2**

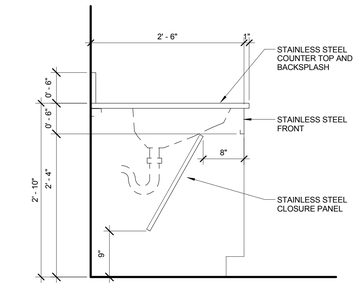
Date: 06/17/2016
Sheet No:
**A5.03**



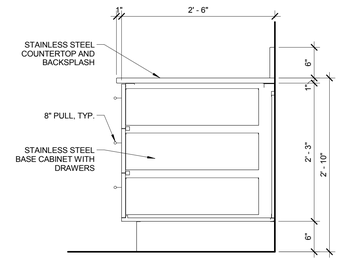

D TALL CABINET DETAIL
SCALE: 1" = 1'-0"




C WALL / BASE CABINET DETAIL
SCALE: 1" = 1'-0"




B CASEWORK @ ACCESSIBLE SINK
SCALE: 1" = 1'-0"




A BASE CABINET DETAIL
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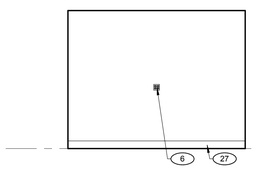
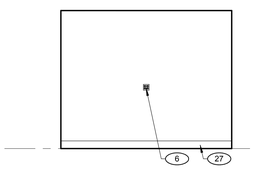
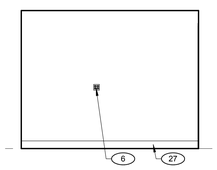


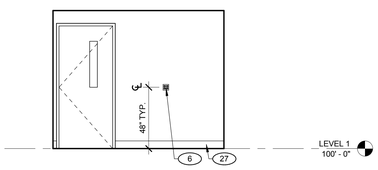

12 CLEAN STORAGE 024 - EAST
SCALE: 1/4" = 1'-0"



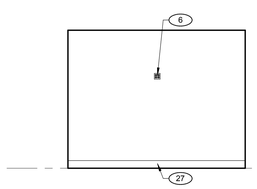

11 CLEAN STORAGE 024 - SOUTH
SCALE: 1/4" = 1'-0"



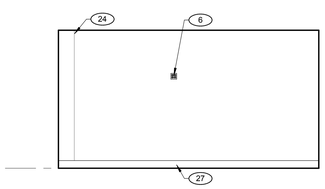

10 CLEAN STORAGE 024 - WEST
SCALE: 1/4" = 1'-0"



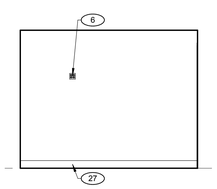

9 CLEAN STORAGE 024 - NORTH
SCALE: 1/4" = 1'-0"



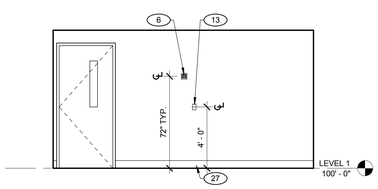

8 HOLD 024 - EAST
SCALE: 1/4" = 1'-0"



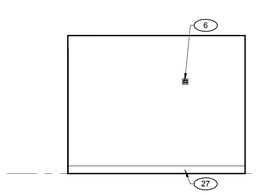

7 HOLD 024 - SOUTH
SCALE: 1/4" = 1'-0"



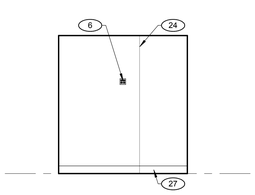

6 HOLD 024 - WEST
SCALE: 1/4" = 1'-0"



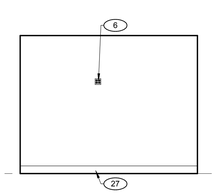

5 HOLD 024 - NORTH
SCALE: 1/4" = 1'-0"



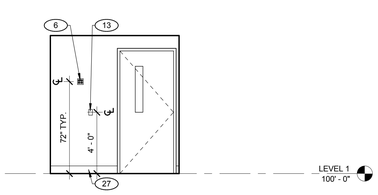

4 HOLD 023 - EAST
SCALE: 1/4" = 1'-0"




3 HOLD 023 - SOUTH
SCALE: 1/4" = 1'-0"




2 HOLD 023 - WEST
SCALE: 1/4" = 1'-0"




1 HOLD 023 - NORTH
SCALE: 1/4" = 1'-0"

## GENERAL NOTES

1. REFERENCE G1.00 FOR TYPICAL ADA FIXTURE ELEVATIONS.
2. "ACC." DENOTES FIXTURES THAT NEED TO COMPLY WITH ADA STANDARDS.
3. FIELD VERIFY ALL DIMENSIONS PRIOR TO MANUFACTURING ALL CASEWORK.
4. ALL CASEWORK TO BE LOCKABLE.

## KEYNOTES

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## LEGEND

SIGNAGE

CARD READER

RECEPTACLE

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Project
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Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

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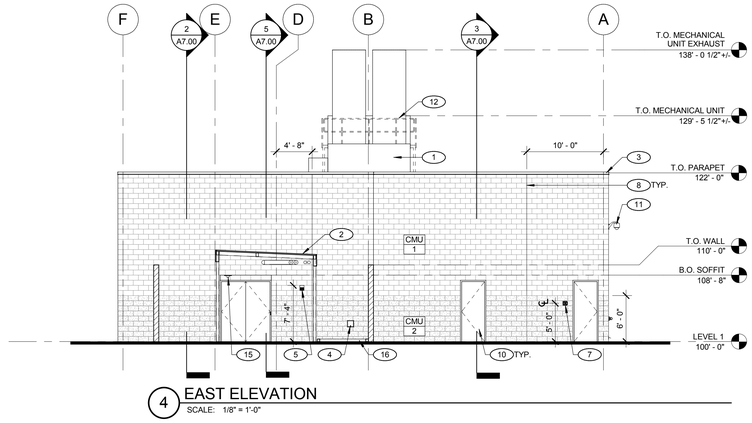
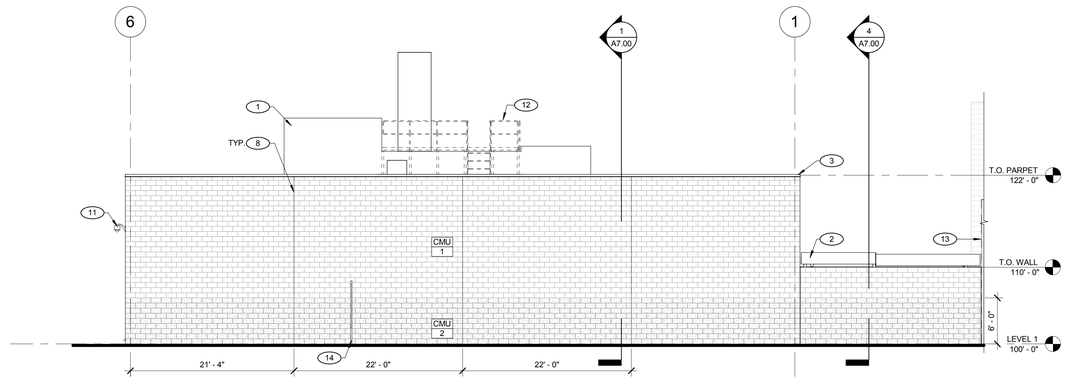
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**INTERIOR ELEVATIONS - PHASE 2**

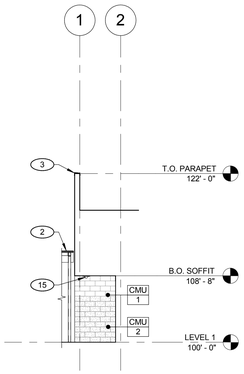
Date: 06/17/2016
Sheet No:
**A5.04**



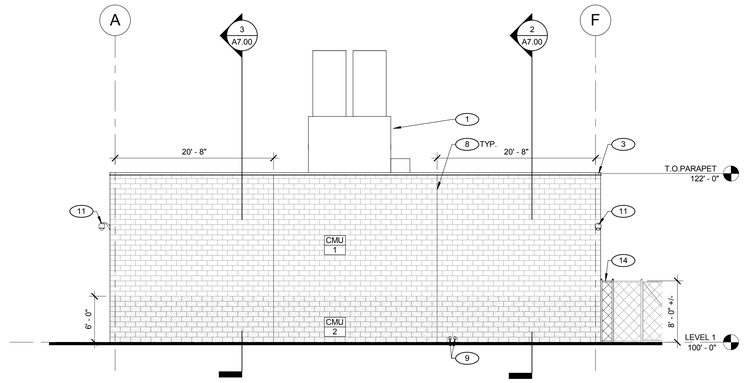

4 EAST ELEVATION
SCALE: 1/8" = 1'-0"



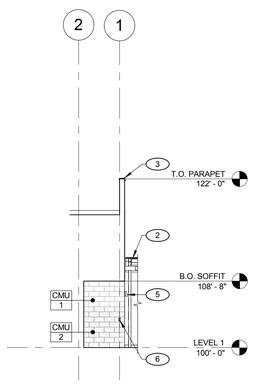

3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



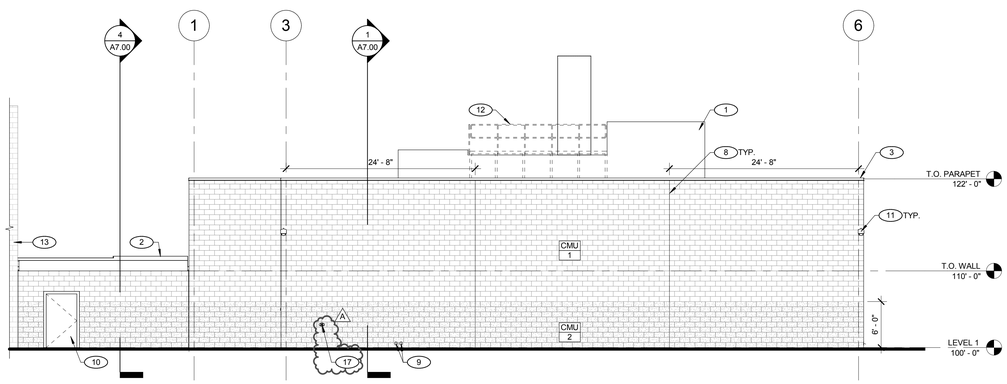

6 ENTRY - SOUTH ELEVATION
SCALE: 1/8" = 1'-0"




2 WEST ELEVATION
SCALE: 1/8" = 1'-0"




5 ENTRY - NORTH ELEVATION
SCALE: 1/8" = 1'-0"




1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

## GENERAL NOTES

1. ALL EXPOSED MASONRY TO RECEIVE ANTI-GRAFFITI COATING.
2. NO EXPOSED CONDUIT ON EXTERIOR CMU WALLS.

## KEYNOTES

1. ROOFTOP MECHANICAL EQUIPMENT - REFER TO MECHANICAL DRAWINGS, PAINT PC-3
2. SHADE CANOPY- REFER TO PLANS AND SECTIONS
3. METAL COPING - CP-1 - REFER TO WALL SECTIONS
4. HOSE BIB - CENTER IN BLOCK - REFER TO PLUMBING DRAWINGS
5. LIGHT FIXTURE - ALIGN TOP OF FIXTURE WITH TOP OF BLOCK - REFER TO ELECTRICAL DRAWINGS
6. CARD READER DEVICE
7. KNOX BOX 3200 SERIES, RECESS MOUNT WITH ALUMINUM FINISH
8. MASONRY CONTROL JOINT - REFER TO DETAIL 7/A2.50 AND STRUCTURAL DRAWINGS
9. ROOF AND ROOF OVERFLOW DRAIN DAYLIGHT LOCATION - REFER TO PLANS AND PLUMBING DRAWINGS
10. DOOR - REFER TO DOOR SCHEDULE - PAINT DOOR AND FRAME PC-?
11. SECURITY CAMERA - MOUNT AT 15'-0" A.F.F., HOUSING COLOR TO MATCH ADJACENT FINISH - REFER TO ELECTRICAL DRAWINGS
12. SAFETY PLATFORM AND GUARDRAILS BY CONTRACTOR - REFER TO SPECIFICATIONS
13. EXISTING WHITE HALL - PROTECT IN PLACE
14. EXTEND EXISTING CHAINLINK FENCE TO NEW VIVARIUM BUILDING - MATCH EXISTING HEIGHT
15. CEILING MOUNTED SECURITY CAMERA - REFER TO RCP AND ELECTRICAL DRAWINGS
16. RAISED CURB FOR CAGE WASH - REFER TO CIVIL AND PLUMBING DRAWINGS
17. FIRE DEPARTMENT CONNECTION - REFER TO CIVIL DRAWINGS. (A)

## LEGEND

CMU-1

CMU-2

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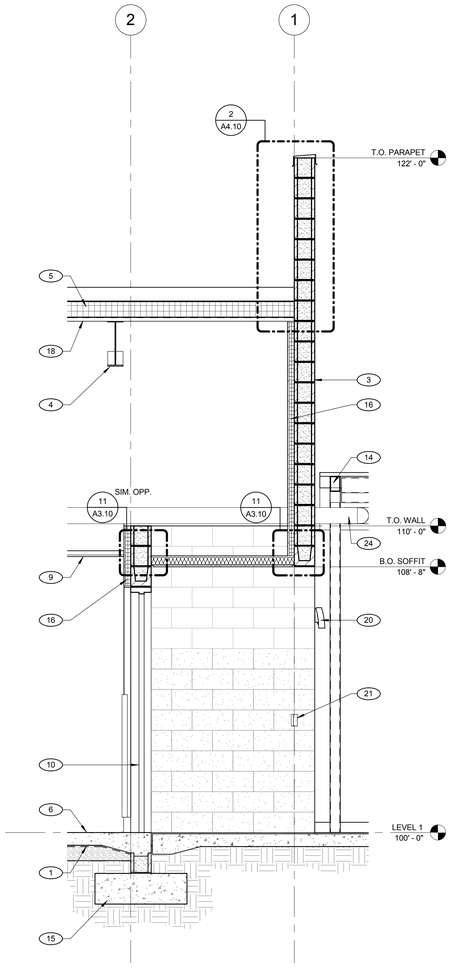
| A | 08/05/16 | ADDENDUM A |

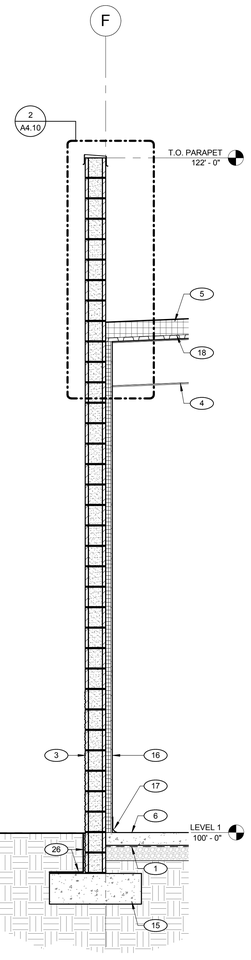
Sheet Title
**BUILDING ELEVATIONS**

Date: 06/17/2016

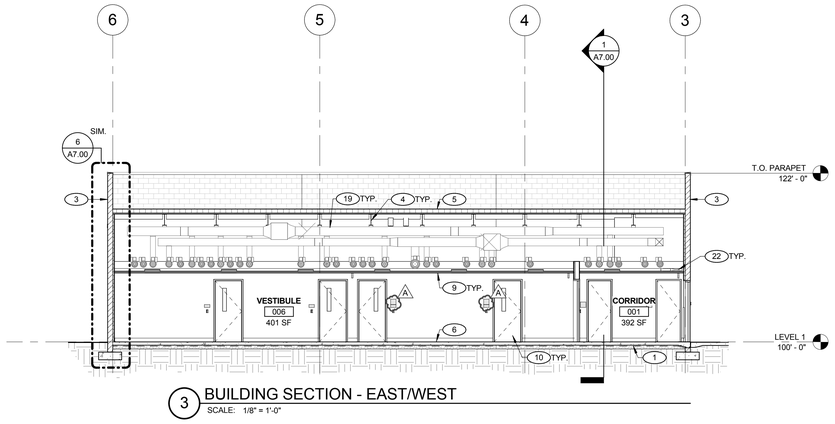
Sheet No:
**A6.00**



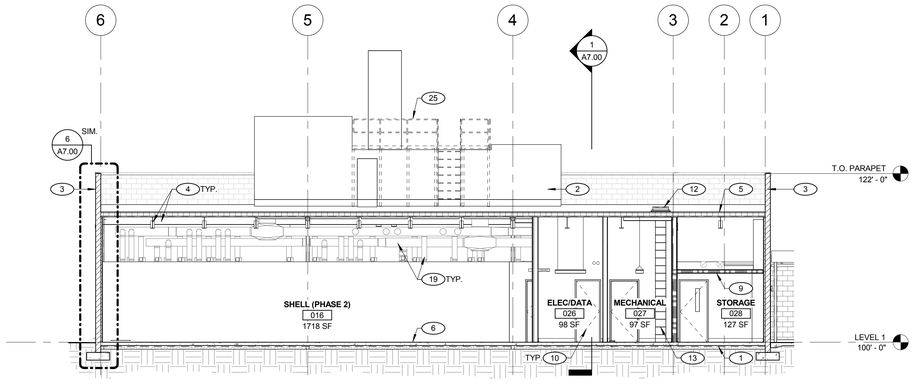

7 WALL SECTION AT MAIN ENTRY
SCALE: 1/2" = 1'-0"



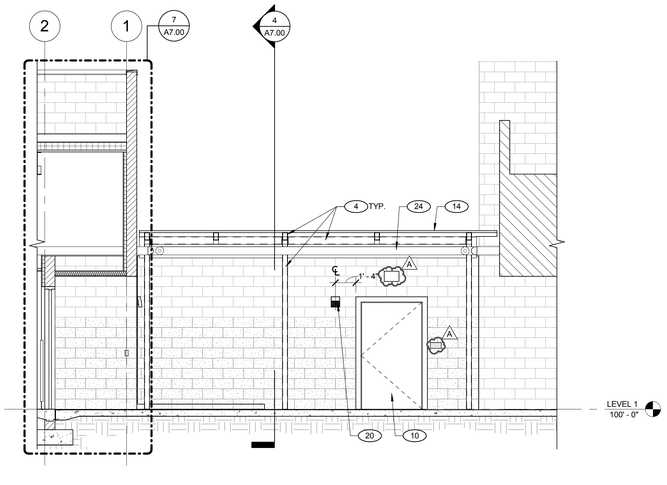

6 WALL SECTION
SCALE: 1/2" = 1'-0"



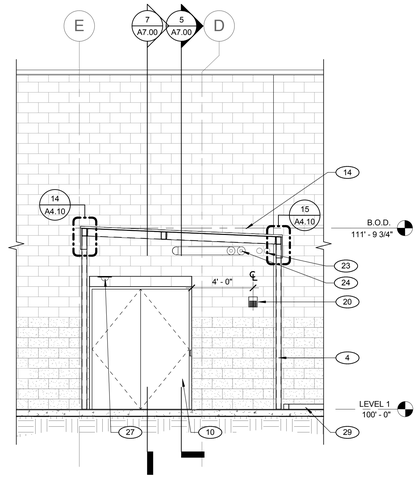

3 BUILDING SECTION - EAST/WEST
SCALE: 1/8" = 1'-0"




2 BUILDING SECTION - EAST/WEST
SCALE: 1/8" = 1'-0"




5 CANOPY SECTION
SCALE: 1/4" = 1'-0"




4 CANOPY SECTION
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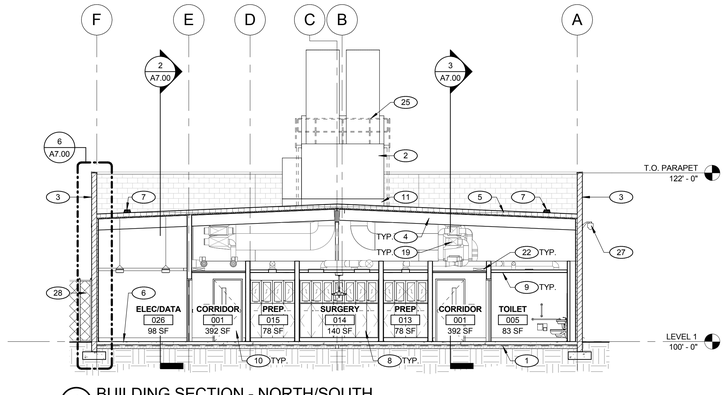


1 BUILDING SECTION - NORTH/SOUTH
SCALE: 1/8" = 1'-0"

## GENERAL NOTES

1. REFER TO STRUCTURAL DRAWINGS FOR FOOTING AND SLAB REQUIREMENTS.
2. REFER TO SHEET A4.10 FOR ROOF DETAILS.
3. REFER TO FLOOR PLANS FOR WALL TYPES.
4. PAINT ALL EXPOSED INTERIOR AND EXTERIOR STRUCTURAL STEEL - REFER TO FINISH SCHEDULE AND ELEVATIONS.
5. REFER TO FINISH SCHEDULE FOR FLOOR, WALL AND CEILING FINISHES.
6. REFER TO ELEVATIONS FOR CMU COLOR/TEXTURE.
7. PROVIDE APPROPRIATE FIRE STOPPING AT FIRE RATED PARTITIONS.
8. PENETRATIONS THROUGH WALLS WITH SOUND INSULATION SHALL BE SEALED TIGHT WITH ACOUSTICAL INSULATION AND SEALANT.
9. GRAY CMU IS ACCEPTABLE BELOW GRADE.

## KEYNOTES

1. VAPOR RETARDER DIRECTLY UNDER CONCRETE SLAB OVER 6" TYPE II OVER STRUCTURAL SUBGRADE - REFER TO GEOTECH REPORT
2. MECHANICAL UNIT - REFER TO MECHANICAL DRAWINGS
3. CMU WALL - REFER TO PLANS
4. STRUCTURAL FRAMING, PAINT PC-4 \- REFER TO STRUCTURAL DRAWINGS
5. ROOF SYSTEM - REFER TO ROOF PLAN AND DETAILS
6. CONCRETE SLAB ON GRADE - REFER TO STRUCTURAL DRAWINGS
7. ROOF DRAIN - REFER TO ROOF PLAN FOR LOCATION
8. STAINLESS STEEL CASEWORK - REFER TO PLANS
9. CEILING - REFER TO REFLECTED CEILING PLANS
10. DOOR - REFER TO DOOR SCHEDULE
11. ROOF CURB - REFER TO DETAIL 12/A4.10
12. ROOF ACCESS HATCH - REFER TO ROOF PLANS
13. ROOF ACCESS LADDER - PROVIDE METAL BACKING AS REQUIRED - REFER TO DETAIL 6/A4.10
14. METAL SHADE CANOPY - REFER TO SECTIONS
15. CONCRETE FOOTING - REFER TO STRUCTURAL DRAWINGS
16. 2" FURRING - REFER TO PLAN FOR PARTITION TYPES
17. WALL BASE - REFER TO FINISH SCHEDULE
18. METAL ROOF DECK - REFER TO STRUCTURAL DRAWINGS
19. DUCTWORK - REFER TO MECHANICAL DRAWINGS
20. WALL MOUNTED EXTERIOR LIGHT - REFER TO ELECTRICAL DRAWINGS
21. CARD READER DEVICE - CENTER ON BLOCK
22. CABLE TRAY - REFER TO ELECTRICAL DRAWINGS
23. ELECTRICAL CONDUIT - REFER TO ELECTRICAL DRAWINGS
24. HYDRONIC PIPING - REFER TO MECHANICAL DRAWINGS
25. SAFETY PLATFORM AND GUARDRAILS BY CONTRACTOR - REFER TO SPECIFICATIONS
26. WATERPROOFING
27. SECURITY CAMERA - HOUSING TO MATCH COLOR OF ADJACENT FINISH - REFER TO ELECTRICAL DRAWINGS
28. EXTEND EXISTING CHAINLINK FENCE TO NEW VIVARIUM BUILDING - MATCH EXISTING HEIGHT
29. RAISED CURB FOR CAGE WASH - REFER TO CIVIL AND PLUMBING DRAWINGS

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Consultant

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Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**BUILDING AND WALL SECTIONS**

Date: 06/17/2016
Sheet No:
**A7.00**

# Structural Cover Sheet
# UNLV VIVARIUM
# 4505 SOUTH MARYLAND PARKWAY
# LAS VEGAS, NV 89154


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## Abbreviations

| | | | |
|---|---|---|---|
| A.B. or A. Bolt | Anchor Bolt | LONGIT. | Longitudinal |
| ANC. | Anchor | L.H.E. | Low Hydrogen Electrode |
| ADD. | Addition | LLBB | Long Leg Back To Back |
| AGGR. | Aggregate | LLH | Long Leg Horizontal |
| ALT. | Alternate | LLV | Long Leg Vertical |
| AL. | Aluminum | LVL | Laminated Veneer Lumber |
| ACI | American Concrete Institute | | |
| AIA | American Institute of Architects | M.B. | Machine Bolt |
| AISC | American Institue of Steel Construction | MK. | Mark |
| AISI | American Iron and Steel Institute | MET. | Metal |
| APA | American Plywood Association | MATL. | Material |
| ASTM | American Society for Testing and Materials | MAX. | Maximum |
| ANSI | American National Standards Institute | MECH. | Mechanical |
| AWS | American Welding Society | MED. | Medium |
| & | And | MEZZ. | Mezzanine |
| L | Angle | MIN. | Minimum |
| APPROX. | Approximate | MIN. | Minute |
| ARCH. | Architect or Architectural | MISC. | Miscellaneous |
| ASPH. | Asphalt | MIX. | Mixture |
| ASS'Y. | Assembly | MULT. | Multiple |
| AVG. | Average | | |
| | | NF | Near Face |
| BPL | Base Plate | NS | Near Side |
| BM. | Beam | NOM. | Nominal |
| BRG. | Bearing | N | North |
| BT | Bent | NTS | Not to Scale |
| M. | Bending Moment | NO. or # | Number |
| BD. | Board | | |
| B., BOTT. OR BOT. | Bottom | OC. | On Center |
| BLDG. | Building | OPNG. | Opening |
| BLKG. | Blocking | OPP. | Opposite |
| BOD | Bottom of Deck | ORIG. | Original |
| | | OD | Outside Diameter |
| C.G. | Center of Gravity | O.S.B. | Oriented Strand Board |
| CLG. | Ceiling | OWSJ | Open Web Steel Joist |
| CEN. | Center | | |
| CL | Center Line | PNL | Panel |
| C | Channel | PERM. | Permanent |
| CLR. | Clear | PERP. | Perpendicular |
| COL. | Column | PC. | Piece |
| CONC. | Concrete | PCF | Pounds Per Cubic Foot |
| CONN. | Connection | PEN. | Penetration |
| CONST. | Construction | PL | Plate |
| CONT. | Continuous | PLYWD. | Plywood |
| CONTR. | Contractor | PNT. | Point |
| CMU | Concrete Masonry Units | P-T | Post Tension, Post Tensioned |
| C.F. | Cubic Foot | P.T. | Pressure Treated |
| CT | Column Tile | P.P. | Partial Pen. |
| C.Y. | Cubic Yard | PSF | Pounds Per Square Foot |
| | | PSI | Pounds Per Square Inch |
| DET. | Detail | PROJ. | Project |
| DIAG. | Diagonal | | |
| DIA. | Diameter | QTR. | Quarter |
| DIMS. | Dimensions | | |
| DO | Ditto | RAD. or R. | Radius |
| 2L | Double Angle | REF. | Reference |
| D.F. | Douglas Fir | REINF. | Reinforce, Reinforced, Reinforcement or Reinforcing |
| DWG. | Drawing | | |
| | | REQ'D. | Required |
| EA. | Each | REV. | Revise or Revision |
| EA. END | Each End | RF. | Roof |
| ELEC T. | Electric or Electrical | RM. | Room |
| E. | East | | |
| EL. or ELEV. | Elevation or Elevator | SCHED. | Schedule |
| ENGR. | Engineer | SECT. | Section |
| EOD of EO DECK | Edge of Deck | SHT. | Sheet |
| E.N. | Edge Nail (Nailing) | SHTG. | Sheathing |
| EQ. | Equal | SHT. MET. | Sheet Metal |
| EQUIP. | Equipment | SIM. or SIML. | Similar |
| EST. | Estimate | SK. | Sketch |
| EXCAV. | Excavate | S | South |
| EXIST. or EXG. | Existing | SPECS. | Specifications |
| EXP. JT. or E.J. | Expansion Joint | SQ. | Square |
| EXT. | Exterior | STD. | Standard |
| X-HVY | Extra Heavy | STL. | Steel |
| X-STR | Extra Strong | STIR. | Stirrup |
| | | STK. | Stock |
| FAB. | Fabrication | STR. | Straight |
| FF | Far Face | STRUCT. | Structural |
| FS | Far Side | SYM. OR SYMM. | Symmetrical |
| FT. or ' | Feet or Foot | S.FR. | Strut Force |
| FIG. | Figure | S.F. | Square Foot |
| FIN. | Finish | | |
| FLR. | Floor | TAN. | Tangent |
| F.D. | Floor Drain | THK. | Thick |
| FTG. | Footing | THRU | Through |
| FDN., FND. or FOUND. | Foundation | THRU-OUT | Throughout |
| FRMG. | Framing | TJI | Trus Joist MacMillan I Joist |
| | | TOL. | Tolerance |
| GA. | Gage or Gauge | T & G | Tongue & Groove |
| GALV. | Galvanize | T & B | Top & Bottom |
| GEN. | General (Notes) | TO | Top Of |
| GLB. | Glu Lam Beam | TOC or TO CONC. | Top of Concrete |
| GR. or GRD. | Grade | TOF or TO FTG. | Top of Footing |
| GRND. | Ground | TOM or TO MASONRY | Top of Masonry |
| | | TOS or TO STL. | Top of Steel |
| H.D. | Hold down (Simpson) | TOW or TO WALL | Top of Wall |
| HGT. | Height | TOT. | Total |
| HORIZ. | Horizontal | TRANSV. | Transverse |
| | | TYP. | Typical |
| S | I Beam | | |
| IN. or " | Inches | UN | Unless Noted |
| INCL. | Include or Included | UNO | Unless Noted Otherwise |
| ID | Inside Diameter | | |
| IF | Inside Face | V.I.F. | Verify in the Field |
| | | VERT. | Vertical |
| JNT. | Joint | VOL. | Volume |
| K | Kip (1,000 lbs.) | | |
| K.O. | Knockout | WT. | Weight |
| | | W | West |
| LAM. | Laminated | W | Wide Flange |
| lb. | Pound | WD. | Wood |
| LGTH. | Length | W.P. | Work Point |
| LG. | Long | | |
| | | YD. | Yard |

## Symbol Legend

- Slope Direction (down)
- Span Direction
- 00'-0" Miscellanious Elevation
- 00'-0" Floor or Steel Elevation
- (00) Number of Headed Shear Studs Required
- Rigid Connection
- C=0" Camber Up
- Masonry (CMU) Wall
- Concrete Wall
- Earth
- New Construction
- Existing Construction
- A / - Section Cut
- A / - Elevation Reference
- # Indicates Size of Deformed Bar.
- AT or @ Spacing Center to Center
- Direction in Which Bars Extend
- Limits of Area Covered By Bars or Post Tension
- Welding per AWS
- Structural Steel per AISC
- H H Brace UP Brace Frame
- Brace Down
- S S Step in Foundation (Footing)
- Change (Step) in Elevation
- SC 2 - 3 Slip Critical Connection
- Number of Bolts per Row
- Number of Rows
- 1 Revision

## General Notes

### GENERAL

1. The Contractor shall verify all dimensions prior to starting construction. The Architect shall be notified of any discrepancies or inconsistencies.
2. Structure noted in the drawings as existing shall be field verified by the contractor and any discrepancies noted shall be reported to the Architect/Structural Engineer.
3. Do not scale the drawings.
4. Notes and details on the drawings shall take precedence over these general notes, typical details, and the project specifications.
5. Typical details and schedules indicated may not be specifically referenced on the drawings. The contractor is responsible to determine where each typical detail or schedule applies. If locations are found where no typical detail, typical schedule, or specific detail applies, notify the Architect/Structural Engineer.
6. All work shall conform to the minimum standards of following codes:

   The 2012 edition of the International Building Code (IBC), including Southern Nevada amendments and other regulating agencies which have authority over any portion of the work, and those codes and standard listed in these notes and in the project specifications.
7. See the architectural drawings for the following:
   Size and location of door and window openings, size and location of interior and exterior non-bearing partitions, size and location of concrete curbs, floor drains, slopes, depressed areas, changes in level, chamfers, grooves, inserts, etc., size and location of floor and roof openings, floor and roof finishes, stair framing and details, dimensions not shown on the structural drawings, ceiling assemblies, exterior wall assemblies.
8. See mechanical, plumbing, and electrical drawings for the following:
   Pipes, sleeves, hangers, trenches, wall floor and roof openings, duct penetration etc., except as shown or noted, electrical conduit runs, boxes, outlets in walls and slabs, concrete inserts for electrical, mechanical or plumbing fixtures, size and location of machine or equipment bases, anchor bolts for mounts.
9. All framing members provided for mechanical equipment, elevator support beams, lintels, roof openings, etc. are preliminary. Submit manufacturer's data for the proposed equipment to structural engineer prior to submittal of shop drawings for verification of supports.
10. For mechanical and electrical equipment anchorage that is to be designed by others, see 2012 IBC section 1613 and ASCE 7-10 chapter 13. Use isolators, fasteners and bracing approved by ICC-ES capable of transmitting code required lateral loads. Secure suspended equipment with lateral bracing.
11. For piping and ductwork bracing to be designed by others, see the latest edition of "Guidelines for Seismic Restraints of Mechanical Systems" by the SheetMetal and Air Conditioning Contractors National Association.
12. The contract Structural drawings and specifications represent the finished structure. They do not indicate the method of construction. Contractor to provide construction means, methods, techniques, sequences and procedures as required. Contractor to provide adequate excavation procedures, shoring, bracing and erection procedures complying with national, state and local safety ordinances. The Contractor shall provide all measures necessary to protect the structure during construction. Such measures shall include, but not be limited to: bracing and shoring for loads due to hydrostatic, earth, wind or seismic forces, construction equipment, etc.
13. Observation visits (site visits) by representatives of Architect/Structural Engineer do not include inspection of construction means and methods. Site visits during construction are not continuous and detailed inspection services which are to be performed by others. Observations are performed solely for the purpose of determining if the Contractor understands design intent shown in the contract drawings. Observations do not guarantee Contractor's performance and are not to be construed as supervision or verification of construction. Structural observation is not required for this project in accordance with 2012 IBC Section 1704.5. (A)
14. Notify the Structural Engineer when drawings by others show openings, pockets, etc., not shown on the structural drawings, but which are located in the structural members.
15. All specifications and codes noted shall be the latest approved editions and revisions by the governmental agency having jurisdiction over this project.
16. Contractor shall investigate the site during clearing and earth work operations for filled excavations or buried structures such as cesspools, cisterns, foundations, utilities, etc. If any such structures are found, the Structural Engineer shall be notified immediately.
17. Construction materials shall be spread out when placed on framed floors or roofs. The construction material load shall not exceed the design live load per square foot. Provide adequate shoring and/or bracing where structure has not attained design strength.
18. Shop drawings submitted to the Structural Engineer for review shall consist of (2) bond copies. No modifications or substitution of drawings and specifications will be accepted via shop drawing review.
    - Contractor shall review and stamp shop drawings prior to submission to the Architect/Structural Engineer. Contractor shall review for completeness and compliance with contract documents.
    - Submit shop drawings to the Architect/Structural Engineer as indicated or specified for review prior to fabrication. Review will be for general conformance with design intent conveyed in contract documents.
    - When an engineer is required to sign and stamp shop drawings and calculations, ensure seal indicates engineer as registered in state where project site occurs.
    - Shop drawings are not a part of contract documents. Therefore, Architect's/Structural Engineer's review does not constitute an authorization to deviate from terms and conditions of the contract.
    - Shop drawings will be rejected for incompleteness, lack of coordination with other portions of contract documents, lack of calculations (if required), or where modifications or substitutions are indicated without prior review per paragraph above.
    - Submit shop drawings and calculations to governing code authority when specifically indicated or requested.
    - Maintain a copy of all shop drawings accepted by the Architect/Structural Engineer at site during construction period.
    - Structural Engineer requires 10 working days after receipt of shop drawings and calculations for processing.
19. Design Loads:

| Live Loads: | |
|---|---|
| Roof | 20 psf (Reducible) |
| | |
| | |

20. IBC Lateral Loads

| Wind Design Data: | |
|---|---|
| Basic Wind Speed | Vult = 115 mph |
| | Vasd = 89 mph |
| Risk Category | II |
| Exposure | C |
| Internal Pressure Coefficient | GCpi = ±0.18 |

| Earthquake Design Data: | | |
|---|---|---|
| Risk Category | II | |
| Seismic Importance Factor | Ie = 1.00 | |
| Mapped Spectral Response Acceleration Parameters | | |
| $S_S$ = 0.464 g | $S_1$ = 0.159 g | |
| Site Class | C | |
| Design Spectral Response Acceleration Parameters | | |
| $S_{DS}$ = 0.371 g | $S_{D1}$ = 0.174 g | |
| Seismic Design Category | C | |
| | | |
| Basic Seismic Force - Resisting System(s) | Main Building: Ordinary Reinforced Masonry Shear Walls | |
| Design Base Shear(s) | 118 k | |
| Seismic Response Coefficient(s) | $C_S$ = 0.183 | |
| Response Modification Coefficient(s) | R = 2 | |
| Analysis Procedure Used | Equivalent Lateral Force | |
| | | |
| Basic Seismic Force - Resisting System(s) | Steel Canopy: Steel Ordinary Cantilever Column System | |
| Design Base Shear(s) | 3 k | |
| Seismic Response Coefficient(s) | $C_S$ = 0.297 | |
| Response Modification Coefficient(s) | R = 1 1/4 | |
| Analysis Procedure Used | Equivalent Lateral Force | |

21. ACI 318-11 Table 4.3.1 Sulfate Exposure (See General Notes - Concrete Item #3 for concrete water cement ratio limits):

    SD
    (Not Applicable)

## Quality Assurance and Special Inspection

Quality Assurance for Seismic Resistance

Special inspection in accordance with the requirements of IBC section 1704, 1705, and structural testing in accordance with the requirements of IBC section 1705.12 shall be required for:

All seismic force resisting systems shown in elevation

Designated seismic force resisting systems denoted by SFRS on plan or detail.

NOTE: Existing seismic force resisting systems denoted on plan or detail by SFRS shall require structural observation performed by

a qualified third party, inspection and testing agency in accordance with IBC section 1710.1, any deficiencies or discrepancies from that shown on the structural drawings shall be reported to the engineer of record.

The type and frequency of special inspection, structural testing and subsequent reporting conforming to the requirements of IBC section 1704 and 1705 shall be submitted by the inspection and testing agencies to the architect/structural engineer for approval.

Structural observations and subsequent reporting of general conformance to the structural drawings shall be performed periodically by the engineer in responsible charge at his/her discretion or when specifically required by the building official.

Quality Assurance for General Construction

Testing Laboratory: Retained by owner and satisfactory to Architect/Structural Engineer and governing code authority to perform required tests and inspections of this contract and applicable code.

Material Certification: Submit laboratory test reports certifying materials are of identifiable tested stock to owner, testing laboratory, Architect/Structural Engineer and, upon request, to governing code authority. If laboratory test reports cannot be made available, testing laboratory will perform tests as directed by Architect/Structural Engineer. Contractor shall pay testing laboratory for costs related to tests and inspections of unidentifiable materials or materials furnished without laboratory test reports, materials found deficient after initial tests and inspections, or materials replacing deficient materials.

Special inspection in accordance with the requirements of IBC section 1704 and 1705 shall be required for the following elements of general construction.

1. Concrete.

   Testing laboratory will review concrete mix design data and will perform the following concrete tests at frequency indicated in ACI section 5.6:
   (a) Slump tests in compliance with ASTM C143.
   (b) Prepare four test cylinders for compressive strength testing in compliance with ASTM C39, ACI 318 and ACI section 5.6. Test one cylinder at 7 days, two cylinders at 28 days and retain remaining cylinder for tests until completion of project. Determine concrete compressive strength at 28 days based on average of two cylinders tested. (A)
   (c) Special inspections and verifications shall be as required by this section and Table 1705.3. Refer to sheet S0.03.
2. Periodic inspection of bolts, embedded plates and post-installed mechanical anchors (expansion anchors) installed in concrete.
   (a) Special inspections and verifications shall be as required by this section and Table 1705.3. Refer to sheet S0.03.
3. Reinforcing and mechanical reinforcing bar splices:
   (a) During placement
   (b) Special inspections and verifications shall be as required by this section and Table 1705.3. Refer to sheet S0.03.
4. Welding:
   (a) Shop welding unless performed on premises of an approved fabricator as defined in IBC Section 1704.2.
   (b) Field welding including shear studs (when permitted)
   (c) Field welding of metal deck per appropriate ICC-ES valuation report. (Periodic inspection permitted per IBC table 17045.2.2 item 2).
   (d) Welded guardrail (A)
   (e) Light gauge steel
   (f) Special inspections and verifications shall be as required by this section and Table 1705.2.2 and Structural Steel Table (Ref. IBC 1705.2.1, 1705.11.1 & 1705.12.2). Refer to sheet S0.03.
5. Periodic inspection of high strength bolting.
6. Structural masonry.
   (a) Special inspections and verifications shall be as required by this section and Masonry Construction Table (Ref. IBC 1705.4). Refer to sheet S0.04.
7. Special cases:
   (a) Periodic inspection of epoxy and grout set bolts and reinforcing bars
   (b) Periodic inspection of built up light gauge steel members
8. Ten percent of drilled-in, epoxy, or grout set anchors shall be proof tested to 2 times allowable tension. Notify Architect/Structural Engineer of any failures so additional testing of adjacent anchors can be directed.
9. Structural steel. (A)
   (a) Special inspections and verifications shall be as required by this section and Structural Steel Table (Ref. IBC 1705.2.1, 1705.11.1 & 1705.12.2). Refer to sheet S0.03.
10. Spray applied fireproofing as indicated on architectural drawings. Thickness testing shall be performed on not less than 25 percent of the structural members on each floor.
11. Insulating concrete per appropriate ICC-ES evaluation report as indicated on Architectural/Structural drawings.
12. Excavation and back-filling. (A)
    (a) Special inspections and verifications shall be as required by this section and Table 1705.6. Refer to sheet S0.03.
    (b) Special inspections and verifications shall be as required by this section and Table 1705.8. Refer to sheet S0.03.

## Sheet List

| DWG# | DRAWING TITLE | DATE | / REV |
|---|---|---|---|
| S0.01 | STRUCTURAL COVER SHEET AND GENERAL NOTES | 08-05-2016 | A |
| S0.02 | GENERAL NOTES | 06-17-2016 | |
| S0.03 | GENERAL NOTES | 08-05-2016 | A |
| S0.04 | GENERAL NOTES | 08-05-2016 | A |
| S1.01 | PHASED FOUNDATION PLANS | 08-05-2016 | A |
| S1.02 | ROOF FRAMING PLAN | 06-17-2016 | |
| S3.01 | WALL ELEVATIONS | 06-17-2016 | |
| S4.01 | TYPICAL FOOTING AND BASE PLATE DETAILS AND SCHEDULES | 06-17-2016 | |
| S5.01 | FOUNDATION TYPICAL DETAILS | 08-05-2016 | A |
| S5.02 | CONCRETE TYPICAL DETAILS | 06-17-2016 | |
| S5.03 | CONCRETE MASONRY UNIT TYPICAL DETAILS | 08-05-2016 | A |
| S5.04 | STRUCTURAL STEEL TYPICAL DETAILS | 06-17-2016 | |
| S5.05 | STEEL DECK TYPICAL DETAILS | 06-17-2016 | |
| S5.06 | STEEL STUD TYPICAL DETAILS | 06-17-2016 | |


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Job No: 15-061

Owner
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PROFESSIONAL ENGINEER - STATE OF NEVADA
JOHN R. ZIELINSKI
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CIVIL STRUCTURAL
No. 011896

8/5/16

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**STRUCTURAL COVER SHEET AND GENERAL NOTES**

Date: 06/17/2016
Sheet No:
**S0.01**

## STRUCTURAL STEEL TABLE (REF. IBC 1705.2.1, 1705.11.1 & 1705.12.2)

| Item | | | Detailed Instructions and Frequencies |
|---|---|---|---|
| **PRIOR TO WELDING (TABLE N5.4-1, AISC 360-10):** | | | |
| Verify welding procedures (WPS) and consumable certificates | ☒ Continuous | ☐ Periodic | |
| Material identification | ☐ Continuous | ☒ Periodic | Verify type and grade of material. |
| Welder identification | ☐ Continuous | ☒ Periodic | A system shall be maintained by which a welder who has welded a joint or member can be identified. |
| Fit-up groove welds | ☐ Continuous | ☒ Periodic | Verify joint preparation, dimensions, cleanliness, tacking, and backing. |
| Access holes | ☐ Continuous | ☒ Periodic | Verify configuration and finish. |
| Fit-up of fillet welds | ☐ Continuous | ☒ Periodic | Verify alignment, gaps at root, cleanliness of steel surfaces, and tack weld quality and location. |
| **DURING WELDING (TABLE N5.4-2, AISC 360-10):** | | | |
| Use of qualified welders | ☐ Continuous | ☒ Periodic | Verify that welders are appropriately qualified. |
| Control and handling of welding consumables | ☐ Continuous | ☒ Periodic | Verify packaging and exposure control. |
| Cracked tack welds | ☐ Continuous | ☒ Periodic | Verify that welding does not occur over cracked tack welds. |
| Environmental conditions | ☐ Continuous | ☒ Periodic | Verify win speed is within limits as well as precipitation and temperature. |
| WPS followed | ☐ Continuous | ☒ Periodic | Verify items such as settings on welding equipment, travel speed, welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained, and proper position. |
| Welding techniques | ☐ Continuous | ☒ Periodic | Verify interpass and final cleaning, each pass is within profile limitations, and quality of each pass. |
| **AFTER WELDING (TABLE N5.4-3, AISC 360-10):** | | | |
| Welds cleaned | ☐ Continuous | ☒ Periodic | Verify that welds have been propyl cleaned. |
| Size, length, and location of welds | ☒ Continuous | ☐ Periodic | |
| Welds meet visual acceptance criteria | ☒ Continuous | ☐ Periodic | |
| Arc strikes | ☒ Continuous | ☐ Periodic | |
| k-area | ☒ Continuous | ☐ Periodic | |
| Backing & weld tabs removed | ☒ Continuous | ☐ Periodic | |
| Repair activities | ☒ Continuous | ☐ Periodic | |
| Document acceptance or rejection of welded joint/member | ☒ Continuous | ☐ Periodic | |
| **NONDESTRUCTIVE TESTING (SECTION N5.5, AISC 360-10):** | | | |
| CJP welds (Risk Cat. II) | ☐ Continuous | ☒ Periodic | Ultrasonic testing shall be performed on 10% of CJP groove welds in butt, T- and corner joints subject to transversely applied tension loading in materials 5/16-inch thick or greater. Testing rate must be increased if > 5% of welds tested have unacceptable defects. |
| CJP welds (Risk Cat. III or IV) | ☒ Continuous | ☐ Periodic | ***A reduction in the rate of ultrasonic testing is allowed per Section N5.5e.*** |
| Access holes (flange > 2") | ☒ Continuous | ☐ Periodic | |
| Welded joints subject to fatigue | ☒ Continuous | ☐ Periodic | |
| **PRIOR TO BOLTING (TABLE N5.6-1, AISC 360-10):**<br>➢ *Not required if only snug-tight joints are specified [per Section N5.6(1) of AISC 360-10].* | | | |
| Certifications of fasteners | ☒ Continuous | ☐ Periodic | |
| Fasteners marked | ☐ Continuous | ☒ Periodic | Verify that fasteners have been marked in accordance with ASTM requirements. |
| Proper fasteners for joint | ☐ Continuous | ☒ Periodic | Verify grade, type, and bolt length if threads are excluded from the shear plane. |
| Proper bolting procedure | ☐ Continuous | ☒ Periodic | Verify proper procedure is used for the joint detail. |
| Connecting elements | ☐ Continuous | ☒ Periodic | Verify appropriate faying surface condition and hole preparation, if specified, meet requirements. |
| Pre-installation verification testing | ☐ Continuous | ☒ Periodic | Observe and document verification testing by installation personnel for fastener assemblies and methods used. |
| Proper storage | ☐ Continuous | ☒ Periodic | Verify proper storage of bolts, nuts, washers, and other fastener components. |
| **DURING BOLTING (TABLE N5.6-2, AISC 360-10):**<br>➢ *Not required if only snug-tight joints are specified [per Section N5.6(1) of AISC 360-10].*<br>➢ *Not required for pretensioned joints using turn-of-the-nut method with match-marking, direct-tension-indicators, or twist-off type tension control method [per Section N5.6(2) of AISC 360-10].* | | | |
| Fastener assemblies | ☐ Continuous | ☒ Periodic | Verify that fastener assemblies are of suitable condition, paced in all holes, and washers are positioned as required. |
| Snug-tight prior to pretensioning | ☐ Continuous | ☒ Periodic | Verify that joints are brought to snug-tight condition prior to pretensioning operation. |
| Fastener component | ☐ Continuous | ☒ Periodic | Verify that fastener component is not turned by wrench prevented from rotating. |
| Pretensioned fasteners | ☐ Continuous | ☒ Periodic | Verify that fasteners are Pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward the free edges. |
| **AFTER BOLTING (TABLE N5.6-3, AISC 360-10):** | | | |
| Document acceptance or rejection of bolted connections | ☒ Continuous | ☐ Periodic | |
| **OTHER STEEL INSPECTIONS (SECTION N5.7, AISC 360-10; Tables J8-1 & J10-1, AISC 341-10):** | | | |
| Structural steel details | ☐ Continuous | ☒ Periodic | All fabricated steel or steel frames shall be inspected to verify compliance with the details shown in the construction documents, such as braces, stiffeners, member locations, and proper application of joint details at each connection. |
| Anchor rods and other embedments supporting structural steel | ☐ Continuous | ☒ Periodic | Shall be on the premises during the placement of anchor rods and other embedments supporting structural steel for compliance with construction documents. Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete. |
| Reduced beam sections (RBS) | ☐ Continuous | ☒ Periodic | Verify contour and finish as well as dimensional tolerances *(see Table J8-1 of AISC 341-10)*. |
| Protected zones | ☐ Continuous | ☒ Periodic | Verify that no holes or unapproved attachments are made within the protected zone *(see Table J8-1 of AISC 341-10)*. |
| H-piles | ☐ Continuous | ☒ Periodic | Verify that no holes or unapproved attachments occur within the protected zones of piling *(see Table J10-1 of AISC 341-10)*. |
| **STEEL ELEMENTS OF COMPOSITE CONSTRUCTION (TABLE N6.1, AISC 360-10; TABLES J9-1 thru J9-3, AISC 341-11):** | | | |
| Placement and installation of steel deck | ☒ Continuous | ☐ Periodic | |
| Placement and installation of steel headed stud anchors | ☒ Continuous | ☐ Periodic | |
| Document acceptance or rejection of steel elements | ☒ Continuous | ☐ Periodic | |
| Reinforcing steel | ☐ Continuous | ☒ Periodic | Verify appropriate reinforcement size, spacing, and orientation; that it has not been re-bent in field; that it is correctly tied and supported; and that required steel clearances have been provided. |
| Composite member size | ☐ Continuous | ☒ Periodic | Verify that composite member is the required size. |

**TABLE 1705.2.2**
**REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL**

| VERIFICATION AND INSPECTION | CONTINUOUS | PERIODIC | REFERENCED STANDARD[a] |
|---|---|---|---|
| 1. Material verification of cold-formed steel deck: | | | |
| a. Identification markings to conform to ASTM standards specified in the approved construction documents. | — | X | Applicable ASTM material standards |
| b. Manufacturer's certified test reports. | — | X | |
| 2. Inspection of welding: | | | |
| a. Cold-formed steel deck: | | | |
| 1) Floor and roof deck welds. | — | X | AWS D1.3 |

**TABLE 1705.3**
**REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION**

| VERIFICATION AND INSPECTION | CONTINUOUS | PERIODIC | REFERENCED STANDARD[a] | IBC REFERENCE |
|---|---|---|---|---|
| 1. Inspection of reinforcing steel and placement. | — | X | ACI 318: 3.5, 7.1-7.7 | 1910.4 |
| 2. Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used. | — | X | ACI 318: 8.1.3, 21.2.8 | 1908.5, 1909.1 |
| 3. Inspection of anchors post-installed in hardened concrete members[b]. | — | X | ACI 318: 3.8.6, 8.1.3, 21.2.8 | 1909.1 |
| 4. Verifying use of required design mix. | — | X | ACI 318: Ch. 4, 5.2-5.4 | 1904.2, 1910.2, 1910.3 |
| 5. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete. | X | — | ASTM C 172<br>ASTM C 31<br>ACI 318: 5.6, 5.8 | 1910.10 |
| 6. Inspection of concrete and shotcrete placement for proper application techniques. | X | — | ACI 318: 5.9, 5.10 | 1910.6, 1910.7, 1910.8 |
| 7. Inspection for maintenance of specified curing temperature and techniques. | — | X | ACI 318: 5.11-5.13 | 1910.9 |
| 8. Inspect formwork for shape, location and dimensions of the concrete member being formed. | — | X | ACI 318: 6.1.1 | — |

**TABLE 1705.6**
**REQUIRED VERIFICATION AND INSPECTION OF SOILS**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS DURING TASK LISTED | PERIODICALLY DURING TASK LISTED |
|---|---|---|
| 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity. | — | X |
| 2. Verify excavations are extended to proper depth and have reached proper material. | — | X |
| 3. Perform classification and testing of compacted fill materials. | — | X |
| 4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill. | X | — |
| 5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly. | — | X |

**TABLE 1705.8**
**REQUIRED VERIFICATION AND INSPECTION OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS DURING TASK LISTED | PERIODICALLY DURING TASK LISTED |
|---|---|---|
| 1. Observe drilling operations and maintain complete and accurate records for each element. | X | — |
| 2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes. | X | — |
| 3. For concrete elements, perform additional inspections in accordance with Table 1705.3. | — | — |


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Project
**UNLV VIVARIUM**

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Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

PROFESSIONAL ENGINEER - STATE OF NEVADA
JOHN R. ZIELINSKI
EXP: 6-30-18
CIVIL STRUCTURAL
No. 012899

8/5/16

**PERMIT SET**

REVISIONS

| REV | DATE | DESCRIPTION |
|---|---|---|
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**GENERAL NOTES**

Date: 06/17/2016
Sheet No: A
**S0.03**

## Post Installed Anchors in Concrete and Masonry

1. Post-installed anchors shall only be used where specified on the drawings.
2. Contractor shall obtain approval from the Engineer of Record (EOR) prior to using post-installed anchors for missing or misplaced cast-in-place anchors.
3. Care shall be given to avoid conflicts with existing rebar. Holes shall be drilled and cleaned in strict accordance with the current manufacturer's published installation instructions (MPII). Anchors shall be installed per the manufacturer's installation instructions at not less than minimum edge distances and/or spacing indicated in the manufacturer's literature.
4. Manufacturer's direct representative shall provide installation training for all products to be used, prior to commencement of work. Only trained installers shall perform post installed anchor installation a record of training shall be kept on site and be made Available to the EOR as required.
5. Installation of adhesive anchors in horizontal to vertically overhead orientation shall be done by a certified adhesive anchor installer (AAI) as certified through ACI and in accordance with ACI 318-2011 (Section D.9.2.2). Proof of current certification shall be submitted to the engineer for approval prior to commencement of installation.
6. Adhesive anchors must be installed in concrete aged a minimum of 21 days.
7. Adhesive anchors installed in horizontal or upwardly inclined orientations to resist sustained tension loads shall be continuously inspected during installation by an inspector specially approved for that purpose by the building official.
8. Anchors shall be embedded in the appropriate substrate with the embedment indicated on the drawings.
9. Substitution requests for products other than those listed below shall be submitted to the Engineer of Record with calculations that are prepared and sealed by a Registered Professional Engineer showing that the substituted product will achieve an equivalent capacity using the appropriate design procedure required by the Building Code.
10. Contractor shall contact manufacturer for free product and installation training prior to anchors being installed. Contact Simpson Strong-Tie at (800) 999-5099, Hilti at (800) 879-8000 or Powers Fasteners at (888) 754-2633 for training, product related questions and availability.
11. Special Inspection shall be provided as required by the applicable ICC-ES Evaluation Services Report.
12. Acceptable products for installation in <u>masonry</u> are as follows:
    A. Expansion anchors shall be:
       Simpson Strong-Tie "Strong Bolt 2" per IAPMO-UES ER-240
       Hilti "Kwik Bolt 3" per ICC-ES ESR-1385
       Powers Power-Stud+ SD1 expansion anchors per ICC-ES ESR-2966 for grouted masonry
    B. Screw anchors shall be:
       Simpson Strong-Tie "Titen HD" per ICC-ES ESR-1056
       Hilti "KWIK HUS-EZ" per ICC-ES ESR-3056
       Powers Wedge-Bolt+ hex head screw anchors per ICC-ES ESR-1678 for grouted masonry
    C. Adhesive anchors shall be:
       Simpson Strong-Tie "SET Epoxy-Tie Adhesive" per ICC-ES ESR-1772
       Hilti "HIT-HY 70" per ICC-ES ESR-2682"
       Powers AC100 + Gold adhesive anchoring system per ICC-ES ESR 3200 for grouted and ungrouted concrete
13. Acceptable products for installation in <u>cracked and uncracked concrete</u> are as follows:
    A. Expansion anchors shall be:
       Simpson Strong-Tie "Strong-Bolt 2" per ICC-ES ESR-3037
       Hilti "Kwik Bolt TZ" per ICC-ES ESR-1917
       ITW Red Head Trubolt+ (1/2" and 5/8" diameter only) per ICC-ES ESR-2427
       Powers Power-Stud+ SD1 per ICC-ES ESR-2818
       Powers Power-Stud+ SD2 per ICC-ES ESR-2502
       Powers Power-Stud+ SD4 and Power-Stud+ SD6 Stainless Steel expansion anchors per ICC-ES ESR-2502
    B. Screw anchors shall be:
       Simpson Strong-Tie "Titen HD" and "Titen HD Rod Hanger" per ICC-ES ESR-2713
       Hilti KWIK HUS EZ and KWIK HUS-EZ1 per ESR - 3027
       Powers Wedge-Bolt+ per ICC-ES ESR-2526
       Powers Snake+ per ICC-ES ESR-2272
       Powers Vertigo+ coupler per ICC-ES ESR-2526
    C. Undercut anchors shall be:
       Simpson Strong-Tie "Torq-Cut" per ICC-ES ESR- 2705
       Hilti "HDA" per ICC-ES ESR-1546
       Powers Atomic+ per ICC-ES ESR-3067
    D. Adhesive anchors shall be:
       Simpson Strong-Tie "AT-XP" per IAPMO-ES ER-263
       Simpson Strong-Tie "SET-XP Epoxy-Tie Adhesive" per ICC-ES ESR-2508
       Hilti "HIT-RE 500-SD" per ICC-ES ESR-2322
       Hilti "HIT-HY 200 SafeSet" per ICC-ES ESR-3187
       Powers PE1000+ per ICC-ES ESR-2583 for slow cure applications
       Powers PURE110+ per ICC-ES ESR-3298 for slow cure applications
       Powers AC100+ gold per ICC-ES ESR-2582 for fast cure applications
    E. Powder Actuated Fasteners shall be:
       Simpson Strong-Tie "Powder-Driven Fasteners" per ICC-ES ESR-2138
       Hilti "Low-Velocity Powder-Driven Fasteners" per ICC-ES ESR-1663 and ESR-2269
       Powers "Powder Driven Fasteners" per ICC-ES ESR-2024
14. Acceptable products for installation in the soffit of concrete over profile metal deck are as follows:
    A. Expansion anchors shall be:
       Simpson Strong-Tie "Strong-Bolt 2" per ICC-ES ESR-3037
       Hilti "Kwik Bolt TZ" per ICC-ES ESR-1917
       Powers Power-Stud+ SD1 per ICC-ES ESR-2818
    B. Screw anchors shall be Simpson Strong-Tie "Titen HD" or "Titen HD Rod Hanger" per ICC-ES ESR-2713
       Hilti "KWIK HUS-EZ and KWIK HUS-EZ1 per ICC-ES ESR-3027
       Powers Wedge-Bolt+ per ICC-ES ESR-2526
       Powers Snake+ per ICC-ES ESR-2272
       Powers Vertigo+ coupler per ICC-ES ESR-2989

## MASONRY CONSTRUCTION TABLE ( REF. IBC 1705.4)

| Item | | | Detailed Instructions and Frequencies |
|---|---|---|---|
| **PRIOR TO CONSTRUCTION (ARTICLE 1.15, TMS-602/ACI 530.1-11):** | | | |
| Review material certificates, mix designs, test results and construction procedures | ☐ Continuous | ☒ Periodic | Verify that materials conform to the requirements of the approved construction documents. Mix design, test results, material certificates, and construction procedures should be submitted for review. Mortar mix designs shall conform to ASTM C 270 while grout shall conform to ASTM C 476. Material certificates shall be provided for the following: reinforcement; anchors, ties, fasteners, and metal accessories; masonry units; mortar and grout materials. Construction procedures for cold-weather or hot-weather construction shall be reviewed. |
| **AS CONSTRUCTION BEGINS (TABLE 1.19.2, TMS-402/ACI 530-11):** | | | |
| Proportions of site-prepared mortar | ☐ Continuous | ☒ Periodic | Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C 270, and that it is mixed in accordance with Article 2.6 A of TMS-602/ACI 530.1-11. |
| Construction of mortar joints | ☐ Continuous | ☒ Periodic | Verify that mortar joints comply with Article 3.3 B of TMS-602/ACI 530.1-11. |
| Grade and size of prestressing tendons and anchorages | ☐ Continuous | ☒ Periodic | Verify that prestressing tendons comply with Article 2.4 B of TMS-602/ACI 530.1-11 and that anchorages, couplers, and end blocks comply with Article 2.4 H. |
| Location of reinforcement, connectors, and prestressing tendons and anchorages | ☐ Continuous | ☒ Periodic | Verify that reinforcement is placed in accordance with Article 3.4 of TMS-602/ACI 530.1-11. Prestressing tendons shall be placed per Article 3.6 A. |
| Prestressing technique | ☐ Continuous | ☒ Periodic | Verify that prestressing technique complies with Article 3.6 B of TMS-602/ACI 530.1-11. |
| Properties of thin-bed mortar for AAC masonry | ☐ Continuous | ☒ Periodic | Verify that mortar complies with Article 2.1 C of TMS-602/ACI 530.1-11. |
| **PRIOR TO GROUTING (TABLE 1.19.2, TMS-402/ACI 530-11):** | | | |
| Grout space | ☐ Continuous | ☒ Periodic | Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per Article 3.2 D and 3.2 F of TMS-602/ACI 530.1-11. *Continuous inspection is required for Risk Category IV buildings.* |
| Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages | ☐ Continuous | ☒ Periodic | Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors comply with the approved construction documents and Section 1.6 of TMS 402/ACI 530-11. |
| Placement of reinforcement, connectors, and prestressing tendons and anchorages | ☐ Continuous | ☒ Periodic | Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors are installed in accordance with the approved construction documents and Articles 3.2 E, 3.4, and 3.6 A of TMS 602/ACI 530.1-11. *Continuous inspection is required for Risk Category IV buildings.* |
| Proportions of site-prepared grout and prestressing grout for bonded tendons | ☐ Continuous | ☒ Periodic | Verify that grout is proportioned per ASTM C 476 and has a slump between 8-11 inches. Self-consolidated grout shall not be proportioned onsite. (see Articles 2.6 B and 2.4 G.1.b of TMS 602/ACI 530.1-11. *Continuous inspection is required for Risk Category IV buildings.* |
| Construction of mortar joints | ☐ Continuous | ☒ Periodic | Verify that mortar joints are placed in accordance with Article 3.3 B of TMS 602/ACI 530.1-11. |
| **DURING MASONRY CONSTRUCTION:** | | | |
| Size and location of structural elements | ☐ Continuous | ☒ Periodic | Verify the locations of structural elements with respect to the approved plans and confirm that tolerances meet the requirements of Article 3.3 F of TMS 602/ACI 530.1-11. |
| Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction. | ☐ Continuous | ☒ Periodic | Verify that correct anchorages and connections are provided per the approved plans and Sections 1.16.4.3 and 1.17.1 of TMS 402/ACI 530-11. *Continuous inspection is required for Risk Category IV buildings.* |
| Welding of reinforcement | ☒ Continuous | ☐ Periodic | |
| Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F). | ☐ Continuous | ☒ Periodic | Verify that cold-weather construction is performed in accordance with Article 1.8 C of TMS 602/ACI 530.1-11 and hot weather construction per Article 1.8 D of TMS 602/ACI 530.1-11. |
| Application and measurement of prestressing force | ☒ Continuous | ☐ Periodic | |
| Placement of grout and prestressing grout for bonded tendons is in compliance | ☒ Continuous | ☐ Periodic | |
| Placement of AAC masonry units and construction of thin-bed mortar joints | ☐ Continuous | ☒ Periodic | Verify that mortar is placed in accordance with Article 3.3 B.8 of TMS-602/ACI 530.1-11. |
| Observation of grout specimens, mortar specimens, and/or prisms | ☐ Continuous | ☒ Periodic | Confirm that specimens/prisms are performed as required by Article 1.4 of TMS-602/ACI 530.1-11. *Continuous inspection is required for Risk Category IV buildings.* |
| **MINIMUM TESTING:** | | | |
| Verification of Slump Flow and Visual Stability Index (VSI) for self-consolidating grout | ☐ Continuous | ☒ Periodic | Compressive strength tests should be performed in accordance with ASTM C 1019 for slump flow and ASTM C 1611 for VSI. |
| Verification of $f'_m$ and $f'_{AAC}$ | ☐ Continuous | ☒ Periodic | Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Article 1.4 B of TMS 602/ACI 530.1-11 prior to construction. *For Risk Category IV buildings this should be verified at every 5,000ft² of construction.* |
| Verification of proportions of materials in premixed or pre-blended mortar and grout | ☐ Continuous | ☒ Periodic | Verify that proportions for mortar meet ASTM C 270 and proportions for grout meet ASTM C 476. This applies to *Risk Category IV buildings only.* |


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PLEASE RECYCLE

Project
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LAS VEGAS, NV 89154

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

PROFESSIONAL ENGINEER - STATE OF NEVADA
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EXP: 6-30-18
CIVIL STRUCTURAL
No. 012895

8/5/16

**PERMIT SET**

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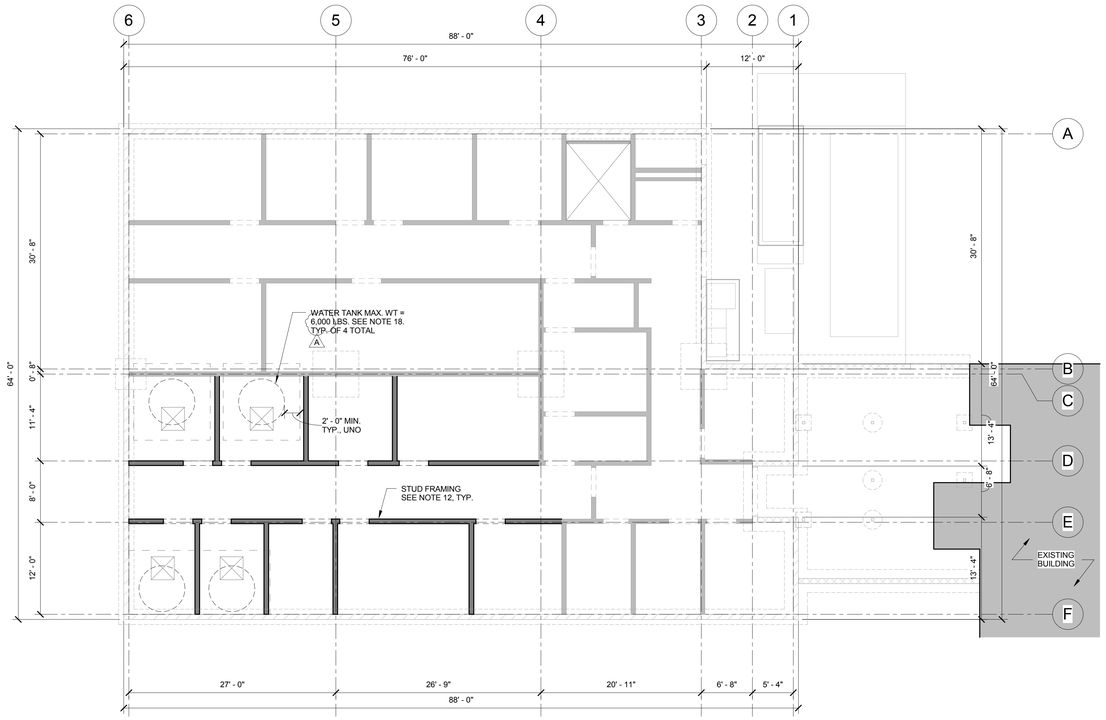
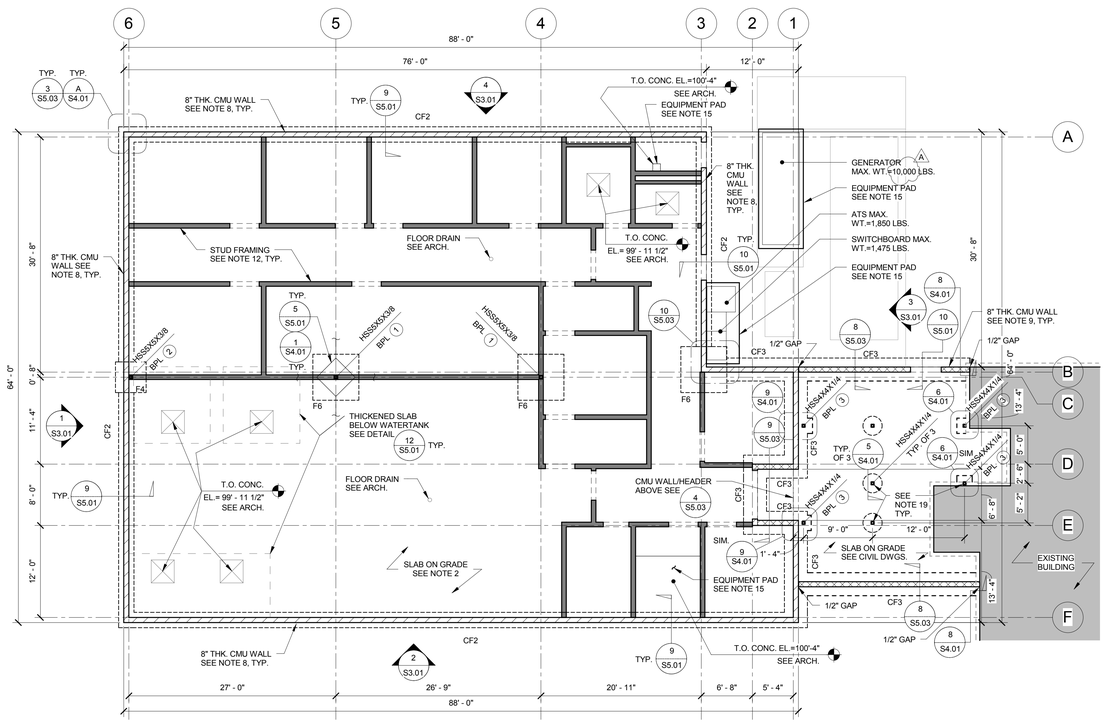
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**GENERAL NOTES**

Date: 06/17/2016
Sheet No:
**S0.04**
A




2 FOUNDATION PLAN - VIVARIUM PHASE 2
1/8" = 1'-0"

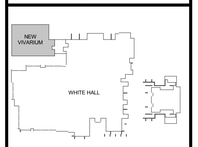



1 FOUNDATION PLAN - VIVARIUM PHASE 1
1/8" = 1'-0"

## PLAN NOTES

1. Top of concrete floor reference elevation = 100'-0" typical uno.
2. Slab on grade shall be 5" thick concrete with #4 at 18" placed, 2" clear from top of concrete. For method of placing slab on grade see 4/S5.01. See architectural drawings for slab depressions, slopes, etc. See detail 3/S5.01, 4/S4.01 and geotech report for subgrade requirements.
3. Top of exterior and interior footing shall be elevation 98'-8", typ. uno.
4. Contractor to coordinate slab on grade control joints with 4/S5.01.
5. For typical concrete/foundation details, see sheet S5.01 and S4.01.
6. See geotechnical report for underslab and footing requirements. Overexcavation for the footings and slab on grade is required in accordance with the geotechnical report. Refer to detail 4/S4.01.
7. Contractor to coordinate placement of utilities thru or adjacent to the footings or stem walls with details 1/S5.01 or the footings may be stepped per 2/S5.01 at contractors option, typ.
8. 8" thk. CMU wall solid grouted. Reinforce with #5 at 32" oc vertical and #4 at 24" oc horizontal centered in cells. Provide additional reinforcing at wall openings, ends, corners and intersections per details on sheet S5.03. See detail 5/S5.03 for control joints and coordinate location with architect.
9. 8" thk. CMU wall solid grouted. Reinforce with #5 at 32" oc vertical each face with spider spacers (vertical positioners) at 4'-0" oc vertically and #4 at 24" oc horizontal centered in cells. Provide additional reinforcing at wall openings,ends, corners and intersections per details on sheet S5.03. See detail 5/S5.03 for control joints and coordinate location with architect.
10. The dimensions shown here apply to structural elements only, see Architectural plans for dimensions not shown. Architectural backgrounds are shown for reference only.
11. Contractor shall field verify existing structural conditions. If any discrepancies are found, contractor shall contact the Architect and Structural Engineer before performing work.
12. Typical interior structural framing, refer to Arch. for stud size, spacing and location. Refer to S5.06 for steel stud typical details.
13. For interior walls and interior and exterior wall finishes, see architectural plans.
14. Refer to Arch. for additional Phase I/Phase II construction sequencing information.
15. Equipment pad, see Arch. for size and location. Refer to detail 11/S5.01 for equipment pad construction.
16. For typical details and notes see sheets S5.01 - S5.06. For general notes see sheets S0.01 and S0.02.
17. (#) denotes base plate type. See schedule and details on sheet S4.01.
18. Tank and anchorage to slab by tank manufacturer.
19. All exterior/exposed steel and hardware shall receive a zinc rich paint coating. Refer to arch.

KEYPLAN

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8/5/16

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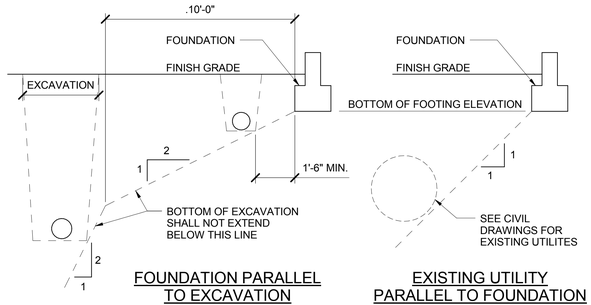
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**PHASED FOUNDATION PLANS**

Date: 06/17/2016
Sheet No:

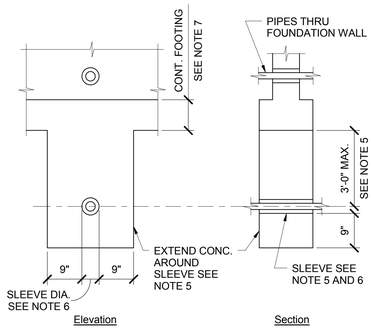
**S1.01**




FOUNDATION PARALLEL TO EXCAVATION

EXISTING UTILITY PARALLEL TO FOUNDATION

NOTES:
1. Contractor shall locate bottom of excavation to avoid surcharge on utilities and other foundations.
2. Contractor shall coordinate all excavations with foundation with foundation requirements.
3. Step foundation as required per 2/-.
4. Contractor shall adhere to the recommendations in the Geotechnical Notes, for all excavations, backfill requirements etc.
5. Pipes passing through footings:
   Less than 3'-0" below foundation, provide sleeve and concrete. More than 3'-0" below foundation, step foundation per 2/- to maintain 3'-0" Maximum.
6. Sleeves shall be minimum 1" clear all around pipes, conduit etc.
7. For pipes etc. within the footing thickness, step footing as required to pass pipes through stem wall.

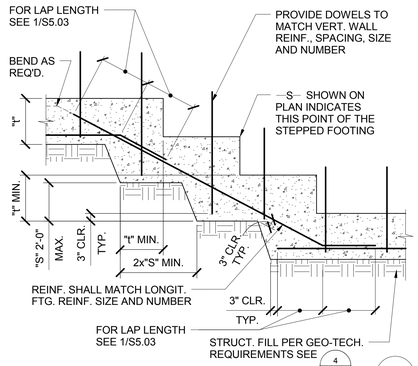



Elevation Section

UTILITY (PIPES)

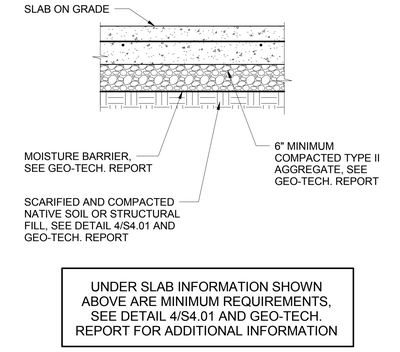
## FOUNDATIONS ADJACENT TO EXCAVATIONS AND UTILITIES

3/4" = 1'-0" — 1 — FN011




## STEPPED FOOTING

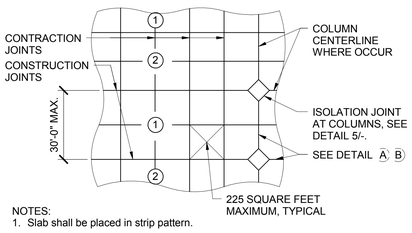
3/4" = 1'-0" — 2 — FN015



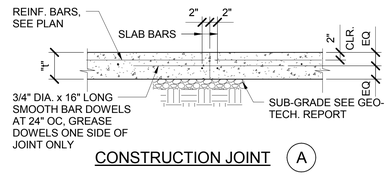

UNDER SLAB INFORMATION SHOWN ABOVE ARE MINIMUM REQUIREMENTS, SEE DETAIL 4/S4.01 AND GEO-TECH. REPORT FOR ADDITIONAL INFORMATION

## SUB-GRADE DETAIL

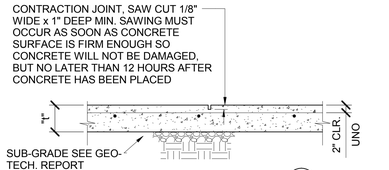
3/4" = 1'-0" — 3 — FN099A




NOTES:
1. Slab shall be placed in strip pattern.
   (1) = First (2) = Second
2. Strips to be divided by construction joints at the centerline of columns where they occur and subdivided as required into areas not exceeding 225 sqft. by construction joints.
3. In areas where columns do not occur provide construction and contraction joints as above.
4. Contractors shall obtain architect's approval for all joint locations.



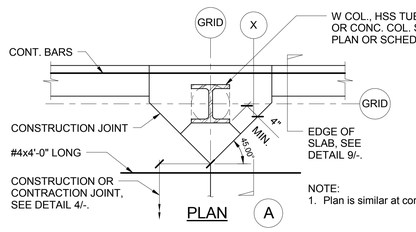

CONSTRUCTION JOINT (A)




CONTRACTION JOINT (B)

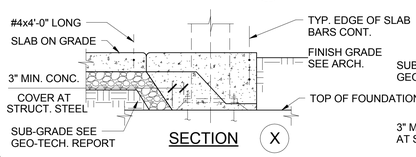
## METHOD OF PLACING SLAB ON GRADE

3/4" = 1'-0" — 4 — FN030A

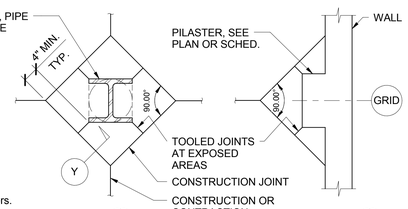



PLAN A

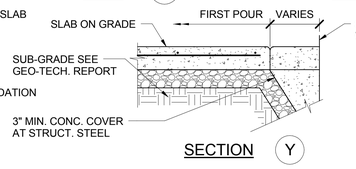
NOTE:
1. Plan is similar at corners.




SECTION X



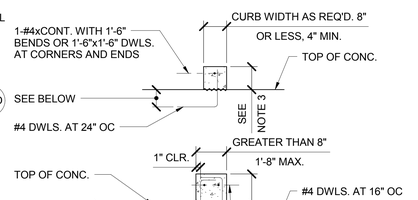

PLAN B PLAN C




SECTION Y

## COLUMN ISOLATION JOINTS

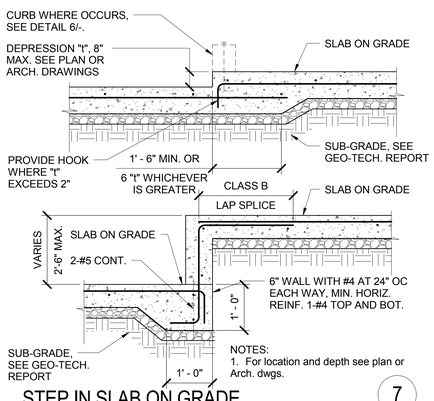
3/4" = 1'-0" — 5 — FN042A




NOTES:
1. Size and locate curbs as required.
2. Provide inserts in curbs as per Arch. and Mech. dwgs.
3. For height see Arch. or Mech. 10" max.

## CONCRETE CURB

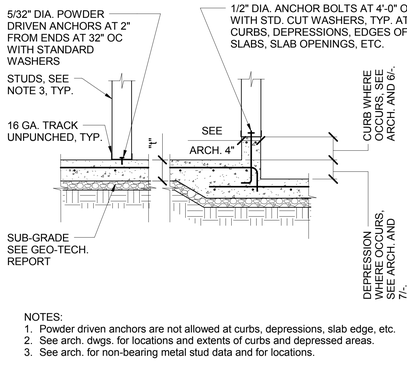
3/4" = 1'-0" — 6 — FN037




NOTES:
1. For location and depth see plan or Arch. dwgs.

## STEP IN SLAB ON GRADE

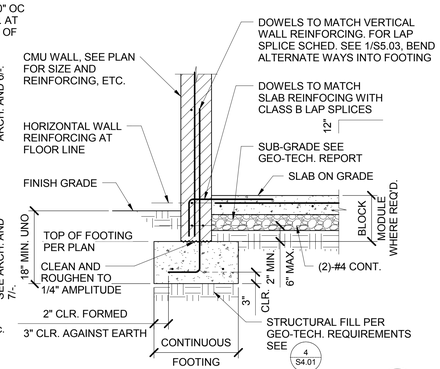
NO SCALE — 7 — FN031A




NOTES:
1. Powder driven anchors are not allowed at curbs, depressions, slab edge, etc.
2. See arch. dwgs. for locations and extents of curbs and depressed areas.
3. See arch. for non-bearing metal stud data and for locations.

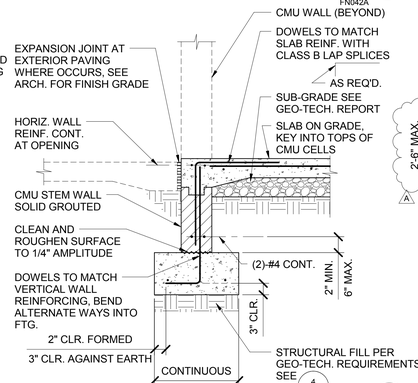
## NON-BEARING STUD WALL

NO SCALE — 8 — FN038



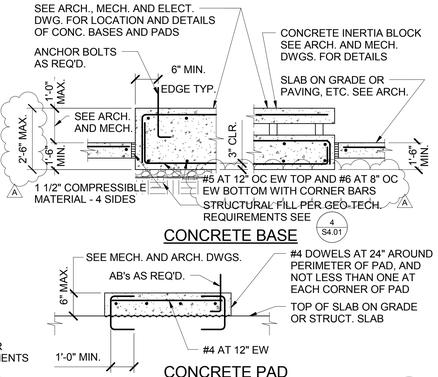

## EXTERIOR WALL FOOTING

NO SCALE — 9 — FN020-ibc




## FOOTING AT WALL OPENING

NO SCALE — 10 — FN023



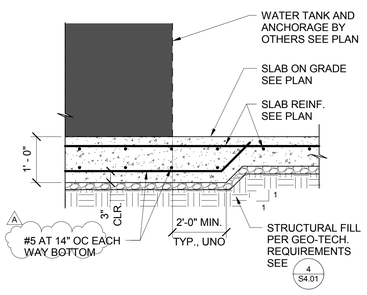

CONCRETE BASE




CONCRETE PAD

## EQUIPMENT BASE AND PAD

3/4" = 1'-0" — 11 — FN036




## THICKENED SLAB

3/4" = 1'-0" — 12

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Project

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Job No: 15-061

Owner

**UNIVERSITY OF NEVADA, LAS VEGAS**

JOHN R. ZIELINSKI — EXP: 6-30-18 — CIVIL STRUCTURAL — No. 012898 — REGISTERED PROFESSIONAL ENGINEER — STATE OF NEVADA

8/5/16

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title

**FOUNDATION TYPICAL DETAILS**

Date: 06/17/2016

Sheet No:

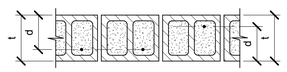
**S5.01**

## Tension Development and Lap Splice Length ( for Masonry only )

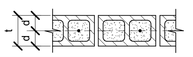
| CMU Thickness | Masonry Design Strength / Placement of Bar BAR SIZE | f'm = 1500 psi | | f'm = 2000 psi | | f'm = 2500 psi | | f'm = 3000 psi | | f'm = 3500 psi | | f'm = 4000 psi | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Center | Edge | Center | Edge | Center | Edge | Center | Edge | Center | Edge | Center | Edge |
| 8" | #3 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| | #4 | 14 | 24 | 12 | 21 | 12 | 18 | 12 | 17 | 12 | 16 | 12 | 15 |
| | #5 | 22 | 38 | 19 | 33 | 17 | 30 | 16 | 27 | 15 | 25 | 14 | 23 |
| | #6 | 43 | 74 | 37 | 64 | 33 | 57 | 30 | 52 | 28 | 48 | 26 | 45 |
| | #7 | 59 | 92 | 51 | 79 | 46 | 71 | 42 | 65 | 39 | 60 | 36 | 56 |
| | #8 | 91 | 121 | 79 | 105 | 71 | 94 | 64 | 85 | 60 | 79 | 56 | 74 |
| | #9 | 118 | NP | 102 | NP | 91 | NP | 83 | NP | 77 | NP | 72 | NP |
| 12" | #3 | 12 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| | #4 | 12 | 24 | 12 | 21 | 12 | 18 | 12 | 17 | 12 | 16 | 12 | 15 |
| | #5 | 14 | 38 | 12 | 33 | 12 | 30 | 12 | 27 | 12 | 25 | 12 | 23 |
| | #6 | 27 | 74 | 23 | 64 | 21 | 57 | 19 | 52 | 18 | 48 | 17 | 45 |
| | #7 | 37 | 92 | 32 | 79 | 29 | 71 | 26 | 65 | 24 | 60 | 23 | 56 |
| | #8 | 57 | 121 | 49 | 105 | 44 | 94 | 40 | 85 | 37 | 79 | 35 | 74 |
| | #9 | 73 | 136 | 63 | 118 | 56 | 105 | 51 | 96 | 48 | 89 | 45 | 83 |

NOTES:
1. All lengths are in inches.
2. For bar placement, edge distance (d Dim.) see detail 2/-.
3. Where 2 bars per cell occur they shall be placed per edge condition see note 2.
4. 6" CMU 2 bars per cell is not permited. 8" CMU 2 bars per cell up to #5 are permitted. 10" CMU 2 bars per cell up to #7 are permitted.
5. NP indicates Not Permitted.
6. #10 and #11 bars where shown on plans or details require a mechanical splice.

VERTICAL REBAR PLACED FOR MAXIMUM d




VERTICAL REBAR IN CENTER OF CELL

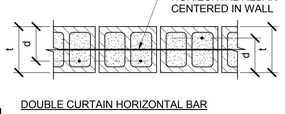



| CMU (Concrete Masonry Units) | | | | | |
|---|---|---|---|---|---|
| NORMAL THICKNESS | ACTUAL THICKNESS (t) | d (inches) | | | |
| | | #3 - #6 | #7 | #8 | #9 |
| 6" CMU | 5 5/8" | 3.25 | NP | NP | NP |
| 8" CMU | 7 5/8" | 5.25 | 5 | 4.625 | NP |
| 10" CMU | 9 5/8" | 7.25 | 7 | 6.625 | 6.25 |
| 12" CMU | 11 5/8" | 9.25 | 9 | 8.625 | 8.25 |
| 16" CMU | 15 5/8" | 13.25 | 13 | 12.625 | 12.25 |

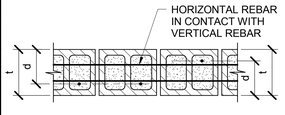
| Concrete Masonry Units | | |
|---|---|---|
| NORMAL THICKNESS | ACTUAL THICKNESS (t) | d (inches) |
| 6" CMU | 5 5/8" | 2.8 |
| 8" CMU | 7 5/8" | 3.8 |
| 10" CMU | 9 5/8" | 4.8 |
| 12" CMU | 11 5/8" | 5.8 |
| 16" CMU | 15 5/8" | 7.8 |

NOTE:
1. Where two vertical reinforcing bars occur in a cell, bars shall be secured in place by a bar positioner at the top and bottom, and at intervals not exceeding 200 bar diameters.

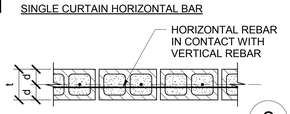
SINGLE CURTAIN HORIZONTAL BAR




DOUBLE CURTAIN HORIZONTAL BAR



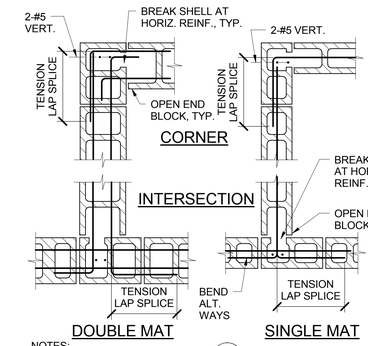

SINGLE CURTAIN HORIZONTAL BAR




## PLAN DETAIL FOR REBAR PLACEMENT IN CMU

3/4" = 1'-0" CM031

2




NOTES:
1. Tension lap splice per schedule 1/S5.03.

## CMU WALL INTERSECTIONS

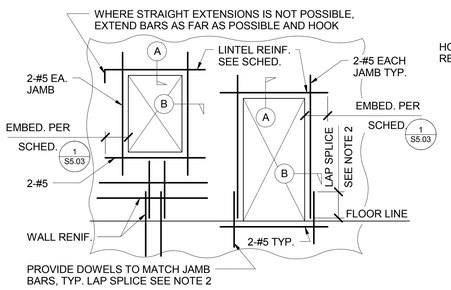
3/4" = 1'-0" CM006-ibc

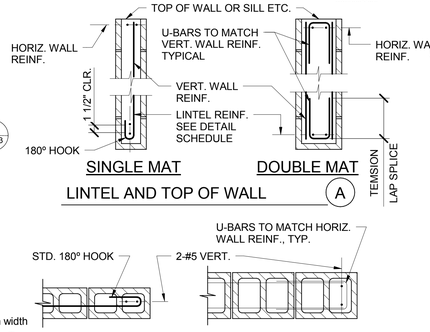
3

## TENSION DEVELOPMENT AND LAP SPLICE LENGTH (FOR MASONRY)

3/4" = 1'-0" CM033A-ibc

1







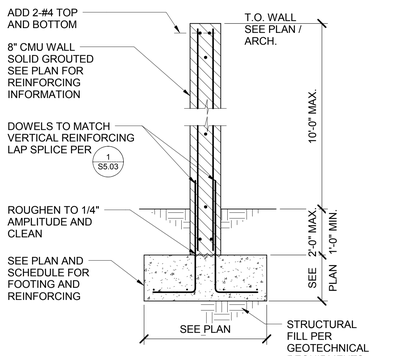
| LINTEL REINFORCING | |
|---|---|
| WIDTH | REINF. |
| < 5'-0" | 2-#5 |
| 5'-0" - 7'-0" | 2-#6 |
| 7'-0" - 10'-0" | 2-#7 |

NOTES:
1. Extend jamb bars full height of wall when width of opening is more than 4'-0".
2. Typical tension lap splice per schedule 1/S5.03.

## MASONRY WALL OPENINGS AND DETAILS

3/4" = 1'-0" CM003-ibc

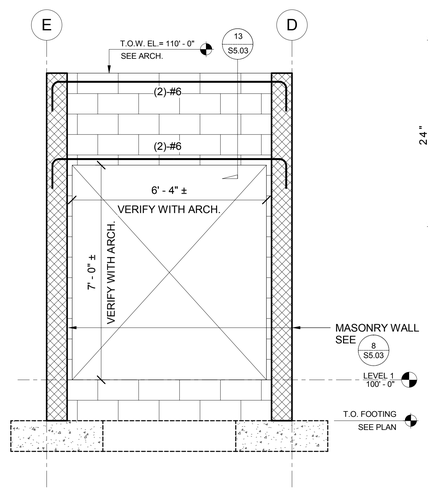
4




## MASONRY WALL

3/4" = 1'-0" CM016-ibc

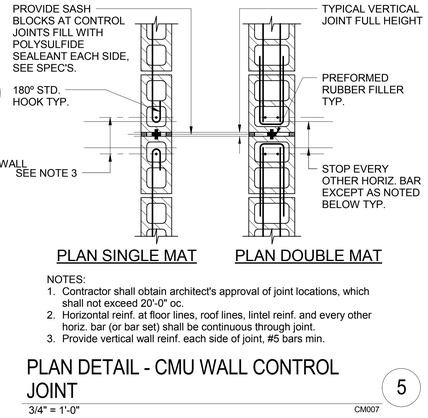
8




## CMU WALL/HEADER SECTION

1/2" = 1'-0"

9

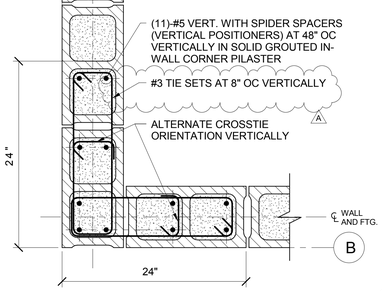



NOTES:
1. Contractor shall obtain architect's approval of joint locations, which shall not exceed 20'-0" oc.
2. Horizontal reinf. at floor lines, roof lines, lintel reinf. and every other horiz. bar (or bar set) shall be continuous through joint.
3. Provide vertical wall reinf. each side of joint, #5 bars min.

## PLAN DETAIL - CMU WALL CONTROL JOINT

3/4" = 1'-0" CM007

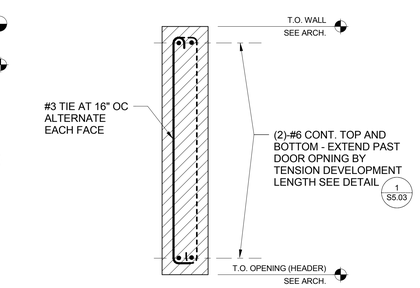
5




## 8" CMU IN-WALL CORNER PILASTER

1 1/2" = 1'-0"

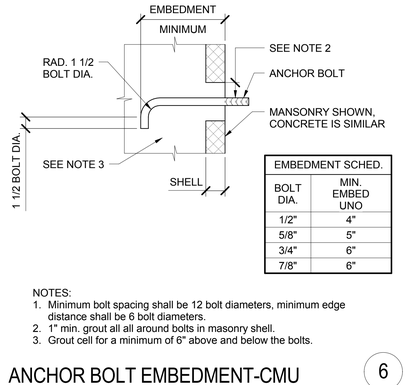
10




## MASONRY HEADER DETAIL

1 1/2" = 1'-0"

13



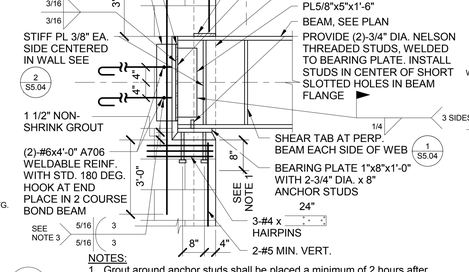

| EMBEDMENT SCHED. | |
|---|---|
| BOLT DIA. | MIN. EMBED UNO |
| 1/2" | 4" |
| 5/8" | 5" |
| 3/4" | 6" |
| 7/8" | 6" |

NOTES:
1. Minimum bolt spacing shall be 12 bolt diameters, minimum edge distance shall be 6 bolt diameters.
2. 1" min. grout all all around bolts in masonry shell.
3. Grout cell for a minimum of 6" above and below the bolts.

## ANCHOR BOLT EMBEDMENT-CMU

3/4" = 1'-0" CM001

6




NOTES:
1. Grout around anchor studs shall be placed a minimum of 2 hours after grout pour immediately below.
2. For in-wall corner pilaster centered below beam see 10/S5.03
3. E80XX electrode at A706 weldable rebar bar to plate typ.

## BEAM BEARING PLATE PARALLEL TO WALL (DRAG LINE)

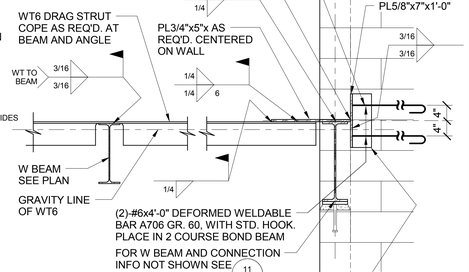
3/4" = 1'-0" ST060

11

## BEAM BEARING PLATE PERPENDICULAR TO WALL

NO SCALE ST058

7




NOTES:
1. Grout around anchor studs shall be placed no more than 2 hours after grout pour immediately below.
2. Use larger plates and welds as required by beam conn. schedule or by AISC specification section J2 welds.

## DRAG STRUT DETAIL

3/4" = 1'-0"

12





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Job No: 15-061

Owner

**UNIVERSITY OF NEVADA, LAS VEGAS**


8/5/16

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title

**CONCRETE MASONRY UNIT TYPICAL DETAILS**

Date: **06/17/2016**

Sheet No:

**S5.03**

# MECHANICAL LEGEND

## SYMBOLS

| | |
|---|---|
| (E) | REMAIN. |
| (E) | EQUIPMENT TO BE REMOVED. |
| 48x36 | NOTATION W/SIZE OF NEAREST SIDE INDICATED FIRST. |
| (SL) | INDICATED ON PLANS ARE NET INSIDE DIMENSIONS. |
| | SUPPLY AIR DUCT SECTION. |
| | RETURN AIR DUCT SECTION. |
| | EXHAUST AIR DUCT SECTION. |
| AP OR AD | ACCESS PANEL OR DOOR. |
| SWR | SIDEWALL REGISTER W/EXTRACTOR. |
| CD | CEILING SUPPLY DIFFUSER W/THROW. |
| CG OR CR | CEILING RETURN GRILLE OR REGISTER. |
| EG OR ER | CEILING EXHAUST GRILLE OR REGISTER. |
| FC | FLEXIBLE DUCT CONNECTION. |
| TH | THROAT SIZE. |
| TV | TURNING VANES. |
| FD | AUTOMATIC FIRE DAMPER. |
| FSD | COMBINATION FIRE/SMOKE DAMPER. |
| VD | MANUAL VOLUME DAMPER. |
| PMOD | |
| EMOD | |
| R OR D | DUCT RISE OR DROP |
| | BRANCH TAKEOFF |
| | RECTANGULAR TO ROUND DUCT |
| OSA | OUTSIDE AIR DUCT. |
| FLEX | FLEXIBLE DUCT. |
| S OR SA | SUPPLY AIR FLOW. |
| R OR RA | RETURN AIR FLOW. |
| X OR EXH | EXHAUST AIR FLOW. |
| OSA, OA | OUTSIDE AIR FLOW. |
| UC | 3/4" UC UNDERCUT DOOR W/SLOT HEIGHT. |
| DL | 2 DL DOOR LOUVER W/FREE AREA SQ FT. |
| T'STAT/SENSOR | THERMOSTAT/SENSOR |
| VS | VARIABLE SPEED CONTROLLER. |
| C02 | C02 SENSOR |
| CD | CONDENSATE DRAIN |
| CAP | CAP |
| | FLOW METER |
| CHWS | CHILLED WATER SUPPLY |
| CHWR | CHILLED WATER RETURN |
| HHWS | HEATING HOT WATER SUPPLY |
| HHWR | HEATING HOT WATER RETURN |
| CWS | CONDENSER WATER SUPPLY |
| CWR | CONDENSER WATER RETURN |
| (E)CHWS | EXISTING CHILLED WATER SUPPLY |
| (E)CHWR | EXISTING CHILLED WATER RETURN |
| (E)HHWS | EXISTING HEATING HOT WATER SUPPLY |
| (E)HHWR | EXISTING HEATING HOT WATER RETURN |
| (E)CWS | EXISTING CONDENSER WATER SUPPLY |
| (E)CWR | EXISTING CONDENSER WATER RETURN |
| (E)SP | EXISTING FIRE SPRINKLER |
| RO | REVERSE OSMOSIS WATER |
| PG | PRESSURE GAUGE |
| A.P. | ACCESS PANEL |
| | RELIEF VALVE |
| | PIPE ANCHOR |
| | FLEXIBLE PIPE CONNECTION |
| PRV | PRESSURE REDUCING VALVE |
| S.V. | SOLENOID VALVE |
| SOV | SHUT-OFF VALVE (GENERIC). |
| C.V. | CHECK VALVE |
| B.V. | BALANCING VALVE |
| | CIRCUIT SETTER |
| | MOTOR ACTUATED SHUT-OFF VALVE. |
| | PIPE RISE |
| | PIPE DROP |
| P.O.C. | POINT OF CONNECTION |
| P.O.D. | POINT OF DISCONNECTION |

## ABBREVIATIONS

| | |
|---|---|
| ABV. | ABOVE |
| AD | ACCESS DOOR |
| AFF | ABOVE FINISHED FLOOR |
| AP | ACCESS PANEL |
| ARCH | ARCHITECTURAL |
| AS | AUTOMATIC FIRE SPRINKLER PIPING |
| ASS'Y. | ASSEMBLY |
| BEL | BELOW |
| BHP | BRAKE HORSEPOWER |
| BOT | BOTTOM |
| BTU | BRITISH THERMAL UNIT |
| BTUH | BTU PER HOUR |
| BV | BALANCING VALVE |
| C | CONVERTER |
| CFF | CAPPED FOR FUTURE |
| C.F.H. | CUBIC FEET PER HOUR |
| CLG. | CEILING |
| CONN | CONNECTION/ CONNECT |
| CFM | CUBIC FEET PER MINUTE |
| CONC | CONCRETE |
| COND | CONDENSATE |
| CONN | CONNECTION |
| CONT | CONTINUATION |
| CONTR. | CONTRACTOR |
| COTG | CLEANOUT TO GRADE |
| CU FT | CUBIC FEET |
| CU IN | CUBIC INCHES |
| CW | DOMESTIC COLD WATER |
| DIA | DIAMETER |
| DB | DRY BULB TEMPERATURE |
| DN. | DOWN |
| DR | DRAIN |
| DWG. | DRAWING |
| (E) | EXISTING |
| EA | EACH |
| EA | EXHAUST AIR |
| EAD | EXHAUST AIR DUCT |
| EC | EVAPORATIVE COOLER |
| EF | EXHAUST FAN |
| EL | ELEVATION |
| ELEC | ELECTRICAL |
| ENT | ENTERING |
| EQ | EQUALIZER PIPING |
| EQUIP. | EQUIPMENT |
| EWC | ELECTRIC WATER COOLER |
| F | FIRE MAIN PIPING |
| FC | FAN COIL |
| FCO | FLOOR CLEANOUT |
| FCV | FLOW CONTROL VALVE |
| FD | FLOOR DRAIN |
| FDC | FIRE DEPARTMENT CONNECTION |
| FEF | FUME EXHAUST FAN |
| FH | FUME HOOD |
| FIN.FLR. | FINISH FLOOR |
| FLR. | FLOOR |
| FPM | FEET PER MINUTE |
| FS | FLOOR SINK COMB. |
| FSD | FIRE/SMOKE DAMPER |
| FT | FEET |
| F.U. | FIXTURE UNIT |
| GA | GAUGE |
| GAL | GALLON |
| G.D. | GARBAGE DISPOSER |
| GPM | GALLON PER MINUTE |
| GV | GATE VALVE |
| H | HIGH |
| HB | HOSE BIBB |
| H.C. | HANDICAP |
| HDR | HEADER |
| HP | HORSEPOWER |
| HW | DOMESTIC HOT WATER |
| HWR | DOMESTIC HOT WATER RETURN |
| HZ | HERTZ |
| I.E. | INVERT ELEVATION |
| IN | INCHES |
| INT. | INTEGRAL |
| IW | INDUSTRIAL WATER |
| KW | KILOWATT |
| LAV | LAVATORY |
| LBS | POUNDS |
| LVG | LEAVING |
| MAX | MAXIMUM |
| MBH | THOUSAND BTU PER HOUR |
| MCC | MOTOR CONTROL CENTER |
| MECH | MECHANICAL |
| MFR | MANUFACTURER |
| MH | MANHOLE |
| MIN | MINIMUM |
| MTD. | MOUNTED |
| (N) | NEW |
| NC | NORMALLY CLOSED |
| N.I.C. | NOT IN CONTRACT |
| N.O. | NORMALLY OPEN |
| NTS | NOT TO SCALE |
| OD | OVERFLOW DRAINAGE PIPING |
| OPER.WT. | OPERATING WEIGHT |
| OPNG | OPENING |
| OSA | OUTSIDE AIR |
| O.S&Y | OUTSIDE STEM AND YOKE |
| GV | GATE VALVE |
| P | PUMP |
| PD | PRESSURE DROP |
| PG | PRESSURE GAUGE |
| PIV | POST INDICATING VALVE |
| PLBG. | PLUMBING |
| PM | PROJECT MANAGER |
| POC | POINT OF CONNECTION |
| PRV | PRESSURE REDUCING VALVE |
| PSI | POUNDS PER SQUARE IN. |
| PSIG | PSI GAUGE |
| QTY | QUANTITY |
| RA | RETURN AIR |
| RAD | RETURN AIR DUCT |
| RD | ROOF DRAIN |
| RAG | RETURN AIR GRILL |
| R.I.&C. | ROUGH-IN & CONNECT |
| RL | REFRIGERANT LINE |
| RPPA | REDUCED PRESSURE PRINCIPAL ASSEMBLY |
| RPM | REVOLUTIONS PER MINUTE |
| S | SINK |
| S OR W | SOIL OR WASTE PIPING |
| SAD | SUPPLY AIR DUCT |
| SD | SUPPLY DIFFUSER |
| SL | SUCTION LINE |
| SP | STATIC PRESSURE |
| SQ.FT. | SQUARE FEET |
| SS | SERVICE SINK |
| STRUC. | STRUCTURAL |
| TEMP | TEMPERATURE |
| THRU | THROUGH |
| TSP | TOTAL STATIC PRESSURE |
| TYP | TYPICAL |
| UH | UNIT HEATER |
| UTR | UP THRU ROOF |
| V | SANITARY VENT PIPING |
| V.B. | VACUUM BREAKER |
| VEL | VELOCITY |
| VTR | VENT THROUGH ROOF |
| WB | WET BULB TEMP. |
| WCO | WALL CLEAN OUT |
| WG | WATER GAUGE |
| W/ | WITH |

DETAIL / RISER REFERENCE

XX (DETAIL/RISER TAG)
XX (SHEET NUMBER)

EQUIPMENT IDENTIFICATION SYMBOL

XX (EQUIPMENT TYPE)
XX (EQUIPMENT IDENTIFIER)

XX — NOTE REFERENCE

XX — EQUIPMENT FURNISHED BY OTHERS

RM (XXX) ROOM TEMP./HUMIDITY/PRESSURE MONITOR

(XXX) — ROOM NUMBER
RM — ROOM MONITOR

# MECHANICAL NOTES

## GENERAL NOTES

1. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE ENFORCED BUILDING, MECHANICAL AND PLUMBING CODES. AND AUTHORITIES HAVING JURISDICTIONS. NOTHING SHOWN IN THE PLANS OR STATED IN THE SPECIFICATIONS IS INTENDED TO INDICATE THAT THE INSTALLATION OR CONNECTIONS OF ANY ITEM OR DEVICE SHOULD BE DONE CONTRARY TO MANUFACTURERS INSTRUCTIONS AND ALL APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT THE INSTALLATIONS AND CONNECTIONS OF ALL ITEMS AND DEVICES CONFORMS TO MANUFACTURERS INSTRUCTIONS AND TO ALL APPLICABLE CODES AND REGULATIONS.
2. THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ARE NOT INTENDED TO INDICATE ALL NECESSARY OFFSETS OF DUCTWORK AND PIPING. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A MANNER AS TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. ALL INSTALLATIONS SHALL BE CONSISTENT WITH NORMALLY ACCEPTABLE INDUSTRY STANDARDS. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ANY DISCREPANCIES OR CONFLICTS THAT WOULD AFFECT THE SYSTEM PERFORMANCE OR WHICH WOULD INCUR ADDITIONAL COSTS. THIS NOTIFICATION SHALL BE MADE PRIOR TO THE INSTALLATION OF THE ITEMS CONCERNED.
3. DUCT SIZES INDICATED ARE NET INSIDE CLEAR DIMENSIONS. ALL SUPPLY, AND RETURN AND EXHAUST, REGISTER CONNECTIONS TO DUCTWORK SHALL BE PROVIDED WITH ACCESSIBLE MANUAL VOLUME DAMPERS. ALTERNATIVELY, ACCESSIBLE MANUAL VOLUME DAMPERS MAY BE PROVIDED IN DUCTWORK FEEDER LINES SERVING INDIVIDUAL REGISTERS.
4. SUBMITTALS: APPROVAL OF SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS OR APPLICABLE CODE REGULATIONS.
5. IF THE CONTRACTORS' USE OF SUBSTITUTE MATERIALS, EQUIPMENT OR METHODS OF INSTALLATION REQUIRES ANY CHANGES IN OTHER TRADES WORK FROM THAT SHOWN ON THE DRAWINGS, THE EXTRA COST OF THE OTHER TRADES WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INITIATING THE SUBSTITUTION.
6. BEFORE SUBMITTING BIDS FOR THE WORK THE CONTRACTOR SHALL MAKE A THOROUGH FIELD SURVEY OF THE WORK TO DETERMINE ANY INTERFERENCES THAT MAY AFFECT THE INSTALLATION OF THE WORK.
7. CONTRACTOR SHALL VERIFY ALL EQUIPMENT MODEL NUMBERS, CAPACITIES, SIZES, VOLTAGES, AND ALL OTHER SCHEDULED INFORMATION WITH ALL OTHER APPLICABLE TRADES AND WITH THE MANUFACTURER PRIOR TO INSTALLATION.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED TO COMPLETE THE MECHANICAL WORK.
9. THE CONSTRUCTION OF THE BUILDING IS WORK OF COMPLEX NATURE WHICH WILL REQUIRE ACCURATE PLANNING, CAREFUL PREPARATION AND EXECUTION TO DETAIL AND CLOSE SUPERVISION BY THE CONTRACTOR WHO WILL BE REQUIRED TO DO THIS WORK IN FULL COOPERATION WITH THE OTHER TRADES.
10. DO NOT CUT OR NOTCH ANY STRUCTURAL MEMBERS WITHOUT ARCHITECT'S/STRUCTURAL ENGINEER'S APPROVAL.
11. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES FOR CLEARANCES AND WORK INCLUDED PRIOR TO START OF ANY WORK.
12. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS OF NEW CONSTRUCTION, EXACT DIFFUSERS, REGISTERS, ACCESS DOORS AND EQUIPMENT LOCATIONS.
13. EQUIPMENT INDICATED ON THIS DRAWING IS SHOWN IN APPROXIMATE POSITION(S). CONTRACTOR SHALL VERIFY ALL CONDITIONS INCLUDING EQUIPMENT LOCATIONS, P.O.C.'S, AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION. IN ALL CASES, ADEQUATE ACCESS (PER MANUFACTURERS RECOMMENDATIONS AND CODE COMPLIANCE) FOR MAINTENANCE AND REPLACEMENT OF EQUIPMENT SHALL BE PROVIDED.
14. FLEXIBLE DUCTS WHERE PERMITTED, SHALL CONSIST OF AN EXTERIOR REINFORCED LAMINATED VAPOR BARRIER, 1-1/2" THICK FIBERGLASS INSULATION (K=.25 @ 750F), ENCAPSULATED SPRING STEEL WIRE HELIX AND IMPERVIOUS, SMOOTH, NON-PERFORATED INTERIOR VINYL LINER INDIVIDUAL LENGTHS OF FLEXIBLE DUCTS SHALL CONTAIN FACTORY FABRICATED STEEL CONNECTION COLLARS. FLEXIBLE DUCTS SHALL BE SUPPORTED AT OR NEAR MID-LENGTH WITH 2" WIDE, 28- GAUGE STEEL HANGER COLLAR ATTACHED TO THE STRUCTURE WITH AN APPROVED DUCT HANGER INSTALLATION SHALL MINIMIZE SHARP RADIUS TURNS OR OFFSETS. FIVE-FEET (5' 0") MAXIMUM LENGTH CONNECTING TO TERMINAL OUTLETS. FLEXIBLE DUCTS MAY BE USED TO CROSS SEISMIC JOINTS WITHOUT OFFSETS. DO NOT USE FLEXIBLE DUCTS TO FORM ELBOW.
15. INSULATED PIPING EXPOSED TO VIEW (THROUGHOUT THE FACILITY), SHALL BE COVERED FINISHED W/ PVC JACKET EQUAL TO MANVILLE PVC/ PERMA-WELD PIPE JACKETING SYSTEM USING 30 MIL THICK JACKET. FITTINGS, FLANGES VALVES & ACCESSORIES SHALL BE JACKETED. INSTALL PER MFRS. INSTRUCTIONS W/SEAM ON TOP OF PIPE SO AS NOT TO BE VISIBLE FROM OCCUPIED SPACE.
16. MAINTENANCE LABEL SHALL BE AFFIXED TO ALL MECHANICAL EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED TO OWNER.
17. PROVIDE VALVE TAGS AND PIPE IDENTIFICATION BANDS. TAGS SHALL BE BRASS WITH CHAIN. IDENTIFICATION BANDS SHALL BE LOCATED EVERY 25 FEET AND ON EITHER SIDE OF INTERMEDIATE BARRIER.
18. PROVIDE 18"X18" MIN. ACCESS DOOR IN INACCESSIBLE CEILINGS AND WALLS FOR EQUIP. REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO BEGINNING OF WORK.
19. MANUAL VOLUME DAMPERS (MVD) AND VALVES ON INSULATED DUCTWORK AND PIPING SHALL HAVE EXTENDED STEMS TO ALLOW FOR THE INSULATION THICKNESS. PROVIDE MIN. 12" LONG RED RIBBON QUADRANT LOCATOR ON VOLUME DAMPER HANDLES.
20. PROVIDE CEILING OPERATORS FOR INACCESSIBLE VD's (MVD) WHERE INDICATED ON PLANS, EQUAL TO YOUNG REGULATOR, REMOTE GEAR OPERATED, WITH CEILING ESCUTCHEON. INSTALL OPERATORS ABOVE ADJACENT CORRIDOR AND PREFERABLY ON PARTITION WALL. PROVIDE ENGRAVED LABEL AND ATTACH PERMANENTLY BELOW THE OPERATOR, AS REQUIRED. LABEL SHALL IDENTIFY THE ROOM# AND LOCATION OF DIFFUSER IN ROOM. (I.E., "RM007-NE DIF.").
21. CEILING DIFFUSERS SHALL BE 36" MIN. FROM CEILING MOUNTED SMOKE DETECTORS. COORDINATE W/ELECTRICAL DWGS.
22. PAINT ALL EXPOSED DUCTWORK PER ARCHITECTURAL DRAWINGS.
23. SEISMIC NOTE: FOR SEISMIC BRACING AND ANCHORAGE OF EQUIPMENT, PIPES AND DUCTWORK REFER TO STRUCTURAL/ARCH. DRAWINGS.

## AIR BALANCE NOTES

THE SERVICES DESCRIBED HEREIN SHALL BE PERFORMED BY THE AABC CERTIFIED TEST AND BALANCE AGENCY (TABA). TABA SHALL BE CONTRACTED BY CONTRACTOR. THIS AGENCY SHALL BE A COMPANY SPECIALIZING IN THE ADJUSTING AND BALANCING OF SYSTEMS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE CERTIFIED BY AABC. WORK SHALL BE PERFORMED UNDER SUPERVISION OF AABC CERTIFIED TEST AND BALANCE ENGINEER AND REGISTERED ENGINEER. THE REPORT SHALL BE PRESENTED TO UNLV IN BOTH DIGITAL AND HARD COPY FORMATS.

1. AIR FLOW AND ITS CORRESPONDING TEMPERATURES THRU EACH LABORATORY SUPPLY AIR VALVE (AND DIFFUSER), EXHAUST AIR VALVES (GENERAL, RACK AND HOOD EXHAUST), AIR FLOW, TEMPERATURE AND HUMIDITY RATIO AT EACH GEN. EXHAUST GRILLS SHALL BE BALANCED PER VALUES INDICATED IN THE PLANS AND SCHEDULES, FOR BOTH HEATING AND COOLING MODES.
2. HEATING HOT WATER FLOW AND TEMPERATURE SETTINGS, THRU ALL NEW REHEAT COILS SHALL BE BALANCED AS SHOWN IN REHEAT COIL SCHEDULE.
3. TABA SHALL TEST AND BALANCE RTU **(AC-V1)** AND ENSURE ALL COMPONENTS (FACE AND BY-PASS DAMPER, HEAT EXCHANGER, DX COOLING COIL, HEATING HOT WATER COIL, HUMIDIFIER SECTION, SUPPLY AND EXHAUST FANS ARRAYS AND THEIR VFD PERFORMS SATISFACTORILY AND PER SCHEDULED VALUES IN THESE DRAWINGS, AND BALANCE AS NEEDED.
4. TABA SHALL VERIFY THAT THE NEW INSTALLATION IS PROPERLY PERFORMED AND REPORT ANY DEFICIENCY, RETURN AIR OR WATER LEAKAGE, PROPER SLOPING OF CONDENSATE DRAIN PIPING, ETC.) TO ARCHITECT/OWNER.
5. SEE SPECIFICATIONS FOR MORE DETAILS.

## SPECIFIC NOTES

1. SEAL ALL DUCTWORK AND PIPING PENETRATIONS THRU RATED WALLS AND CEILINGS TO MAINTAIN FIREPROOF RATINGS, AS APPLICABLE.
2. INSTALL INSULATION FOR EQUIPMENT VALVES AND FITTINGS REQUIRING ACCESS FOR MAINTENANCE, REPAIR, OR CLEANING, IN SUCH A MANNER THAT IT CAN BE EASILY REMOVED AND REPLACED WITHOUT DAMAGE.
3. SEISMIC NOTE:
   PROVIDE SEISMIC RESTRAINTS PER THE **2012 IBC** CODE REQUIREMENTS AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR TO PROVIDE STAMPED AND SEALED DESIGN DRAWINGS AND CALCULATIONS FOR PIPING AND EQUIPMENT BELOW AND ABOVE ROOF DECK FOR SEISMIC RESTRAINTS FROM THE STATE OF NEVADA LICENSED PROFESSIONAL ENGINEER. SEE STRUCTURAL DRAWINGS FOR SEISMIC RATINGS. SEE DIV.1. FOR SEISMIC CONTROL AND SUBMITTAL REQUIREMENTS.

# MECHANICAL INDEX

## MECHANICAL DRAWING INDEX




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PROFESSIONAL ENGINEER-STATE OF NEVADA
BIJAN SALIMI
MECHANICAL
NO. 13897

DATE: 06/16/16
EXP. DATE: 06/30/16

PLEASE RECYCLE

Project

**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner

**UNIVERSITY OF NEVADA, LAS VEGAS**

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title

**LEGEND, NOTES AND INDEX**

Date: 06/17/2016

Sheet No:

**M0.01**

# MECHANICAL SCHEDULES

## ROOFTOP HEAT RECOVERY UNIT SCHEDULE (VRV HEAT PUMP/ HHW UNIT @ 2,200 FEET ELEVATION)

| SYMBOL | MANUFACTURER & MODEL NO. | SERVING | AIR DISTRIBUTION SYSTEM TYPE | LOCATION | HEAT EXCHANGER/COOLING SEASON | | | | | | COOLING COIL CAPACITY–DX, VARIABLE VOLUME | | | | | | SUPPLY AIR | | | | | | | | | | EXHAUST AIR | | | | | | | | | | HEAT EXCHANGER/HEATING SEASON | | | | | | HEATING COIL CAPACITY–HEATING HOT WATER | | | | | | | OUTDOOR–CONDENSING SECTION "DAIKIN VRV–IV UNIT" INDOOR COMPRESSORS | | | | OPER. WT. LB. | REMARKS | SYMBOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | INTAKE AIR (OSA) | | | EXHAUST AIR (ROOM) | | | | | | AIR SIDE | | | | | | | | | | | | | | | | | | | | | | INTAKE AIR (OSA) | | | EXHAUST AIR (ROOM) | | | AIR SIDE | | | WATER SIDE | | | | | | | | | | | | |
| | | | | | CFM (MAX) | PD | ENT.AIR LVG.AIR (°F) | | CFM (MAX.) | PD | ENT.AIR LVG.AIR (°F) | | TOTAL | SENS. | REF. | CFM | AIR PD | ENT.AIR LVG.AIR (°F) | | TOTAL CFM | | EXT. SP | SUPPLY FAN WALL | | | | | TOTAL CFM | | EXT. SP | EXHAUST FAN WALL | | | | | CFM (MAX) | PD | ENT.AIR LVG.AIR (°F) | | CFM (MAX) | PD | ENT.AIR LVG.AIR (°F) | | TOTAL | CFM | | | FLOW | PD | EWT | LWT | FACE VEL. FPM | MCA | MOP | RLA | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | DB | WB | | | DB | WB | | | | | IN.WG | | MAX | MIN | IN.WG | IN.WG | EA. | # | TOTAL | V/Ø/HZ | | | IN.WG | IN.WG | EA. | # | TOTAL | V/Ø/HZ | | IN.WG | DB | RH | | IN.WG | DB | RH | | IN.WG | | DB | WB | | | | | | | | | | |
| AC V1 | ALLIANCE ——— | VIVARIUM WHI | VARIABLE VOLUME | ON ROOF | 10,510 | 0.41 | 115 / 92.8 | 73 / 62 | 10,235 | 0.44 | 78 / 98.8 | 55.5 / 63.5 | 436.8 | 436.8 | R-410A | 10,510 | 0.45 | 92.8 / 50.5 | 62 / 45.5 | 10,510 | 7,730 | 4.0 | 6.64 | 7.5 | 3 | 22.5 | 208/3/60 | 10,235 | 7,455 | 3.0 | 3.1 | 15 | 2 | 30 | 208/3/60 | 10,510 | 0.48 | 27 / 57.9 | 10% / 3% | 10,235 | 0.43 | 75 / 49.6 | – / – | 495 | 10,510 | 0.05 | 57.9 / 105 | 24.75 | 1.5 | 180 | 140 | 490 | 2X36.3 4X72.6 | 2X45 4X90 | 2X26.2 4X52.4 | 208/3/60 208/3/60 | 26,000 | SEE NOTES BELOW | AC V1 |

1. PROVIDE QUANTITY OF FANS SCHEDULED. CONNECTED HP SHALL NOT EXCEED THE SCHEDULE AMOUNT.
2. ALL MOTORS SHALL BE STANDARD FOOT MOUNTED TYPE TEAO SELECTED AT THE SPECIFIED OPERATING VOLTAGE, RPM, AND EFFICIENCY AS SPECIFIED IN SPECIFICATIONS. MOTORS SHALL MEET THE REQUIREMENTS OF NEMA MG–1 PART 30 AND 31, SECTION 4.4.2
3. MOTORS SHALL BE AS MANUFACTURED BY TECO–WESTIGHOUSE, BALDOR, SIEMENS, OR TOSHIBA FOR USE IN MULTIPLE FAN ARRAYS THAT OPERATE AT VARYING SYNCHRONOUS SPEEDS AS DRIVEN BY AN APPROVED VFD, SEE NOTE 12.
4. STEEL CASED MOTORS AND/OR ODP MOTORS ARE NOT ACCEPTABLE.
5. ALL MOTORS SHALL INCLUDE PERMANENTLY SEALED (L10–400,000 HR) BEARINGS AND AEGIS™ SHAFT GROUNDING TO PROTECT THE MOTOR BEARINGS FROM ELECTRICAL DISCHARGE MACHINING DUE TO STRAY SHAFT CURRENTS.
6. THE MULTIPLE FAN ARRAY AH UNIT SHALL PROVIDE, AS A MINIMUM THE SPECIFIED (BASE) UNIT'S ACOUSTICAL PERFORMANCE, FOR THE UNIT SUPPLY DISCHARGE OPENING(S), AND EXHAUST AIR OPENING(S).
7. EACH INDIVIDUAL CUBE OR CELL IN THE MULTIPLE FAN ARRAYS SHALL BE PROVIDED WITH AN INTEGRAL BACK FLOW PREVENTION DEVICE THAT PROHIBITS RECIRCULATION OF AIR IN THE EVENT A FAN OR MULTIPLE FANS BECOME DISABLED.
8. EACH FAN MOTOR SHALL BE INDIVIDUALLY WIRED TO A CONTROL PANEL CONTAINING MULTIPLE VFD'S.
9. EACH FAN & MOTOR ASSEMBLY SHALL BE REMOVABLE THROUGH A 24"WIDE, FREE AREA, ACCESS DOOR LOCATED ON THE DISCHARGE SIDE OF THE FAN WALL ARRAY WITHOUT REMOVING THE FAN WHEEL FROM THE MOTOR.
10. ALL MOTORS IN THE FANWALL ARRAY SHALL BE PROVIDED WITH INDIVIDUAL MOTOR PROTECTION FOR THERMAL OVERLOAD PROTECTION.
11. PROVIDE REMOTE INDICATION BY MEANS OF AUX CONTACTS WIRED IN SERIES.
12. PROVIDE MULTIPLE DANFOSS VARIABLE FREQUENCY DRIVE TO START AND RUN EACH ROW OF FAN MOTORS IN THE FANWALL ARRAY.
13. GRATE FLOORS SHALL BE PROVIDED AT SUPPLY AND RETURN AIR SECTIONS.
14. PROVIDE ACCESSIBLE SERVICE/SAFETY PLATFORM AT UPPER SECTION (EXHAUST FAN SECTION). SHOP DRAWINGS SHALL BE SUBMITTED AND THE FIELD MOUNTED ASSEMBLY/ARRANGEMENT SHALL BE APPROVED BY ARCHITECT AND UNLV PRIOR TO ORDERING OF THE UNIT.
15. ALL EXHAUST/RELEIF, OUTSIDE AIR AND RETURN AIR (MIXED AIR) SECTIONS OPENINGS SHALL BE EQUIPPED WITH DAMPERS TO BE CONTROLLED BY ELECTRIC MOTOR VIA BAS.
16. INSTALL CONTROL VALVES AND PIPING INSIDE UNIT ENCLOSURE (OR PROVIDE DOGHOUSE) WITH PROPER SIZE ACCESS DOOR.
17. PROVIDE WITH BACKDRAFT DAMPER ON OSA INTAKE AND EXHAUST AIR OPENINGS.
18. PROVIDE WITH FACTORY INSTALLED AIRFLOW MEASUREMENTS STATIONS ON RETURN/EXHAUST AND OUTSIDE/SUPPLY AIR SIDES. SEE SPECIFICATIONS FOR MORE DETAILS.
19. PROVIDE FACE AND BY–PASS DAMPER SECTION ON SUPPLY AIR SIDE.
21. PROVIDE FILTERS AS FOLLOWS:
    - 2"MERV–8 30% EFFICIENCY PRE–FILTERS FOR BOTH RETURN AND OUTSIDE AIR SECTIONS.
    - 4"MERV–13, FINAL INLET FILTERS (UPSTREAM OF COILS, AT FAN SUCTION).
    - 12"MERV–16, 95% EFFICIENCY FINAL FILTERS AT SUPPLY SIDE OF THE UNIT (DISCHARGE SIDE OF FAN).
22. PROVIDE WITH SINGLE POINT OF CONNECTION FOR HHWS&HHWR PIPING INSIDE UNIT PIPING CABINET (DOGHOUSE).
23. PROVIDE WITH HUMIDIFIER "H–V1", AND DRAIN PANS. RO WATER SHALL BE ROUTED INTO THE PIPING CABINET FOR CONNECTION TO PUMP PACKAGE BELOW. SEE SPECIFICATIONS FOR MORE DETAILS. PROVIDE HUMIDIFICATION SYSTEM EQUIPMENT AS SCHEDULED IN THIS SHEET.
24. PROVIDE WITH DUAL, TOTALLY INDEPENDENT REFRIGERANT CIRCUITS.
25. ALL INTERNAL REFRIG. PIPING TO EACH SET OF COOLING COILS SHALL BE FACTORY INSTALLED.
26. PROVIDE WITH INTELLIGENT SMOKE DETECTOR ON SUPPLY AIR SECTION.
27. SMOKE DETECTOR SHALL BE PROVIDED BY DIV. 16 AND INSTALLED BY UNIT MANUFACTURER.
28. PROVIDE WITH SINGLE POINT OF ELECTRICAL CONNECTION AND FACTORY INSTALLED DISCONNECT.
29. PROVIDE SEPARATE/DEDICATED POWER FOR BAS CONTROLS. SEE SPEC. FOR ADDITIONAL REQUIREMENTS.
30. PROVIDE WITH 120V, 20A GFIC SERVICE RECEPTACLE. SEE ELECTRICAL DRAWINGS.
31. PROVIDE TERMINAL BUSS (FOR BAS CONNECTION), UNIT BACnet CONTROL MODULE AND SENSORS WITH TEMPERATURE AND HUMIDITY CONTROL, SEE SPECS FOR CONTROLS AND "SEQUENCE OF OPERATION".
32. PROVIDE ADEQUATELY SIZED, VENTILATED CONTROL PANELS FOR HOUSING BAS DDC CONTROLLERS AND INSTRUMENTATIONS, TERMINAL BOARDS AND VFD'S.
33. PROVIDE PROPER AND ADEQUATE "LED" SERVICE LIGHTS IN DIFFERENT SECTIONS OF THE AC UNIT.
34. PROVIDE VIBRATION ISOLATORS AND SEISMIC SNUBBERS FOR MOVING PARTS, FANS, AND COMPRESSORS.
35. PROVIDE WITH MANUFACTURER ROOF CURB.
36. PROVIDE WITH BOTTOM DISCHARGE SUPPLY AND RETURN/EXHAUST DUCTWORK.
37. PROVIDE WITH HIGH PRESSURE, AND LOSS OF CHARGE/LOW PRESSURE SWITCH, AND CRANKCASE HEATER.

## HUMIDIFIER SCHEDULE

| SYMBOL | MANUFACTURER & MODEL NO. | SERVING | CAPACITY | | | | | | PUMP | NO OF NOZZLES | NO OF ZONE VALVES | NO OF MANIFOLDS | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CFM | GROSS (#/HR) | EVAP EFF. (%) | NET (#/HR) | EAT DB/WB (DEG F) | LAT (DEG F) | | | | | |
| H V1 | MeeFOG | VIVARIUM WHI | 10,510 | 240 | 99% | 238 | 105/58 | 85 | SEE "FPS–V1" | 15 | 4 | 5 | SEE BELOW. |

1. ALL WETTED COMPONENTS TO BE STAINLESS STEEL.
2. CONTROLS AND SENSORS BY BAS.

## LABORATORY SUPPLY AIR VALVE SCHEDULE

| SYMBOL | DESIGN BASE MANUFACTURER: "PHOENIX CONTROLS CORP." TYPE: "ACCEL–II VALVE" MODEL NO.: | VALVE SIZE | QTY OF VALVES | SERVICE | CFM | | REHEAT COIL (@100% FLOW) | | | | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | MAX | MIN | MBH | GPM | EWT (°F) | LWT (°F) | RUN OUT SIZE (INCH) | MAX. WATER PRESS. DROP (FT. WG.) | EAT (°F) | LAT (°F) | MAX. AIR PRESS. DROP (IN. WG.) | |
| SAV 001 | MAV–A–108–M | 12" | 1 | CORRIDOR 001 | 900 | 860 | 27 | 1.4 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | 1. PROVIDE WITH 24VAC POWER, CONTROL ENCLOSURE & REHEAT COIL CONNECTIONS ON SAME SIDE OF UNIT.<br>2. FURNISHED VALVE FOR MEDIUM PRESSURE SYSTEM.<br>3. PROVIDE CIRCULAR FLANGES FOR SINGLE VALVES.<br>4. PROVIDE EMERGENCY POWER FOR AIR CONTROL SYSTEM.<br>5. PROVIDE ALL VALVES WITH "TRACCEL" CONTROLS EXCEPT AS NOTED BELOW.<br>6. PROVIDE WITH "CELLERIS" CONTROLS FOR "SAV–007" AND "SAV–018".<br>7. VALVES SHALL FAIL TO "LAST POSITION".<br>8. PROVIDE HEATING COIL WITH BELIMO "PICCV" VALVE. SEE DETAILS FOR PIPING.<br>9. INSTALL SPACE TEMPERATURE AND HUMIDITY SENSORS IN GENERAL EXHAUST DUCT, IMMEDIATELY DOWNSTREAM OF THE EXHAUST GRILL.<br>10. AIR VALVES SHALL BE MANUFACTURED BY PHOENIX CONTROLS CORPORATION, OR APPROVED EQUAL. |
| SAV 002 | MAV–A–108–M | 8" | 1 | QUARANTINE 002 | 300 | 210 | 9.5 | .5 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 003 | MAV–A–108–M | 8" | 1 | JANITOR 003 | 125 | 125 | 2.4 | .1 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 005 | MAV–A–108–M | 8" | 1 | TOILET 005 | 100 | 100 | 3.5 | .2 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 006 | MAV–A–110–M | 10" | 1 | VESTIBULE 006 | 750 | 425 | 22.4 | 1.1 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 007 | MAV–A–108–M | 8" | 1 | PROCEDURE 007 | 430 | 430 | 13 | .6 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 008 | MAV–A–108–M | 8" | 1 | HOLD 008 | 350 | 275 | 11 | .5 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 009 | MAV–A–108–M | 8" | 1 | HOLD 009 | 350 | 310 | 11 | .5 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 010 | MAV–A–108–M | 8" | 1 | HOLD 010 | 450 | 310 | 13 | .6 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 011 | MAV–A–108–M | 8" | 1 | HOLD 011 | 450 | 310 | 13 | .6 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 012 | MAV–A–112–M | 12" | 1 | HOLD 012 | 1,000 | 710 | 30 | 1.5 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 013 | MAV–A–108–M | 8" | 1 | PREP 013 | 175 | 125 | 4.7 | .2 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 014 | MAV–A–108–M | 8" | 1 | SURGERY 014 | 500 | 300 | 14 | .7 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 015 | MAV–A–108–M | 8" | 1 | PREP 015 | 175 | 125 | 4.7 | .2 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 016 | MAV–A–110–M | 10" | 1 | VESTIBULE 016 | 750 | 575 | 22.4 | 1.1 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 017 | MAV–A–108–M | 8" | 1 | HOLD 017 | 500 | 410 | 15.3 | .8 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 018 | MAV–A–108–M | 8" | 1 | PROCEDURE 018 | 430 | 430 | 13 | .6 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 019 | MAV–A–108–M | 8" | 1 | BEHAVIOR 019 | 275 | 175 | 8.2 | .4 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 020 | MAV–A–108–M | 8" | 1 | BEHAVIOR 020 | 275 | 175 | 8.2 | .4 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 021 | MAV–A–108–M | 8" | 1 | BEHAVIOR 021 | 225 | 150 | 7 | .4 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 022 | MAV–A–108–M | 8" | 1 | BEHAVIOR 022 | 225 | 150 | 7 | .4 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 023 | MAV–A–108–M | 8" | 1 | HOLD 023 | 225 | 210 | 7 | .4 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 024 | MAV–A–108–M | 8" | 1 | HOLD 024 | 450 | 310 | 13 | .6 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 025 | MAV–A–108–M | 8" | 1 | CLEAN STORAGE 025 | 300 | 200 | 9.4 | .5 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 026 | MAV–A–108–M | 8" | 1 | ELEC/DATA 026 | 400 | 100 | ← | | | | NONE | | | → | | |
| SAV 027 | MAV–A–108–M | 8" | 1 | MECHANICAL 027 | 150 | 100 | 4.7 | .2 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |
| SAV 028 | MAV–A–108–M | 8" | 1 | STORAGE 028 | 250 | 150 | 7 | .4 | 180 | 140 | 3/4" | 5.0 | 50.5 | 80 | 0.10 | |

## FUME HOOD SCHEDULE

(FOR REFERENCE ONLY. SEE ARCH. DWGS AND SPEC FOR EXACT INFORMATION)

DESIGN EXHAUST VOLUME OF 470 CFM WITH 18"SASH OPENING, AT 100FPM DESIGN VELOCITY IS SPECIFIED FOR FUME HOOD.

## EQUIPMENT SCHEDULE

| SYMBOL | DESCRIPTION | SERVICE | LOCATION | MANUFACTURER & MODEL | REMARKS |
|---|---|---|---|---|---|
| WS V1 | WATER SOFTENER | "ROS" (RO SYSTEM) | MEC. 027 | "Mee INDUSTRIES, INC." | 0.75 CU.FT. BRINE TANK SIZE, 15,000 GRAINS, HARDNESS REMOVAL PER REGENERATION.<br>PROVIDE WITH 120V–1PH ELECTRICAL OUTLET. |
| ROS V1 | RO WATER TREATMENT SYSTEM | "ROT" (RO TANK) | MEC. 027 | "Mee INDUSTRIES, INC."<br>MODEL:<br>"MEERO–01–10–3–RP" | COMBINED RO SYSTEM AND PUMP PACKAGED.<br>W/PRE–PRESSURE PUMP. ALL COMPONENTS SHALL BE MOUNTED ON A 304 STAINLESS STEEL FRAME (SKID) INCLUDED WITH PIPING, VALVES & GAUGES FOR CONVENIENT INSTALLATION AND FIELD PIPING INTERFACE. UNIT SHALL BE PROVIDED WITH SINGLE MOTOR CONTROL PANEL AND SINGLE POINT OF ELECTRICAL CONNECTION, 208V–60HZ–3PH., WITH FULL LOAD AMP OF 5.9.<br>WITH CARBON FILTER, TIME CLOCK, TWIN ALTERNATING WATER SOFTENER, WATER HARDNESS TEST KIT, SOLENOID VALVE, REVERSE OSMOSIS MEMBRANE SYSTEM MODEL: MEEROC–011002. RO HIGH PRESSURE PUMP, ROTARY VANE PUMP, 304 SS, 3/4 HP, 1 GPM @ 210 PSI. PROVIDE WITH PUMP INLET LOW PRESSURE CUT–OFF SWITCH, AND RO INLET PLEATED CARTRIDGE FILTER.<br>PROVIDE WITH RE–PRESSURE/RE–CIRCULATION SYSTEM, UV STERILIZER, 200AL FRP SHELL BLADDER TANK, AND RE–PRESSURIZATION PUMP CENTRIFUGAL PUMP 316 SS .33 HP, 2 GPM @ 42 PSI.<br>UNIT OPERATING WEIGHT SHALL NOT EXCEED 800LBS. |
| RPP V1 | PRE–PRESSURE PUMP PACKAGE. | "FPS" (FOG PUMP SYSTEM) | MEC. 027 | | |
| ROT V1 | RO SYSTEM STORAGE TANK | "RPP" (RE–PRESSURE PUMP) | MEC. 027 | "Mee INDUSTRIES, INC."<br>MODEL:<br>"PN20999b" | 55 GALLON RO WATER STORAGE TANK, POLYPROPYLENE CLEAR TANK, WITH REMOVABLE LID. WITH HIGH AND LOW LEVEL CONTROL FLOATS. 26.5"DIA.X51" HEIGHT (INCLUDING SUPPORT LEGS/RACK).<br>PROVIDE WITH 120VOLTS OUTLET.<br>UNIT OPERATING WEIGHT SHALL NOT EXCEED 500LBS. |
| FPS V1 | FOG PUMP SYSTEM | HUMIDIFIER (@ AC–V1) | MEC. 027 | "Mee INDUSTRIES, INC."<br>MODEL:<br>"MFP–800" | HIGH PRESSURE WATER ATOMIZATION TYPE PUMP UNIT, PUMP MODEL: "CAT231", 1.6GPM (800LBS/HR), 2HP MOTOR, WITH ABB VFD.<br>ELECTRICAL REQUIREMENT: 230V–60HZ–3PH. PROVIDE WITH 120V–1PH. ELECTRICAL OUTLET FOR SOLENOID VALVE PANEL.<br>UNIT OPERATING WEIGHT SHALL NOT EXCEED 600LBS. |

## AIR DEVICE SCHEDULE

| TAG | SERVICE/ LOCATION | MANUFACTURER & MODEL NUMBER | TYPE – FACE SIZE | TYPE OF CEILING | SIZE | | MAX. N.C. | MAX. PRESS. LOSS ("WC) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | NECK (IN) | MAX. CFM | | | |
| S1 | SUPPLY AIR DIFFUSER SEE PLANS | "TITUS" MODEL FTI–20 | LINEAR SINGLE SLOT 2"SLOT WIDTH 4FT. LONG | GYPSUM | 8"ø INLET | 175 | 10 | 0.08 | W/ PLENUM |
| S2 | SUPPLY AIR DIFFUSER SEE PLANS | "TITUS" MODEL FTI–30 | LINEAR SINGLE SLOT 3"SLOT WIDTH 4FT. LONG | GYPSUM | 10"ø INLET | 110 | 10< | 0.03 | W/ PLENUM |
| S3 | SUPPLY AIR DIFFUSER SEE PLANS | "TITUS" MODEL FTI–30 | LINEAR SINGLE SLOT 3"SLOT WIDTH 5FT. LONG | GYPSUM | 10"ø INLET | 375 | 15 | 0.08 | W/ PLENUM |
| S4 | SUPPLY AIR DIFFUSER GENERAL, SEE PLAN | "TITUS" "TDC–AA" | SQUARE NECK | GYPSUM/ EXPOSED | 6X6– 6"ø<br>8X8– 8"ø<br>10X10–10"ø<br>12X12–12"ø<br>14"ø<br>16"ø | 100<br>200<br>300<br>400<br>550<br>750 | 10 | 0.1 | FOUR WAY ADJUSTABLE PATTERN, SQUARE TO ROUND ADAPTER ALUMINUM |
| S5 | SUPPLY AIR REGISTER GENERAL, SEE PLAN | "TITUS" "272–FS" | WALL, SOFFIT, SIDEWALL | EXPOSED/ SOFFIT | 8X6<br>12X6<br>16X6<br>18X8 | 150<br>210<br>300<br>450 | 15 | 0.1 | DOUBLE DEFLECTION, ALUMINUM |
| E1 | EXHAUST AIR GRILLE SEE PLAN | "TITUS" "350RL" | SQUARE NECK | GYPSUM | 6X6<br>8X8<br>10X10<br>12X12<br>14X14 | 90<br>200<br>300<br>450<br>600 | 10 | 0.12 | 3/4" SPACING, 35° DEFLECTION<br>W/ MATCHING SQUARE TO ROUND ADAPTER. |
| E2 | EXHAUST AIR GRILLE SEE PLAN | "TITUS" "350FL" | WALL | GYPSUM | 6X6<br>8X8<br>10X10<br>12X12<br>24X12 | 90<br>200<br>300<br>450<br>750 | 25 | 0.12 | ¾" SPACING–35 DEGREE DEFLECTION.<br>PAINT PER ARCH. FINISH SCHEDULE. |

NOTES:
1. INSIDE PORTION OF THE DIFFUSERS AND REGISTERS/GRILLES THAT ARE VISIBLE SHALL BE PAINTED FLAT BLACK.
2. PAINT DIFFUSER AS REQUIRED BY ARCHITECTURAL DRAWINGS. REFER TO ARCHITECT FOR CLARIFICATION.


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PROFESSIONAL ENGINEER–STATE OF NEVADA
BIJAN SALIMI
MECHANICAL
NO. 13897

DATE: 06/16/16
EXP. DATE: 06/30/16
PLEASE RECYCLE

Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**SCHEDULES**

Date: 06/17/2016
Sheet No:
**M0.02**

# MECHANICAL SCHEDULES

## LABORATORY GENERAL EXHAUST VALVE SCHEDULE

| SYMBOL | DESIGN BASE MANUFACTURER: "PHOENIX CONTROLS CORP." TYPE: "ACCEL-II VALVE" MODEL NO.: | VALVE SIZE | QTY OF VALVES | SERVICE | CFM MAX | CFM MIN | PD (IN WC) MAX | PD (IN WC) MIN | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| GEV 001 | TEV-A-108-M | 8" | 1 | CORRIDOR 001 | 225 | 35 | 3.0 | 0.6 | 1. PROVIDE WITH 24VAC POWER, CONTROL ENCLOSURE & REHEAT COIL CONNECTIONS ON SAME SIDE OF UNIT. 2. FURNISHED VALVE FOR MEDIUM PRESSURE SYSTEM. 3. PROVIDE CIRCULAR FLANGES FOR SINGLE VALVES. 4. PROVIDE EMERGENCY POWER FOR AIR CONTROL SYSTEM. 5. PROVIDE ALL VALVES WITH "TRACCEL" CONTROLS EXCEPT AS NOTED BELOW. 6. PROVIDE WITH "CELERIS" CONTROLS FOR "GEV-007" AND "GEV-018". 7. VALVES SHALL FAIL TO "LAST POSITION". 8. INSTALL SPACE TEMPERATURE AND HUMIDITY SENSORS (ONE PER EACH SPACE) IN GENERAL EXHAUST DUCT, IMMEDIATELY DOWNSTREAM OF THE EXHAUST GRILL. 9. AIR VALVES SHALL BE MANUFACTURED BY PHOENIX CONTROLS CORPORATION, OR APPROVED EQUAL. |
| GEV 002 | TEV-A-108-M | 8" | 1 | QUARANTINE 002 | 275 | 35 | 3.0 | 0.6 | |
| GEV 003 | TEV-A-108-M | 8" | 1 | JANITOR 003 | 150 | 150 | 3.0 | 0.6 | |
| GEV 005 | TEV-A-108-M | 8" | 1 | TOILET 005 | 175 | 175 | 3.0 | 0.6 | |
| GEV 006 | TEV-A-112-M | 12" | 1 | VESTIBULE 006 | 1,200 | 125 | 3.0 | 0.6 | |
| GEV 007 | TEV-A-108-M | 8" | 1 | PROCEDURE 007 | 410 | 35 | 3.0 | 0.6 | |
| GEV 008 | TEV-A-108-M | 8" | 1 | HOLD 008 | 325 | 100 | 3.0 | 0.6 | |
| GEV 009 | TEV-A-108-M | 8" | 1 | HOLD 009 | 225 | 35 | 3.0 | 0.6 | |
| GEV 010 | TEV-A-108-M | 8" | 1 | HOLD 010 | 325 | 35 | 3.0 | 0.6 | |
| GEV 011 | TEV-A-108-M | 8" | 1 | HOLD 011 | 325 | 35 | 3.0 | 0.6 | |
| GEV 012 | TEV-A-108-M | 8" | 1 | HOLD 012 | 475 | 35 | 3.0 | 0.6 | |
| GEV 013 | TEV-A-108-M | 8" | 1 | PREP 013 | 175 | 125 | 3.0 | 0.6 | |
| GEV 014 | TEV-A-108-M | 8" | 1 | SURGERY 014 | 350 | 150 | 3.0 | 0.6 | |
| GEV 015 | TEV-A-108-M | 8" | 1 | PREP 015 | 175 | 125 | 3.0 | 0.6 | |
| GEV 016 | TEV-A-114-M | 14" | 1 | VESTIBULE 016 | 1,425 | 200 | 3.0 | 0.6 | |
| GEV 017 | TEV-A-108-M | 8" | 1 | HOLD 017 | 275 | 35 | 3.0 | 0.6 | |
| GEV 018 | TEV-A-108-M | 8" | 1 | PROCEDURE 018 | 410 | 35 | 3.0 | 0.6 | |
| GEV 019 | TEV-A-108-M | 8" | 1 | BEHAVIOR 019 | 250 | 150 | 3.0 | 0.6 | |
| GEV 020 | TEV-A-108-M | 8" | 1 | BEHAVIOR 020 | 250 | 150 | 3.0 | 0.6 | |
| GEV 021 | TEV-A-108-M | 8" | 1 | BEHAVIOR 021 | 200 | 125 | 3.0 | 0.6 | |
| GEV 022 | TEV-A-108-M | 8" | 1 | BEHAVIOR 022 | 200 | 125 | 3.0 | 0.6 | |
| GEV 023 | TEV-A-108-M | 8" | 1 | HOLD 023 | 200 | 35 | 3.0 | 0.6 | |
| GEV 024 | TEV-A-108-M | 8" | 1 | HOLD 024 | 325 | 35 | 3.0 | 0.6 | |
| GEV 025 | TEV-A-108-M | 8" | 1 | CLEAN STORAGE 025 | 225 | 125 | 3.0 | 0.6 | |
| GEV 026 | TEV-A-108-M | 8" | 1 | ELEC/DATA 026 | 475 | 175 | 3.0 | 0.6 | |
| GEV 027 | TEV-A-108-M | 8" | 1 | MECHANICAL 027 | 225 | 175 | 3.0 | 0.6 | |
| GEV 028 | TEV-A-108-M | 8" | 1 | STORAGE 028 | 325 | 225 | 3.0 | 0.6 | |

## LABORATORY RACK EXHAUST VALVE SCHEDULE "CONSTANT FLOW"

| SYMBOL | DESIGN BASE MANUFACTURER: "PHOENIX CONTROLS CORP." TYPE: "ACCEL-II VALVE" MODEL NO.: | VALVE SIZE | QTY OF VALVES | SERVICE | CFM | PD (IN WC) MAX | PD (IN WC) MIN | REMARKS |
|---|---|---|---|---|---|---|---|---|
| REV 002 | EXV-A-108-M | 8" | 1 | QUARANTINE 002 | 100 | 3.0 | 0.6 | 1. PROVIDE WITH 24VAC POWER, CONTROL ENCLOSURE & REHEAT COIL CONNECTIONS ON SAME SIDE OF UNIT. 2. FURNISHED VALVE FOR MEDIUM PRESSURE SYSTEM. 3. PROVIDE CIRCULAR FLANGES FOR SINGLE VALVES. 4. PROVIDE EMERGENCY POWER FOR AIR CONTROL SYSTEM. 5. PROVIDE WITH "TRACCEL" CONTROLS. 7. VALVES SHALL FAIL TO "LAST POSITION". 8. AIR VALVES SHALL BE MANUFACTURED BY PHOENIX CONTROLS CORPORATION, OR APPROVED EQUAL. |
| REV 008 | EXV-A-108-M | 8" | 1 | HOLD 008 | 100 | 3.0 | 0.6 | |
| REV 009.1 | EXV-A-108-M | 8" | 1 | HOLD 009 | 100 | 3.0 | 0.6 | |
| REV 009.2 | EXV-A-108-M | 8" | 1 | HOLD 009 | 100 | 3.0 | 0.6 | |
| REV 010.1 | EXV-A-108-M | 8" | 1 | HOLD 010 | 100 | 3.0 | 0.6 | |
| REV 010.2 | EXV-A-108-M | 8" | 1 | HOLD 010 | 100 | 3.0 | 0.6 | |
| REV 011.1 | EXV-A-108-M | 8" | 1 | HOLD 011 | 100 | 3.0 | 0.6 | |
| REV 011.2 | EXV-A-108-M | 8" | 1 | HOLD 012 | 100 | 3.0 | 0.6 | |
| REV 012.1 | EXV-A-108-M | 8" | 1 | HOLD 012 | 100 | 3.0 | 0.6 | |
| REV 012.2 | EXV-A-108-M | 8" | 1 | HOLD 012 | 100 | 3.0 | 0.6 | |
| REV 012.3 | EXV-A-108-M | 8" | 1 | HOLD 012 | 100 | 3.0 | 0.6 | |
| REV 012.4 | EXV-A-108-M | 8" | 1 | HOLD 012 | 100 | 3.0 | 0.6 | |
| REV 012.5 | EXV-A-108-M | 8" | 1 | HOLD 012 | 100 | 3.0 | 0.6 | |
| REV 012.6 | EXV-A-108-M | 8" | 1 | HOLD 012 | 100 | 3.0 | 0.6 | |
| REV 017.1 | EXV-A-108-M | 8" | 1 | HOLD 017 | 100 | 3.0 | 0.6 | |
| REV 017.2 | EXV-A-108-M | 8" | 1 | HOLD 017 | 100 | 3.0 | 0.6 | |
| REV 017.3 | EXV-A-108-M | 8" | 1 | HOLD 017 | 100 | 3.0 | 0.6 | |
| REV 019 | EXV-A-108-M | 8" | 1 | BEHAVIOR 019 | 100 | 3.0 | 0.6 | |
| REV 020 | EXV-A-108-M | 8" | 1 | BEHAVIOR 020 | 100 | 3.0 | 0.6 | |
| REV 021 | EXV-A-108-M | 8" | 1 | BEHAVIOR 021 | 100 | 3.0 | 0.6 | |
| REV 022 | EXV-A-108-M | 8" | 1 | BEHAVIOR 022 | 100 | 3.0 | 0.6 | |
| REV 023 | EXV-A-108-M | 8" | 1 | HOLD 023 | 100 | 3.0 | 0.6 | |
| REV 024.1 | EXV-A-108-M | 8" | 1 | HOLD 024 | 100 | 3.0 | 0.6 | |
| REV 024.2 | EXV-A-108-M | 8" | 1 | HOLD 024 | 100 | 3.0 | 0.6 | |

## LABORATORY FUME HOOD EXHAUST VALVE SCHEDULE

| SYMBOL | DESIGN BASE MANUFACTURER: "PHOENIX CONTROLS CORP." TYPE: "ACCEL-II VALVE" MODEL NO.: | VALVE SIZE | QTY OF VALVES | SERVICE | CFM MAX | CFM MIN | PD (IN WC) MAX | PD (IN WC) MIN | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| HEV 007 | EXV-A-108-M | 8" | 1 | PROCEDURE 007 | 470 | 95 | 3.0 | 0.6 | 1. PROVIDE WITH 24VAC POWER, CONTROL ENCLOSURE & REHEAT COIL CONNECTIONS ON SAME SIDE OF UNIT. 2. FURNISHED VALVE FOR MEDIUM PRESSURE SYSTEM. 3. PROVIDE CIRCULAR FLANGES FOR SINGLE VALVES. 4. PROVIDE EMERGENCY POWER FOR AIR CONTROL SYSTEM. 5. PROVIDE WITH "CELERIS" CONTROLS. 7. VALVES SHALL FAIL TO "LAST POSITION". 8. AIR VALVES SHALL BE MANUFACTURED BY PHOENIX CONTROLS CORPORATION, OR APPROVED EQUAL. |
| HEV 018 | EXV-A-108-M | 8" | 1 | PROCEDURE 018 | 470 | 95 | 3.0 | 0.6 | |

## SPACE AIR BALANCE

| SPACE | VALVE | MIN. SUPPLY AIR CFM | MIN. EXH. AIR CFM | MIN. OFFSET X-FILT CFM | MIN. OFFSET IN-FILT CFM | MAX. SUPPLY AIR CFM | MAX. EXH. AIR CFM | MAX. OFFSET X-FILT CFM | MAX. OFFSET IN-FILT CFM |
|---|---|---|---|---|---|---|---|---|---|
| CORRIDOR-001 | SAV-001 | +860 | – | | | +900 | – | | |
| | GEV-001 | – | -35 | | | – | -225 | | |
| | **TOTAL:** | **+860** | **-35** | **-825** | | **+900** | **-225** | **-750** | **+75** |
| QUARANTINE-002 | SAV-002 | +210 | – | | | +300 | – | | |
| | GEV-002 | – | -35 | | | – | -275 | | |
| | REV-002 | – | -100 | | | – | -100 | | |
| | **TOTAL:** | **+210** | **-135** | **-75** | | **+300** | **-375** | | **+75** |
| TOILET/FIRE-003/004 | SAV-003 | +75 | – | | | +75 | – | | |
| | GEV-003 | – | -150 | | | – | -150 | | |
| | **TOTAL:** | **+75** | **-150** | | **+75** | **+75** | **-150** | | **+75** |
| TOILET-005 | SAV-005 | +100 | – | | | +100 | – | | |
| | GEV-005 | – | -175 | | | – | -175 | | |
| | **TOTAL:** | **+100** | **-175** | | **+75** | **+100** | **-175** | | **+75** |
| VESTIBULE-006 | SAV-006 | +425 | – | | | +750 | – | | |
| | GEV-006 | – | -125 | | | – | -1,200 | | |
| | **TOTAL:** | **+425** | **-125** | **-450** | **+150** | **+750** | **-1,200** | **-75** | **+525** |
| PROCEDURE-007 | SAV-007 | +430 | – | | | +430 | – | | |
| | GEV-007 | – | -35 | | | – | -410 | | |
| | HEV-007 | – | -470 | | | – | -95 | | |
| | **TOTAL:** | **+430** | **-505** | | **+75** | **+430** | **-505** | | **+75** |
| HOLD-008 | SAV-008 | +275 | – | | | +350 | – | | |
| | GEV-008 | – | -100 | | | – | -325 | | |
| | REV-008 | – | -100 | | | – | -100 | | |
| | **TOTAL:** | **+275** | **-200** | **-75** | | **+350** | **-425** | | **+75** |
| HOLD-009 | SAV-009 | +310 | – | | | +350 | – | | |
| | GEV-009 | – | -35 | | | – | -225 | | |
| | REV-009 | – | -200 | | | – | -200 | | |
| | **TOTAL:** | **+310** | **-235** | **-75** | | **+350** | **-425** | | **+75** |
| HOLD-010 | SAV-010 | +310 | – | | | +450 | – | | |
| | GEV-010 | – | -35 | | | – | -325 | | |
| | REV-010 | – | -200 | | | – | -200 | | |
| | **TOTAL:** | **+310** | **-235** | **-75** | | **+450** | **-525** | | **+75** |
| HOLD-011 | SAV-011 | +310 | – | | | +450 | – | | |
| | GEV-011 | – | -35 | | | – | -325 | | |
| | REV-011 | – | -200 | | | – | -200 | | |
| | **TOTAL:** | **+310** | **-235** | **-75** | | **+450** | **-525** | | **+75** |
| HOLD-012 | SAV-012 | +710 | – | | | +1,000 | – | | |
| | GEV-012 | – | -35 | | | – | -475 | | |
| | REV-012 | – | -600 | | | – | -600 | | |
| | **TOTAL:** | **+710** | **-635** | **-75** | | **+1,000** | **-1,075** | | **+75** |
| PREP-013 | SAV-013 | +125 | – | | | +175 | – | | |
| | GEV-013 | – | -125 | | | – | -175 | | |
| | **TOTAL:** | **+125** | **-125** | **-75** | **+75** | **+175** | **-175** | **-75** | **+75** |
| SURGERY-014 | SAV-014 | +300 | – | | | +500 | – | | |
| | GEV-014 | – | -150 | | | – | -350 | | |
| | **TOTAL:** | **+300** | **-150** | **-150** | | **+500** | **-350** | **-150** | |
| PREP-015 | SAV-015 | +125 | – | | | +175 | – | | |
| | GEV-015 | – | -125 | | | – | -175 | | |
| | **TOTAL:** | **+125** | **-125** | **-75** | **+75** | **+175** | **-175** | **-75** | **+75** |
| VESTIBULE-016 | SAV-016 | +575 | – | | | +750 | – | | |
| | GEV-016 | – | -200 | | | – | -1,425 | | |
| | **TOTAL:** | **+575** | **-200** | **-600** | **+225** | **+750** | **-1,425** | **-75** | **+750** |
| HOLD-017 | SAV-017 | +410 | – | | | +500 | – | | |
| | GEV-017 | – | -35 | | | – | -275 | | |
| | REV-017 | – | -300 | | | – | -300 | | |
| | **TOTAL:** | **+410** | **-335** | **-75** | | **+500** | **-575** | | **+75** |
| PROCEDURE-018 | SAV-018 | +430 | – | | | +430 | – | | |
| | GEV-018 | – | -35 | | | – | -410 | | |
| | HEV-018 | – | -470 | | | – | -95 | | |
| | **TOTAL:** | **+430** | **-505** | | **+75** | **+430** | **-505** | | **+75** |
| BEHAVIOR-019 | SAV-019 | +175 | – | | | +275 | – | | |
| | GEV-019 | – | -150 | | | – | -250 | | |
| | REV-019 | – | -100 | | | – | -100 | | |
| | **TOTAL:** | **+175** | **-250** | | **+75** | **+275** | **-350** | | **+75** |
| BEHAVIOR-020 | SAV-020 | +175 | – | | | +275 | – | | |
| | GEV-020 | – | -150 | | | – | -250 | | |
| | REV-020 | – | -100 | | | – | -100 | | |
| | **TOTAL:** | **+175** | **-250** | | **+75** | **+275** | **-350** | | **+75** |
| BEHAVIOR-021 | SAV-021 | +150 | – | | | +225 | – | | |
| | GEV-021 | – | -125 | | | – | -200 | | |
| | REV-021 | – | -100 | | | – | -100 | | |
| | **TOTAL:** | **+150** | **-225** | | **+75** | **+225** | **-300** | | **+75** |
| BEHAVIOR-022 | SAV-022 | +150 | – | | | +225 | – | | |
| | GEV-022 | – | -125 | | | – | -200 | | |
| | REV-022 | – | -100 | | | – | -100 | | |
| | **TOTAL:** | **+150** | **-225** | | **+75** | **+225** | **-300** | | **+75** |
| HOLD-023 | SAV-023 | +210 | – | | | +225 | – | | |
| | GEV-023 | – | -35 | | | – | -200 | | |
| | REV-023 | – | -100 | | | – | -100 | | |
| | **TOTAL:** | **+210** | **-135** | **-75** | | **+225** | **-300** | | **+75** |
| HOLD-024 | SAV-024 | +310 | – | | | +450 | – | | |
| | GEV-024 | – | -35 | | | – | -325 | | |
| | REV-024 | – | -200 | | | – | -200 | | |
| | **TOTAL:** | **+310** | **-235** | **-75** | | **+450** | **-525** | | **+75** |
| CLEAN STORAGE-025 | SAV-025 | +200 | – | | | +300 | – | | |
| | GEV-025 | – | -125 | | | – | -225 | | |
| | **TOTAL:** | **+200** | **-125** | **-75** | | **+300** | **-225** | **-75** | |
| ELEC/DATA-026 | SAV-026 | +100 | – | | | +400 | – | | |
| | GEV-026 | – | -175 | | | – | -475 | | |
| | **TOTAL:** | **+100** | **-175** | | **+75** | **+400** | **-475** | | **+75** |
| MECHANICAL-027 | SAV-027 | +100 | – | | | +150 | – | | |
| | GEV-027 | – | -175 | | | – | -225 | | |
| | **TOTAL:** | **+100** | **-175** | | **+75** | **+150** | **-225** | | **+75** |
| STORAGE-028 | SAV-028 | +150 | – | | | +250 | – | | |
| | GEV-028 | – | -225 | | | – | -325 | | |
| | **TOTAL:** | **+150** | **-225** | | **+75** | **+250** | **-325** | | **+75** |


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PROFESSIONAL ENGINEER-STATE OF NEVADA
BIJAN SALIMI
MECHANICAL
No. 13867

DATE: 06/16/16
EXP. DATE: 06/30/16
PLEASE RECYCLE

Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

**PERMIT SET**

| REVISIONS | | |
|---|---|---|
| REV | DATE | DESCRIPTION |
| A | 08/05/16 | ADDENDUM A |

Sheet Title
**SCHEDULES**

Date: 06/17/2016
Sheet No:

**M0.03**

# ENERGY COMPLIANCE REPORT

| 2012 IECC | Final Inspection | Complies? | Comments/Assumptions |
|---|---|---|---|
| C408.2.4 [FI29][1] | Preliminary commissioning report completed and certified by registered design professional or approved agency. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C408.2.5.4 [FI30][1] | Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C408.2.3.1 [FI31][1] | HVAC equipment has been tested to ensure proper operation. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C406 [FI34][1] | Efficient HVAC performance, efficient lighting system, or on-site supply of renewable energy consistent with what is shown the approved plans. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |

**Additional Comments/Assumptions:**

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)



| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|---|---|---|---|---|---|
| C403.2.11 [ME71][2] | Unenclosed spaces that are heated use only radiant heat. | | | ☐Complies ☐Does Not ☐Not Observable ☒Not Applicable | |

**Additional Comments/Assumptions:**

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)



| 2012 IECC | Footing / Foundation Inspection | Complies? | Comments/Assumptions |
|---|---|---|---|
| C403.2.4.5 [FO9][1] | Freeze protection and snow/ice melting system sensors for future connection to controls. | ☐Complies ☐Does Not ☐Not Observable ☒Not Applicable | |

**Additional Comments/Assumptions:**

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)



**COMcheck Software Version 4.0.1**

## Mechanical Compliance Certificate

**Project Information**

| | |
|---|---|
| Energy Code: | 2012 IECC |
| Project Title: | UNLV-WHI Vivarium |
| Location: | Las Vegas, Nevada |
| Climate Zone: | 3b |
| Project Type: | New Construction |

Construction Site:
4505 S. Maryland Parkway
La Vegas, NV 89154

Owner/Agent:
Jeni Penars
Tate Snyder Kimsey
709 Valle Verde Court
Henderson, NV 89014
702-456-3000
jpenars@tska.com

Designer/Contractor:
Farideh Shamash
Sigma Mechanical Engineering Consultants Inc.
187 E. WarmSprings Road
Las Vegas, NV 89119
702-315-4272
faridehs@sigmamec.com

**Additional Efficiency Package**

Unspecified

**Mechanical Systems List**

| Quantity | System Type & Description |
|---|---|
| 2 | HVAC System 2 (Single Zone):<br>VRF, Air Cooled Heat Pump<br>Heating Mode: Capacity = 257 kBtu/h,<br>No minimum efficiency requirement applies<br>Cooling Mode: Capacity = 228 kBtu/h,<br>No minimum efficiency requirement applies<br>Fan System: None |

**Mechanical Compliance Statement**

*Compliance Statement:* The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.0.1 and to comply with the mandatory requirements listed in the Inspection Checklist.

Bijan Salimi, President — *Bijan Salimi* — July 21, 2016
Name - Title — Signature — Date





| 2012 IECC | Final Inspection | Complies? | Comments/Assumptions |
|---|---|---|---|
| C403.2.4.2 [FI47][1] | Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.4.2 [FI38][1] | Thermostatic controls have a 5 °F deadband. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.4.2 [FI20][1] | Temperature controls have setpoint overlap restrictions. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.4.3 [FI39][1] | Each zone equipped with setback control using automatic time clock or programmable control system. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.4.3 [FI40][1] | Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.4.1.1 [FI42][1] | Heat pump controls prevent supplemental electric resistance heat from coming on when not needed. | ☐Complies ☐Does Not ☐Not Observable ☒Not Applicable | |
| C408.2.5.1 [FI7][1] | Furnished HVAC as-built drawings submitted within 90 days of system acceptance. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C303.3,C408.2.5.3 [FI8][1] | Furnished O&M manuals for HVAC systems within 90 days of system acceptance. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C408.2.5.3 [FI43][1] | An air and/or hydronic system balancing report is provided for HVAC systems. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C408.2.3.2 [FI10][1] | HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.2 [FI27][1] | HVAC systems and equipment capacity does not exceed calculated loads. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C408.2.1 [FI28][1] | Commissioning plan developed by registered design professional or approved agency. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)



| Section # & Req.ID | Mechanical Rough-In Inspection | Plans Verified Value | Field Verified Value | Complies? | Comments/Assumptions |
|---|---|---|---|---|---|
| C403.2.3 [ME55][2] | HVAC equipment efficiency verified. | Efficiency:____ | Efficiency:____ | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | *See the Mechanical Systems list for values.* |
| C403.2.5.1 [ME59][1] | Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm. | | | ☐Complies ☐Does Not ☐Not Observable ☒Not Applicable | |
| C403.2.7 [ME60][2] | HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection. | R-____ | R-____ | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.8 [ME61][2] | HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection. | ____ in. | ____ in. | ☐Complies ☐Does Not ☐Not Observable ☒Not Applicable | |
| C403.2.8.1 [ME7][1] | Piping insulation exposed to weather is protected from damage (due to sun, moisture, wind, etc.). | | | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.8 [ME41][1] | Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5. | | | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.7 [ME10][2] | Ducts and plenums sealed based on static pressure and location. | | | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.7.1.3 [ME11][1] | Ductwork operating >3 in. water column requires air leakage testing. | | | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C408.2.2.1 [ME53][1] | Air outlets and zone terminal devices have means for air balancing. | | | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.4.2 [ME66][2] | VAV fan motors >=7.5 hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand. | ☐ VSD ☐ Vane axial fan ☐ Other | ☐ VSD ☐ Vane axial fan ☐ Other | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C403.2.6 [ME57][1] | Exhaust air energy recovery on systems meeting Table C403.2.6 | | | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)



**COMcheck Software Version 4.0.1**

## Inspection Checklist

Energy Code: 2012 IECC

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

| 2012 IECC | Plan Review | Complies? | Comments/Assumptions |
|---|---|---|---|
| C103.2 [PR2][1] | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |
| C406 [PR9][1] | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options. | ☒Complies ☐Does Not ☐Not Observable ☐Not Applicable | |

**Additional Comments/Assumptions:**

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)



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PROFESSIONAL ENGINEER-STATE OF NEVADA
BIJAN SALIMI
MECHANICAL
NO. 13897

DATE: 06/16/16
EXP. DATE: 06/30/16

PLEASE RECYCLE

Project
**UNLV VIVARIUM**

**4505 SOUTH MARYLAND PARKWAY LAS VEGAS, NV 89154**

Job No: 15-061

Owner
**UNIVERSITY OF NEVADA, LAS VEGAS**

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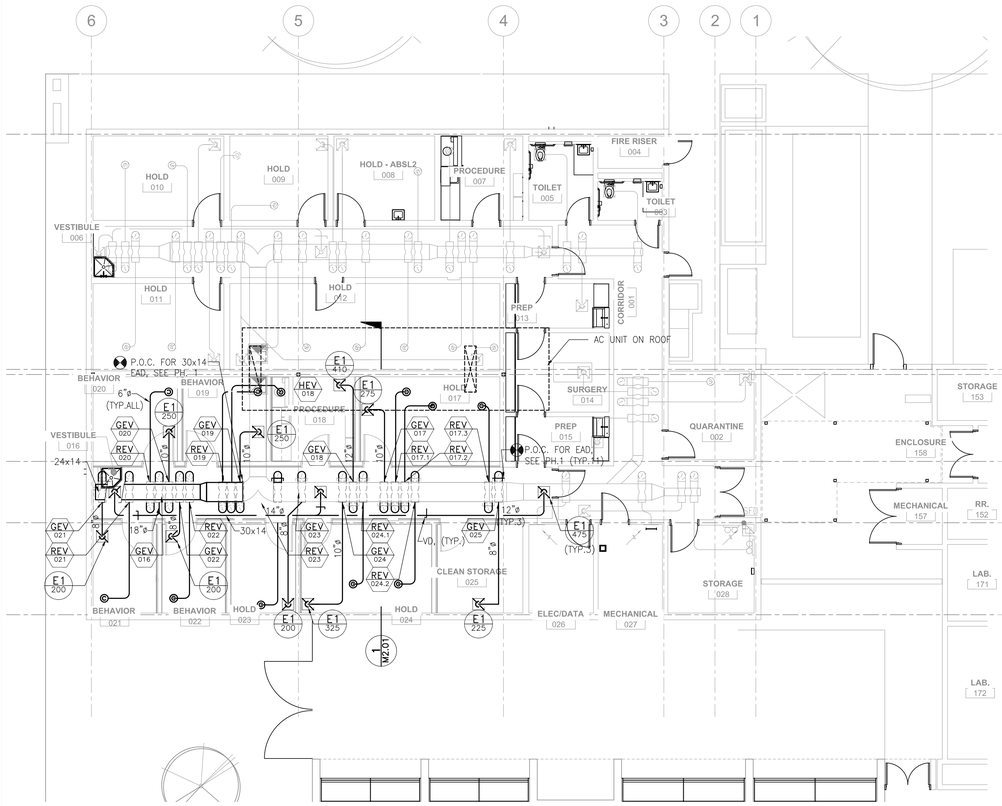
| A | 08/05/16 | ADDENDUM A |

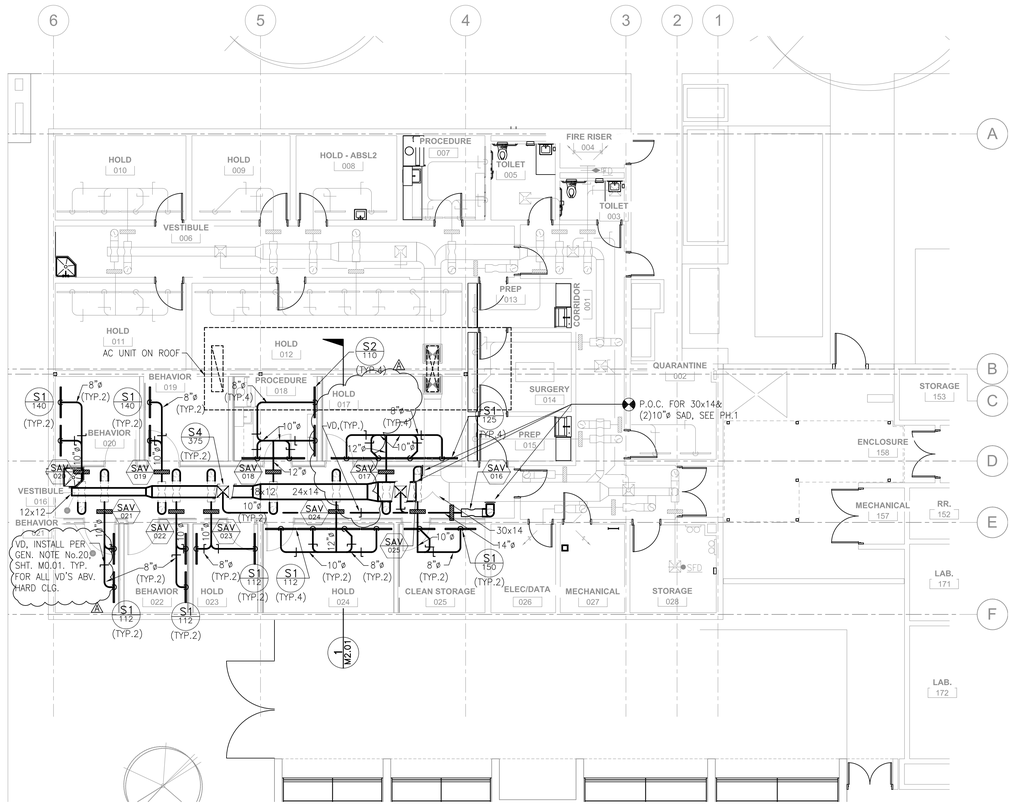
Sheet Title
**COMPLIANCE REPORT**

Date: 06/17/2016
Sheet No:
**M0.04**



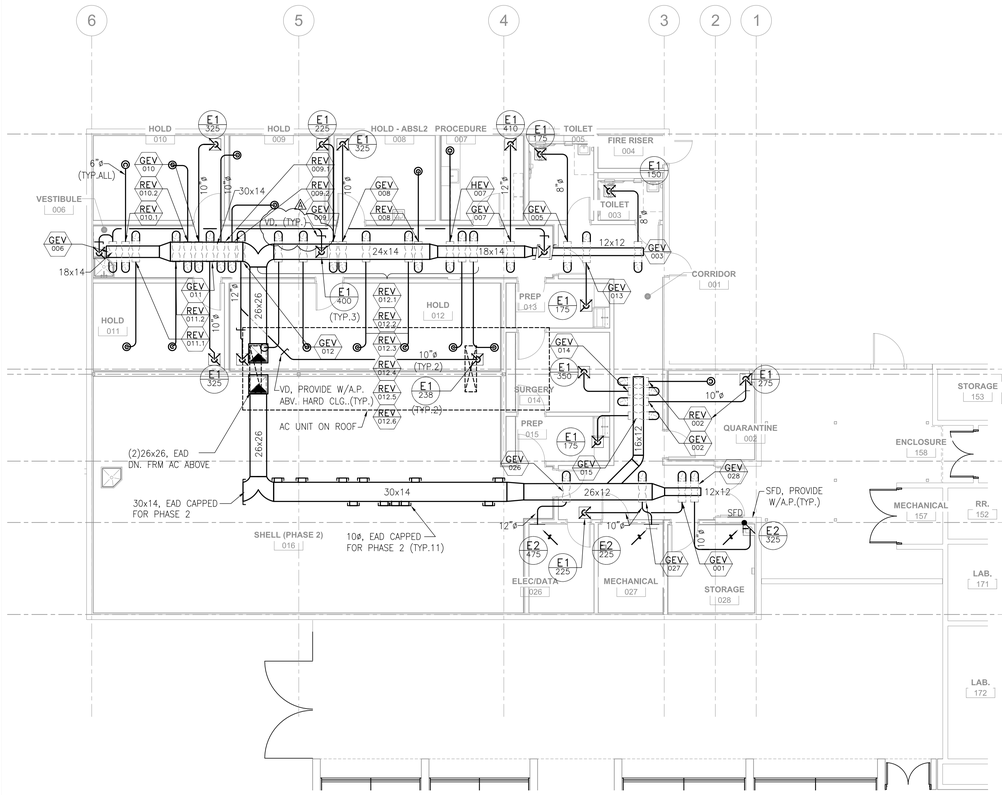

4 M1.01 MECHANICAL FLOOR PLAN – PHASE 2
"EXHAUST AIR SYSTEM"

0' 4' 8' 16' NORTH




2 M1.01 MECHANICAL FLOOR PLAN – PHASE 2
"SUPPLY AIR SYSTEM"

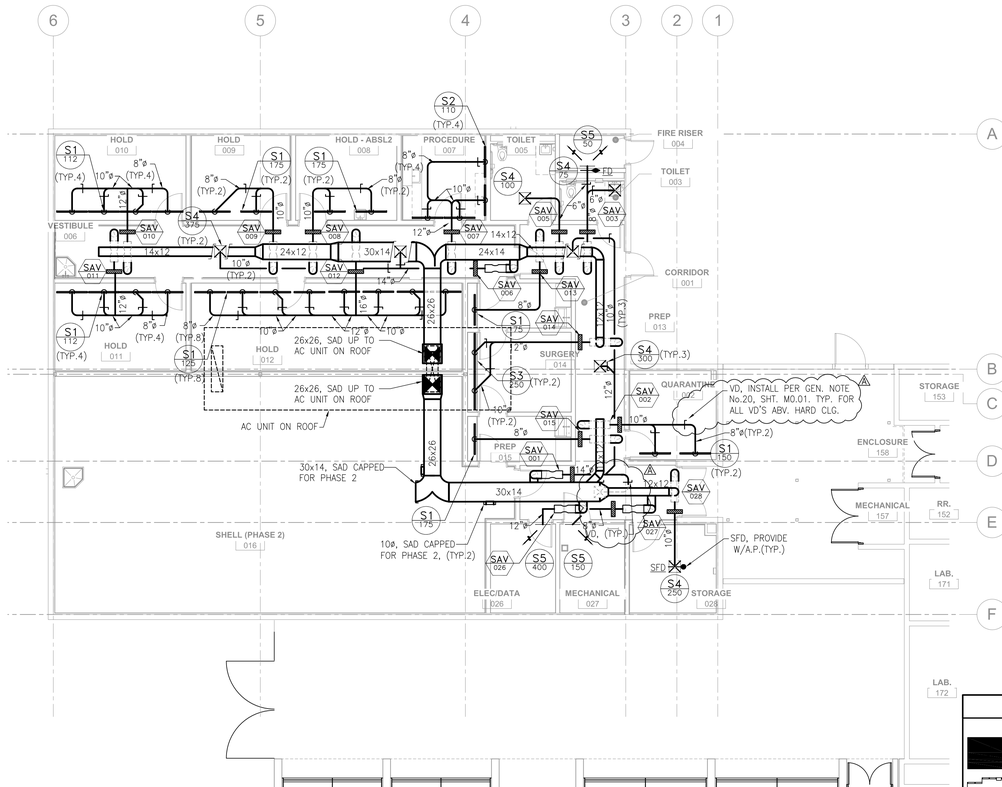
0' 4' 8' 16' NORTH




3 M1.01 MECHANICAL FLOOR PLAN – PHASE 1
"EXHAUST AIR SYSTEM"

SCALE: 1/8" = 1'-0"

0' 4' 8' 16' NORTH

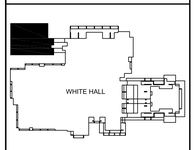



1 M1.01 MECHANICAL FLOOR PLAN – PHASE 1
"SUPPLY AIR SYSTEM"

SCALE: 1/8" = 1'-0"

0' 4' 8' 16' NORTH

KEYPLAN

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Sheet Title

**PHASED FLOOR PLANS**

Date: 06/17/2016

Sheet No:

**M1.01**