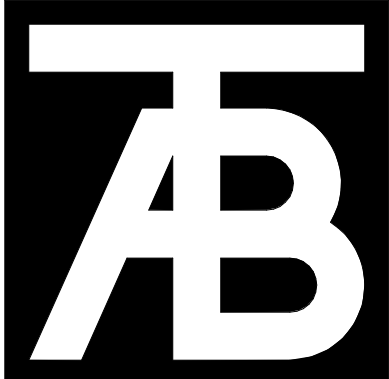


Glenwood Springs High School Annex Renovation

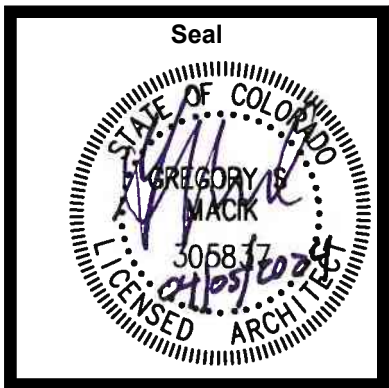
1405 Grand Ave
Glenwood Springs, CO 81601

CONSTRUCTION DOCUMENTS
04/05/24



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Revisions:		
No	Description	Date

Issue Dates:
SD-03/07/2024
CD-04/05/2024

Sheet Title:
Cover

Project No:
2404

Sheet No:
A0.0

INTERIOR

HEAD

PLAN

BASE

INTERIOR

HEAD

PLAN

BASE

INTERIOR

HEAD

PLAN

BASE

INTERIOR

HEAD

PLAN

BASE

TYPE 4

INTERIOR PARTITION

TYPE 4G

SIM TO TYPE 22, EXCEPT SUBSTITUTE MOISTURE RESISTANT 5/8" GYP BOARD AT WET AREAS BEHIND TILE

TYPE 4R

SIM TO TYPE 22, EXCEPT SUBSTITUTE 5/8" TYP "X" GYP BOARD BOTH SIDES OF WALL FROM FLOOR TO UNDERSIDE OF STRUCTURE, TO PROVIDE 1 HOUR FIRE RATINGS PER UL 1465

TYPE 4A

SIM TO TYPE 22, EXCEPT ADD ANOTHER LAYER OF 5/8" TYP "X" GYP BOARD ON UNITS SIDE OF WALL FROM FLOOR TO UNDERSIDE OF STRUCTURE

TYPE 5

INTERIOR PARTITION

TYPE 5G

SIM TO TYPE 21, EXCEPT SUBSTITUTE MOISTURE RESISTANT 5/8" GYP BOARD AT WET AREAS BEHIND TILE

TYPE 5R

SIM TO TYPE 21, EXCEPT SUBSTITUTE 5/8" TYP "X" GYP BOARD BOTH SIDES OF WALL FROM FLOOR TO UNDERSIDE OF STRUCTURE, TO PROVIDE 1 HOUR FIRE RATING PER UL 1465

WALL TYPES

DRAWING INDEX

ALTERNATES

SYMBOLS

FINISH SCHEDULE

ABBREVIATIONS

DATUM REFERENCE

DATUM REFERENCE FOR THIS PROJECT IS THE MAIN FINISH FLOOR LEVEL
T.O. GYPCRETE = EL. 100'-0" ON ALL OTHER DRAWINGS EQUALS 5814.5' ON SITE PLAN

COPYRIGHT

#1 - MECHANICAL ALTERNATE TO REMOVE BASE BOARD HEAT IN ROOM 205. REFER TO MECHANICAL SHEETS FOR REMOVAL NOTES. ARCHITECTURE - WALLS MAY NEED TO BE PATCH, EXTEND NEW CARPET TO WALLS AND PROVIDE NEW BASE.

#2 - SEE ELECTRICAL. PROVIDE PRICE TO TRACE EXISTING CIRCUITS AND LABEL EXISTING PANELS.

View Name

1/8" = 1'-0"

DRAWING TITLE & SCALE

Ref

1 A101

EXTERIOR ELEVATION

1 A101

INTERIOR ELEVATION

1 A101

REVISION NUMBER

11

PARTITION OR WALL TYPE

101

DOOR TAG SIZE AS DESIGNATED ON DOOR SCHDULE

11

WINDOW TAG
ALL WINDOWS ARE TO BE HINGED PER EXTERIOR ELEVATION DRAWINGS

7

KEYNOTE TAG

LEVEL 1
124'-0"

ELEVATION

124'-0"

SPOT ELEVATION

1 A101

SIM

WALL SECTION & PARTIAL SECTION

1 A101

SIM

DETAIL SECTION

1 A101

AREA ENLARGEMENT

PROJECT DIRECTORY

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MEP ENGINEERS

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CONTRACTOR

TBD

SHEET LIST

Sheet Number

Sheet Name

A0.0

Cover

A0.1

Index Sheet

A0.2

Code Summary

A1.1

Site Plan

A1.2

Site Plan Enlarged

A1.3

Site Details

D2.1

Demo Building Floor Plans

D6.1

Demo Reflected Ceiling Plan

A2.2

Proposed Main Floor Plan

AS.1

Details

A6.1

Reflected Ceiling Plan

A7.1

Enlarged Plans

Structural

-

S-100

Structural Notes and Details

Mech and Plum

-

M0.0

Mechanical Cover Sheet

M0.1

Mechanical Schedules

M0.2

Mechanical Specifications

M2.0

Mechanical Lower Level Plan

MD2.1

Mechanical Upper Level Demo Plan

M2.1

Mechanical Upper Level Plan

M3.1

Mechanical Diagrams

Electrical

-

E0.0

Electrical Cover Sheet

E0.1

Electrical Schedules

E0.2

Electrical Schedules

E2.0

Electrical Lower Level Plan

ED2.1

Electrical Upper Level Demo Plan

E2.1

Electrical Upper Level Plan

EL2.1

Lighting Upper Level Plan

ACQUSTIC PANEL CEILING

APC-1

CLASSROOMS

ARMSTRONG

FINE FISSURED-HIGH ACOUSTICS SQUARE LAY-IN - 1714

WHITE W/ WHITE GRID

24" x 48"x34"

NRC: .55

ACQUSTIC PANEL CEILING

BASE

B-1

GENERAL WALL BASE

ROPPE

VINYL - TYPE TV - 700 SERIES

TBD

4" H

BASE

B-2

RESTROOM FLOOR TILE BASE WITH COVE

DALTILE

NATURAL HUES 1 - 5X12 COVE BASE FLAT TOP

BIRCH QH84

5'X12"

INSTALL IN ALL RESTROOMS

BASE

CARPET

CPT-1

FIELD

TANDUS CENTIVA

2N DPOWER 04987

VARICOLOR 71605

6' ROLLS

CARPET

GROUT

G-1

FOR WALL TILE T-1, T-2, T-3

MAPEI

EPOXY

WHITE 00

GROUT

PAINT

P-1

FIELD PAINT

SHERWIN WILLIAMS

DISTRICT STANDARD COLOR

PAINT

P-2

3103 CLASSROOM

SHERWIN WILLIAMS

COLOR TBD

REPAINT OF EX WD WAINSCOT

PAINT

TILING

T-1

RESTROOM WALL TILE

DALTILE

NATURAL HUES 1

BIRCH QH84

12X12

INSTALL IN ALL RESTROOMS

TILING

T-2

RESTROOM FLOOR TILE

DALTILE

HARMONIST

COMPOSURE HM23

12X12

INSTALL IN ALL RESTROOMS

TILING

T-3

RESTROOM WALL CAP

DALTILE

NATURAL HUES 1

BIRCH QH84

4X12

INSTALL IN ALL RESTROOMS

TILING

TRANSITIONS

TR-1

RESTROOM WALL TILE EDGE TRIM

SCHLUTER

JOLLY

SATIN ANODIZED ALUMINUM

HEIGHT TO MATCH TILE AND SETTING BED THICKNESS

TRANSITIONS

TR-4

TILE TO CARPET

SCHLUTER

RENO-TK

AE

INSTALLER TO VERIFY SIZE

TRANSITIONS

WALK OFF CARPET

WOC-1

3105 CLASSROOM

TANDUS CENTIVA

ASSERTIVE ACTION 04837

CHROMIUM 26201

24X24 MODULAR

WALK OFF CARPET

A

AMPERE

FD

FLOOR DRAIN

P

POLE

AB

ANCHOR BOLT

FE

FIRE EXTINGUISHER

PAN

PANTRY

ACT

ACOUSTICAL CEILING TILE

FEC

FIRE EXTINGUISHER

PERF

PERFORATED

APC

ACOUSTICAL PLASTER

G

GABINET

PL

PROPERTY LINE OR PLATE

AFF

ABOVE FINISHED FLOOR

FG

FIBERGLASS

PNT

PAINT

AFG

ABOVE FINISHED GRADE

FF

FINISH FLOOR

POLY

POLYETHYLENE

ALT

ALTERNATE

FH

FIRE HYDRANT

POLYISO

POLYISOCYANURATE

ALUM

ALUMINUM

FLG

FLANGE

POLYSTYRENE

POLYSTYRENE

ARCH

ARCHITECT(URAL)

FLUOR

FLUORESCENT

PRV

PRESSURE RELIEVE VALVE

BD

BEDROOM

FOP

FACE OF FINISH

PRO

PREJECTION

BRZ

BREAKER

FP

FIREPLACE

PSF

PRESSURE PER SQUARE FOOT

BM

BEAM

FRZ

FREEZER

PSI

PRESSURE PER SQUARE INCH

BRG

BEARING

FS

FLOOR SINK

PVC

PRESSURE TREATED

BRD

BOARD

FT

FIRE TREATED

PVC

POLYVINYL CHLORIDE

B.O.

BOTTOM OF

FTG

FOOTING

PW

POTABLE WATER

BOT

BOTTOM

GA

GAUGE

REINF

REINFORCE(D), (ING)

BRKR

BREAKER

GAL

GALLON

RCP

REFLECTED CEILING PLAN

BTU

BRITISH THERMAL UNIT

GALV

GALVANIZED

REF

REFRIGERATOR

BTUH

BTU PER HOUR

GI

GALVANIZED IRON

RM

ROOM

BTWN

BETWEEN

G

GAS

S

SIMILAR

BLDG

BUILDING

GMMU

GLASS MESH MORTAR UNIT(S)

SAT

SUSPENDED ACOUSTICAL TILE

BUR

BUILT UP ROOFING

GND

GROUND

SCH

SCHEDULE

C

CONDUIT

GR

GRADE, GRADING

SD

STORM DRAIN

C/C

CENTER TO CENTER

GYP

GYP SUM

SF

SQUARE FOOT (FEET)

CFM

CUBIC FEET PER MINUTE

GWB

GYP SUM WALL BOARD

SHT

SHEET

CJ

CONTROL JOINT

H&V

HEATING & VENTILATING SPECIFICATION(S)

SS

STAINLESS STEEL

CL

CENTER LINE

HDO

HIGH DENSITY OVERLAY

SSFC

SOLID SURFACE

CLOS

CLOSET

HDPE

HIGH DENSITY POLYETHYLENE

STL

STEEL

CMP

CORRUGATED METAL PIPE

HGT

HEIGHT

STIFF

STIFFENER

CLG

CEILING

HK

HOOK(S)

STN

STONE

CLOS

CLOSET

HM

HOLLOW METAL

STRUCT

STRUCTURAL

CO

CLEAN OUT

HM

HOLLOW METAL

SUSP

SUSPENDED

COL

COLUMN

HORIZ

HORIZONTAL

T&G

TOUNGE AND GROOVE

CONC

CONCRETE

HP

HORSE POWER

TC

TEMPERATURE CONTROL

CONT

CONTINUOUS, CONTINUE

HW

HOT WATER

THK

THICKNESS

CORR

CORRUGATED

HR

HOUR

THRU

THROUGH

CTC

CENTER TO CENTER

INSUL

INSULATION, INSULATING

T.O.

TOP OF

CW

COLD WATER

JOINT

JOINT

TRANSV

TRANSVERSE

X

CROSS

KIT

KITCHEN

TS

TUBE STEEL

D

DEEP OR DEPTH OR DRYER

KV

KILOVOLT

TYP

TYPICAL

DTL

DETAIL

KVA

KILOVOLT AMPERE

UG

UNDERGROUND

DIAG

DIAGONAL

LVD

LAUNDRY

UNO

UNLESS NOTED OTHERWISE

DIA

DIAMETER

MAX

MAXIMUM

VB

VAPOR BARRIER

DIAPH

DIAPHRAM

MH

MANHOLD

VERT

VERTICAL

DIN

DINING

MECH

MECHANICAL

VEST

VESTIBULE

DHW

DOMESTIC HOT WATER

MFR

MANUFACTURE(R)

V

VOLT

DR

DOOR

MIN

MINIMUM

WC

WEATHER BARRIER

DWG

DRAWING

MST

MASTER BED

W

WATER

EA

EACH

MTL

METAL

W

WATT OR WASHER OR WIDTH

ELEC

ELECTRICAL

N

NORTH

W/O

WITHOUT

EWV

ELECTRIC WATER COOLER

NO

NUMBER

ELEV

ELEVATION, ELEVATOR

OC

ON CENTER

EMBED

EMBEDMENT

OPP

OPPOSITE

EM

EMERGENCY

OZ

OUNCE(S)

EXIST

EXISTING

OD

OUTSIDE DIAMETER

EXP

EXPANSION

OSF

OUTSIDE FACE

EXT

EXTERIOR, EXTRUDED

Exhibit A

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Revisions:		
No	Description	Date

Issue Dates:
SD-03/07/2024
CD-04/05/2024

Sheet Title:
Index Sheet

Project No:
2404

Sheet No:
A0.1

LOWER LEVEL - NO CHANGE

UPPER LEVEL

UPPER LEVEL
EAST HALF -
CLASSROOM 205 - TWO EGRESS POINTS TO THE EAST AND SOUTH DIRECT TO THE
EXTERIOR.

WEST HALF -
CLASSROOMS 203 AND 240 - EXIT TO THE MAIN CORRIDOR. TWO EXITS FROM CORRIDOR
TO THE EAST AND WEST. EAST EXITING IS THROUGH DOWN EXISTING EXIT STAIR AND
CORRIDORS ON LOWER LEVEL. WEST EXITING IS THROUGH EXISTING EXITING STAIR.

EGRESS DOORS

ALL EGRESS DOORS TO THE EXTERIOR WILL HAVE FREE EGRESS WITH PANIC DEVICES
DOORS WITH NOTED OCCUPANT LOAD OF 50 OR OVER WILL ALSO HAVE FREE EGRESS
WITH PANIC DEVICE ELECTRONIC DOOR LOCKS DO NOT HAMPER EGRESS

220 OCCUPANTS

CATEGORY	WATER CLOSETS	LAVATORIES
MALE (110)	1 PER 50 = 3	1 PER 50 = 3
FEMALE (110)	1 PER 50 = 3	1 PER 50 = 3

DRINKING FOUNTAINS (220) 1 PER 100 = 3

220 OCCUPANTS

CATEGORY	WATER CLOSETS	LAVATORIES
EXISTING		
MALE	2 WC- 1 URINAL	3
FEMALE	3 WC	3

NEW		
UNISEX	2 WC	2
DRINKING FOUNTAINS -		1 EXISTING AND 1 REMOVED
		2 NEW
TOTAL REMAINING AND NEW:	3	

JANITORS	EXISTING
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
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95	95
96	96
97	97
98	98
99	99
100	100

2021 International Building Code (IBC)
2021 International Existing Building Code (IEBC)
2021 International Fire Code (IFC)
2021 International Mechanical Code (IMC)
2021 International Energy Conservation Code (IECC)
2017 ICC A117.1
2021 International Plumbing Code (IPC)
2021 International Fuel Gas Code (IFGC)
2023 National Electric Code (NEC)

CLIMATE ZONE 5B

No Fire Suppression System
Existing Fire Alarm - Full Addressable

IEBC - CHAPTER 8 - LEVEL 2 ALTERATION

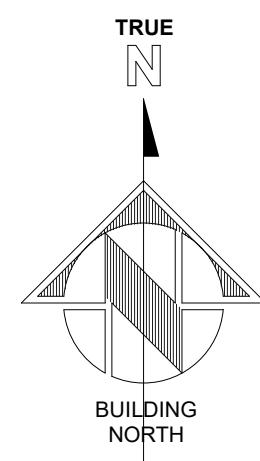
ADDRESS: GLENWOOD SPRINGS HIGH SCHOOL
ANNEX BUILDING
1405 GRAND AVE
GLENWOOD SPRINGS, CO 81601

SQUARE FOOTAGE: 8,100 SQFT

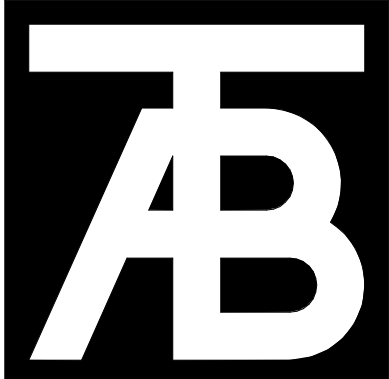
YEAR BUILT: UNKNOWN

NUMBER OF STORIES: 2

BUILDING CONSTRUCTION INFORMATION
TYPE OF CONSTRUCTION: TYPE VB
NOT FULLY SPRINKLED







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Seal



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Revisions:		
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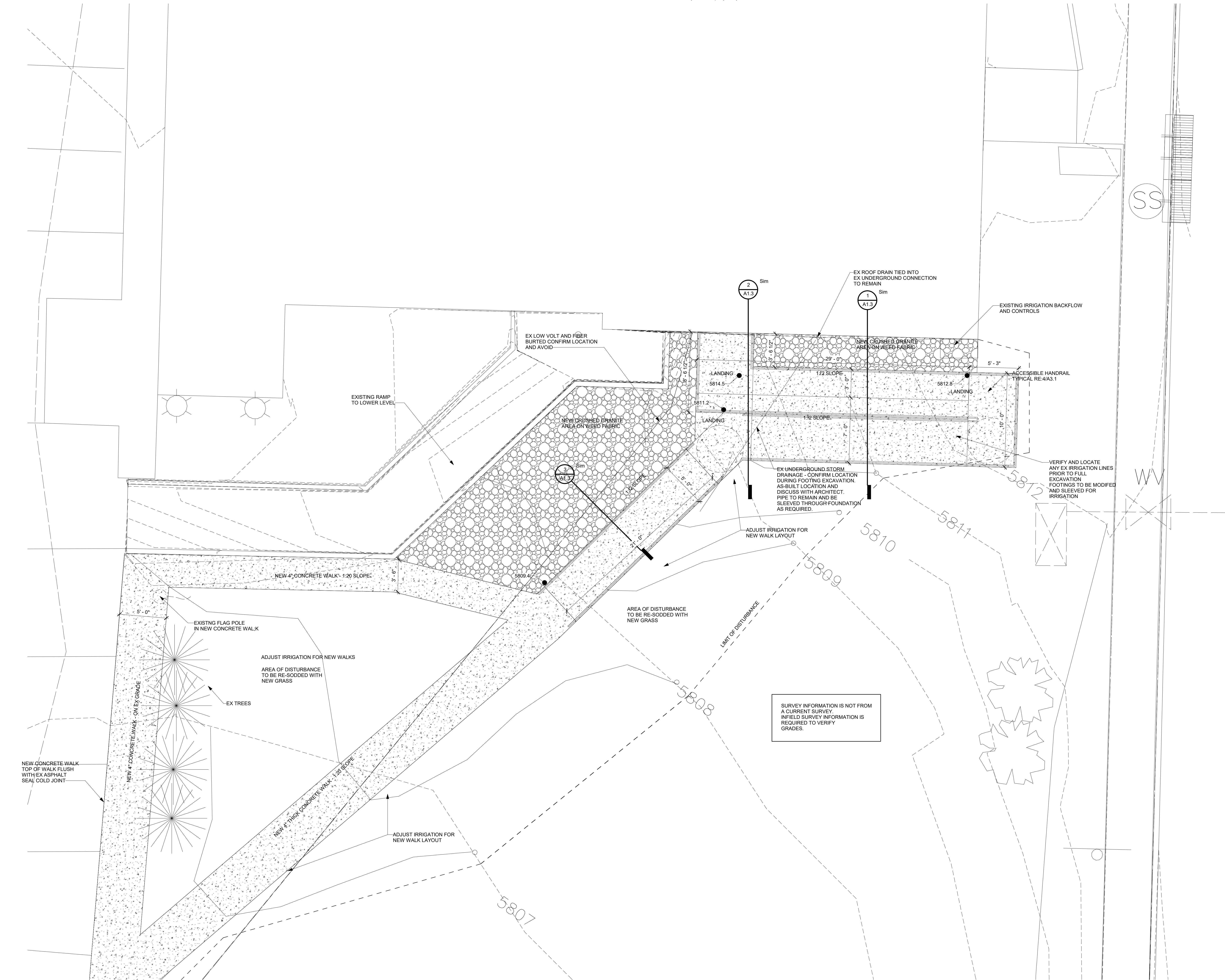
Issue Dates:
SD-03/07/2024
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Sheet Title:
Site Plan
Enlarged

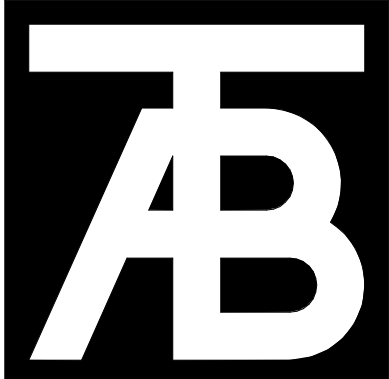
Project No:
2404

Sheet No:
A1.2

Survey Note:
All survey and topographical information electronically provided
by "XX Company" Project Number XX, Dated xx/xx/xx

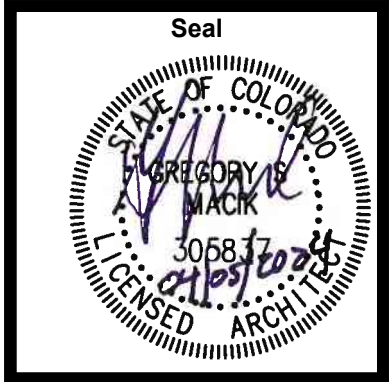


SITE PLAN OVERALL ENLARGED
1 1/4" = 1'-0"



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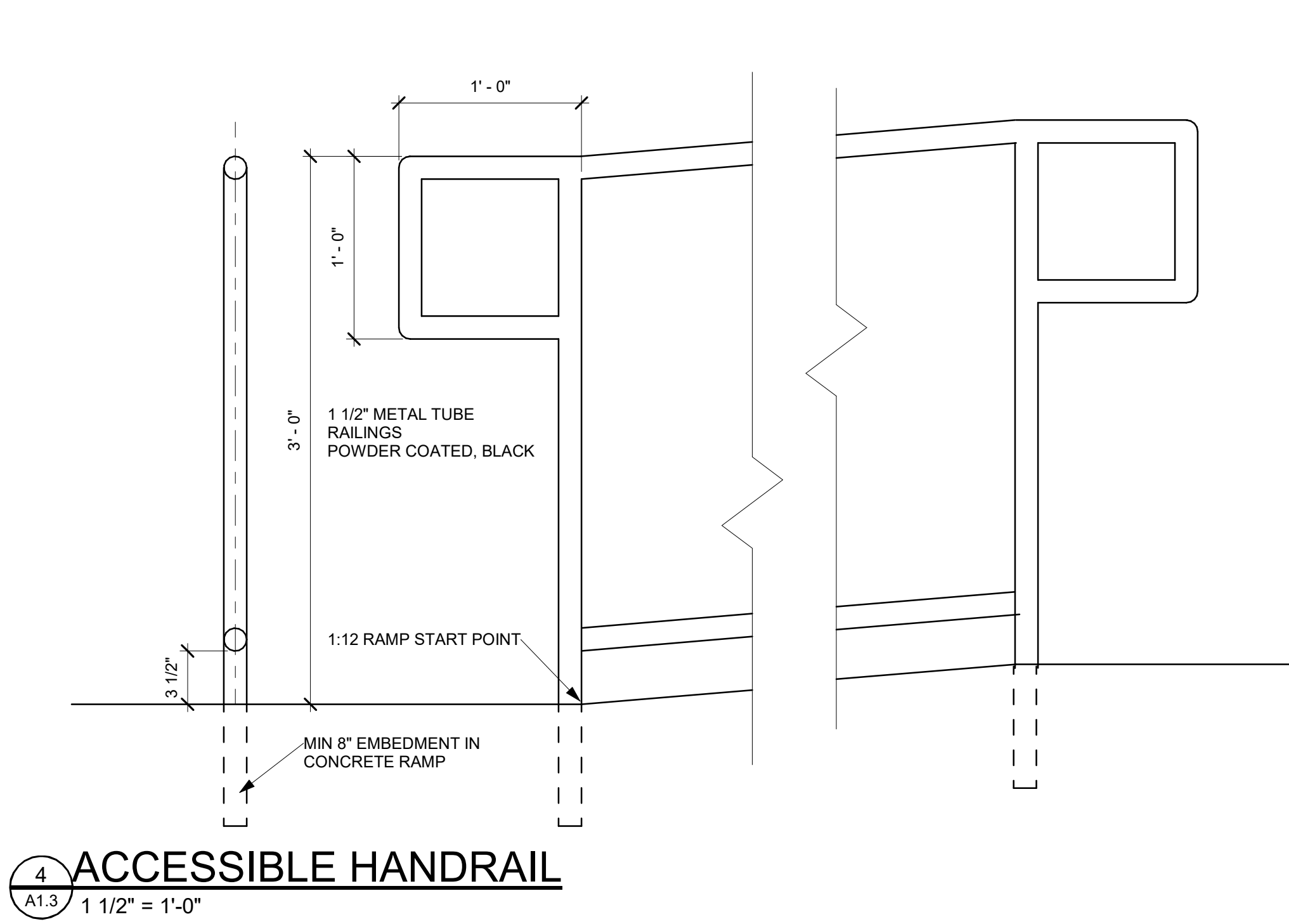
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No	Description	Date

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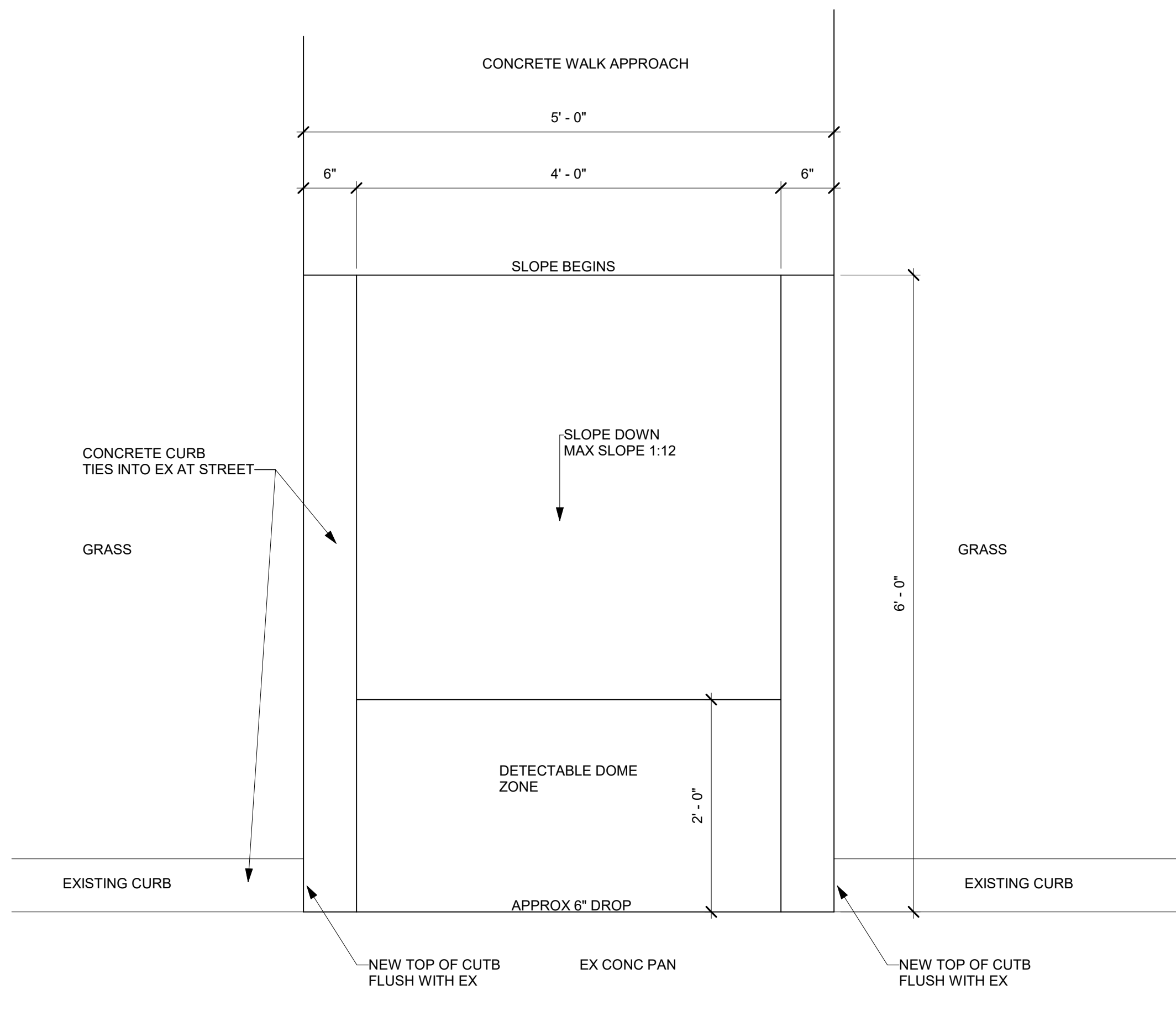
Sheet Title:
Site Details

Project No:
2404

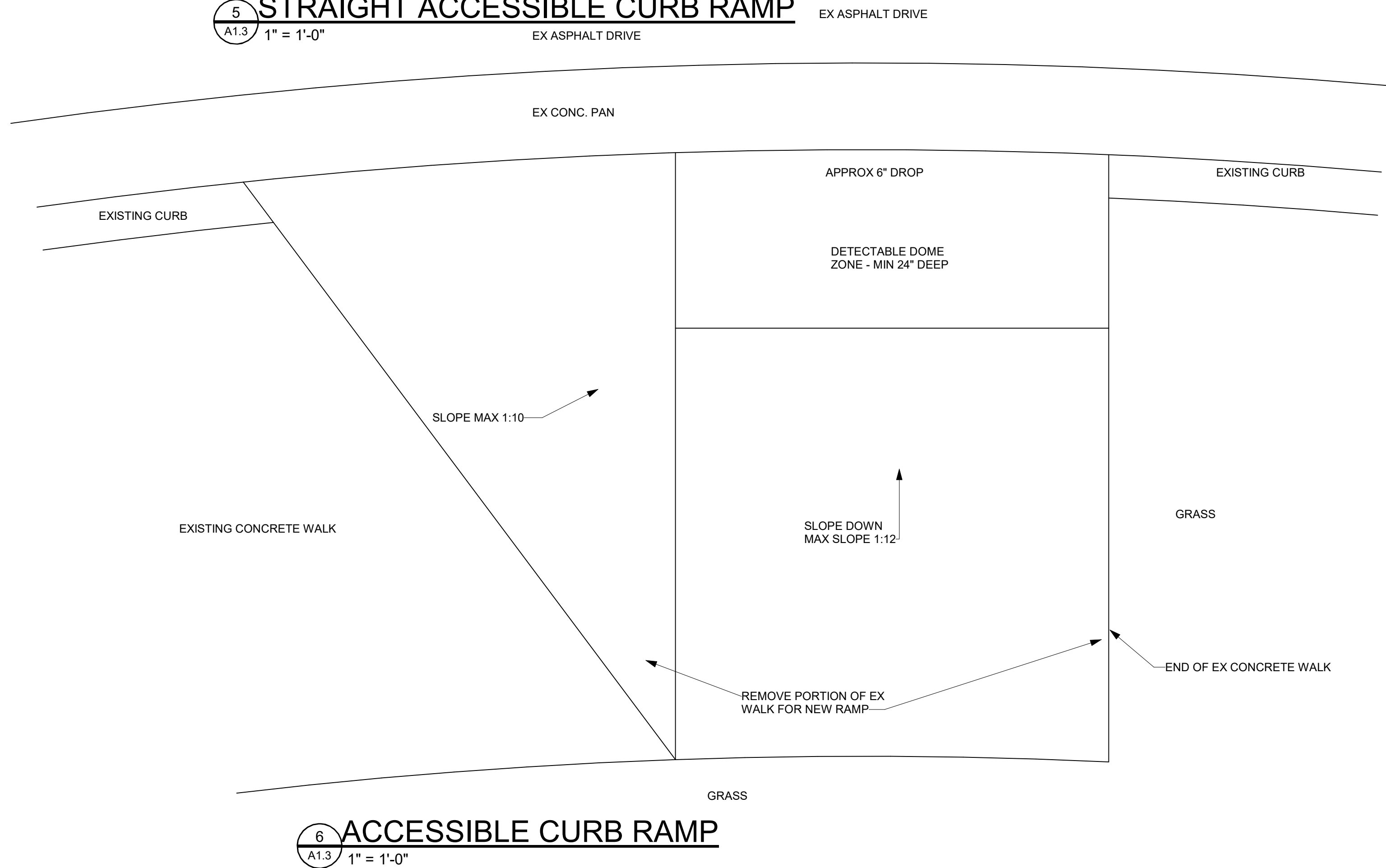
Sheet No:
A1.3



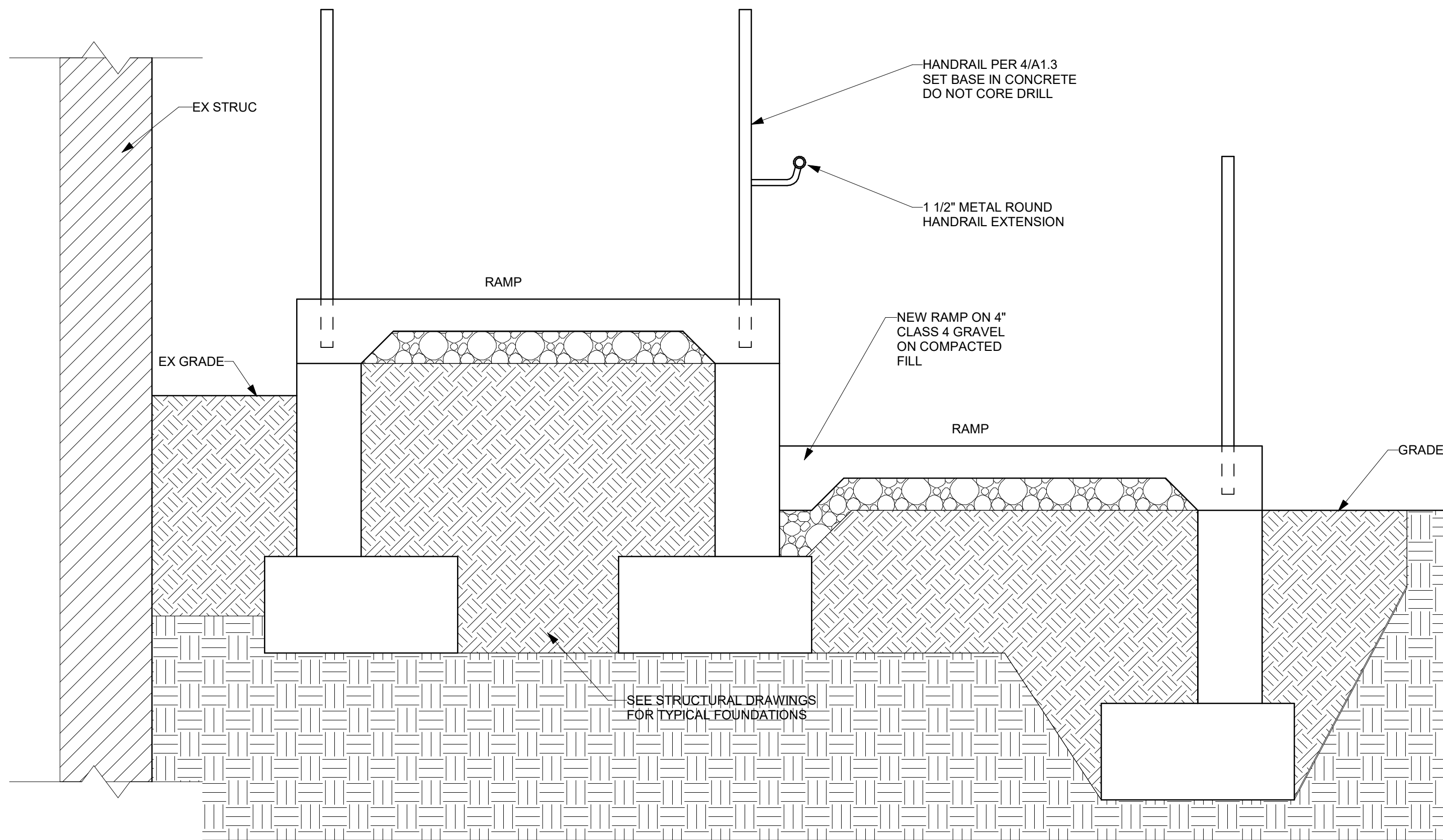
4 ACCESSIBLE HANDRAIL
A1.3 1 1/2" = 1'-0"



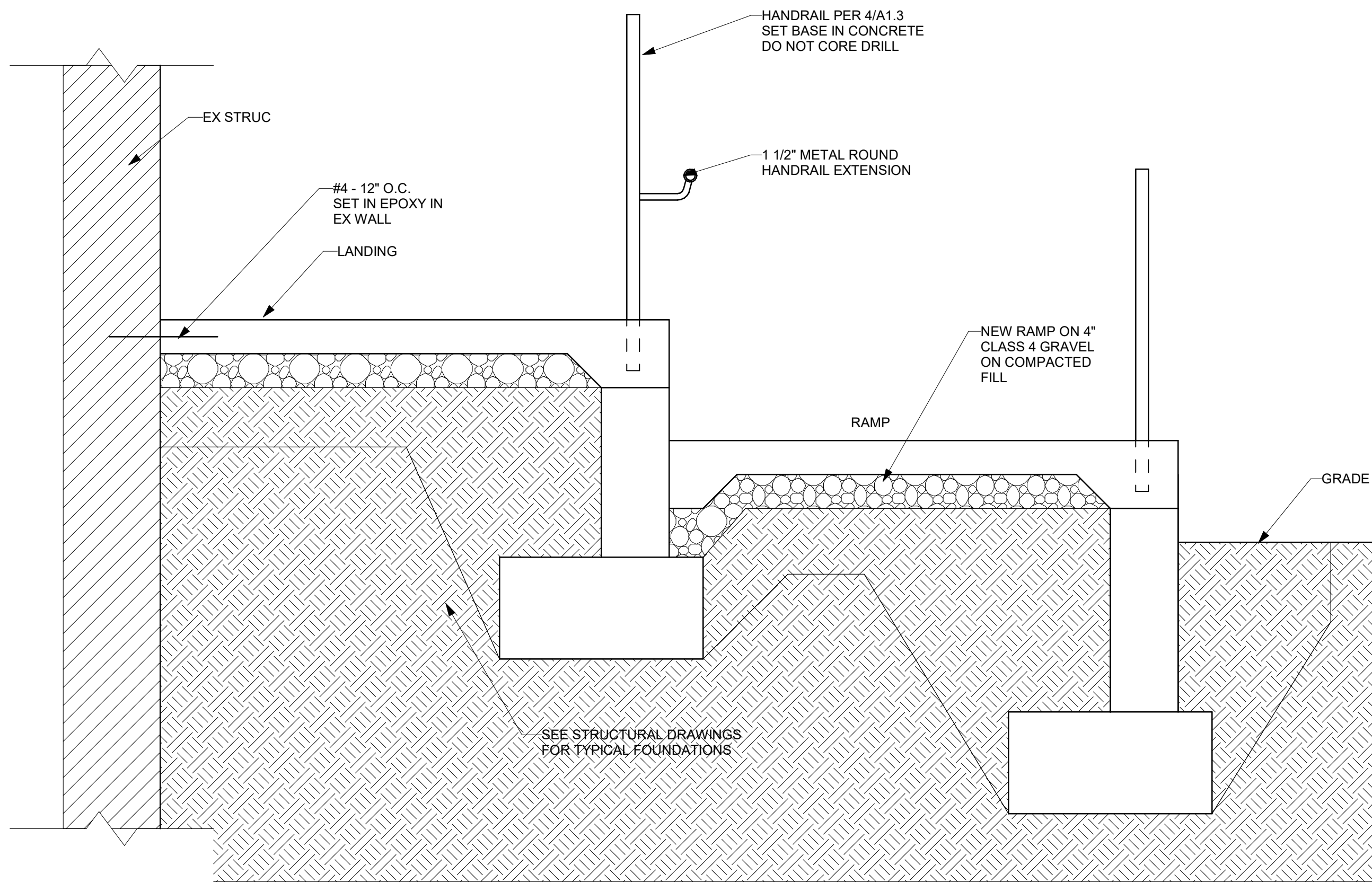
5 STRAIGHT ACCESSIBLE CURB RAMP
A1.3 1" = 1'-0"



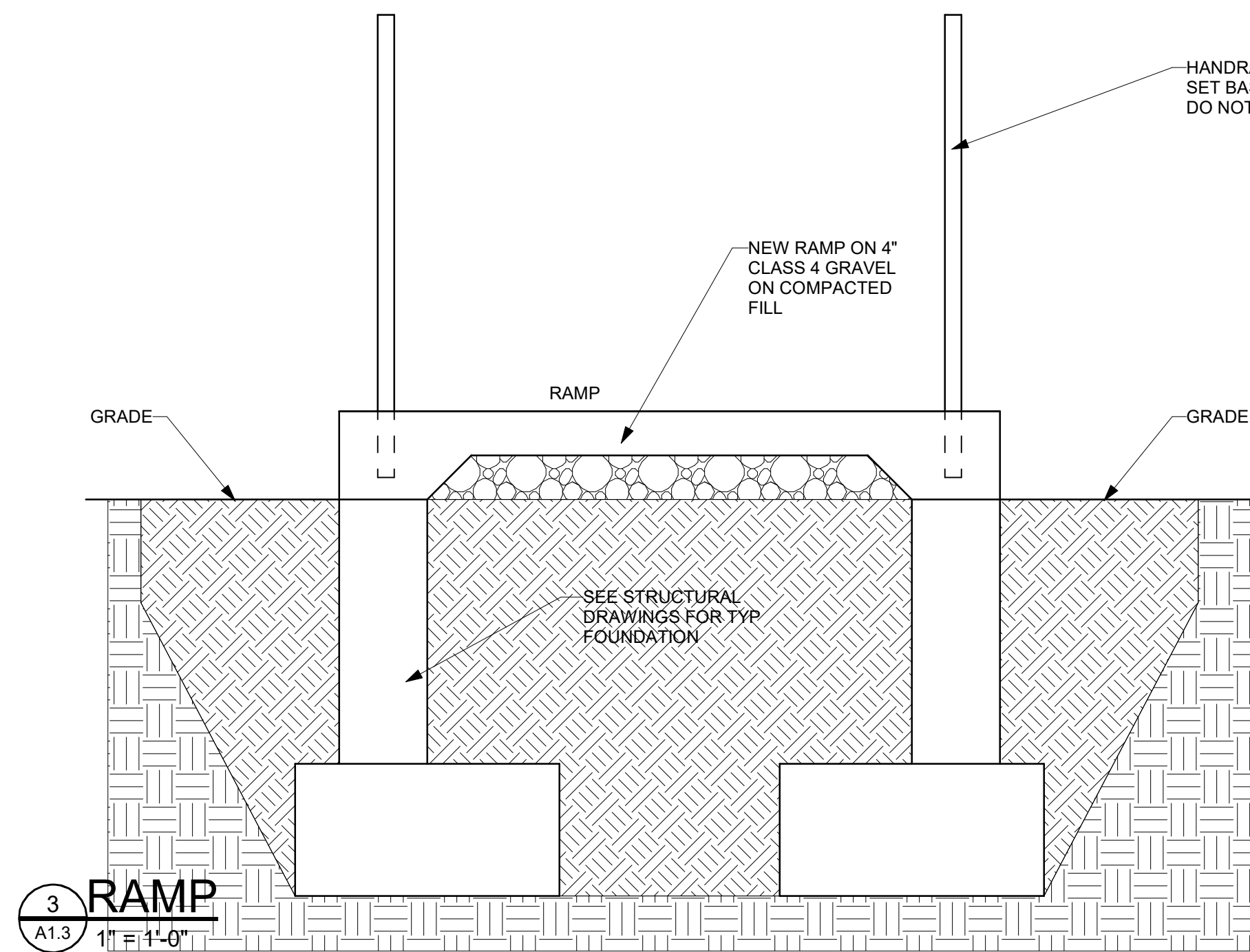
6 ACCESSIBLE CURB RAMP
A1.3 1" = 1'-0"



1 DOUBLE RAMP
A1.3 1" = 1'-0"



2 LANDING AND RAMP
A1.3 1" = 1'-0"



3 RAMP
A1.3 1" = 1'-0"

DEMOLITION DEFINITIONS:

1. REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM ON SITE, UNLESS OTHERWISE INDICATED TO BE REMOVED AND SALVAGED OR REMOVED AND REINSTALLED.
2. SALVAGE: DETACH ITEMS FROM EXISTING CONDITIONS AND RETURN TO OWNER READY FOR REUSE.
3. REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONDITIONS, PREPARE THEM FOR REUSE, TEMPORARY STORE AS REQUIRED AND REINSTALL THEM AS INDICATED.
4. EXISTING: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED, SALVAGED OR REMOVED AND REINSTALLED.
5. DRAWINGS ATTEMPT TO SHOW EXISTING CONDITIONS, BUT EXISTING CONDITIONS MAY NOT BE SHOWN OR VISIBLE ON SITE. CARE MUST BE TAKEN TO ABANDON, TURNOFF OR OTHERWISE SECURE EXISTING CONDITIONS THAT ARE NOT TO BE REMOVED WITH REMOVED STRUCTURE.

Key Value	Keynote Text
-----------	--------------

D201	REMOVE EXISTING DOOR AND FRAME
D202	REMOVE EXISTING DOOR, FRAME REMAINS
D204	REMOVE EXISTING WALLS WHICH STOP AT CEILING LEVEL AND CEILING CONTINUES ACROSS.
D205	REMOVE EXISTING WINDOW
D206	EXISTING MECHANICAL CHASE
D207	EXISTING ROOF DRAIN REMAINS
D208	REMOVE EXISTING FLOORING
D209	EXISTING ROOM NO DEMO
D210	SALVAGE EXISTING SMART BOARD
D211	REMOVE WALL AS REQ FOR NEW DOOR, COORDINATE AND ALIGN WITH EXISTING BRICK COURSING
D212	EXISTING BASE BOARD HEAT TO REMAIN
D213	PORTION OF EX BASE BOARD HEAT TO BE REMOVED, RE MEP
D214	EXISTING DOOR TO REMAIN
D215	EXISTING STAIR TO REMAIN
D216	EXISTING WALL TO REMAIN
D217	EXISTING WINDOW TO REMAIN
D218	DEMO CABINETS AND ALL ATTACHED ITEMS
D219	REMOVE OVEN
D220	REMOVE FRIDGE
D221	SALVAGE EX SCREEN
D222	EX TV TO BE REMOVED AND SALVAGED FOR REINSTALLATION D2
D224	REMOVE EXISTING DRINKING FOUNTAIN
D225	SALVAGE EX CLOCKS AND SPEAKERS
D226	SALVAGE EXISTING FIRE EXTINGUISHER AND CABINET
D227	REMOVE WALLS WHICH GO BEYOND CEILING LEVEL
D228	EXISTING ACCESS AND DOOR SECURITY, NO REVISIONS
D229	EXISTING CARPET TO REMAIN
D230	REMOVE EXISTING CARPET, SALVAGE ENOUGH TO STRIP IN A REPAIR IN 204 AT REMOVED WALL
D231	SALVAGE EXISTING DOOR, FRAME AND HARDWARE FOR RELOCATION, TO DOOR 01
D232	SALVAGE EX MARKERBOARD FOR RELOCATION
D233	SALVAGED EXISTING DOOR, FRAME AND HARDWARE FOR REINSTALLATION

No	Description	Date

SD-03/07/2024
CD-04/05/2024

Demo

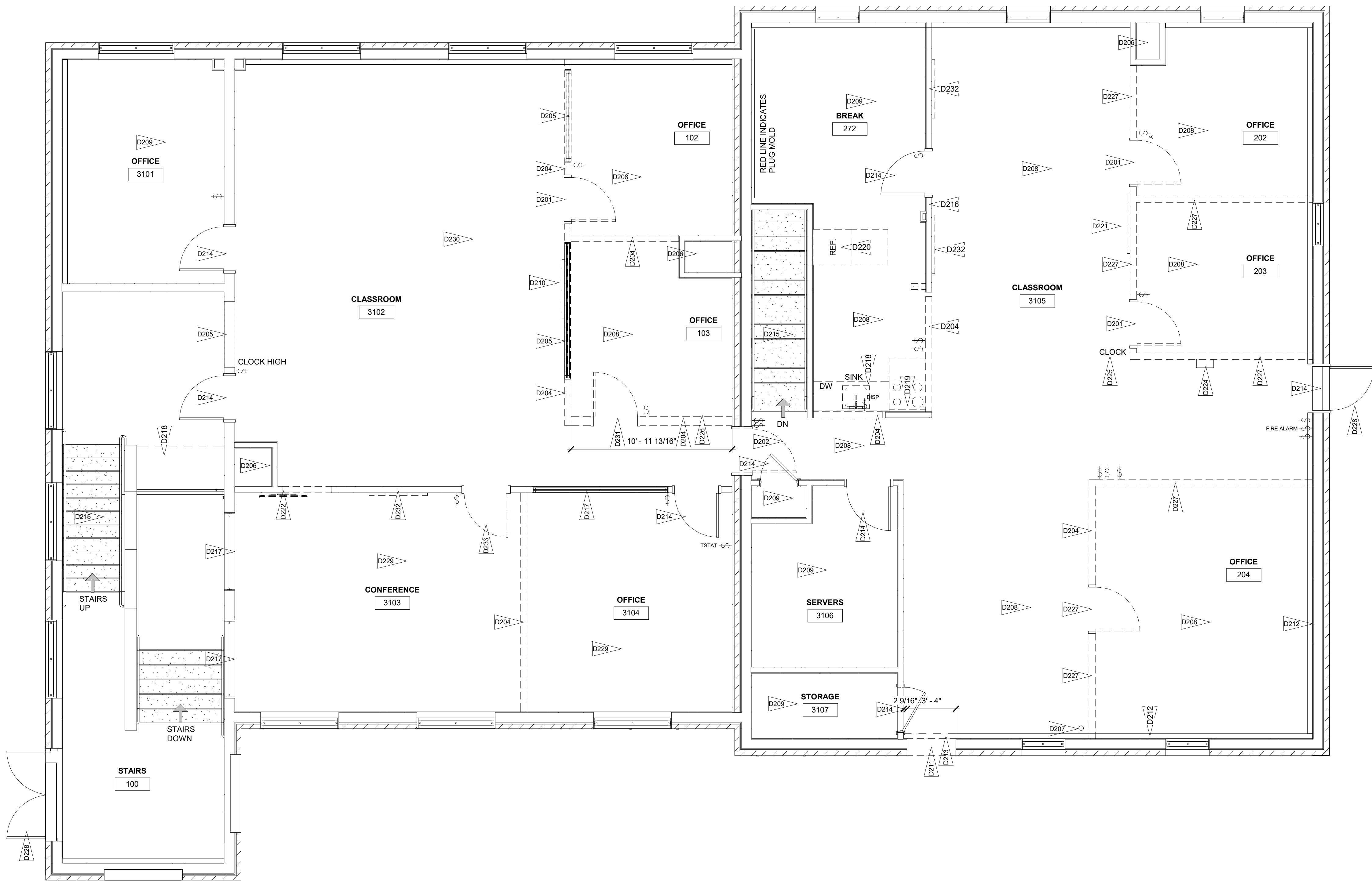
Demo Building Floor Plans

2404

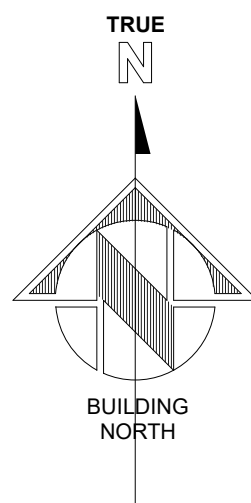
D2.1

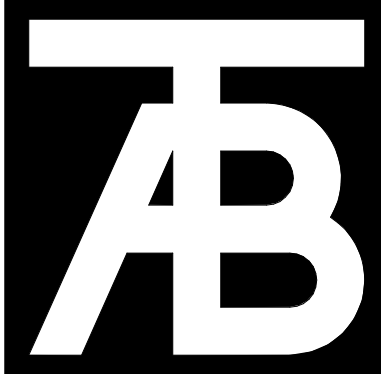
1. DEMOLITION GENERAL NOTES APPLY TO ALL DEMOLITION SHEETS.
2. COORDINATE DEMOLITION AND PHASING EFFORTS WITH ARCHITECT AND OWNER'S REPRESENTATIVES. MAKE EVERY EFFORT SIMULTANEOUSLY TO MINIMIZE DISRUPTION OF OWNER'S OPERATIONS AND TO PROVIDE BUILDING USER'S SAFETY. EXCESSIVE NOISE AND VIBRATION SHALL BE PRE-APPROVED AND COORDINATED WITH OWNER'S REPRESENTATION.
3. COORDINATE DISRUPTION OF UTILITY SERVICES WITH OWNER AND AS SATISFIED.
4. VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS AND NOTIFY ARCHITECT OF DISCREPANCIES.
5. ITEMS NOT SHOWN DASHED ARE TO REMAIN. ALL DASHED ITEMS REPRESENT ITEMS TO BE REMOVED. COORDINATE REMOVAL WITH NEW ITEMS SHOWN IN DRAWINGS.
6. REMOVE EXISTING WALLS, DOORS, MILLWORK, PLUMBING FIXTURES, BELONGINGS, TOPFITS, MARKERBOARDS, ETC. IN THEIR ENTIRETY AND AS REQUIRED TO EXECUTE DEMOLITION AND CONSTRUCTION WORK AS DESCRIBED ON THE DRAWINGS.
7. THE OWNER SHALL RESERVE THE RIGHT TO SALVAGE ANY MATERIALS.
8. PROVIDE PROTECTIONS FOR EXISTING BUILDING MATERIALS AND EQUIPMENT FROM DAMAGE DUE TO DEMOLITION OR CONSTRUCTION-RELATED INCIDENTS PERMITTED UNDER THIS CONTRACT.
9. REFER TO MEP AND STRUCTURAL DRAWINGS FOR ADDITIONAL ITEMS TO BE REMOVED, CAPPED OR ALTERED.
10. IF NEW CONSTRUCTION IS SHOWN ON OTHER DRAWINGS IT IS ASSUMED DEMOLITION IS REQUIRED IF EXISTING WALLS, FINISHES AND ETC. ARE TO BE REMOVED.
11. CONTRACTOR TO COORDINATE REMOVAL OF EXISTING ITEMS WITH INSTALLATIONS OF NEW ITEMS.
12. COORDINATE NEW STRUCTURAL ITEMS WITH REMOVAL OF EXISTING ITEMS. REFER TO STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL WORK TO EXISTING STRUCTURE.
13. IT IS ASSUMED ITEMS NOT TAGGED AS REMOVED OR SALVAGED WILL BE REMOVED IF ATTACHED TO WALL, CABINET, OR OTHER ITEMS. THIS INCLUDES ITEMS ON WALLS, CEILINGS AND FLOORS.
14. ALL PLUMBING SHOWN AS DASHED AND NOT SPECIFICALLY NOTED AS TO BE REMOVED. ALL PLUMBING NEEDS TO BE MODIFIED TO MATCH NEW LAYOUT. REFER TO PLUMBING PLANS FOR EXTENT OF WORK.
15. DRAWINGS ATTEMPT TO SHOW EXISTING CONDITIONS, BUT, ALL EXISTING CONDITIONS MAY NOT BE SHOWN OR VISIBLE ON SITE. CARE MUST BE TAKEN TO AVOID CONFLICT, TURNOFF OR OTHERWISE PROTECT EXISTING UTILITIES. WHEN CONFLICTS ARE FOUND WITH REMOVED STRUCTURE, WHEN COMPLETED WITH POUND CONTACT ARCHITECT FOR DIRECTION.
16. REFER TO DEMO REFLECTED CEILING PLANS FOR ADDITIONAL WORK
17. ALL HARDWARE TO BE SALVAGED FOR OWNER OR REUSE FOR NEW CONSTRUCTION.
18. DISTRICT WILL REMOVE FURNITURE, ART WORK AND ETC UNLESS NOTED OTHERWISE.
19. NOT ALL ITEMS TAGGED FOR CLARITY. ASSUME REMOVAL IF DASHED.

— — — — EXISTING CONSTRUCTION TO BE REMOVED
———— EXISTING CONSTRUCTION TO REMAIN



1 UPPER LEVEL DEMO PLAN





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Revisions:		
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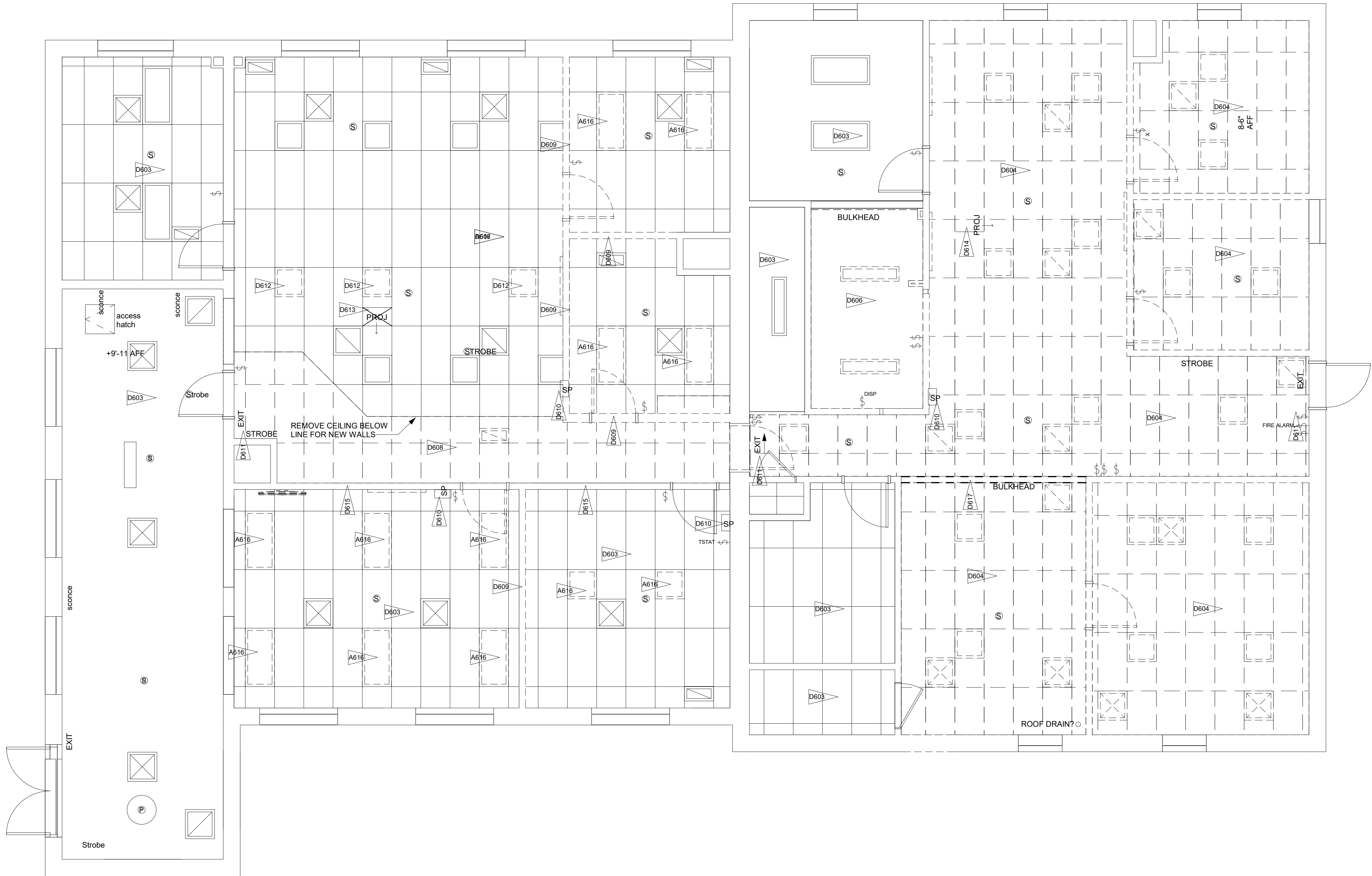
Sheet Title:
Demo Reflected Ceiling Plan

Project No:
2404

Sheet No:
D6.1

- EXISTING ACT CEILING TO BE REMOVED
- EXISTING GYPSUM BOARD CEILING TO BE REMOVED

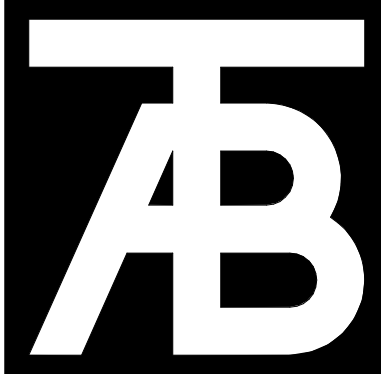
RCP Demo Key
1/8" = 1'-0"



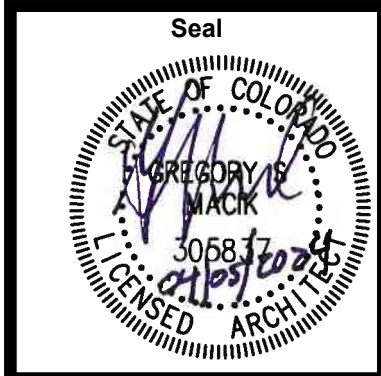
1 UPPER LEVEL DEMO RCP
D6.1 1/4" = 1'-0"

NOTES:

Keynote Legend	
Key Value	Keynote Text
A616	NEW LIGHT FIXTURES IN ROOM. - RE. ELEC. PROVIDE NEW CEILING TILES AS NEEDED TO FILL HOLES REMAINING FROM REMOVE 2X4 FIXTURES
D603	EX CEILING NO WORK
D604	REMOVE EXISTING CEILING. SALVAGE ALL EXISTING LIGHTING, MECH DIFFUSERS AND ITEMS MOUNTED TO CEILING. SUPPORT MECHANICAL DIFFUSERS IN EXISTING LOCATIONS. LIGHT FIXTURES TO BE RELOCATED.
D606	REMOVE EXISTING HARD LID CEILING AND ITEMS ATTACHED THERE TO.
D607	PORTION OF EXISTING CEILING TO REMAIN.
D608	REMOVE PORTION OF EXISTING CEILING.
D609	WALLS BELOW ARE BEING REMOVED. EXISTING CEILING CURRENTLY CONTINUES OVER WALLS BELOW.
D610	EX WALL SPEAKERS. SALVAGE ON REMOVED WALLS AND KEEP ON WALLS NOT REMOVED.
D611	EX EXIT SIGNS REMAIN
D612	SALVAGE EXISTING LIGHT FIXTURES FOR RELOCATION
D613	EX PROJECTOR TO REMAIN
D614	SALVAGE EX PROJECTOR FOR RELOCATION
D615	EXISTING WALLS STOP AT EXISTING CEILING. REMOVE PORTION OF CEILING IN NEW CORRIDOR.
D617	REMOVE EXISTING DRYWALL BULKHEAD



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Sheet Title:
Proposed Main Floor Plan

Project No:
2404

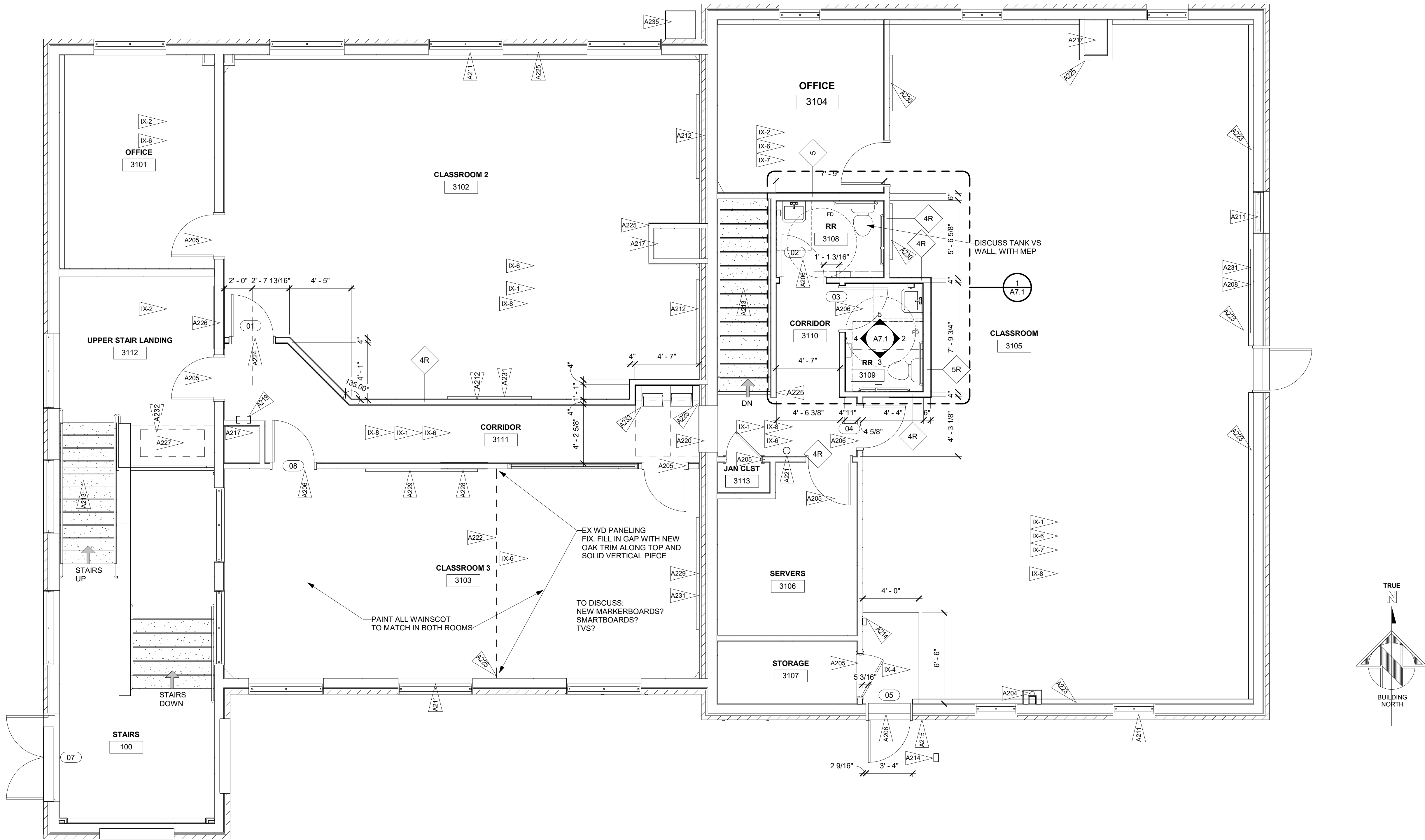
Sheet No:
A2.2

NOTES:

FLOOR PLAN GENERAL NOTES:

- PATCH EXISTING CONSTRUCTION SCHEDULED TO REMAIN. REPAIRED SURFACES TO BE FLUSH WITH ADJACENT FINISH SURFACES. TO SAME QUALITY AS NEW CONSTRUCTION PRIOR TO INSTALLING NEW FINISHES. REFER TO THE FINISH MANUFACTURER'S GUIDELINES FOR INSTALLATION.
- PATCH EXISTING FIRE-RATED WALLS, FLOOR CEILINGS, ETC. SO AS TO MAINTAIN THE FIRE-RADIATING. ADD FIRE-SMOKE DAMPERS WHERE NEW DUCTS CROSS. ADD FIRE STOP AT ALL.
- PATCH WALLS AT REMOVED RECEPTACLE OPENINGS SO AS TO RECEIVE SUBSEQUENT WORK.
- PATCH AND LEVEL FLOOR SUBSTRATES TO RECEIVE NEW WORK AS SCHEDULED.
- COORDINATE ALL FLOOR CORE DRILLING WITH EXISTING.
- DO NOT SCALE DRAWINGS.
- ALL SPOT ELEVATIONS SHOWN ON THE FLOOR PLANS OUTSIDE THE BUILDING RELATE TO USGS ELEVATIONS. ALL SPOT ELEVATIONS INSIDE THE BUILDING REFER TO BUILDING REFERENCE ELEVATIONS. NOTIFY ARCHITECT IMMEDIATELY SHOULD CONDITIONS BE FOUND CONTRADICTORY TO THESE DRAWINGS.
- ALL ANGLES SHOWN ON THE FLOOR PLANS ARE 90 DEGREES UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE TO FACE OF STUD.
- TYPICAL WALL TYPE IS 4, UNLESS NOTED OTHERWISE.
- COORDINATE CEILING REMOVAL AND PATCHING AT LOWER LEVEL WITH NEW PLUMBING. PATCH WITH MATERIAL TO MATCH EXISTING.
- COORDINATE ROOF PENETRATIONS WITH MEP PLANS. PROVIDE TERMINATIONS AND PATCHES PER EXSITING ROOFING MFG DETAILS.

Keynote Legend	
Key Value	Keynote Text
A204	EXISTING ROOF DRAIN PIPE TO REMAIN. NEW FRAMED BOX. PROVIDE CLEANOUT COVER FOR EX CLEANOUT
A205	EXISTING DOOR TO REMAIN
A206	INSTALL NEW DOOR
A208	INSTALL SALVAGED SCREEN
A211	TYPICAL ALL EXISTING EXTERIOR WINDOWS TO REMAIN. WINDOW COVERINGS REMAIN
A212	INSTALL SALVAGED MARKERBOARD
A213	EXISTING STAIRS, NO WORK
A214	INSTALL NEW ADA ACTUATOR
A215	INSTALL NEW DISTRICT DOOR CAMERA AND SECURITY ACCESS
A217	EX MECHANICAL SHAFT
A219	REINSTALL RECESSED FIRE EXTINGUISHER CABINET AND FIRE EXTINGUISHER
A220	EXISTING FRAMED OPENING, NO DOOR
A221	EXISTING WALL MOUNTED FIRE EXTENGUISHER, NO CHANGE
A222	PATCH EXISTING CARPET AT REMOVED WALL. PATCH WITH SALVAGE PIECE FROM DEMO WORK.
A223	CLEAN BRICK OF MISC DRYWALL, MUD AND ETC AT REMOVED WALLS
A224	INSTALL SALVAGED DOOR, FRAME AND HARDWARE
A225	PATCH EX DRYWALL AT REMOVED WALLS
A226	INFILL WALL AT REMOVED WINDOW WITH WALL TYPE SIMILAR TO TYPE 5
A227	NEW COPIER LOCATION
A228	INFILL WALL WITH NEW PATCH TO MATCH EX. PATCH WOOD WAINSCOT BELOW
A229	NEW 4'X8' MARKERBOARD
A230	REINSTALL SALVAGED MARKERBOARDS
A231	SHORT THROW PROJECTOR ABOVE
A232	INSTALL CARPET PATCH AT REMOVED BASE, PATCH WALLS. INSTALL BASE
A233	NEW DOUBLE DRINKING FOUNTAIN - ELKAY I2ST18WSP. STANDARD, ACCESSIBLE AND BOTTLE FILLER
A235	NEW EXTERIOR ROOF ACCESS LADDER - SIMILAR TO KATTSAFE.COM. CAGED FIXED LADDER - RL41. 14'. PROVIDE BRACKETS, ANCHORS AND INSTALLATION. FULLY INSTALLED BY GC.
IX-1	NEW CARPET
IX-2	EX FLOOR FINISH
IX-4	INSTALL NEW TANDUS ABRASIVE ACTION II, CHARCOAL, WALK-OFF CARPET TILE
IX-6	ALL EXISTING AND NEW DRYWALL, AND ALL OTHER EX PAINTED ITEMS TO BE PAINTED.
IX-7	EXISTING UNPAINTED BRICK TO NOT BE PAINTED
IX-8	NEW RUBBER BASE, NOT REQUIRED AT BASEBOARD HEAT



1 UPPER LEVEL
A2.2 1/4" = 1'-0"

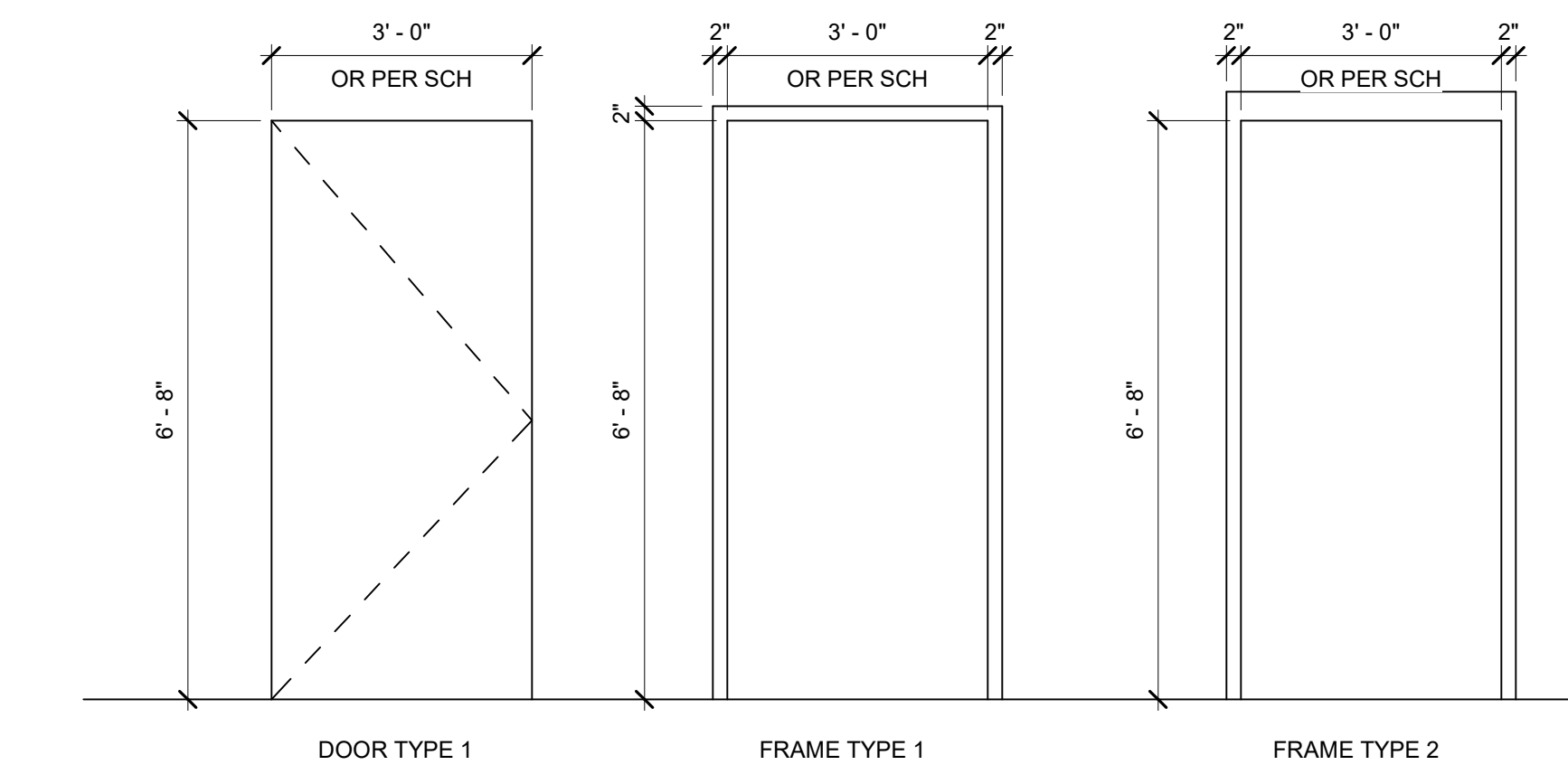
DOOR SCHEDULE																			
Mark	LOCATION		WIDTH	HEIGHT	DOOR THICKNESS	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FRAME DEPTH	GLASS TYPE	HEAD	JAMB	SILL	Door Fire Rating	HARDWARE	REMARKS
	FROM ROOM	TO ROOM																	
01	CORRIDOR	CLASSROOM 2	3' - 0"	6' - 8"	1 3/4"	EX	EWD	EX	EX	EHM	PT	5 1/4"					20 MIN	6	
02	CORRIDOR	RR	3' - 0"	6' - 8"	1 3/4"	1	WD	ST	1	HM	PT	5 1/4"						2	
03	RR	CORRIDOR	3' - 0"	6' - 8"	1 3/4"	1	WD	ST	1	HM	PT	5 1/4"						2	
04	CORRIDOR	CLASSROOM	3' - 0"	6' - 8"	1 3/4"	1	WD	ST	1	HM	PT	5 1/4"					20 MIN	1	EX BEING RELOCATED HAS DOOR LABEL
05	CLASSROOM		3' - 0"	6' - 8"	1 3/4"	1	HM	PT	1	HM	PT	0"						3	ACCESS CONTROL, VIF FRAME DEPTH
07	STAIRS		6' - 0"	7' - 0"	1 3/4"	EX	EHM	EX	EX	EHM	EX	0"						5	NO WORK
08	CLASSROOM 3	CORRIDOR	3' - 0"	6' - 8"	1 3/4"							0"							

HARDWARE GROUPS

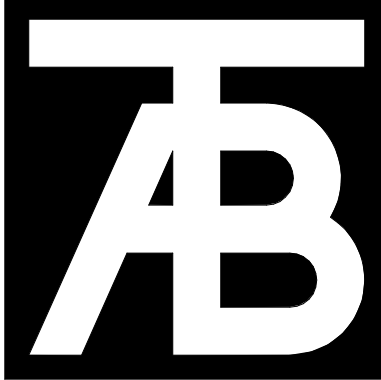
- CLASSROOM LOCK SET -
 - EA HINGES - 5BB1 4.5X4.5 652 IVE
 - EA CLASSROOM 9K37R15D 626 BES
 - EA KICKPLATE 630 IVE
 - EA WALL STOP 630 IVE
 - EA SILENCER 630 GY IVE
- RESTROOM LOCK SET -
 - EA HINGES - 5BB1 4.5X4.5 652 IVE
 - EA PRIVACY W/ INDICATOR 626 BES
 - EA KICKPLATE 630 IVE
 - EA WALL STOP 630 IVE
 - EA SILENCER 630 GY IVE
- EXTERIOR LOCKSET
 - EA CONT. HINGE 112HD 628 IVE
 - EA PANIC HARDWARE CD-98 626 VON
 - EA RM CYLINDER 1E72 626 BES
 - EA MORTISE CYLINDER 1E74 626 BES
 - EA ELECTRIC STRIKE 6200 FSE 630 VON
 - EA OPERATOR D-4990 2
 - EA DOOR RELEASE 2
 - WEATHERSTRIP 703 EV NA
 - EA DOOR SWEEP 200 NA NG
 - THRESHOLD 88RV4 1
 - ACCESSIBLE DOOR OPERATOR REMOTES (2) 1
 - EA ACTUATOR CL4163 630 SD
 - EA ACTUATOR AND POST CL2247 - CL4163 1
 - EA POWER SUPPLY 1
 - ACCESS CONTROL - Alphaone (District Spec)

PROVIDE ITEMS AS NEEDED TO COMPLETE INSTALLATION OF SYSTEMS

- EXISTING ACCESS NO WORK
- EXISTING DOOR AND HARDWARE NO NEW WORK.
- REUSES EXISTING HARDWARE



2 DOOR AND FRAME TYPES
A2.2 1/2" = 1'-0"



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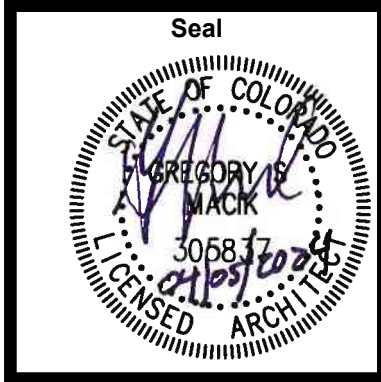
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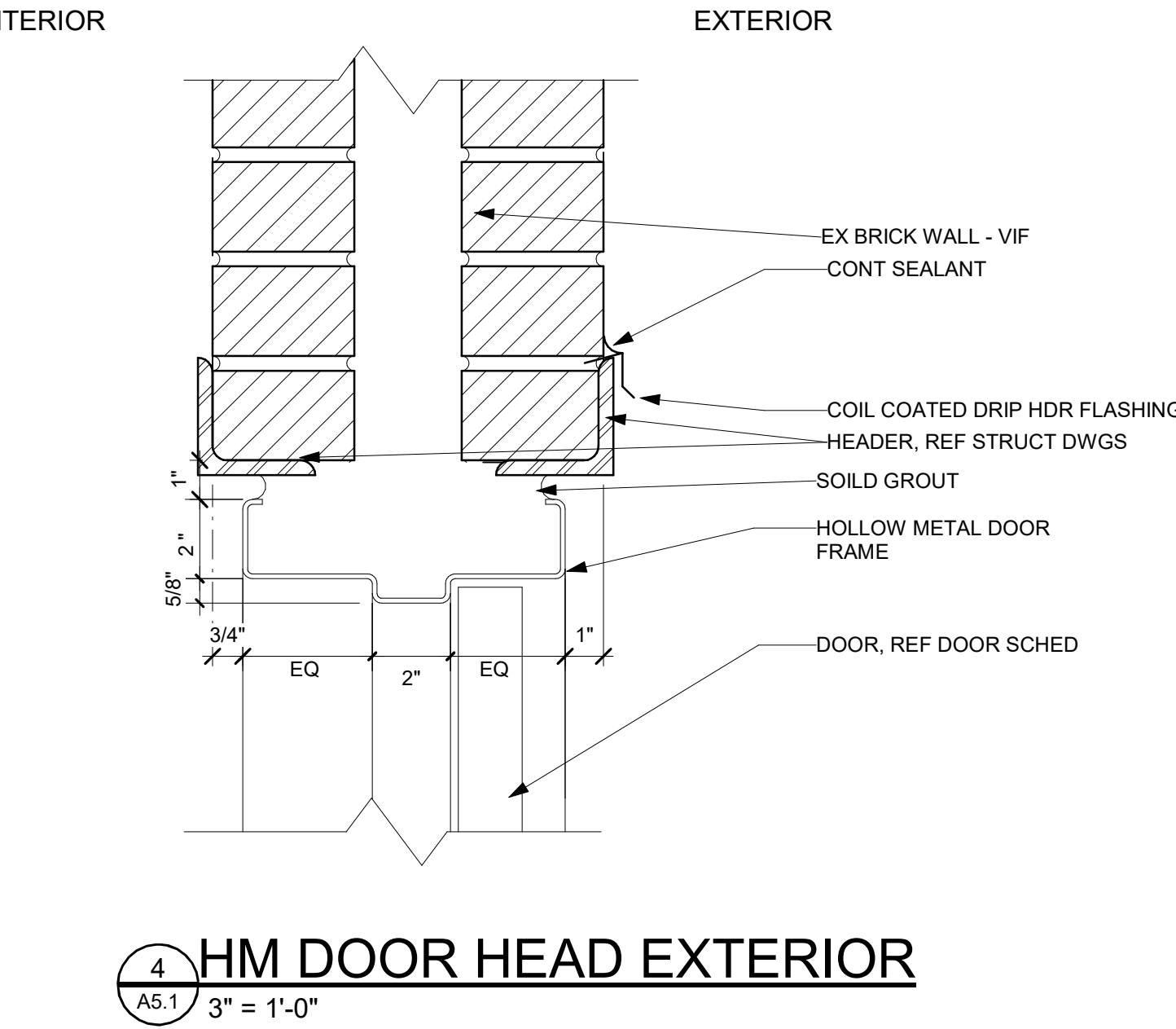
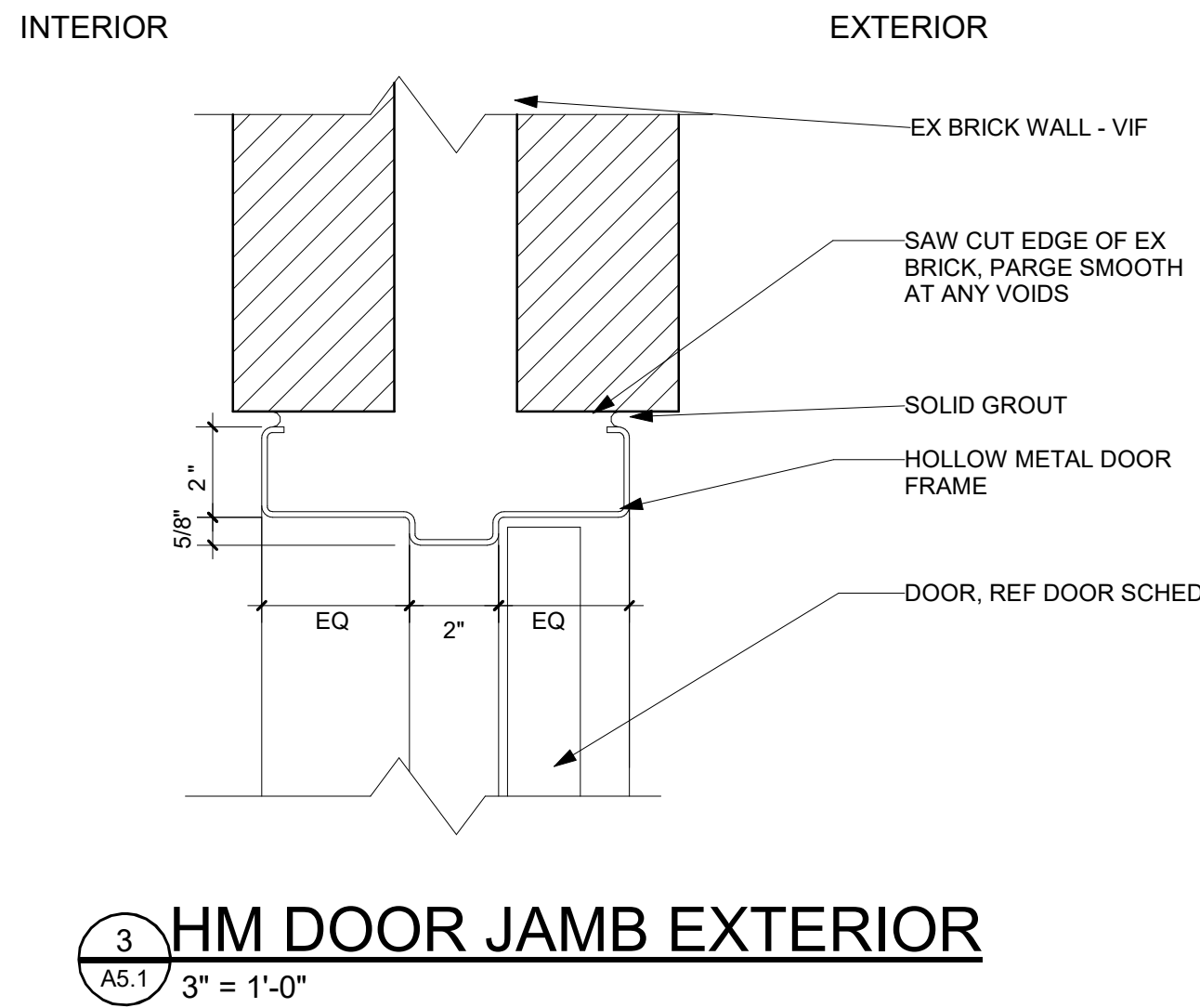
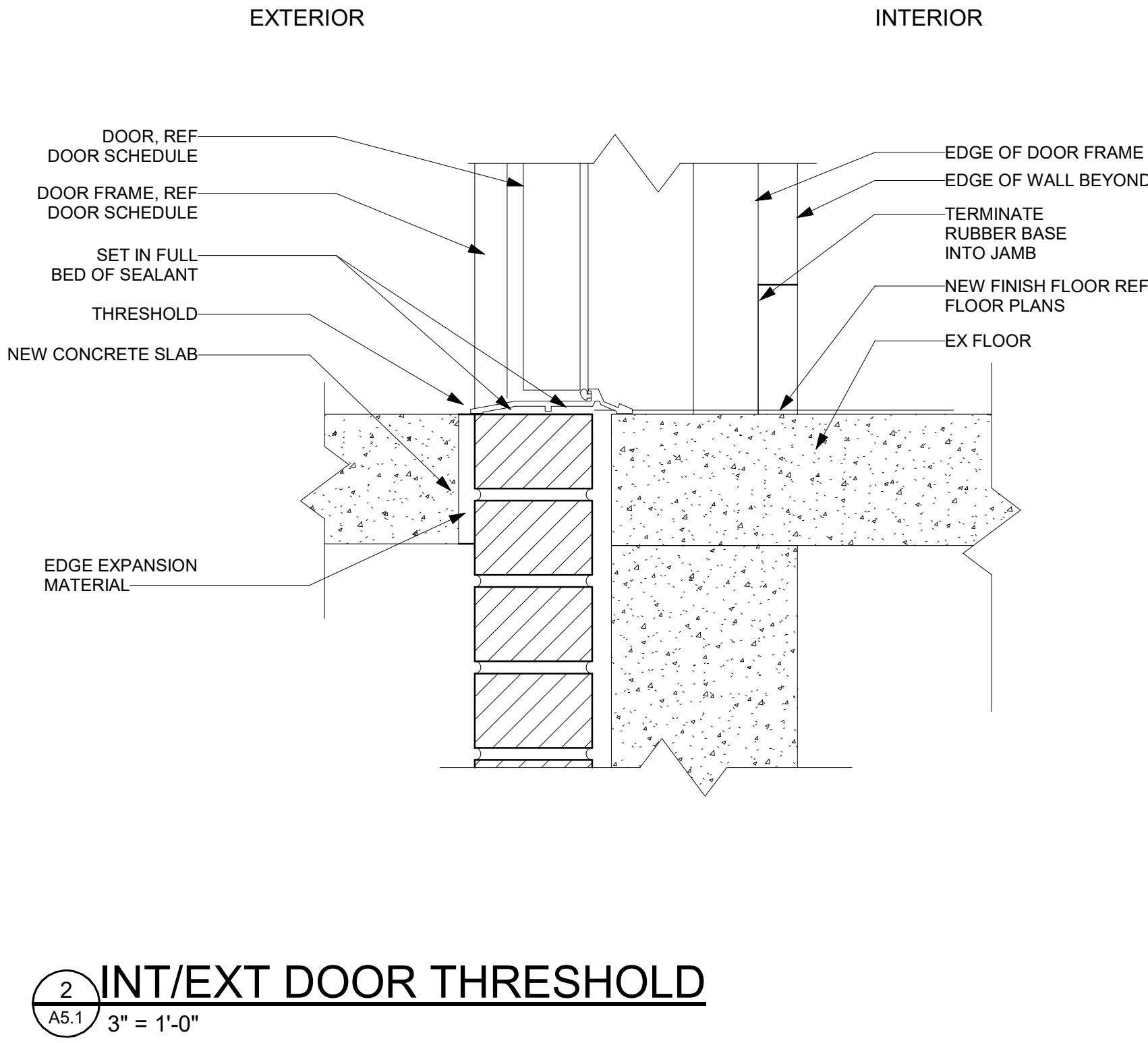
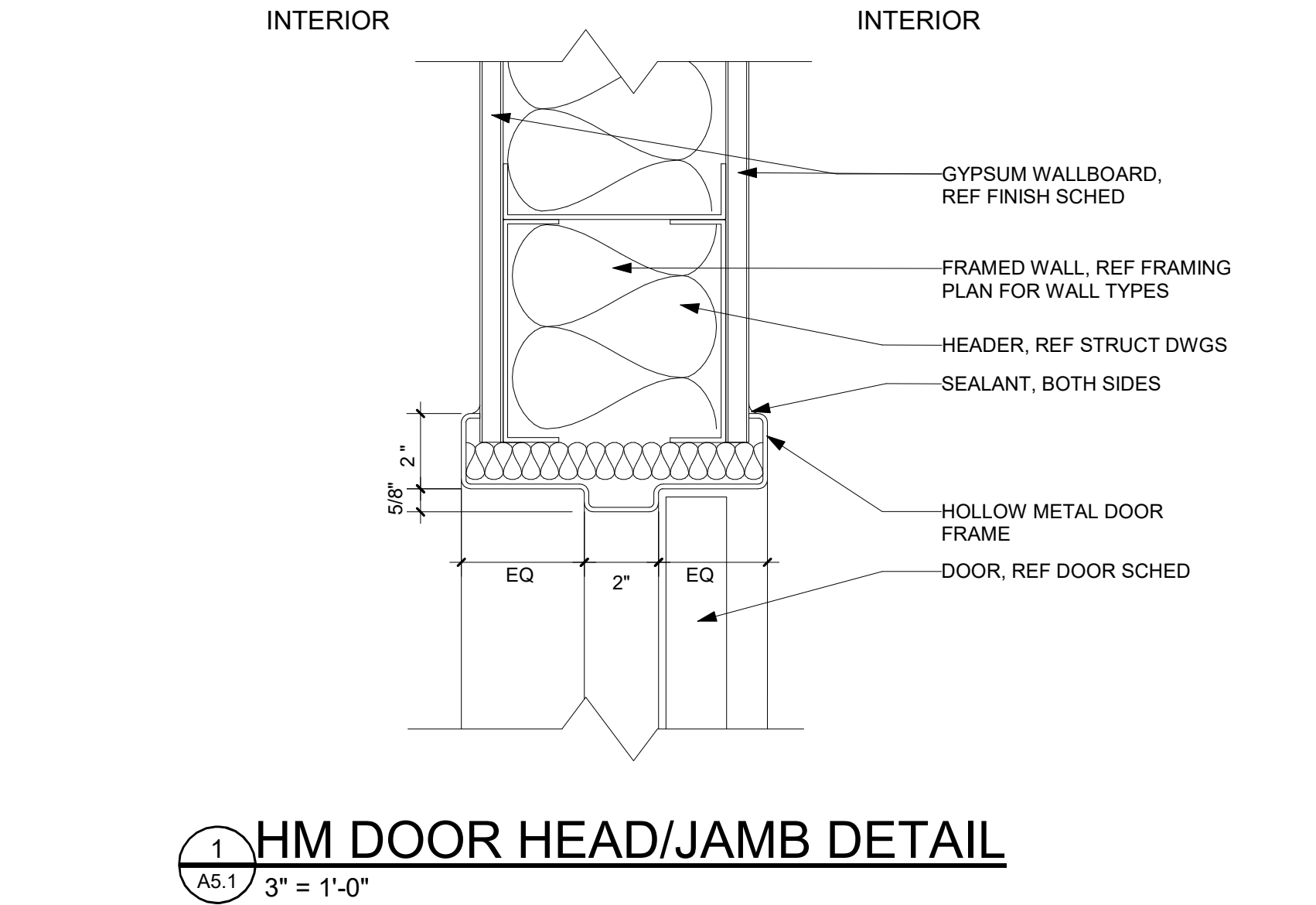
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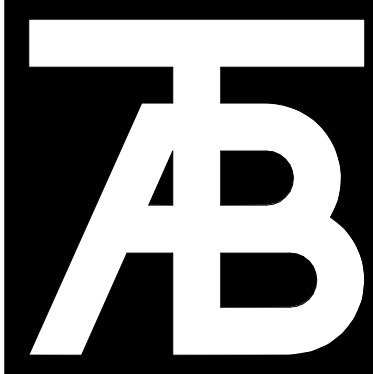
Project No:

2404

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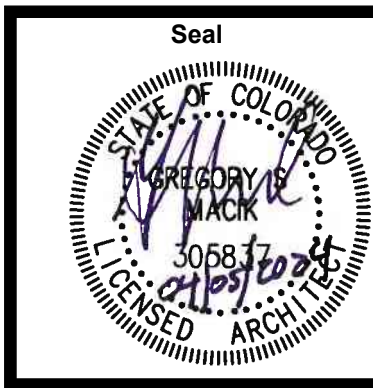
A5.1





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Sheet Title:

**Reflected
Ceiling
Plan**

Project No:
2404

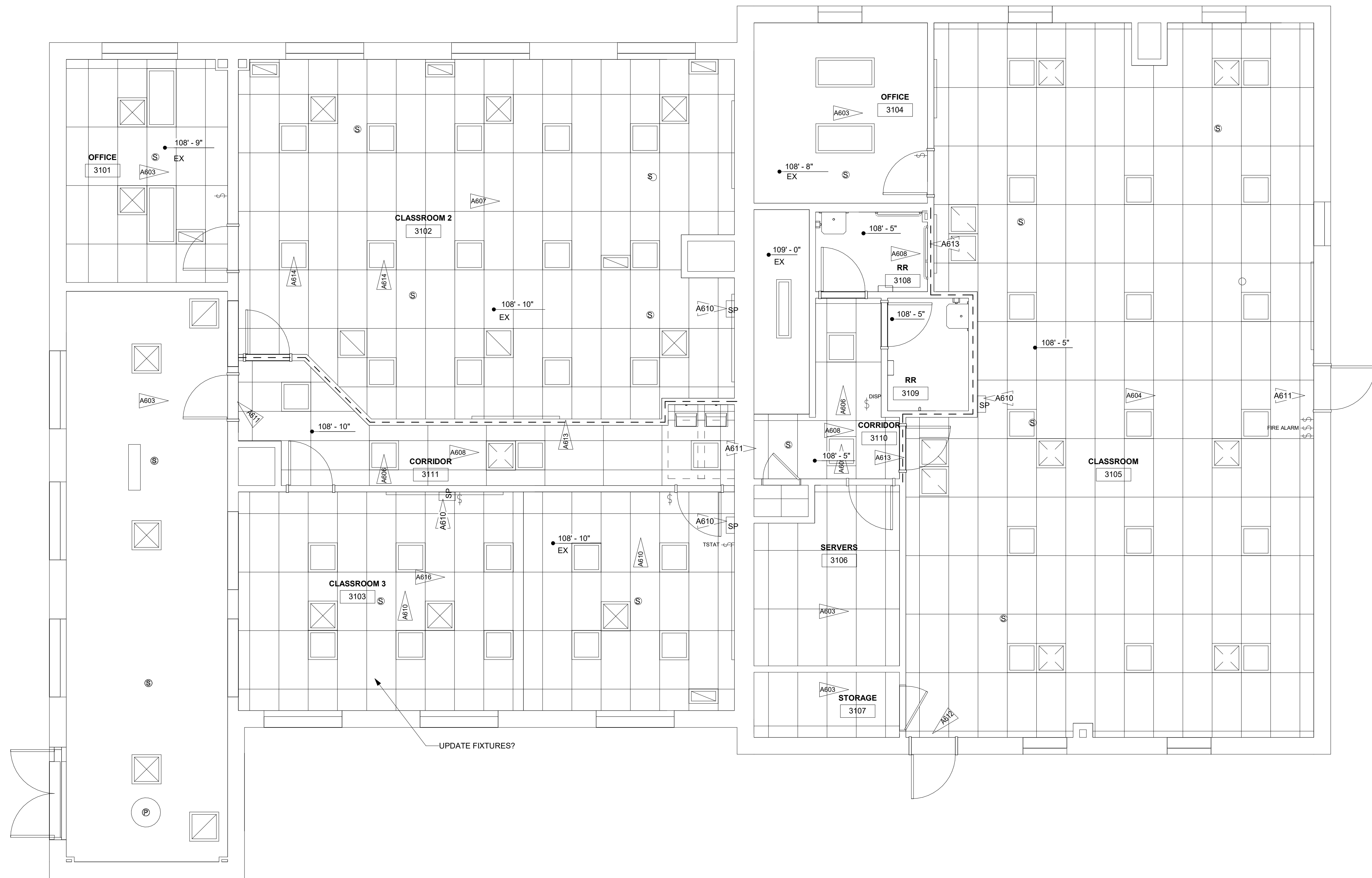
Sheet No:

A6.1

NOTES:**RCP NOTES:**

1. ALL CEILINGS SHALL BE AS NOTED ON PLANS.
2. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS WHERE NO CEILINGS IS REQUIRED OR INDICATED.
3. LIGHTS, DIFFUSERS, EXIT SIGNS, SMOKE DETECTORS, AND FIRE ALARMS/SPEAKERS/STROBES SHALL BE CENTERED IN THE CEILING TILES IN WHICH THEY OCCUR, UNLESS NOTED OTHERWISE.
4. CENTER ALL CEILING GRIDS IN EACH ROOM OR SPACE UNLESS OTHERWISE INDICATED WITH A GRID ORIGIN OR DIMENSION.
5. REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR NEW LIGHTS AND REGISTERS.

Keynote Legend	
Key Value	Keynote Text
A603	EX CEILING NO WORK
A604	NEW CEILING WITH EXISTING LIGHTS AND DIFFUSERS RELOCATED. REINSTALL IN EXISTING OR SLIGHTLY MODIFIED LOCATION TO ALIGN WITH NEW GRID
A605	RELOCATED FIXTURE
A606	NEW LIGHT FIXTURES
A607	PORTION OF EXISTING CEILING TO REMAIN. FIXTURES AND MECH DIFFUSERS TYPICALLY IN CURRENT LOCATIONS. SOME FIXTURES RELOCATED AND SOME NEW PER MEP.
A608	NEW CEILING
A610	EX WALL SPEAKERS, SALVAGE ON REMOVED WALLS AND KEEP ON WALLS NOT REMOVED.
A611	EX EXIT SIGNS REMAIN
A612	NEW EXIT SIGN
A613	NEW WALLS TO DECK ABOVE. SHOWN WITH DASHED LINE
A614	EXISTING FIXTURE RELOCATED
A616	NEW LIGHT FIXTURES IN ROOM - RE: ELEC. PROVIDE NEW CEILING TILES AS NEEDED TO FILL HOLES REMAINING FROM REMOVE 2X4 FIXTURES



1 UPPER LEVEL RCP
A6.1 1/4" = 1'-0"

1
A7.1

ENLARGED RESTROOM PLANS

1/2" = 1'-0"

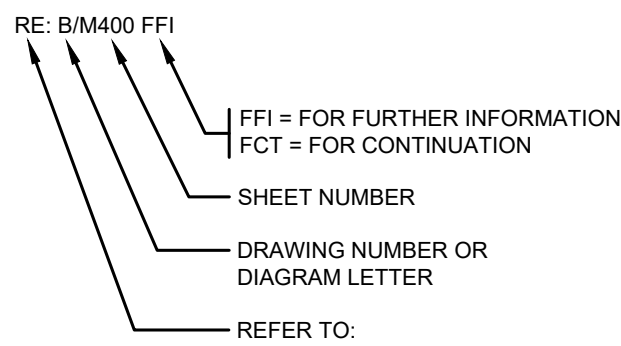
MECHANICAL EQUIPMENT WIRING AND CONNECTIONS			
ITEM	FURNISHED UNDER	SET IN PLACE OR MTD UNDER	WIRED/ CONNECTED UNDER
1. EQUIPMENT MOTORS AND THERMAL OVERLOADS, RESISTANCE HEATERS.	MD	MD	ED
2. VFD'S, MOTOR CONTROLLERS; MAGNETIC STARTERS, REDUCED VOLTAGE STARTERS AND OVERLOAD RELAYS.	MD	ED(a)	ED
3. DISCONNECT SWITCHES (FUSED OR NON-FUSED), HP RATED SWITCHES, THERMAL OVERLOAD SWITCHES AND FUSES AND MANUAL OPERATING SWITCHES.	ED(a)	ED(a)	ED
4. PUSHBUTTON STATIONS, PILOT LIGHTS, MULTI-SPEED SWITCHES, FLOAT SWITCHES, THERMOSTATS, CONTROL RELAYS, TIMECLOCKS, CONTROL TRANSFORMERS, CONTROL PANELS, MOTOR VALVES, DAMPER ACTUATORS, SOLENOID VALVES, EP AND PE SWITCHES AND INTERLOCKS.	MD	MD	MD(b)
5. 120 VOLT POWER FOR BAS PANELS, FIRE PROTECTION AND BOILER CONTROLS.	ED	ED	ED
6. FIRE/SMOKE DAMPERS AND ELEVATOR VENT DAMPERS.	MD	MD	ED(c)
MD = MECHANICAL DIVISION ED = ELECTRICAL DIVISION			
NOTES:			
(a) IF FURNISHED AS PART OF FACTORY-WIRED EQUIPMENT, THEN WIRING AND CONNECTIONS ONLY BY ED			
(b) IF ANY OF THESE DEVICES CARRY THE FULL LOAD CURRENT TO ANY MOTOR THEY SHALL BE CONNECTED BY ED. CONTROL DEVICES CARRYING FULL LOAD CURRENT FURNISHED BY MD AND WIRED BY ED SHALL BE LOCATED AT THE DEVICE BEING CONTROLLED, UNLESS SHOWN ON DRAWINGS OR MUTUAL AGREEMENT IS MADE BETWEEN THE CONTRACTORS WITH NO CHANGE IN THE CONTRACT PRICE.			
(c) WIRING FROM ALARM CONTACTS TO ALARM SYSTEM BY ED; ALL CONTROL FUNCTION WIRING BY MD. DUCT DETECTORS FURNISHED BY ED, SET IN PLACE BY MD.			
GENERAL NOTES: THE ABOVE LIST DOES NOT ATTEMPT TO INCLUDE ALL COMPONENTS. ALL ITEMS NECESSARY FOR A COMPLETE SYSTEM SHALL BE INCLUDED IN THE BASE CONTRACT.			

MECHANICAL SHEET INDEX		ISSUE LOG	
#	TITLE	REVISED	DATE
M0.0	MECHANICAL COVER SHEET	✓	
M0.1	MECHANICAL SCHEDULES	✓	
M0.2	MECHANICAL SPECIFICATIONS	✓	
M2.0	MECHANICAL LOWER LEVEL PLAN	✓	
M02.1	MECHANICAL UPPER LEVEL DEMO PLAN	✓	
M2.1	MECHANICAL UPPER LEVEL PLAN	✓	
M3.1	MECHANICAL DIAGRAMS	✓	
ISSUE LOG KEY: ✓: ISSUED AS PART OF A SET -: NOT PART OF SET -•: ISSUED FOR INFORMATION ONLY		DATE	

FIXTURE CONNECTION SCHEDULE					
TAG	DESCRIPTION	HW	CW	WASTE	VENT
BS	BAR SINK	1/2"	1/2"	1-1/2"	1-1/2"
CS	CLOTHES WASHER OUTLET BOX	1/2"	1/2"	2"	1-1/2"
DF	DRINKING FOUNTAIN / WATER COOLER	-	1/2"	1-1/2"	1-1/2"
DM	DISH MACHINE ROUGH-IN	3/4"	3/4"	2"	1-1/2"
DW	DISHWASHER ROUGH-IN	1/2"	-	2"	1-1/2"
FD	FLOOR DRAIN	-	-	2"	1-1/2"
FRIG	REFRIGERICE MAKER BOX	-	1/2"	-	-
FS	FLOOR SINK	-	-	2"	1-1/2"
HB	HOSE BIB	-	3/4"	-	-
HS	HAND SINK	1/2"	1/2"	1-1/2"	1-1/2"
KS	KITCHEN SINK W/ OR W/O DISPOSAL	1/2"	1/2"	2"	1-1/2"
LAV	LAVATORY	1/2"	1/2"	1-1/2"	1-1/2"
MSB	MOP SERVICE BASIN	3/4"	3/4"	3"	2"
SHSHWR	SHOWER	3/4"	3/4"	2"	1-1/2"
SHUTUB	SHOWER/BATHTUB	3/4"	3/4"	2"	1-1/2"
TUB	BATHTUB	3/4"	3/4"	2"	1-1/2"
SS	SERVICE SINK	1/2"	1/2"	3"	2"
TO	TRENCH DRAIN	-	-	3"	2"
UR	URINAL (BLOWOUT)	-	1"	2"	1-1/2"
UR	URINAL (WASHDOWN)	-	3/4"	2"	1-1/2"
UR	URINAL (WATERLESS)	-	-	2"	1-1/2"
WC	WATER CLOSET (FLUSH VALVE)	-	1"	4"	2"
WC	WATER CLOSET (FLUSH TANK)	-	1/2"	4"	2"
WS	WORK SINK	3/4"	3/4"	2"	1-1/2"

- NOTES:
- SIZES SHOWN ARE MINIMUM PIPE SIZES TO A SINGLE FIXTURE. LARGER SIZES MAY BE INDICATED ON PLANS WHERE REQUIRED.
 - MINIMUM DOMESTIC PIPE SIZE TO (2) OR MORE FIXTURES IS 3/4".
 - RE: MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR INDIRECT WASTE SIZES.
 - WASTE AND VENT SIZES SHOWN ABOVE APPLY TO INDIVIDUAL VENTING ONLY. WHERE ALLOWED, INDIVIDUAL VENT CONNECTIONS MAY BE OMITTED OR SIZES MAY VARY WHEN CIRCUIT VENTS, COMMON VENTS, WASTE STACK VENTS, WET VENTS, OR COMBINATION DRAIN AND VENT SYSTEMS ARE USED. PRIOR APPROVAL FROM THE ENGINEER IS REQUIRED TO USE THESE ALTERNATIVE VENTING METHODS.
 - PROVIDE TRAP PRIMER FOR ALL FLOOR DRAINS AND FLOOR SINKS NOT LOCATED IN FOOD SERVICE AREAS.
 - MINIMUM SIZE FOR WASTE AND VENT PIPING BENEATH SLAB IS 2".
 - ALL FIXTURES LISTED ARE NOT NECESSARILY USED ON THIS PROJECT.
 - REFER TO APPLIANCE SCHEDULES (BY OTHERS) FOR ADDITIONAL PLUMBING FIXTURE CONNECTIONS SUCH AS INSTA-HOTS, COFFEE MAKERS, AND GARBAGE DISPOSALS.
 - PROVIDE ICE MAKER BOX ROUGH IN W/ 1/2"CW CONNECTION FOR ALL REFRIGERATOR LOCATIONS.
 - DESIGNER TO CONFIRM FLOW RATE OF FLOOR DRAINS, FLOOR SINKS, ETC. WITH ACTUAL SIZE REQUIRED.

REFERENCE SAMPLE



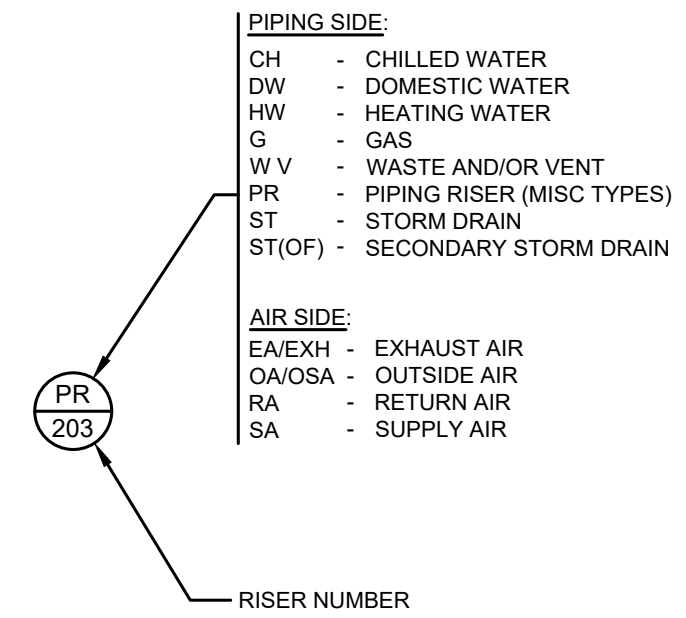
PROJECT ALTITUDE

XXXX' ABOVE SEA LEVEL

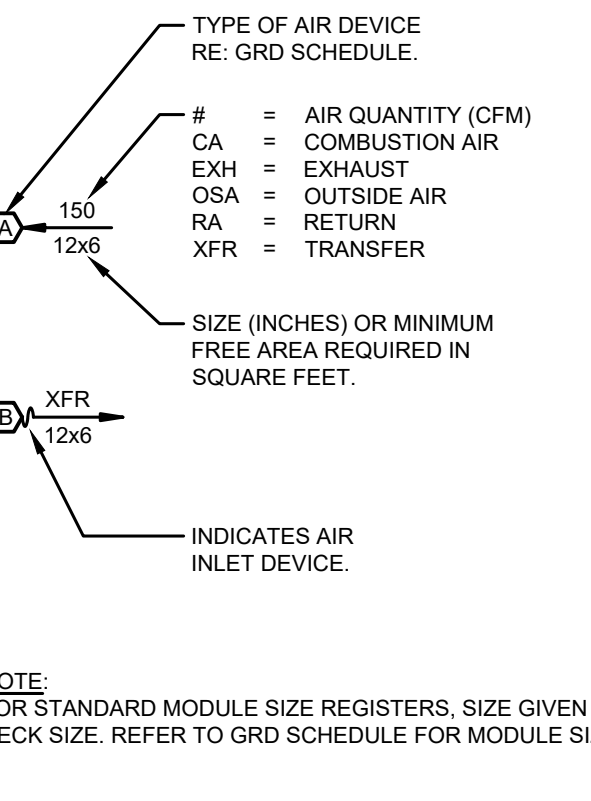
MECHANICAL SYSTEMS LEGEND

PIPING SYMBOLS		EQUIPMENT ABBREVIATIONS		PLAN ABBREVIATIONS	
	90° ELBOW DN	AHU	AIR HANDLING UNIT	AAV	AIR ADMITTANCE VALVE
	90° ELBOW UP	AS	AIR SEPARATOR	ABV	ABOVE
	TEE DOWN	B	BOILER (HOT WATER)	AFF	ABOVE FINISHED FLOOR
	TEE UP	BB	BASE BOARD	AFG	ABOVE FINISHED GRADE
	BUTTERFLY VALVE	BT	BUFFER TANK	AUTO	AUTOMATIC
	SHUT OFF (BALL, GATE, BUTTERFLY)	CC	COOLING COIL	BCS	BUILDING CONTROL SYSTEM
	GLOBE VALVE	CH	CHILLER	BDD	BACK DRAFT DAMPER
	CHECK VALVE	CP OR P	CIRC PUMP	BFG	BELOW FINISHED GRADE
	FLOW CONTROL VALVE	CT	COOLING TOWER	BLDG	BUILDING
	BALL VALVE	CUH	CABINET UNIT HEATER	B/N	BETWEEN
	PLUG OR BALANCING VALVE	CV	CONSTANT VOLUME BOX	C	COMMON (OR CLOSED)
	FLOW BALANCING VALVE	DC	DUCT COIL	CA	COMBUSTION AIR
	PLUG VALVE IN RISER	DEF	DISHWASHER EXHAUST FAN	CC	CONTROLS CONTRACTOR
	GATE OR GLOBE VALVE IN RISER	EBH	ELECTRIC BASEBOARD HEATER	CDBC	CONTINUATION DESIGN BUILD BY CONTRACTOR
	TEMPERATURE CONTROL VALVE (2-WAY)	ECU	EVAPORATIVE COOLING UNIT	CFM	CUBIC FEET PER MINUTE (AIR FLOW RATE)
	TEMPERATURE CONTROL VALVE (3-WAY)	EF	EXHAUST FAN	CIP	CAST IN PLACE
	PRESSURE REDUCING VALVE	ERU	ENERGY RECOVERY UNIT	CLG	CEILING (OR COOLING)
	SOLENOID VALVE	ET	EXPANSION TANK	CO	CLEANOUT
	VENTURIFLOW INDICATOR	EWH	ELECTRIC WATER HEATER	CONC	CONCRETE
	PUMP & EQUIPMENT CONNECTOR	F	FURNACE	COND	CONDENSATE
	PIPE UNION	FC	FAN COIL	CONN	CONNECT (OR CONNECTION)
	DOUBLE CHECK BACKFLOW PREVENTER	FP	FAN POWERED BOX	CONTRR	CONTRACTOR
	PIPE ANCHOR	GF	GLYCOL FEEDER	COTG	CLEANOUT TO GRADE
	PIPE EXPANSION JOINT	H	HUMIDIFIER	CW	COLD WATER
	FLEXIBLE CONNECTOR	HC	HEATING COIL	DHR	DOMESTIC HOT WATER RECIRC
	SAFETY RELIEF VALVE	HP	HEAT PUMP	DHW	DOMESTIC HOT WATER
	AIR VENT	HX	HEAT EXCHANGER	DN	DOWN
	PRESSURE - TEMP TAP	KEF	KITCHEN EXHAUST FAN	DW	DOMESTIC WATER
	PRESSURE GAUGE W/ PIG TAIL & COCK	MAU	MAKE-UP AIR UNIT	DWR	DOMESTIC HOT WATER RECIRC
	THERMOMETER	MCC	MOTOR CONTROL CENTER	(E)	EXISTING
	VACUUM BREAKER	MV	MIXING VALVE	EA	EXHAUST AIR
	STRAINER W/ BLOW-OFF VALVE	P	PUMP	EAT	ENTERING AIR TEMPERATURE
	SHOCK ABSORBER	RF	RETURN (OR RELIEF) AIR FAN	EC	ELECTRICAL CONTRACTOR
	FLOW SWITCH	RA	RADIANT ZONE	EWI	ENTERING WATER TEMPERATURE
	HORIZONTAL CLEANOUT	SA	SNOWMELT AREA	EXH	EXHAUST
	VERTICAL CLEANOUT	SB	SUMP BASIN	(F)	FUTURE
	FLOOR DRAIN	SF	SUPPLY FAN	FA	FREE AREA
	FLOOR SINK	SP	SUMP PUMP	FBO	FURNISHED BY OWNER
	ROOF DRAIN	ST	STORAGE TANK	FCO	FLOOR CLEANOUT
	DECK/ROOF DRAIN ABOVE	TMV	THERMOSTATIC MIXING VALVE	FCT	FOR CONTINUATION
	TEMPERATURE CONTROLLER OR SENSOR	UH	UNIT HEATER	FD	FIRE DAMPER
	HOSE BIBB	VR	VARIABLE VOLUME BOX W/ REHEAT	FFI	FOR FURTHER INFORMATION
	WALL HYDRANT	VV	VARIABLE VOLUME BOX	FSD	COMBINATION FIRE/SMOKE DAMPER
	STEAM TRAP TEST CHAMBER	WH	WATER HEATER	GC	GENERAL CONTRACTOR
	FI-FLOAT & THERMOSTATIC TO-THERMODYNAMIC			GHX	GROUND HEAT EXCHANGER
	B-INVERTED BUCKET			GPM	GALLONS PER MINUTE (WATER FLOW RATE)
	TS-THERMOSTATIC			HP	HORSEPOWER
	BP-BALANCED PRESSURE			HW	HOT WATER
				HWC	HOT WATER RECIRC
				ILO	IN LIEU OF
				KW	KILOWATTS
				LAT	LEAVING AIR TEMPERATURE
				LF	LINEAR FOOT
				LWT	LEAVING WATER TEMPERATURE
				MC	MECHANICAL CONTRACTOR
				MFR	MANUFACTURER
				MOD	MOTOR OPERATED DAMPER
				(N)	NEW
				NC	NORMALLY CLOSED
				NEC	NATIONAL ELECTRIC CODE
				NIC	NOT IN CONTRACT
				NO	NORMALLY OPEN
				OA	OUTSIDE AIR
				OBD	OPPOSED BLADE VOLUME DAMPER
				OC	ON CENTER
				OSA	OUTSIDE AIR
				RA	RETURN AIR
				RE	REFER TO:
				REQD	REQUIRED
				REQMTS	REQUIREMENTS
				SA	SUPPLY AIR
				SF	SQUARE FOOT (FEET)
				SP	STATIC PRESSURE
				SS	STAINLESS STEEL
				TA	THROW-AWAY (TRANSFER AIR)
				TYP	TYPICAL
				UNO	UNLESS NOTED OTHERWISE
				WI	WITH
				W/O	WITHOUT
				WCO	WALL CLEANOUT
				WRT	WITH REGARD TO
				WC	WATER COOLED
				VTR	VENT THRU ROOF
				XFR	TRANSFER
				Ø	DIAMETER

DUCT/PIPE RISER DESIGNATION KEY

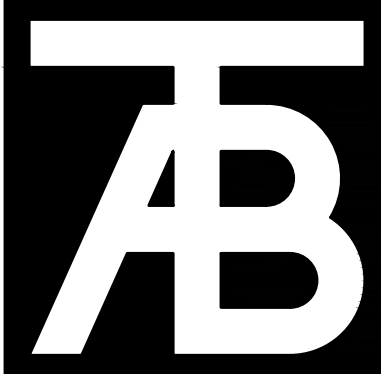


AIR DEVICE DESIGNATION KEY



DUCTWORK LEGEND		
SINGLE LINE	DESCRIPTION	DOUBLE LINE
	90° ELBOW DOWN (ROUND DUCT ONLY)	
	ROUND 90° ELBOW UP (ROUND DUCT ONLY)	
	OFFSET TO CHANGE ELEVATION (AT 30° WHEN POSSIBLE) D = DROP, R = RISE	
	ROUND RADIUS ELBOW	
	90° STRAIGHT TEE	
	90° CONICAL TEE	
	45° BRANCH	
	45° CONICAL TEE	
	SIZE OR SHAPE TRANSITION	
	ROUND FLEXIBLE DUCT	
	90° ELBOW DN (NEGATIVE PRESSURE)	
	90° ELBOW DN (POSITIVE PRESSURE)	
	90° ELBOW UP (NEGATIVE PRESSURE)	
	90° ELBOW UP (POSITIVE PRESSURE)	
	90° RADIUS ELBOW	
	90° RADIUS ELBOW W/TURNING VANES	
	SQUARE DUCT SPLIT	
	ROUND DUCT SPLIT	
	SPLIT BRANCH TAKE-OFF WITH SQUARE ELBOW & SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF WITH RADIUS ELBOW & SPLITTER DAMPER	
	POSITIVE PRESSURE RISER, TYPICALLY SUPPLY	
	NEGATIVE PRESSURE RISER, TYPICALLY RETURN, EXHAUST OR OUTSIDE AIR	
	COMBINATION FIRE & SMOKE DAMPER	
	FIRE DAMPER	
	SMOKE DAMPER	
	MOTOR OPERATED DAMPER (MOD)	
	MANUAL VOLUME DAMPER, SINGLE BLADE DAMPER (SBD) FOR ROUND OR <10' TALL, OPPOSED BLADE DAMPER (OBD) >10' TALL	
	BACKDRAFT DAMPER	
	SMOKE DETECTOR	
	DUCT SIZE: FIRST NUMBER IS PLAN WIDTH, SECOND NUMBER IS DEPTH.	

NOTE: CONTRACTOR MUST KEEP IN MIND THAT THIS IS A REMODEL PROJECT. READ GENERAL NOTES CAREFULLY. CONTRACTORS MUST COORDINATE NEW AND EXISTING CONDITIONS FOR INSTALLATION OF THE WORK.



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MECHANICAL COVER SHEET

Project No:
2404

Sheet No:
M0.0



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Sheet Title:

**MECHANICAL
SCHEDULES**

Sheet No:
MO.1

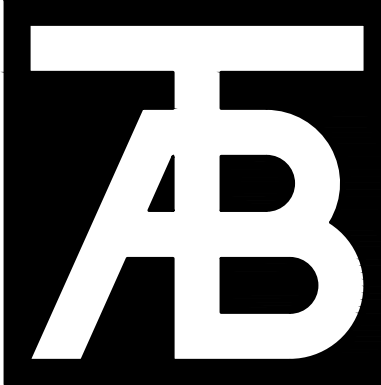
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MARK	SERVICE	TYPE	FAN						MOTOR			VFD	OPER. WEIGHT (LBS)	MANUFACTURER* & MODEL #	ACCESSORIES	REMARKS
			CFM	DRIVE	RPM	SONES	ESP		MHP (WATT)	VOLT	PHASE					
							@ S.L (IN WC)	@ ALT (IN WC)								
EF-1	RESTROOM	CEILING	100	ECM	NA	0.6	0.3	0.25	47W	120	1	Y	-	PANASONIC FV-1115WK3	FV-15VK1: MULTI-SPEED WITH TIME DELAY	-
EF-2	JANITOR	CEILING	100	ECM	NA	0.6	0.3	0.25	47W	120	1	Y	-	PANASONIC FV-1115VK3	FV-15VK1: MULTI-SPEED WITH TIME DELAY	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALTERNATE MANUFACTURERS: COOK, GREENHECK, TWIN CITY, PENN. BROWN																
NOTES: ALL NOTES ARE NOT NECESSARILY USED ON THE PROJECT																
A:																
B:																

MARK	SERVICE	TYPE	GPM	TDH (FT)	INLET SIZE (IN.)	IMPELLER SIZE (IN.)	FLUID	MOTOR				MANUFACTURER* & MODEL #	ACCESSORIES	REMARKS
								WATTS	RPM	VOLT	PHASE			
HWP-1	HEATING WATER CIRC	IN-LINE	26	30	1.5	NA	30% PG	474W	VARIES	120	1	GRUNDFOS MAGNA1 40-120 GF	BACK FLOW PREVENTOR	BUILDING AUTOMATION INTERFACE
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALTERNATE MANUFACTURERS:														
+ B&G, TACO, ARMSTRONG														
NOTES: ALL NOTES ARE NOT NECESSARILY USED ON THE PROJECT.														
A:														
B:														

MARK	SERVICE	TYPE	COIL DIMENSION	CFM	HEATING COIL								MANUFACTURER* & MODEL #	ACCESSORIES	REMARKS	
					AIR CONDITIONS			WATER CONDITIONS			COIL					
					E.A.T. DB (°F)	L.A.T. DB (°F)	SENS. MBH	E.W.T. (°F)	L.W.T. (°F)	GPM	FLUID TYPE	MAX. WTR P.D. (FT)				MAX. AIR P.D. (IN.)
DC-1	RTU-3	INLINE DUCT	18x20	1200	45	95	65	160	130	5	30% P.G.	3	0.1	MODINE HEATCRAFT 4WB	-	2-ROW MINIMUM, DUCT MOUNTED
DC-2	RTU-4	INLINE DUCT	18x20	800	45	95	48	160	130	4	30% P.G.	3	0.1	MODINE HEATCRAFT 4WB	-	2-ROW MINIMUM, DUCT MOUNTED
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ALTERNATE MANUFACTURERS:																
PRICE, GREENHECK, NALOR, TITUS, ENVIROTEC																
NOTES: ALL NOTES ARE NOT NECESSARILY USED ON THE PROJECT.																
A:																
B:																

[illegible]



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MECHANICAL SPECIFICATIONS

Project No:

2404

Sheet No:

M0.2



MECHANICAL SPECIFICATIONS

- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
- ALL SUBCONTRACTORS SHALL BE LICENSED, EXPERIENCED, AND THOROUGHLY KNOWLEDGEABLE IN THEIR RESPECTIVE AREAS OF THE CONSTRUCTION INDUSTRY AND SHALL PERFORM IN A RESPONSIBLE MANNER WITH ESTABLISHED QUALITY STANDARDS. THE ARCHITECT SHALL RECOGNIZE THE PRIORITY OF THE CONSTRUCTION DOCUMENTS, AND SHALL INFORM THE PRIME CONTRACTOR OF POTENTIAL PROBLEMS WHEN THE CONSTRUCTION DOCUMENTS ARE UNCLEAR OR INCONSISTENT.
- SUBCONTRACTORS SHALL BE RESPONSIBLE TO NOTIFY THE PRIME CONTRACTOR OF DISCREPANCIES OR CONFLICTS IN THE CONSTRUCTION DOCUMENTS FOUND DURING BIDDING AND/OR PRIOR TO PERFORMING THE WORK.
- EXAMINATION OF BIDDING DOCUMENTS.
 - EACH BIDDER SHALL EXAMINE THE BIDDING DOCUMENTS CAREFULLY, AND NOT LATER THAN SEVEN (7) DAYS PRIOR TO THE DATE OF RECEIPT OF BIDS. SHALL MAKE WRITTEN REQUEST TO THE ARCHITECT FOR INTERPRETATION OR CORRECTION OF ANY DISCREPANCIES, AMBIGUITIES, INCONSISTENCIES, OR ERRORS. THEREIN WHICH THEY MAY DISCOVER. THE ARCHITECT WILL ISSUE ANY INTERPRETATION OR CORRECTION AS AN ADDENDUM. ONLY A WRITTEN INTERPRETATION OR CORRECTION BY ADDENDUM SHALL BE BINDING. NO ORAL INTERPRETATIONS OR CORRECTIONS SHALL BE GIVEN. ANY DISCREPANCIES, AMBIGUITIES, INCONSISTENCIES, OR ERRORS ARE NOT COVERED BY ADDENDUM OR WRITTEN DIRECTIVE. THE CONTRACTOR SHALL INCLUDE IN HIS BID, LABOR MATERIALS AND METHODS OF CONSTRUCTION RESULTING IN HIGHER COST. AFTER AWARD OF CONTRACT, NO ALLOWANCE OR EXTRA COMPENSATION WILL BE MADE ON BEHALF OF THE CONTRACTOR DUE TO HIS FAILURE TO MAKE THE WRITTEN REQUESTS AS DESCRIBED ABOVE.
 - FAILURE TO REQUEST CLARIFICATION DURING THE BID PERIOD OF ANY INADEQUACY, OMISSION, OR CONFLICT WILL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES. THE SIGNING OF THE CONTRACT WILL BE CONSIDERED AS IMPLICITLY DENOTING THAT THE CONTRACTOR HAS A THOROUGH COMPREHENSION OF THE FULL INTENT AND SCOPE OF THE CONSTRUCTION CONTRACT DRAWINGS AND SPECIFICATIONS.
- PROVIDE A BASE BID WHICH SHALL INCLUDE ONLY SPECIFIED EQUIPMENT OR EQUIPMENT LISTED AS EQUIVALENT. NO SUBSTITUTIONS FOR THE LISTED EQUIPMENT SHALL BE ALLOWED IN THE BASE BID.
 - THE MANUFACTURER OF EQUIPMENT OR MATERIALS FIRST NAMED ON THE DRAWINGS IS THE BASIS OF DESIGN. OTHER MANUFACTURERS LISTED ARE CONSIDERED GENERAL EQUIVALENTS ONLY.
 - COORDINATION OF GENERAL EQUIVALENTS AND SUBSTITUTIONS: WHERE CONTRACT DOCUMENTS PERMIT SELECTION FROM SEVERAL GENERAL EQUIVALENTS, OR WHEN SUBSTITUTIONS ARE AUTHORIZED, COORDINATE CLEARANCE AND OTHER INTERFACE REQUIREMENTS WITH MECHANICAL AND OTHER WORK.
 - PROVIDE NECESSARY ADDITIONAL ITEMS SO THAT SELECTED OR SUBSTITUTED ITEM OPERATES EQUIVALENT TO THE BASIS OF DESIGN AND PROPERLY FITS IN THE AVAILABLE SPACE ALLOCATED FOR THE BASIS OF DESIGN.
 - PROVIDE ALL FEATURES WHICH ARE STANDARD ON THE BASIS OF DESIGN PLUS ANY SPECIFIED OPTIONS.
 - BE RESPONSIBLE FOR ASSURING THAT PIPING, CONDUIT, DUCT, FLUE, AND OTHER SERVICE LOCATIONS FOR GENERAL EQUIVALENTS OR SUBSTITUTIONS DO NOT CAUSE ACCESS, SERVICE, OR OPERATIONAL DIFFICULTIES ANY GREATER THAT WOULD BE ENCOUNTERED WITH THE BASE DESIGN.
- INASMUCH AS DESIGN FOR REMODEL AND/OR REHABILITATION REQUIRES THAT CERTAIN ASSUMPTIONS BE MADE REGARDING EXISTING CONDITIONS, AND BECAUSE SOME OF THESE ASSUMPTIONS CANNOT BE VERIFIED WITHOUT DESTROYING OTHERWISE ADEQUATE OR SERVICEABLE PORTIONS OF THE BUILDING, THE ENGINEER CANNOT ASSURE THE OWNER OR THE CONTRACTOR THAT THE PROFESSIONAL CONSULTING SERVICES HEREIN ENCOMPASS ALL CONTINGENCIES. FIELD COORDINATION DURING CONSTRUCTION IS IMPERATIVE. MAKE REASONABLE ALLOWANCES FOR UNKNOWN CONDITIONS.
- THE EXISTING BUILDING WILL BE OCCUPIED BY THE OWNER DURING CONSTRUCTION. CONTINUED OPERATION OF THE FACILITY SHALL NOT BE HINDERED BY THIS WORK. ACCOUNT FOR ALL ADDITIONAL COSTS WHICH MAY BE INCURRED DUE TO THE DIFFICULTY OF WORKING OVER AND AROUND EMPLOYEES, FURNITURE, EQUIPMENT, ETC., AND DUE TO THE HOURS OF THE DAY IN WHICH AN AREA MAY BE ACCESSIBLE WHEN COMPLETING BID.
- BE RESPONSIBLE TO FIELD VERIFY EXISTING EQUIPMENT OR DUCTWORK REMAINING TO BE CONNECTED TO NEW OR EXISTING SYSTEMS. PROVIDE DUCTWORK, PIPING, CONTROLS, DIFFUSERS, ETC., AS REQUIRED TO RESTORE CONTINUITY OF SYSTEM (S), OR TO MAKE NEW WORK MEET EXISTING CONDITIONS, WHETHER INDICATED OR NOT.
- THE SUBCONTRACTOR SHALL VERIFY EXISTENCE AND LOCATION OF ALL UTILITY SERVICES AND COORDINATE AS REQUIRED BY THEIR RESPECTIVE AREA OF THE CONSTRUCTION, NOTIFYING THE PRIME CONTRACTOR OF VARIATIONS OR CONFLICTS.
- IF NOT SPECIFICALLY DEFINED IN THESE CONSTRUCTION DOCUMENTS, MATERIALS AND/OR EQUIPMENT SHALL BE IDENTIFIED BY THE SUBCONTRACTOR WITH SUFFICIENT TIME TO ALLOW SELECTION, PURCHASE, AND DELIVERY TO MAINTAIN CONSTRUCTION SCHEDULE.
- PROVIDE MECHANICAL DEMOLITION AS REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR LOCATION AND EXTENT OF DEMOLITION REQUIRED. PRIOR TO BID TO DETERMINE EXTENT OF WORK INVOLVED. EXISTING FIXTURES, MECHANICAL EQUIPMENT, ETC., BEING REMOVED SHALL BE RETURNED TO THE OWNER. DISPOSE OF ALL REMOVED PIPING, DUCTWORK, ETC., UNLESS NOTED OTHERWISE.
- VERIFY EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
- ALL DUCTWORK, DIFFUSERS, PIPING, FIXTURES, AND EQUIPMENT SHOWN IN LIGHT LINE WEIGHT IS EXISTING AND NEW IS INDICATED BY HEAVIER LINE WEIGHT, EXCEPT WHERE NOTED. PIPES, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED, ARE SHOWN HATCHED.
- OFFSET PIPING, DUCTWORK, ETC. AS NECESSARY TO ACCOMMODATE STRUCTURE, BEAMS, COLUMNS, AND EXISTING EQUIPMENT.
- ALL EXISTING SUPPORT RODS AND STRAPS NOW SUPPORTING DUCTS, PIPES, AIR TUBING, ELECTRICAL CONDUIT, ETC. THAT ARE REMOVED TO ALLOW ROOM FOR INSTALLATION OF NEW EQUIPMENT SHALL BE RELOCATED AND REINSTALLED, OR REPLACED IF DAMAGED.
- ALL "CAPPED" SANITARY AND VENT LINES SHALL BE RECONNECTED OR RE-ROUTED AS NECESSARY TO PREVENT "DEAD-ENDS" IN THE PIPING. ALL PIPING SHALL DRAIN TO ACTIVE SANITARY WASTE LINES AND ALL BRANCHES WITH TRAPS SHALL BE ADEQUATELY VENTED.
- CAP ALL DEMOLISHED AND ABANDONED DUCT TAKE-OFFS AT TRUNK DUCT.
- WORK SHALL BE PERFORMED IN A PROFESSIONAL MANNER CONSISTENT WITH INDUSTRY STANDARDS AND TO THE SATISFACTION OF THE ARCHITECT, OWNER, AND ENGINEER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERFORM HISHER WORK IN CONFORMANCE WITH ALL APPLICABLE CODES, ORDINANCES AND LIFE SAFETY FEATURES AS REQUIRED BY LOCAL, STATE, OR NATIONAL AUTHORITIES. THE CONTRACTOR SHALL VERIFY WITH THE ARCHITECT IF MODIFICATION OF HISHER WORK IS REQUIRED FOR COMPLIANCE.
- ALL WORK OF ALL TRADES MUST BE IN STRICT COMPLIANCE WITH, OR EXCEED THE MINIMUM MATERIAL, AND METHOD REQUIREMENTS OF THE 2021 VERSION OF THE INTERNATIONAL BUILDING, MECHANICAL, PLUMBING, ENERGY CONSERVATION, FUEL GAS, AND FIRE CODES AND THE 2023 NATIONAL ELECTRICAL CODE, MOST CURRENT NFPA, ALL LOCAL ORDINANCES AND AMENDMENTS AND MANUFACTURER'S INSTALLATION RECOMMENDATIONS. IF A CONFLICT BETWEEN THOSE PUBLICATIONS EXISTS, THE MOST STRINGENT REQUIREMENT SHALL APPLY.
- MECHANICAL WORK SHALL CONFORM TO THE FOLLOWING CODES:

ALL LOCAL, CITY, COUNTY, AND STATE CODES

AABC - ASSOCIATE AIR BALANCE COUNCIL

ADC - AIR DIFFUSION COUNCIL

AGA - AMERICAN GAS ASSOCIATION

AMCA - AIR MOVING AND CONTROL ASSOCIATION

ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE

ASHRAE - AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS

ASME - AMERICAN SOCIETY OF MECHANICAL ENGINEERS

ASTM - AMERICAN SOCIETY OF TESTING MATERIALS

AWWA - AMERICAN WATER WORKS ASSOCIATION

NFPA - NATIONAL FIRE PROTECTION ASSOCIATION

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

UL - UNDERWRITERS' LABORATORIES

SMACNA - SHEET METAL AND AIR CONDITIONING NATIONAL ASSOCIATION

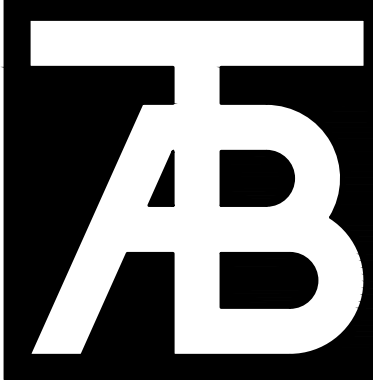
GVI - GAS VENT INSTITUTE, EDITION 10-A
- PAY FOR AND SECURE ALL REQUIRED PERMITS AND INSPECTIONS. PRIOR TO FINAL PAYMENT, TURN OVER TO ARCHITECT ALL CERTIFICATES OF COMPLETION.
- WARRANTY THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. THE WARRANTY SHALL BE FOR A PERIOD OF ONE YEAR AFTER THE OWNERS ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.
- SUBMIT O&M MANUALS WITHIN 90 DAYS OF ACCEPTANCE IN ACCORDANCE WITH DIVISION 1 REQUIREMENTS. IN THE ABSENCE OF DIVISION 1 REQUIREMENTS, O&M MANUALS SHALL INCLUDE: SUBMITTAL DATA STATING SIZES AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, MANUFACTURER'S OPERATING MANUALS AND MAINTENANCE MANUALS WITH REQUIRED ROUTINE MAINTENANCE ACTIONS (NAME AND ADDRESS OF AT LEAST ONE SERVICE AGENCY), HVAC CONTROLS AND SYSTEM MAINTENANCE, RECOMMENDED SENSOR CALIBRATION SCHEDULE, WIRING DIAGRAM AND SYSTEM SCHEMATICS, AND A NARRATIVE OF HOW EACH SYSTEM IS TO OPERATE INCLUDING RECOMMENDED SETPOINTS.
- SUBMIT RECORD DOCUMENTS TO ARCHITECT WITHIN 90 DAYS OF COMPLETION. DOCUMENTS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTING, ETC.
- SYSTEMS SHALL BE COMPLETE, OPERABLE, AND READY FOR CONTINUOUS OPERATION PRIOR TO ACCEPTANCE BY THE OWNER.
- SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. PERFORM AT A MINIMUM ALL CODE REQUIRED TESTS OR SYSTEMS. IF TESTS OF WORK ARE DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO ADDITIONAL COST TO OWNER.
- THE OWNER WILL ENGAGE A COMMISSIONING AGENT FOR THE PROJECT. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ADEQUATE TIME TO PARTICIPATE IN THE IECC COMMISSIONING PROCESS WITH THE COMMISSIONING AUTHORITY (CXA). COMMISSIONING SYSTEMS INCLUDE HVAC SYSTEMS AND CONTROLS, DOMESTIC HOT WATER HEATING SYSTEMS, AND EXTERIOR LIGHTING CONTROLS. COMMISSIONING PROCESS REQUIREMENTS INCLUDE:
 - INTEGRATING COMMISSIONING PROCESS ACTIVITIES PROVIDED BY THE CXA INTO THE CONSTRUCTION SCHEDULE.
 - ATTENDING A CONSTRUCTION PHASE CONTROL COORDINATION MEETING
 - REVIEW, ACCEPT, AND COMPLETE PRE-FUNCTIONAL CHECKLISTS PROVIDED BY THE CXA. SUBMIT NOTIFICATIONS OF READINESS UPON COMPLETION OF CHECKLISTS.
 - REVIEW, ACCEPT, AND PARTICIPATE IN SYSTEM FUNCTIONAL PERFORMANCE TEST PROCEDURES PROVIDED AND WITNESSED BY THE CXA.
 - EVALUATE PERFORMANCE DEFICIENCIES IDENTIFIED IN TEST REPORTS AND EQUIPMENT INSTALLATIONS. RECOMMEND CORRECTIVE ACTION AND COOPERATE WITH THE CXA FOR RESOLUTION OF ITEMS.
 - CERTIFY THE WORK IS COMPLETE AND SYSTEMS ARE OPERATIONAL ACCORDING TO THE CONTRACT DOCUMENTS INCLUDING CALIBRATION OF INSTRUMENTS AND CONTROLS.
- ALL MATERIALS AND/OR EQUIPMENT SHALL BE HANDLED AND INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- SUBMIT ALL MECHANICAL DIVISION SHOP DRAWING AND PRODUCT DATA AT ONE TIME. PARTIAL SUBMITTALS WILL BE REJECTED.
- SHOP DRAWING SUBMITTALS SHALL STATE CAPACITIES, SIZES, ETC. OF ALL EQUIPMENT AND SHALL BE CERTIFIED AND INCLUDE COMPUTER BASED PROJECT SPECIFIC SELECTIONS WHERE APPLICABLE. CLEARLY MARK EACH SHOP DRAWING, CATALOG CUT AND/OR SPECIFICATION SHEET TO INDICATE THOSE PRODUCTS AND FEATURES WHICH ARE INTENDED TO BE FURNISHED. SPECIFICALLY INDICATE ANY DEVIATIONS FROM THE DESIGN INTENT. ENGINEER RESERVES THE RIGHT TO REQUIRE CORRECTION AT NO COST TO OWNER FOR DEVIATIONS NOT SPECIFICALLY INDICATED IN THE SUBMITTALS. REVIEW AND APPROVAL OF SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF FURNISHING EQUIPMENT AND MATERIALS OF PROPER DIMENSION, SIZE, QUANTITY, QUALITY AND ALL PERFORMANCE CHARACTERISTICS TO EFFICIENTLY PERFORM THE REQUIREMENTS AND INTENT OF THE CONTRACT DOCUMENTS. SUBMITTAL SHALL BE BOUND AND INDEXED IN A NEAT AND ORDERLY MANNER.
- SUBMITTALS SHALL INCLUDE, BUT NOT BE LIMITED TO: EQUIPMENT, FIXTURES, INSULATION, DIFFUSERS, PUMPS, FANS, PIPING, VALVES, COILS, BASEBOARD, BOILERS, FURNACES, CONTROLS, AND FIRE PROTECTION.
- FAILURE TO ORDER, OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT, OR INSTALLATION METHODS.

- PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC., AS REQUIRED. BACKFILL TRENCHES IN 6" LAYERS AND TO 90% COMPACTION AND PATCH TO MATCH EXISTING GRADE.
- REPAIR ALL ACCIDENTAL OR INTENTIONAL DAMAGE TO MATCH EXISTING CONSTRUCTION WITH NO NOTICEABLE DIFFERENCE IN CONTINUITY, APPEARANCE OR FUNCTION.
- COORDINATE ALL PENETRATIONS OF THE FLOOR SLAB PRIOR TO COMMENCING WORK. UTILIZE X-RAY AND VISUAL INVESTIGATION OF EXISTING CONDITIONS AS REQUIRED PRIOR TO DRILLING OR CUTTING. COORDINATE ALL NEW PENETRATIONS WITH OTHER DIVISIONS OF THE WORK. ALL CONTRACTORS ARE INDIVIDUALLY RESPONSIBLE FOR ALL PENETRATIONS REQUIRED BY THEIR DIVISIONS.
- FIRE STOPPING REQUIREMENT: PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASSES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814. ACCEPTABLE MATERIALS INCLUDE: DOW CORNING RTV FIRE STOP FORM FOR BARE PIPE, METAL CONDUIT, AND ELECTRICAL CABLE; 3M FIRE DAM 150 CAULK FOR BARE PIPE, METAL CONDUIT, AND BUILDING CONSTRUCTION GAPS; 3M CP-25 CAULK AND FS-106 INTUMESCENT STRIPS FOR INSULATED PIPES, PLASTIC PIPE OR CONDUIT, AND ELECTRICAL CABLE. SUBMIT UL LISTED APPLICATION DATA FOR EACH TYPE OF PENETRATION ENCOUNTERED.
- DUCTS, PIPING, AND CONDUITS PENETRATING THROUGH THE ROOF SHALL HAVE ROOF FLASHING COMPATIBLE WITH THE ROOFING SYSTEM. SEE ARCHITECTURAL DRAWINGS. IN THE ABSENCE OF ANY OTHER REQUIREMENTS, PROVIDE SHEET LEAD TYPE FLASHING FOR PLUMBING VENTS IN BUILT-UP ROOFS. TALL CONE WITH EPDM BOOT FOR PIPE AND CONDUIT IN SINGLE PLY MEMBRANE ROOFS, AND CURBED ROOF PENETRATIONS IN ALL TYPES OF ROOF. INSTALLATION SHALL BE WATERTIGHT.
- ALL FLOOR DRAINS SHALL BE EQUIPPED WITH TRAP PRIMERS. PROVIDE TRAP PRIMERS WITH BACKFLOW PREVENTERS AND CONNECT TO THE NEAREST COLD WATER PIPING ADJACENT TO A FLUSHING FIXTURE. PROVIDE ELECTRONIC TRAP PRIMERS FOR ANY AREAS WHERE THE NEAREST ADJACENT FLUSHING FIXTURES ARE NOT WITHIN A REASONABLE DISTANCE OR STRUCTURAL OBSTRUCTIONS PREVENT GRAVITY SLOPING OF TRAP PRIMER LINES. THE ADDED COST OF ELECTRIC POWER FOR ELECTRONIC TRAP PRIMERS SHALL BE BORNE BY THE PLUMBING CONTRACTOR. INSTALL ALL TRAP PRIMER VALVES AND ASSOCIATED SYSTEMS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR ALL CEILING PENETRATIONS AND AIR DEVICE LOCATIONS.
- COORDINATE ARCHITECTURAL, STRUCTURAL, MECHANICAL, FIRE PROTECTION, ELECTRICAL, AND TECHNOLOGY DESIGN DRAWINGS PRIOR TO INSTALLATION.
- CAREFULLY VERIFY ELECTRICAL SERVICE VOLTAGE AND PHASE AVAILABLE.
- MOUNT ALL STATS AT 48" AFF IN "ACCESSIBLE" AREAS, 48" AFF IN OTHER AREAS, UNLESS NOTED OTHERWISE. COORDINATE LOCATION WITH WALL FINISH, AND TO AVOID CASEWORK, FURNITURE, DOOR SWINGS, HEAT SOURCES, AND EXTERIOR WALLS. NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO BEGINNING THERMOSTAT INSTALLATION.
- SUBMIT A WRITTEN BALANCE REPORT BY A NEBB OR ABC CERTIFIED BALANCING CONTRACTOR IN ACCORDANCE WITH NEBB, TABS, OR ABC STANDARDS. BALANCING PROCEDURES SHALL BE IN ACCORDANCE WITH NEBB OR ABC GUIDELINES FOR PROPORTIONAL BALANCE. SUBMIT REPORT ON STANDARD NEBB FORMS OR SUBMIT FORMS FOR REVIEW PRIOR TO BALANCING. MEASUREMENTS SHALL INCLUDE ALL MOTOR AMMAGE AND VOLTAGE READINGS; MOTOR AND FAN RPM; STATIC PRESSURE AT INLET AND OUTLET OF ALL PACKAGED EQUIPMENT; FANS, COILS, AND FILTERS; PILOT TUBE MEASUREMENT OF SUPPLY, EXHAUST, RETURN, AND OUTSIDE AIR MAIN DUCTS, AT MINIMUM OUTSIDE AIR, AND 100% (ECONOMIZER) OUTSIDE AIR. VELOCITY DISTRIBUTION ACROSS THE FACE OF FILTERS; AIR INLET AND OUTLETS WATER FLOW AT ALL FLOW MEASUREMENT STATIONS; INLET AND OUTLET PRESSURE AT PUMPS WITH FLOW CALCULATED FROM THE PUMP CURVE; WATER FLOW, TEMPERATURE DROP, AND PRESSURE DROP AT ALL COILS.
 - PROVIDE BELTS AND SHEAVES AS REQUIRED FOR DRIVE CHANGES TO ADJUST FAN SPEED.
 - ADJUST FLOWS TO WITHIN 10% OF REQUIRED QUANTITY. WHERE ROOM AIR PRESSURE RELATIONSHIP ARE REQUIRED TO BE MAINTAINED AS SHOWN BY A DIFFERENTIAL OF SUPPLY AND EXHAUST RETURN OR BY NOTE, ADJUST SUPPLY TO WITHIN 10% AND THEN ADJUST EXHAUST RETURN TO PROVIDE THE INDICATED ROOM PRESSURE. IF ACTUAL QUANTITY IS LESS THAN 80% INVESTIGATE CAUSE, ATTEMPT TO RECTIFY AND NOTIFY ENGINEER. SUBMITTAL OF BALANCE REPORT WITH LESS THAN REQUIRED FLOWS WITHOUT EXPLANATION IS CAUSE FOR REJECTION OF REPORT.
 - SUBMIT IN ELECTRONIC PDF FORMAT.
- DUCTWORK:
 - FLEXIBLE DUCTWORK SHALL HAVE AN OUTER JACKET OF FIRE RETARDANT POLYETHYLENE VAPOR BARRIER MATERIAL, UNIFORM LAYER OF FIBERGLASS INSULATION, HIGH-STRENGTH GALVANIZED STEEL HELIX ENCAPSULATED IN REINFORCED "RIP STOP" ALUMINUM LAMINATE, INTERIOR CORE, UL LISTED AND LABELED, CLASS 1 AIR DUCT, WORKING PRESSURE RATING: POSITIVE 8", NEGATIVE 4". FLEXMASTER TYPE 5 OR EQUIVALENT. SUBMIT SAMPLES TO DETERMINE EQUIVALENCE.
 - FLEXIBLE CONNECTION: EQUIVALENT TO VENTBAG, FIREPROOF GLASS CLOTH, 10" W/C, RATED.
 - ROUND DUCT: SPIRAL SEAM, GALVANIZED STEEL. DIE STAMPED OR 5 GORE ELBOWS "SNAP-LOCK", LONGITUDINAL SEAM DUCT, OR ADJUSTABLE FITTINGS ARE ACCEPTABLE ON INDIVIDUAL GRILLED/DIFFUSER RUNS ONLY.
 - INSULATION:
 - INTERIALLY LINE ALL RECTILINEAR SUPPLY, OUTSIDE AIR, RETURN AIR DUCTS, EXHAUST AIR RISERS, AND MAKE UP AIR RISERS WITH 1", 1.5 LB/CF, BLACK MATTE COATED INSULATING DUCT LINER. INSULATION CONDUCTIVITY VALUE NOT EXCEEDING 0.27 BTU/IN(HR)(FT²)(°F). LINER SHALL BE COATED AND SEALED AND SHALL MEET ASTM C1071. MATERIAL SHALL MEET ALL THE REQUIREMENTS OF NFPA-80. INSTALL WITH ADHESIVE AND WELDED Joints IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS".
 - EXTERNALLY WRAP ALL ROUND SUPPLY AIR DUCTS WITH FLEXIBLE GLASS FIBER, ANSIA/ASTM C612, 0.002 INCH FOIL SCRIM FACING. ALL RAW EDGES OF INSULATION SHALL BE NEATLY TRIMMED AND SEALED WITH MASTIC.
 - DUCTWORK: 680 GALVANIZED SHEET STEEL; LOCK FORMING QUALITY, CONSTRUCTED TO THE LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS"; +/- 1" W/C PRESSURE CLASSIFICATION, SEAL CLASS "B", WITH GALVANIZED STEEL FASTENERS, ANCHORS, ANGLES, STRAPS, ETC.
 - SEAL ALL SEAMS (LONGITUDINAL AND TRANSVERSE) AIRTIGHT WITH UNITED MCGILL "UNI-GRIP" UL LISTED, WATER BASED, NON-HARDENING, ELASTIC SEALANT OR EQUIVALENT. TAPE NOT ALLOWED.
- PROVIDE 1/2" GALVANIZED MESH SCREEN ON ALL COMBUSTION AIR DUCTS OR OPENINGS, AND ALL OPEN END RETURN AND EXHAUST DUCTS.
- ALL DUCTWORK DIMENSIONS ARE OUTSIDE SHEET METAL DIMENSIONS. DUCT LINER HAS BEEN ACCOUNTED FOR WITHIN RECTANGULAR DUCTWORK.
- DUCTWORK NOTES:
 - DIFFUSER NECK SIZE IS SAME AS FLEXIBLE DUCT SIZE.
 - UNLESS OTHERWISE NOTED, ALL CHANGES IN DIRECTION SHALL BE MADE WITH RADIUS ELBOWS WITH RADIUS TO CENTERLINE EQUAL TO 1.5 DUCT WIDTH.
 - WHERE REQUIRED FOR SPACE CONSTRAINTS, PROVIDE SQUARE THROAT ELBOWS WITH SINGLE WIDTH (NON-AIRFOIL) TURNING VANES.
 - FOR DUCT DEPTHS OF 36" OR LESS, PROVIDE MANUFACTURED SINGLE WIDTH (NON-AIRFOIL) TURNING VANES, WITH SPACING IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR "STANDARD SPACING". USE DOUBLE THICKNESS BLADES FOR DUCT DEPTHS GREATER THAN 36". USE NO TRAILING EDGES.
 - ALL FLEXIBLE DUCTS SHALL NOT EXCEED EIGHT FEET IN LENGTH.
 - RETURN AIR PLENUM: THE HVAC SYSTEM WILL USE THE SPACE ABOVE THE CEILING ON EACH FLOOR AS A RETURN AIR PLENUM, CONFORM TO THE REQUIREMENTS OF NFPA AND LOCAL CODE REQUIREMENTS FOR ALL MATERIAL INSTALLED IN THE RETURN AIR PLENUM. PROVIDE A COMB BETWEEN RETURN AIR PATH BETWEEN ALL RETURN AIR DEVICES (GRILLER ETC.) AND THEIR RESPECTIVE HVAC UNIT. THE MAXIMUM VELOCITY OF RETURN AIR IN PLENUM SHALL GENERALLY NOT EXCEED 250 FEET PER MINUTE, NOR EXCEED 750 FEET PER MINUTE AT ANY CROSS-SECTION OF THE RETURN AIR PATH.
- DUCTWORK SPECIALTIES
 - VOLUME AND SPLITTER DAMPERS: GALVANIZED SHEET METAL, WITH VENTFABRICS, INC. VENTLOCK OR EQUAL OPERATING HARDWARE, FOR ACCESSIBLE DAMPERS, PROVIDE NO. 620, 635 OR 637 DIAL REGULATORS, NO. 635 OR 637 SQUARE END BEARING, AND NO. 635 SPRING END BEARING, AS APPLICABLE. FOR INACCESSIBLE DAMPERS, PROVIDE NO. 686 CONCEALED DAMPER REGULATORS, WITH PAINTED COVER (COLOR BY ARCHITECT) AND BEARINGS AS ABOVE. FOR MEDIUM PRESSURE DUCTS, PROVIDE NO. 635 HVEL DIAL REGULATOR AND NO. 609 HVEL END BEARING FOR ACCESSIBLE DAMPERS.
 - MULTI-LOUVER VOLUME DAMPERS: TITUS AG-35-B OPPOSED BLADE, ANEMOSTAT OR EQUAL. SEE DETAIL REGARDING REMOTE ACCESS TO VOLUME DAMPERS.
 - FIRE-SMOKE DAMPERS: RUSKIN, AIR BALANCE, INC. OR EQUAL, UL LABELED AND IN CONFORMANCE WITH NFPA 90A. ALL DAMPERS TO BE OUT OF AIRSTREAM, TYPE B OR C RATED FOR A MINIMUM OF 1-1/2 HOURS (2 HOURS WHERE NOTED), UL LABEL AND AS APPROVED BY LOCAL AUTHORITIES. MOUNT DAMPERS WITHIN 16-GAGE SLEEVES HELD IN PLACE WITH RETAINING ANGLES. COORDINATE LOCATION OF ACCESS PANELS TO PERMIT EASY ACCESS TO FUSIBLE LINK.
 - TURNING VANES FOR LOW PRESSURE DUCTS: SMACNA SMALL DOUBLE VANE, PLATE NO. 228 OR EQUAL, WITH AIRFOIL BLADES FOR DUCTS 36" OR LESS IN WIDTH; SMACNA FIG. 3.23 FOR DUCTS GREATER THAN 36" WIDE. FOR MEDIUM PRESSURE DUCTS: SMACNA FIG. 3-23.
 - ACCESS PANELS:
 - REINFORCED, GALVANIZED SHEET METAL WITH AIRTIGHT GASKETS RATED FOR PRESSURES AND SERVICE INTENDED. MILCOR OR EQUAL. PROVIDE HINGES AND VENTFABRICS, INC. VENTLOCK LATCHES.
 - DUCT ACCESS PANELS FOR HAND ENTRY ONLY: NO. 90 SASH TYPE LATCH, MINIMUM SIZE: 16" X 16".
 - DUCT AND PLENUM ACCESS DOORS FOR BODY ENTRY: NO. 310 LATCH, OPERABLE FROM BOTH SIDES OF DOOR. MINIMUM SIZE: 16" X 16".
 - REFERENCE OTHER SECTIONS FOR CEILING/WALL ACCESS PANELS.
 - BACKDRAFT DAMPERS: PROVIDE COUNTERWEIGHT TYPE BACKDRAFT DAMPERS IN ALL DUCTS OPENING TO THE OUTSIDE RUSKIN MODEL CR87 OR APPROVED EQUAL.
- SUPPORT PIPE WITH ROD AND CLEVIS, RING HANGERS, TRAPEZE, OR CLAMPS. NO PIPE TAPE OR STRAPPING ALLOWED. ALL HANGERS SHALL BE SIZED FOR OD OF INSULATION. IF ANY, PROTECT INSULATED LINES WITH 20 GA SHEET METAL. SHEETS AND PROVIDE CALCIUM SILICATE INSULATION INSERTS FOR ALL INSULATED PIPING. MAINTAIN VAPOR BARRIER ON ALL COLD LINES. ISOLATE BARE COPPER LINES FROM HANGERS WITH VIBRASORB OR EQUIVALENT, COPPER COATED HANGERS ARE NOT SUFFICIENT, WRAPPING PIPE WITH TAPE NOT ACCEPTABLE.
- NEW HOT AND COLD WATER BRANCHES TO BE ROUTED FROM NEAREST HOT WATER AND COLD WATER OF LINE SIZE EQUAL TO OR GREATER THAN NEW BRANCH—TYPICAL.
- REFER TO PLUMBING FIXTURE CONNECTIONS SCHEDULE FOR PIPE SIZES TO INDIVIDUAL PLUMBING FIXTURES.
- PROVIDE SHOCK ARRESTERS AT ALL DOMESTIC HOT AND COLD WATER BRANCHES SERVING FIXTURES AND EQUIPMENT WITH QUICK CLOSING VALVES. SUCH FIXTURES AND EQUIPMENT INCLUDES FLUSH VALVE WATER CLOSETS, DISHWASHERS, ICE MACHINES, AND CLOTHES WASHERS. SHOCK ARRESTERS SHALL BE CONSTRUCTED WITH A PISTON IN A SEALED COPPER TUBE CHAMBER, AND APPROVED FOR INSTALLATION WITHIN WALLS WITHOUT ACCESS PANELS. SIOUX CHIEF OR EQUIVALENT. BELLOWES TYPE NOT ACCEPTABLE.
- DOMESTIC HOT AND COLD PIPING INSIDE BUILDING—BURIED LINES, TYPE "K" SOFT ANNEALED COPPER BURNED LINES, SINGLE LENGTH TO AVOID FITTINGS. WROUGHT COPPER FITTINGS WHERE UNAVAILABLE AND 1100F SOLDIER. NON-BURNED LINES, TYPE "L" HARD COPPER WATER TUBE, WROUGHT COPPER FITTINGS AND NO LEAD 55-SOLDER.
- COPPER PIPE VALVES AND SPECIALTIES
 - GATE VALVES - BRONZE, CLASS 125, 200 LB. W.O.G.
 - BALL VALVES - BRONZE, CLASS 125, 600 LB. W.O.G.
 - CHECK VALVES - BRONZE, CLASS 125, 300 LB. W.O.G.
 - BALANCING VALVES - 125 PSI W.P. FOR 250 DEGREE FAHRENHEIT SERVICE TIGHT SHUTOFF, TOUR AND ANDERSON STA. ARMSTRONG CBV, GERARD, OR FLOWSET, B&G CIRCUIT SETTER
 - DIRECT UNIONS: FURNISH AND INSTALL A DIELECTRIC UNION AT EACH CONNECTION BETWEEN DISSIMILAR METALS.

- MATERIALS, SOIL, WASTE, AND VENT PIPING (INSIDE BUILDING)

- LINES BURNED BELOW GROUND: STANDARD WEIGHT, CAST IRON SOIL PIPE, AND FITTINGS. HUB AND SPIGOT WITH NEOPRENE GASKETS.
- LINES BURNED BELOW GROUND: SCHEDULE 40 SOLID CORE PVC PIPE ACCORDING TO ASTM D 2665 DRAIN, WASTE AND VENT AND PVC SOCKET FITTINGS ACCORDING TO ASTM D 2665 AND ASTM D 3311 DWV PATTERNS AND TO FIT SCHEDULE 40 PIPE. ASSEMBLED WITH ASTM F 686 ADHESIVE PRIMER AND ASTM D 2564 SOLVENT CEMENT.
- LINES ABOVE GROUND: STANDARD WEIGHT, CAST IRON SOIL PIPE, AND FITTINGS. HUB AND SPIGOT WITH NEOPRENE GASKETS, OR NO HUB WITH STANDARD CLAMPS. UP THROUGH 2-1/2" MAY BE STANDARD WEIGHT. GALVANIZED STEEL PIPE WITH BLACK, WROUGHT IRON DRAIN FITTINGS, OR DWV COPPER TUBE WITH DWV FITTINGS AND 95-5 NO LEAD SOLDER.
- PROVIDE EXPANSION JOINTS OR LOOPS ON ALL HEATING WATER PIPING RUNS IN EXCESS OF 50 FEET AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- GRADE AND VALVE ALL HEATING WATER PIPING WITH 3/4" HOSE END VALVES TO PERMIT COMPLETE DRAINAGE OF THE SYSTEM. VENT ALL HIGH POINTS IN EQUIPMENT ROOMS AS NECESSARY WITH AUTOMATIC AIR VENTS PIPED TO CONVENIENT DRAIN. ALL HIGH POINTS IN SYSTEM OUTSIDE OF EQUIPMENT ROOMS WITH COMBINATION AUTOMATIC/MANUAL AIR VENTS AS REQUIRED TO RELIEVE AIR IN THE SYSTEM.
- PROVIDE PLASTIC GROMMETS ON ALL HEATING WATER PIPING PASSING THROUGH WOOD JOISTS AND STUDS.
- MATERIALS: HYDRONIC PIPING
 - ABOVE GRADE, UP THROUGH 2-1/2": SCHEDULE 40 STEEL PIPE WITH MALLEABLE IRON THREADED FITTINGS, OR TYPE "C" COPPER TUBE WITH WROUGHT COPPER FITTINGS AND 95-5 NO LEAD SOLDER.
- DRAIN AND RECEPTOR PIPING FOR COMBUSTION CONDENSATE—NOT BURIED—TYPE: SCHEDULE 40 SOLID-WALL PVC, PVC FITTINGS, AND PVC CEMENT; BURIED—TYPE: SCHEDULE 80 SOLID-WALL PVC, PVC FITTINGS, AND PVC CEMENT. ALL BURIED PIPE SHALL BE SURROUNDED WITH 4" OF CLEAN SAND. PROVIDE NEUTRALIZATION SYSTEMS AS RECOMMENDED BY COMBUSTION APPLIANCE MANUFACTURER.
- INDOOR PIPING INSULATION - INSULATE ALL NEW HEATING WATER, DOMESTIC WATER, DOMESTIC HOT WATER, AND DOMESTIC HOT WATER RECIRCULATION PIPING WITH UL APPROVED, WHITE, ALL SERVICE, MINERAL FIBER, SNAP-ON PIPE INSULATION. INSULATE FITTINGS WITH MINERAL FIBER BLANKET INSULATION AND PRE-MOLDED PVC COVERS. ALL MATERIALS SHALL HAVE A SMOKE DEVELOPED RATING OF 50 OR LESS AND A FLAME SPREAD RATING OF 25 OR LESS. PROVIDE CALCIUM SILICATE THERMAL INSERT AT HANGERS AND SUPPORTS. INSULATION SHALL PASS UNINTERRUPTED THROUGH HANGERS. VAPOR BARRIERS SHALL BE CONTINUOUS AND SEALED WITH "NON-BREATHING" VAPOR BARRIER MASTIC ON PIPING OPERATING AT TEMPERATURES BELOW AMBIENT. ALL RAW EDGES OF INSULATION SHALL BE NEATLY TRIMMED AND SEALED WITH MASTIC.
 - INSULATION THICKNESS BELOW BASED ON INSULATION CONDUCTIVITY VALUE NOT EXCEEDING 0.27 BTU/IN(HR)(FT²)(°F):
 - HEATING WATER (LESS THAN 202°F) - NPS 1/25 AND LESS, 1.5" THICK; NPS 1.5 AND GREATER, 2" THICK. RUNOUTS WITHIN 4 FEET OF TERMINAL AND 1" PIPE DIAMETER OR LESS, 1" THICK.
 - DOMESTIC HOT WATER (DHW) AND DOMESTIC HOT WATER RECIRCULATION: ALL PIPE SIZES - 1" THICK; NON-RECIRCULATED DHW RUNOUTS WITHIN 8 FEET OF FIXTURES - 1/2" THICK.
 - DOMESTIC COLD WATER: ALL PIPE SIZES - 1/2" THICK.
- CLEAN, STERILIZE, FLUSH, AND FILL ALL NEW SYSTEMS, PRIOR TO STARTUP. INCLUDE LABOR AND MATERIALS FOR FINAL FILL.
- IDENTIFICATION: LABEL ALL NEW PIPING AND EQUIPMENT. PROVIDE FULL BAND OR STRIP-TYPE MARKERS AND FLOW ARROWS ON PIPING. PROVIDE ENGRAVED PLASTIC VALVE TAGS WITH VALVE NUMBER AND ATTACH WITH STANDARD CHAIN OR S-HOOKS. PROVIDE ENGRAVED PLASTIC SIGN ON OR NEAR SPECIFIED EQUIPMENT.
- FIRE PROTECTION DESIGN/BUILD REQUIREMENTS:

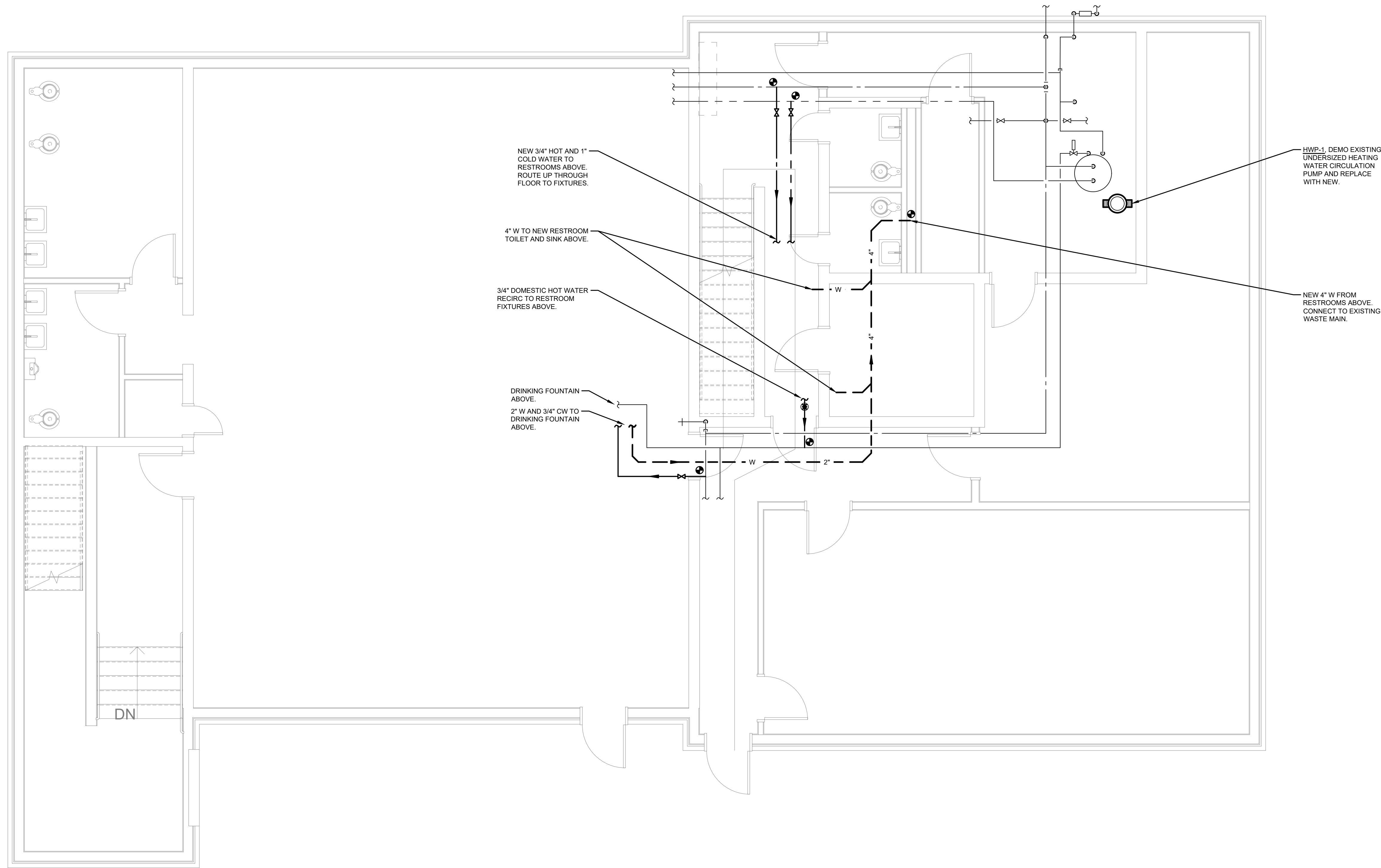
- THE FIRE SPRINKLER CONTRACTOR SHALL SERVE AS THE ENGINEER OF RECORD FOR ALL WORK PERFORMED UNDER THIS DIVISION. IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION, (AHJ) SUBMIT COMPLETE FIRE SPRINKLER SYSTEM SHOP DRAWINGS AND HYDRAULIC CALCULATIONS, GENERATED BY CONTRACTOR. SHOP DRAWINGS SHALL BE A MINIMUM 1/8" SCALE, AND SHALL SHOW DEVICE AND APPLIANCE LOCATIONS, BUILDING BACKGROUND INFORMATION, ROOM OCCUPANCY DESCRIPTIONS, DOOR SWINGS, FIRE RATINGS AND FIRE PROTECTION SYSTEM LAYOUT AND DETAILS. SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER OR REGISTERED TECHNICIAN REGISTERED IN THE STATE OF COLORADO. SUBMIT SHOP DRAWINGS AND HYDRAULIC CALCULATIONS TO THE BUILDING AND FIRE DEPARTMENTS AS A DEFERRED SUBMITTAL AND OBTAIN THEIR APPROVAL BEFORE SUBMISSION TO THE ARCHITECT.
- EXTEND THE EXISTING SPRINKLER SYSTEM. ADD NEW SPRINKLER HEADS IN ACCORDANCE WITH NFPA 13, ALL APPLICABLE CODES AND ORDINANCES AND PROJECT REQUIREMENTS TO COMPLETE THE WORK.
- SYSTEM SHALL BE INSTALLED COMPLETE AND OPERATIONAL, INCLUDING WATER FLOW INDICATOR, CONNECTIONS TO EXISTING ALARM, DRAIN PIPING, IDENTIFICATION SIGNS, ETC.
- WORK SHALL BE PERFORMED BY A QUALIFIED FIRE SPRINKLER INSTALLER WITH A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN SIMILAR INSTALLATIONS.
- COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO AND DURING INSTALLATION.
- PROVIDE AN EXTRA STOCK OF SIX (6) SPRINKLER HEADS, THREE (3) OF EACH TYPE, AND A SPRINKLER WRENCH. SPRINKLER HEADS SHALL MATCH EXISTING IN ADJACENT AREAS.

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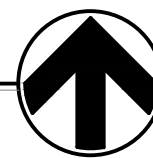
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1. REM3.1 FOR MECHANICAL DIAGRAM.
2. THE SPACE ABOVE CEILING IS BEING UTILIZED AS A RETURN AIR PLENUM. ALL RETURN GRILLES SHALL BE PROVIDED WITH SOUND BOOTS AND A DIRECT PATH TO THE AIR HANDLING SYSTEM RETURN DUCT OPEN TO PLENUM. WHERE FULL HEIGHT WALLS ARE INSTALLED AND THE RETURN AIR PATH IS COMPROMISED, THE SOUND BOOT SHALL EXTEND THROUGH THE WALL OR TRANSFER AIR DUCTS SHALL BE PROVIDED. OTHERWISE, PROVIDE S OR U-DUCT TRANSFER THROUGH WALL. TRANSFER DUCTS AND SOUND BOOTS SHALL BE LINED SHEET METAL. NON-METAL DUCT NOT PERMITTED.
3. MAINTAIN MIN. 3 FT BETWEEN ENVIRONMENTAL EXH TERMINATIONS AND OPENINGS INTO BUILDING.
4. ALL BRANCH HEATING WATER PIPE TO TERMINAL HEATING EQUIPMENT ARE 3/4" PIPE, U.N.O.
5. ALL VALVES SHALL BE INSTALLED ABOVE DROP-IN CEILINGS IN ACCESSIBLE LOCATIONS, OR WITH ACCESS PANELS IN HARD-LID CEILINGS.
6. REFER TO THE PLUMBING FIXTURE CONNECTION SCHEDULE FOR PIPE SIZES TO INDIVIDUAL FIXTURES.
7. NOT ALL REQUIRED CLEANOUTS ARE NECESSARILY SHOWN ON THESE PLANS. PROVIDE CLEANOUTS ON WASTE, VENT AND STORM PIPING AS REQUIRED BY CODE AND FOR REASONABLE MAINTENANCE BASED ON ACTUAL FIELD INSTALLATION. COORDINATE LOCATIONS WITH ARCHITECT/ENGINEER.
8. INSTALL THERMOSTATIC MIXING VALVES, ASSE 1070 LISTED, AT EACH PUBLIC HANDWASHING LAVATORY/SINK. SIZE TO MATCH HW PIPE SIZE.
9. TERMINATE PLUMBING VENTS NOT LESS THAN 18" ABOVE ROOF.

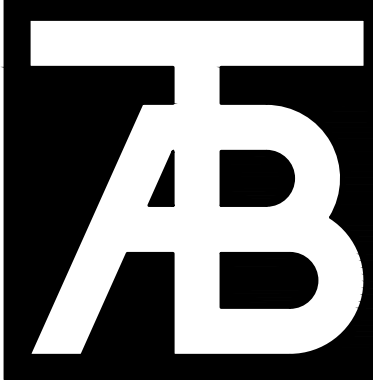
**1 MECHANICAL LOWER LEVEL PLAN**

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



Revisions:		
No	Description	Date

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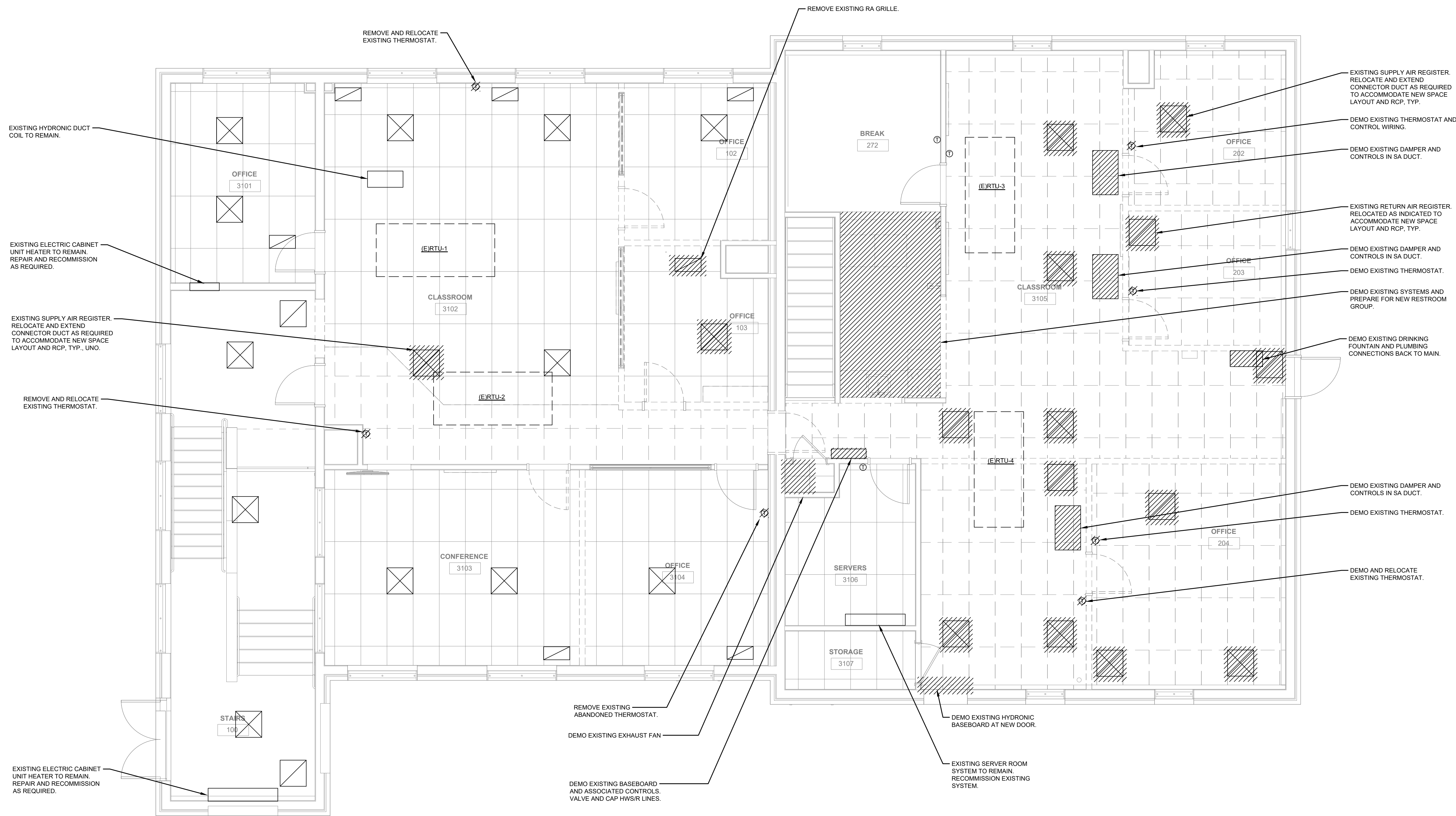
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Structural Engineer:
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(970) 949-6108
Electrical Engineer:
BG Building Works
(970) 949-6108**GSHS Annex Reno**
1405 Grand Ave
Glenwood Springs CO 81601

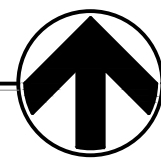
Revisions:		
No	Description	Date

Issue Dates:
PERMIT-04/05/2024Sheet Title:
MECHANICAL UPPER LEVEL DEMO PLANProject No:
2404Sheet No:
MD2.1**DEMOLITION NOTES:**

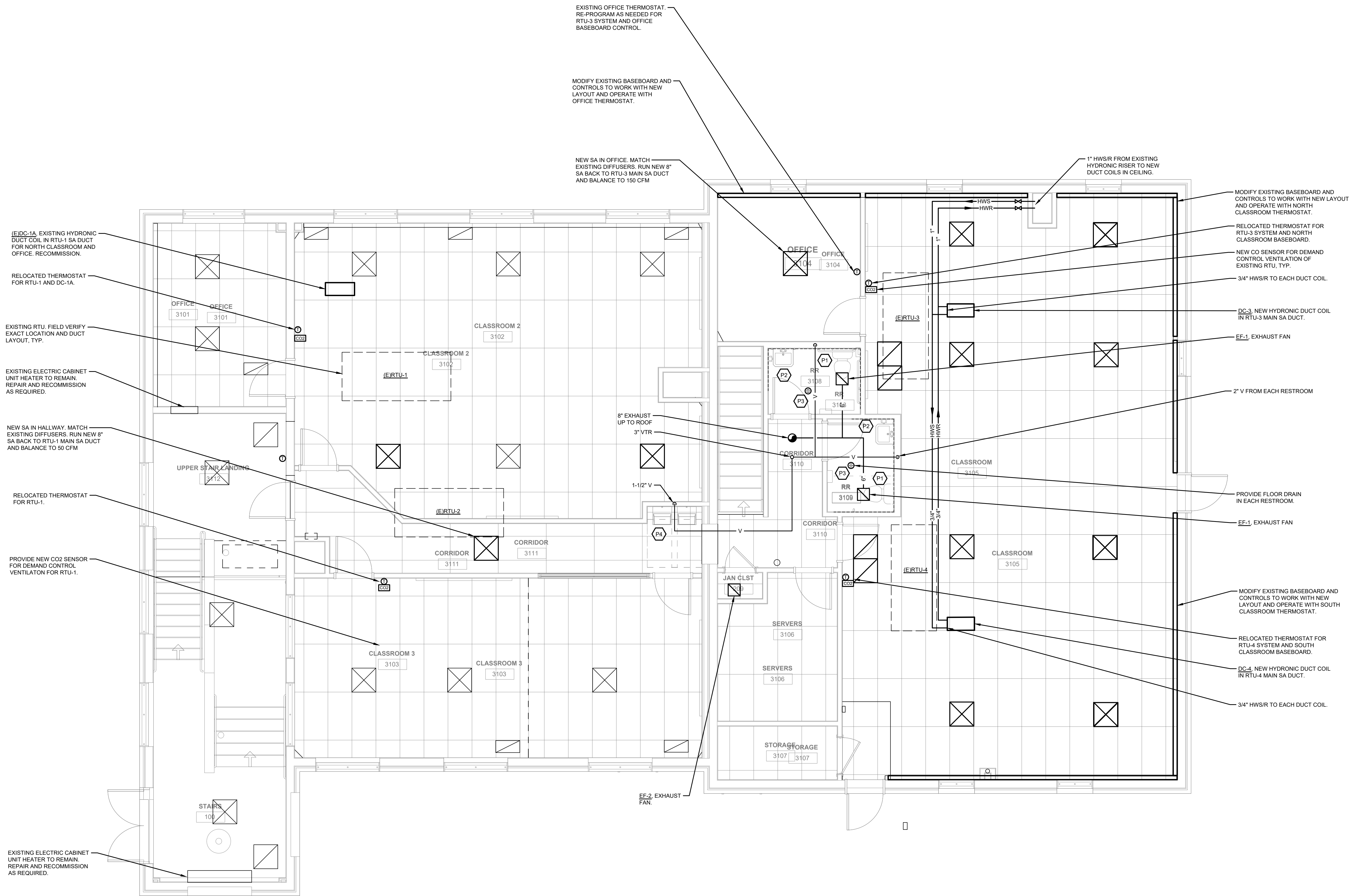
1. ADDITIONAL STORM, HYDRONIC, DOMESTIC, WASTE AND VENT PIPING MAY BE ROUTED IN SPACE THAT IS NOT REPRESENTED, BUT IS TO REMAIN. OTHER SYSTEMS MAY EXIST WITHIN THE SPACE THAT ARE NOT REPRESENTED ON THESE DRAWINGS. MODIFICATIONS TO THESE SYSTEMS ARE NOT ANTICIPATED.
2. FIELD VERIFY ALL COMPONENTS PRIOR TO DEMOLITION. THE INFORMATION ON THIS SHEET WAS OBTAINED, IN PART, FROM HISTORIC DESIGN DRAWINGS. ONLY PORTIONS OF THE SYSTEMS WERE ACCESSIBLE FOR VISUAL CONFIRMATION DURING DESIGN PROCESS.
3. PROVIDE PRELIMINARY TESTING OF EXISTING HYDRONIC SYSTEMS. MEASURE CURRENT FLUID FLOW RATE THROUGH ALL EXISTING COILS, RADIANT, AND SNOWMELT ZONES FOR THE CURRENTLY INSTALLED SYSTEMS. SUBMIT REPORT OF MEASURED VALUES TO ENGINEER FOR REVIEW AND CONFIRMATION OF SYSTEM DESIGN ASSUMPTIONS PRIOR TO DEMOLITION.
4. PROVIDE PRELIMINARY TESTING OF EXISTING HVAC DUCTWORK SYSTEMS. MEASURE CURRENT AIR FLOW RATES AT ALL EXISTING SUPPLY, RETURN, AND EXHAUST REGISTERS. MEASURE TOTAL AIR FLOWS AT MAIN DUCT BRANCHES AND ALL FAN SYSTEMS. SUBMIT REPORT OF MEASURED VALUES TO ENGINEER FOR REVIEW AND CONFIRMATION OF SYSTEM DESIGN ASSUMPTIONS PRIOR TO DEMOLITION.
5. (E) WASTE SYSTEM SERVING SPACE IS LOCATED IN THE CEILING OF THE SPACE BELOW.
6. REMOVE ALL MECHANICAL ITEMS INDICATED.
7. TEMPORARILY SEAL OR CAP PIPING TO BE RE-USED FOR LATER CONNECTION.
8. SEAL ALL OPEN DUCTS DURING CONSTRUCTION TO MITIGATE DUST AND DEBRIS FROM SYSTEM. CAP DUCTWORK IN LOCATIONS THAT ARE NOT BEING RECONNECTED.
9. REMOVE ALL DEMOLISHED COLD WATER, HOT WATER AND HOT WATER RECIRCULATION PIPING BACK TO BRANCH FROM MAIN TO ELIMINATE ALL DEAD ENDS IN DOMESTIC WATER PIPING.
10. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OF INFORMATION REPRESENTED IN THE DOCUMENTS VERSUS WHAT IS FOUND IN THE FIELD.
11. COORDINATE PATCHING AND REPAIRS OF WALLS, CEILINGS AND FLOORS WITH ARCHITECT.
12. PATCH STRUCTURAL OPENINGS IN FLOORS, WALLS AND ROOFS THAT WERE PREVIOUSLY OCCUPIED BY SYSTEMS AND EQUIPMENT DEMOLISHED UNDER THIS CONTRACT IN ACCORDANCE WITH STRUCTURAL ENGINEER'S REQUIREMENTS.

**1 MECHANICAL UPPER LEVEL DEMO PLAN**

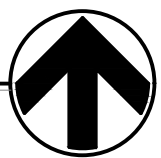
SCALE: 1/4" = 1'-0"



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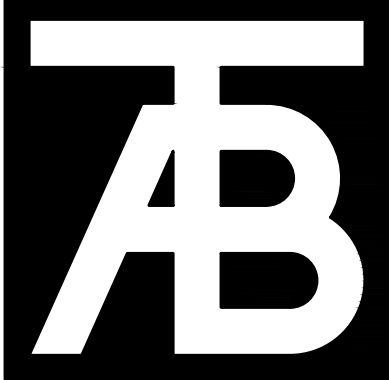
1 MECHANICAL UPPER LEVEL PLAN
SCALE: 1/4" = 1'-0"



MECHANICAL NOTES:

1. RE-M3.1 FOR MECHANICAL DIAGRAMS.
2. THE SPACE ABOVE CEILING IS BEING UTILIZED AS A RETURN AIR PLENUM. ALL RETURN GRILLES SHALL BE PROVIDED WITH SOUND BOOTS AND A DIRECT PATH TO THE AIR HANDLING SYSTEM RETURN DUCT OPEN TO PLENUM. WHERE FULL HEIGHT WALLS ARE INSTALLED AND THE RETURN AIR PATH IS COMPROMISED, THE SOUND BOOT SHALL EXTEND THROUGH THE WALL OR TRANSFER AIR DUCTS SHALL BE PROVIDED. OTHERWISE, PROVIDE 2" OR U-DUCT TRANSFER THROUGH WALL. TRANSFER DUCTS AND SOUND BOOTS SHALL BE LINED SHEET METAL. NON-METAL DUCT NOT PERMITTED.
3. MAINTAIN MIN. 3 FT BETWEEN ENVIRONMENTAL EXH TERMINATIONS AND OPENINGS INTO BUILDING.
4. ALL BRANCH HEATING WATER PIPE TO TERMINAL HEATING EQUIPMENT ARE 3/4" PIPE, U.N.O.
5. ALL VALVES SHALL BE INSTALLED ABOVE DROP-IN CEILINGS IN ACCESSIBLE LOCATIONS, OR WITH ACCESS PANELS IN HARD-LID CEILINGS.
6. REFER TO THE PLUMBING FIXTURE CONNECTION SCHEDULE FOR PIPE SIZES TO INDIVIDUAL FIXTURES.
7. NOT ALL REQUIRED CLEANOUTS ARE NECESSARILY SHOWN ON THESE PLANS. PROVIDE CLEANOUTS ON WASTE, VENT AND STORM PIPING AS REQUIRED BY CODE AND FOR REASONABLE MAINTENANCE BASED ON ACTUAL FIELD INSTALLATION. COORDINATE LOCATIONS WITH ARCHITECT/ENGINEER.
8. INSTALL THERMOSTATIC MIXING VALVES, ASSE 1070 LISTED, AT EACH PUBLIC HANDWASHING LAVATORY/SINK. SIZE TO MATCH HW PIPE SIZE.
9. TERMINATE PLUMBING VENTS NOT LESS THAN 18" ABOVE ROOF.

Exhibit A



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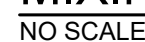
Issue Dates:
PERMIT-04/05/2024

Sheet Title:
**MECHANICAL
UPPER LEVEL
PLAN**

Project No:
2404

Sheet No:
M2.1





GENERAL NOTES:

- EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT 'AS-BUILT' CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS.
- SYSTEM OUTAGES SHALL BE PERMITTED ONLY AT TIMES APPROVED BY OWNER - IN WRITING. WORK WHICH COULD RESULT IN AN ACCIDENTAL OUTAGE (BEYOND BRANCH CIRCUITS) SHALL BE PERFORMED WITH THE OWNER'S MAINTENANCE PERSONNEL ADVISED OF SUCH WORK.
- SERVICE SHALL BE MAINTAINED TO EXISTING AREAS DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE PORTABLE GENERATORS, CABLES, OUTLETS, ETC. AS REQUIRED TO MAINTAIN CONTINUITY OF SERVICE. PLACEMENT OF SUCH PORTABLE EQUIPMENT SHALL BE SUBJECT TO OWNER APPROVAL.
- WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ENGINEER.
- WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES.
- SECURE AND PAY FOR ALL PERMITS AND FEES NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK. FURNISH TO THE ARCHITECT A COPY OF INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS.
- CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT, OR INSTALLATION METHODS.
- EXISTING SYSTEMS AND CONDITIONS SHOWN ON DRAWINGS FOR EXISTING BUILDINGS ARE TO BE NOTED "FOR GUIDANCE ONLY". THE ELECTRICAL CONTRACTOR TO FIELD CHECK ALL EXISTING CONDITIONS PRIOR TO BIDDING AND TO INCLUDE IN HIS BID AN ALLOWANCE FOR REMOVAL AND/OR RELOCATION OF EXISTING CONDUITS, WIRES, DEVICES, FIXTURES, OR OTHER EQUIPMENT AS INDICATED ON THE PLANS OR AS REQUIRED TO COORDINATE AND ADAPT NEW AND EXISTING ELECTRICAL SYSTEM TO ALL OTHER WORK AS REQUIRED.
- ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS OR PARTITIONS SHALL BE SEALED TO PREVENT THE SPREAD OF SMOKE AND FIRE THROUGH THEM. THE FIRE RATING OF THE PENETRATION SEAL SHALL AT A MINIMUM BE THE SAME RATING AS THAT OF THE FLOOR OR WALL. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- EXPOSED CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES, PARALLEL WITH OR AT RIGHT ANGLES TO THE BUILDING STRUCTURE. DO NOT LOOP EXCESS FLEXIBLE CONDUIT IN CEILING SPACE.
- PROVIDE A SEPARATE CODE SIZED GREEN EQUIPMENT GROUND CONDUCTOR IN ALL CONDUITS AND RACEWAYS CONTAINING LINE VOLTAGE CIRCUITS. FOR ALL 20A CIRCUITS, EQUIPMENT GROUND CONDUCTOR SIZE SHALL MATCH PHASE CONDUCTOR SIZE. FOR CIRCUITS UPSIZED FOR VOLTAGE DROP INCREASE EQUIPMENT GROUNDING CONDUCTOR SIZE PER CODE.
- THE CONTRACTOR SHALL DO ALL CUTTING AND PATCHING OF THE EXISTING CONSTRUCTION WORK WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP AND FINISH AS, AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK.
- INSTALL ALL MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANY DEVIATIONS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION PRIOR TO INSTALLATION.
- FINAL CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION, OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
- UPON COMPLETION OF ALL ELECTRICAL WORK, ELECTRICAL CONTRACTOR SHALL ADJUST AND TEST ALL CIRCUITS AND ANY OTHER ELECTRICAL ITEMS SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH ALL NEW EQUIPMENT AND THAT PART OF THE SYSTEM SHALL THEN BE RETESTED. ALL SUCH REPLACEMENT OR REPAIR SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.
- AFTER COMPLETION OF WORK UNDER THIS SECTION, CLEAN-UP ALL RESULTANT DEBRIS FROM THIS WORK AND REMOVE FROM THE SITE.
- ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.I. OR OTHER RECOGNIZED TESTING FACILITY.
- ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC RACEWAYS, UNLESS NOTED OTHERWISE. CONNECTORS SHALL BE INSULATED THROAT TYPE. MINIMUM RACEWAY SIZE IS 3/4" BRANCH CIRCUITS 25A AND LARGER SHALL BE INSTALLED IN INDIVIDUAL RACEWAYS. BRANCH CIRCUITS 20A AND SMALLER MAY BE GROUPED INTO RACEWAYS AS TO NOT EXCEED 6 CURRENT-CARRYING 75-DEGREE CONDUCTORS, OR 3 CURRENT-CARRYING 90-DEGREE CONDUCTORS, IN A SINGLE RACEWAY. METAL CLAD CABLE IS PERMITTED.
- WIRE SHALL BE COPPER, 75 DEGREE CELSIUS RATED FOR GENERAL USE. SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30 DEGREE CELSIUS AMBIENT. CONDUCTOR AMPACITY SHALL BE DERATED FOR HIGHER AMBIENT INSTALLATIONS.
- PROVIDE NEW UPDATED PANELBOARD DIRECTORIES FOR EXISTING AND NEW CIRCUITS BEING UTILIZED FOR COMPLETION OF PROJECT.
- PANEL DIRECTORIES SHALL BE REMOVABLE. ROOM NAMES AND NUMBERS SHALL BE AS DIRECTED BY OWNER. DIRECTORIES SHALL BE TYPED AND INSTALLED UNDER CLEAR PLASTIC COVERS.
- GARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.
- SYSTEMS SHALL BE COMPLETE, OPERABLE, AND READY FOR CONTINUOUS OPERATION.

BID ALTERNATE

PROVIDE LINE ITEM BREAKOUT COST TO TRACE EXISTING BRANCH CIRCUITS AND PROVIDE NEW PANEL DIRECTORIES FOR ALL BRANCH CIRCUIT PANELS.

MECHANICAL EQUIPMENT WIRING AND CONNECTIONS

ITEM	FURNISHED UNDER	SET IN PLACE OR MTD UNDER	WIRED/ CONNECTED UNDER
1. EQUIPMENT MOTORS AND THERMAL OVERLOADS, RESISTANCE HEATERS.	MD	MD	ED
2. VFD'S, MOTOR CONTROLLERS, MAGNETIC STARTERS, REDUCED VOLTAGE STARTERS AND OVERLOAD RELAYS.	MD	ED(a)	ED
DISCONNECT SWITCHES (FUSED OR NON-FUSED), HP RATED SWITCHES, THERMAL OVERLOAD SWITCHES AND FUSES AND MANUAL OPERATING SWITCHES.	ED(a)	ED(a)	ED
PUSHBUTTON STATIONS, PILOT LIGHTS, MULTI-SPEED SWITCHES, FLOAT SWITCHES, THERMOSTATS, CONTROL RELAYS, TIMECLOCKS, CONTROL TRANSFORMERS, CONTROL PANELS, MOTOR VALVES, DAMPER ACTUATORS, SOLENOID VALVES, EP AND PE SWITCHES AND INTERLOCKS.	MD	MD	MD(b)
5. 120 VOLT POWER FOR BAS PANELS, FIRE PROTECTION AND BOILER CONTROLS.	ED	ED	ED
6. FIRE/SMOKE DAMPERS AND ELEVATOR VENT DAMPERS.	MD	MD	ED(c)

MD = MECHANICAL DIVISION
ED = ELECTRICAL DIVISION

NOTES:

(a) IF FURNISHED AS PART OF FACTORY-WIRED EQUIPMENT, THEN WIRING AND CONNECTIONS ONLY BY ED

IF ANY OF THESE DEVICES CARRY THE FULL LOAD CURRENT TO ANY MOTOR THEY SHALL BE CONNECTED BY ED. CONTROL DEVICES CARRYING FULL LOAD CURRENT FURNISHED BY MD AND WIRED BY ED SHALL BE LOCATED AT THE DEVICE BEING CONTROLLED, UNLESS SHOWN ON DRAWINGS OR MUTUAL AGREEMENT IS MADE BETWEEN THE CONTRACTORS WITH NO CHANGE IN THE CONTRACT PRICE.

(c) WIRING FROM ALARM CONTACTS TO ALARM SYSTEM BY ED; ALL CONTROL FUNCTION WIRING BY MD. DUCT DETECTORS FURNISHED BY ED, SET IN PLACE BY MD.

GENERAL NOTES: THE ABOVE LIST DOES NOT ATTEMPT TO INCLUDE ALL COMPONENTS. ALL ITEMS NECESSARY FOR A COMPLETE SYSTEM SHALL BE INCLUDED IN THE BASE CONTRACT.

ELECTRICAL SHEET INDEX

#	TITLE
ED.0	ELECTRICAL COVER SHEET
ED.1	ELECTRICAL SPECIFICATIONS
ED.2	TECHNOLOGY SPECIFICATIONS
ED2.1	ELECTRICAL UPPER LEVEL DEMO PLAN
ED.0	ELECTRICAL LOWER LEVEL PLAN
E2.1	ELECTRICAL UPPER LEVEL PLAN
EL2.1	LIGHTING UPPER LEVEL PLAN

ISSUE LOG KEY:

✓✓ ISSUED AS PART OF A SET
✓ NOT PART OF SET
✓✓ ISSUED FOR INFORMATION ONLY

ISSUE LOG

DATE
04.05.2024

N.E.C. Load Justification Form

PROJECT NAME:	GSHS ANNEX ALTERNATIONS	ENGINEER:	MASS
DATE:	8/1/2024	ELECTRICAL UTILITY:	GSE
1. EXISTING ELECTRICAL SERVICE:			
	200	VOLTS	
	3	PHASES	
	60	AMPS	
2. 12 MONTH PEAK DEMAND ON THIS ELECTRICAL SERVICE ACCORDING TO UTILITY:	26.67	KW	
3. ASSUMING A 0.8 POWER FACTOR, THE MAX KVA IS:	33.34	KVA	
4. MAX KVA x 120V PER THE NEC:	41.67	KVA	
5. (KVA FROM LINE 4 x 1000) / VOLTAGE:	115.62	AMPS	
6. LOAD ADDED AS A RESULT OF THE PROJECT:			
	WATER FOUNTAIN	600	VA
	COPPER	1000	VA
	LIGHTING	487	VA
	REMAINING TASKS (S)	65	VA
	RECEPTACLES (12)	2180	VA
7. TOTAL LOAD ADDED:	12.49	AMPS	
8. LOAD REMOVED FROM THE ELECTRICAL SERVICE AS A RESULT OF THE PROJECT:			
	HANDOVER	8000	VA
	MICROWAVE	1000	VA
	REFRIGERATOR	1000	VA
	RECEPTACLES (15)	2700	VA
	OPTIONAL	950	VA
9. TOTAL LOAD REMOVED FROM THE ELECTRICAL SERVICE:	41.12	AMPS	
10. ELECTRICAL SERVICE CAPACITY (11-AMPS OF EXISTING ELECTRICAL LOAD + AMPS OF LOAD ADDED) - (AMPS OF LOAD REMOVED):	513.06	AMPS OF SERVICE CAPACITY REMAINING	

PANEL: L1A (EXISTING)

LOCATION: LOWER LEVEL

MOUNTING:

NO.	LOAD	TYPE	LOAD DESCRIPTION	BREAKER POLE	TRIP	A	B	C	BUS	BREAKER TRIP	POLE	LOAD	NO.
1			(E) LTGT FRONT OFF.	1	20	+			20	1			2
3			(E) LIGHTING STAIRS UPPER DEF.	1	20	+			20	1			4
5			(E) LTGT UPPER OFF.	1	20	+			20	1			6
7			(E) LTGT OUTSIDE FRONT	1	20	+			20	1			8
9			(E) LTGT 101	1	20	+			20	1			10
11			(E) LTGT 101	1	20	+			20	1			12
13			(E) LTGT 101	1	20	+			20	1			14
15			(E) LTGT 108	1	20	+			20	1			16
17			(E) LTGT 103-104	1	20	+			20	2			18
19			(E) LTGT RECEPT NEST	1	20	+			20	1			20
21			(E) LTGT RECEPT 103-104	1	20	+			20	2			22
23			(E) LTGT RECEPT 101	1	20	+			20	1			24
25			(E) LTGT RECEPT BOARD RM	1	20	+			20	1			26
27			(E) LTGT 108	1	20	+			20	3			28
29			(E) LTGT 108	1	20	+			20	1			30
31			(E) LTGT 108	1	20	+			20	1			32
33			(E) LTGT 108	1	20	+			20	1			34
35			(E) LTGT 108	1	20	+			20	1			36
37			(E) LTGT 108	1	20	+			20	1			38
39			(E) LTGT 108	1	20	+			20	1			40
41			(E) LTGT 3	3	20	+			20	2			42

LOAD TYPE	PANEL TOTAL	FED THRU TOTAL	SURFED TOTAL	FEDDER SUBTOTAL	DEMAND	FEDDER TOTAL
ALL LIGHTING	0	0	0	100%	0	0
RECEPTACLES	0	0	0	NEC 220	0	0
ALUM LARGEST MOTOR	0	0	0	25%	0	0
WATER FOUNTAIN	0	0	0	100%	0	0
RECEPTACLES	0	0	0	100%	0	0
WATER FOUNTAIN	0	0	0	100%	0	0
WATER FOUNTAIN	0	0	0	100%	0	0
WATER FOUNTAIN	0	0	0	100%	0	0
WATER FOUNTAIN	0	0	0	100%	0	0
WATER FOUNTAIN	0	0	0	100%	0	0

PANEL TOTAL (KVA):

PANEL TOTAL (A): 0

VOLTAGE: 120/208V, 3PH, 4W

MINIMUM BUS: 225

MAIN: 225

MINIMUM AIC:

GENERAL NOTES:

(1) VERIFY EXISTING IS SPARE. NOTIFY ENGINEER IF CONNECTED TO EXISTING LOAD.

(2) PROVIDE GFCI CIRCUIT BREAKER.

(3) PROVIDE GFCI CIRCUIT BREAKER.

(4) PROVIDE GFCI CIRCUIT BREAKER.

(5) PROVIDE GFCI CIRCUIT BREAKER.

(6) PROVIDE GFCI CIRCUIT BREAKER.

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(45) PROVIDE GFCI CIRCUIT BREAKER.

ELECTRICAL SYSTEMS LEGEND

NOTE: ALL SYMBOLS SHOWN ON LEGEND ARE NOT NECESSARILY USED.

LIGHTING FIXTURE SYMBOLS

- RECESSED LIGHTING FIXTURE
- DIRECTIONAL/ADJUSTABLE RECESSED LIGHTING FIXTURE
- SURFACE MOUNTED LIGHT
- PENDANT MOUNTED LIGHT
- WALL MOUNTED LIGHT
- WALL MOUNTED UP-LIGHT
- MONO-POINT LIGHTING FIXTURE
- RECESSED STEP LIGHT
- FLUORESCENT STRIP LIGHT
- WALL MOUNTED LINEAR FLUORESCENT LIGHT
- RECESSED OR SURFACE MOUNTED FLUORESCENT TROFFER
- FIXTURE WITH EMERGENCY BACKUP OR ON EM CIRCUIT
- CEILING MOUNTED EXIT SIGN W/ FACES & ARROWS AS SHOWN
- WALL MOUNTED EXIT SIGN W/ FACES & ARROWS AS SHOWN
- WALL MOUNTED COMBO EXIT SIGN/ EGRESS LIGHT
- EMERGENCY LIGHTS
- EXTERIOR POLE MOUNTED LIGHT
- EXTERIOR POST (BOLLARD) MOUNTED LIGHT
- CEILING FAN
- CEILING FAN WITH LIGHT

LIGHTING CONTROL SYMBOLS

- WALL MOUNTED SWITCH
- THREE-WAY SWITCH
- FOUR-WAY SWITCH
- DOOR JAMB SWITCH
- KEY SWITCH
- DIMMER SWITCH
- WALL MOUNTED DEVICE
- WIRELESS WALL MOUNTED DEVICE
- ROOM CONTROLLER
- PLUG LOAD CONTROLLER
- OCCUPANCY/VACANCY PROGRAMMED SENSOR - CEILING MOUNTED
- WIRELESS OCCUPANCY/VACANCY PROGRAMMED SENSOR - CEILING MOUNTED
- OCCUPANCY/VACANCY PROGRAMMED SENSOR - CORNER MOUNTED
- WIRELESS OCCUPANCY/VACANCY PROGRAMMED SENSOR - CORNER MOUNTED
- DAYLIGHT PHOTO SENSOR
- WIRELESS DAYLIGHT PHOTO SENSOR

LIGHTING DRAWING SYMBOLS

- ALIGNMENT LINE
- CENTER LINE DESIGNATION

POWER SYMBOLS

- SINGLE RECEPTACLE - WALL MOUNTED
- DUPLEX RECEPTACLE - WALL MOUNTED
- DUPLEX RECEPTACLE WITH USB PORTS - WALL MOUNTED
- DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - WALL MOUNTED
- QUADPLEX RECEPTACLE - WALL MOUNTED
- DUPLEX RECEPTACLE: GFCI - WALL MOUNTED
- DUPLEX RECEPTACLE: HALF SWITCHED - WALL MOUNTED
- DUPLEX RECEPTACLE: ISOLATED GROUND - WALL MOUNTED
- DUPLEX RECEPTACLE: HALF DIMMED - WALL MOUNTED
- DUPLEX RECEPTACLE: FULL DIMMED - WALL MOUNTED
- SPECIAL OUTLET AS NOTED - WALL MOUNTED
- DUPLEX RECEPTACLE - CEILING MOUNTED; TYP. ALL TYPES
- FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE, TYP. ALL TYPES
- FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE AND TELECOM
- JUNCTION BOX - WALL MOUNTED
- JUNCTION BOX - FLUSH FLOOR MOUNTED
- JUNCTION BOX - CEILING MOUNTED
- MULTI-OUTLET PLUG STRIP
- POWER/TELECOM POLE
- MECHANICAL EQUIPMENT POWER CONNECTION
- KITCHEN EQUIPMENT POWER CONNECTION
- POOL EQUIPMENT POWER CONNECTION
- TIMER SWITCH
- FUSED DISCONNECT
- NON FUSED DISCONNECT
- MOTOR STARTER
- ENCLOSED CIRCUIT BREAKER
- PULL BOX
- PUSH BUTTON
- TIME CLOCK
- PHOTO-CELL
- TRANSFORMER
- PANELBOARD OR LOAD CENTER
- CONTACTOR
- ELECTRIC MOTOR
- METER
- THERMOSTAT
- AUTOMATIC TRANSFER SWITCH
- CIRCUIT HOMERUN
- CONDUIT RUN
- CONDUIT RUN BELOW GRADE
- CONDUIT UP
- CONDUIT DOWN
- SWITCH
- THERMAL OVERLOAD SWITCH
- VARIABLE SPEED SWITCH
- KEY SWITCH

ONE-LINE DIAGRAM SYMBOLS

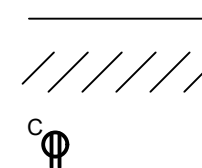
- DISCONNECT SWITCH
- FUSE
- CIRCUIT BREAKER
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- METER
- VOLT-METER
- AMP-METER
- SURGE PROTECTION DEVICE
- SELECTOR SWITCH
- GROUND FAULT PROTECTION
- SHUNT TRIP
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- GROUND
- COLD WATER GROUND CONNECTION
- BUILDING STEEL GROUND CONNECTION
- TRANSFORMER
- DISCONNECT
- AUTOMATIC TRANSFER SWITCH

ABBREVIATIONS

- AFB - ABOVE FINISHED CEILING
- AFB - ABOVE FINISHED FLOOR
- AFB - ABOVE FINISHED GRADE
- AP - AUTHORITY HAVING JURISDICTION
- AL - ALUMINUM
- AP - ACCESS POINT
- AWG - AMERICAN WIRE GAUGE
- BAS - BUILDING AUTOMATION SYSTEM
- BFG - BELOW FINISH GRADE
- BMS - BUILDING MANAGEMENT SYSTEM
- C - CONDUIT
- CATV - COMMUNITY (CABLE) ANTENNA TELEVISION SYSTEM
- CCTV - CLOSED CIRCUIT TELEVISION
- CKT - CIRCUIT
- CPU - CENTRAL PROCESSING UNIT
- CT - CURRENT TRANSFORMER
- DISP - GARBAGE DISPOSAL
- DW - DISHWASHER
- (E) - EXISTING
- EM - EMERGENCY
- EW - ELECTRIC WATER COOLER
- FA - FIRE ALARM
- FACP - FIRE ALARM CONTROL PANEL
- FBO - FURNISHED BY OTHERS
- GC - GENERAL CONTRACTOR
- GF1 - GROUND FAULT CIRCUIT INTERRUPTER
- GRD - GROUND
- IAW - IN ACCORDANCE WITH
- IC - INTERMEDIATE CROSS-CONNECT
- IDF - INTERMEDIATE DISTRIBUTION FRAME
- IG - ISOLATED GROUND
- IR - INFRARED
- LAN - LOCAL AREA NETWORK
- MDF - MAIN DISTRIBUTION FRAME
- (N) - NEW
- NIC - NOT IN CONTRACT
- NL - NIGHT LIGHT
- NTS - NOT TO SCALE
- OC - ON CENTER
- PA - PUBLIC ADDRESS
- REF - REFRIGERATOR
- SPD - SURGE PROTECTION DEVICE
- T - TAMPER RESISTANT
- TTB - TELECOMMUNICATIONS TERMINAL BOARD
- TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR
- TVB - TELEVISION TERMINAL BOARD
- UG - UNDERGROUND
- UNO - UNLESS NOTED OTHERWISE
- V - VOLT
- W - WATT
- WAN - WIDE AREA NETWORK
- WAP - WIRELESS ACCESS POINT
- WLAN - WIRELESS LOCAL AREA NETWORK
- WP - WEATHERPROOF
- XP - EXPLOSIONPROOF
- +18" - MOUNTING HEIGHT TO CENTERLINE OF DEVICE ABOVE FINISH FLOOR (VERIFY W/ ARCH ELEV)

NOTES:

- LIGHT LINEWEIGHT INDICATES EXISTING.
- HATCHED AREAS INDICATE DEMOLITION.
- "C" ADJACENT TO A DEVICE INDICATES MOUNTING ABOVE COUNTERTOP.



MECHANICAL EQUIPMENT SCHEDULE

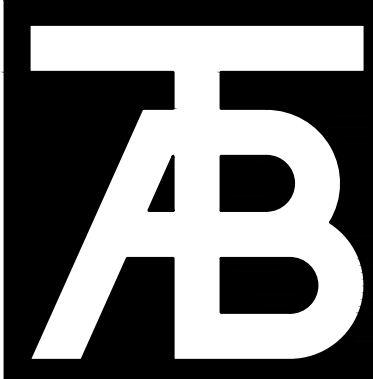
MARK	DESCRIPTION	VOLT / PHASE	HP	WATTS	FLA	MCA	FEEDER	SPECIFIC NOTES
EF-1	EXHAUST FAN	120/1		47			2-#12, #12 GRD	
EF-2	EXHAUST FAN	120/1		47			2-#12, #12 GRD	
HWP-1	HEATING WATER CIRCULATION PUMP	120/1		474			2-#12, #12 GRD	

PANEL: L1B (EXISTING)

LOCATION: 1st LEVEL ELECT. ROOM

MOUNTING:

NO.	LOAD	TYPE	LOAD DESCRIPTION	BREAKER	A	B	C	BUS
				POLE TRIP				
1			EXISTING LOAD	1	20	+		20
3			EXISTING LOAD	1	20	+		20
5			EXISTING LOAD	1	20	+		20
7			EXISTING LOAD	1	20	+		20
9			EXISTING LOAD	1	20	+		20
11			EXISTING LOAD	1	20	+		20
13			EXISTING LOAD	1	20	+		20
15			EXISTING LOAD	1	20	+		20
17			EXISTING LOAD	1	20	+		20
19			EXISTING LOAD	1	20	+		20
21			EXISTING LOAD	1	20	+		20
23			EXISTING LOAD	2	100	+		20
25			EXISTING LOAD	2	100	+		20
27			CLASSROOM 2 RECEPTLES	1	20	+		20
29			ADA DOOR OPENER	1	20	+		20



TAB

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ELECTRICAL SPECIFICATIONS:

SECTION 26 00 10 - GENERAL PROVISIONS

PART 1 - GENERAL

1.01 PROJECT DESCRIPTION

A. THIS PROJECT IS A REMODEL OF A HIGH SCHOOL ANNEX BUILDING. THE RENOVATION PROJECT IS APPROXIMATELY 3,400 SQUARE FEET LOCATED AT THE SECOND FLOOR OF THE GLENWOOD SPRINGS HIGH SCHOOL ANNEX BUILDING IN GLENWOOD SPRINGS, COLORADO.

1.02 PROVISIONS

- WORK PERFORMED UNDER THIS DIVISION OF THE SPECIFICATIONS SHALL CONFORM TO THE REQUIREMENTS OF DIVISION 1, AND THE ELECTRICAL DRAWINGS AND ALL ITEMS HEREINAFTER SPECIFIED.
- THE DRAWINGS AND SPECIFICATIONS FOR THE ELECTRICAL WORK ARE INTENDED TO DESCRIBE A COMPLETE ELECTRICAL SYSTEM. OMISSION OF MINOR ITEMS OBVIOUSLY NECESSARY TO ACCOMPLISH THE ABOVE INTENT SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SAME.
- PRIOR TO ANY WORK BEING PERFORMED UNDER THIS DIVISION EXAMINE ARCHITECTURAL, AND MECHANICAL, DRAWINGS AND SPECIFICATIONS AND IF ANY DISCREPANCIES OCCUR BETWEEN THEM AND THE ELECTRICAL DRAWINGS AND SPECIFICATIONS, REPORT SAME TO THE ARCHITECT IN WRITING AND OBTAIN WRITTEN INSTRUCTIONS FOR THE WORK.
- ELECTRICAL DRAWINGS ARE DIAGNOSTIC BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE BUILDING WILL PERMIT. ALL CHANGES FROM DRAWINGS NECESSARY TO MAKE THE ELECTRICAL WORK CONFORM TO THE BUILDING AS CONSTRUCTED SHALL BE MADE WITHOUT COST TO THE OWNER.
- COORDINATE THE ELECTRICAL WORK WITH THE GENERAL CONTRACTOR AND BE RESPONSIBLE TO HIM FOR SATISFACTORY PROGRESS OF SAME. COORDINATE ELECTRICAL WORK WITH ALL OTHER TRADES ON THE PROJECT WITHOUT COST TO THE OWNER.
- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS ON ARCHITECTURAL DRAWINGS AND IN FIELD PRIOR TO COMMENCEMENT OF WORK.
- ALL WORK AND MATERIALS COVERED BY DRAWINGS AND SPECIFICATIONS SHALL BE SUBJECT TO REVIEW AT ANY TIME BY REPRESENTATIVES OF THE ARCHITECT AND OWNER. IF THE ARCHITECT OR OWNER'S AGENT FINDS ANY MATERIAL OR INSTALLATION THAT DOES NOT CONFORM TO THESE DRAWINGS AND SPECIFICATIONS, CONTRACTOR SHALL REMOVE THE MATERIAL FROM THE PREMISES AND CORRECT THE INSTALLATION TO THE SATISFACTION OF THE AGENT.
- IN ACCEPTANCE OR REJECTION OF INSTALLED ELECTRICAL SYSTEMS, NO ALLOWANCE WILL BE MADE FOR LACK OF SKILL ON THE PART OF THE INSTALLERS.

1.03 WORK INCLUDED

- THE ELECTRICAL SYSTEM REQUIRED FOR THIS WORK TO INCLUDE, BUT IS NOT NECESSARILY LIMITED TO:
 - COMPLETE BRANCH CIRCUIT WIRING FOR LIGHTING, MOTORS, RECEPTACLES, JUNCTION BOXES, AND SIMILAR USES.
 - LIGHTING FIXTURES, WALL SWITCHES, RECEPTACLES AND SIMILAR ITEMS.
 - LIGHTING CONTROL SYSTEM.
 - CONDUITS AND BOXES FOR DATA SYSTEM.
 - FIRE ALARM SYSTEM AS REQUIRED BY NATIONAL, STATE, AND LOCAL CODES.
 - BRANCH CIRCUITS FOR WATER FOUNTAINS.
 - DISCOVERY AND DOCUMENTATION OF EXISTING BRANCH CIRCUITS FOR BUILDINGS. (ADD ALTERNATE)

1.04 CODES AND STANDARDS

- THE APPLICABLE AND ENFORCED EDITIONS OF THE FOLLOWING CODES AND PUBLISHED STANDARDS (INCLUDING SUPPLEMENTS AND OFFICIAL INTERPRETATIONS) ARE MINIMUM REQUIREMENTS:
 - NFPA 70 - NATIONAL ELECTRICAL CODE (NEC).
 - NFPA 72 - NATIONAL FIRE ALARM CODE.
 - NFPA 101 - LIFE SAFETY CODE.
 - COLORADO DEPARTMENT OF HEALTH RULES AND REGULATIONS GOVERNING SCHOOLS IN THE STATE OF COLORADO.
 - CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES.
 - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
 - NATIONAL ELECTRICAL SAFETY CODE (NESC).
 - AMERICANS WITH DISABILITIES ACTS (ADA) AND AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) 117.
 - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA).
 - UNDERWRITERS LABORATORIES (UL).
 - INSULATED CABLE ENGINEERS ASSOCIATION (ICEA).
 - INTERNATIONAL BUILDING CODE.
 - INTERNATIONAL MECHANICAL CODE.
 - INTERNATIONAL FIRE CODE.
 - INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
- SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA).
- COMPLY WITH REQUIREMENTS OF UNDERWRITERS LABORATORIES FOR ALL ITEMS INSTALLED FOR WHICH U.L. STANDARDS HAVE BEEN ESTABLISHED.
- THE DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT THAN CODE, STATUTES, OR ORDINANCES IN EFFECT. APPLICABLE CODES, ORDINANCES, STANDARDS AND STATUTES TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT OR CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS.

1.05 EXAMINATION OF BIDDING DOCUMENTS

- EACH BIDDER SHALL EXAMINE THE BIDDING DOCUMENTS CAREFULLY, AND NOT LATER THAN SEVEN DAYS PRIOR TO THE DATE OF RECEIPT OF BIDS, SHALL MAKE WRITTEN REQUEST TO THE ARCHITECT FOR INTERPRETATION OR CORRECTION OF ANY DISCREPANCIES, AMBIGUITIES, INCONSISTENCIES, OR ERRORS THEREIN WHICH HE MAY DISCOVER. THE ARCHITECT WILL ISSUE ANY INTERPRETATION OR CORRECTION AS AN ADDENDUM. ONLY A WRITTEN INTERPRETATION OR CORRECTION BY ADDENDUM SHALL BE BINDING. NO BIDDER SHALL RELY UPON INTERPRETATIONS OR CORRECTIONS GIVEN BY ANY OTHER METHOD. IF DISCREPANCIES, AMBIGUITIES, INCONSISTENCIES, OR ERRORS ARE NOT COVERED BY ADDENDUM OR WRITTEN DIRECTION, CONTRACTOR SHALL INCLUDE IN HIS BID LABOR, MATERIALS AND METHODS OF CONSTRUCTION RESULTING IN HIGHER COST. AFTER AWARD OF CONTRACT, NO ALLOWANCE OR EXTRA COMPENSATION WILL BE MADE ON BEHALF OF THE CONTRACTOR DUE TO HIS FAILURE TO MAKE THE WRITTEN REQUESTS AS DESCRIBED ABOVE.
- FAILURE TO REQUEST CLARIFICATION DURING THE BID PHASE OF ANY INADEQUACY, OMISSION, OR CONFLICT WILL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES. THE SIGNING OF THE CONTRACT WILL BE CONSIDERED AS IMPLICITLY DENOTING THAT THE CONTRACTOR HAS A THOROUGH COMPREHENSION OF THE FULL INTENT AND SCOPE OF THE WORKING DRAWINGS AND SPECIFICATIONS.

1.06 EXAMINATION OF PREMISES

- VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED. CONTRACTOR SHALL INCLUDE IN HIS BID COSTS REQUIRED TO MAKE HIS WORK MEET EXISTING CONDITIONS.

1.07 EXISTING CONDITIONS

- EXISTING SYSTEMS AND CONDITIONS SHOWN ON DRAWINGS FOR EXISTING BUILDINGS ARE TO BE NOTED "FOR GUIDANCE ONLY". THE ELECTRICAL CONTRACTOR SHALL FIELD CHECK ALL EXISTING CONDITIONS PRIOR TO BIDDING AND IS TO INCLUDE IN HIS BID AN ALLOWANCE FOR EXTENSION, REMOVAL, AND/OR RELOCATION OF EXISTING CONDUITS, WIRES, DEVICES, FIXTURES, OR OTHER EQUIPMENT AS INDICATED ON THE PLANS OR AS REQUIRED TO COORDINATE AND ADAPT NEW AND EXISTING ELECTRICAL SYSTEM TO ALL OTHER WORK.
- WHERE THE REUSE OF EXISTING CONDUITS, WIRES, DEVICES, ETC., IS PERMISSIBLE, MAKE CERTAIN THAT THE WIRING FOR SAME IS CONTINUOUS FROM OUTLET TO OUTLET AND THAT SUCH CIRCUIT OR SYSTEMS SHALL PASS THROUGH NO OUTLET OR JUNCTION BOXES WHICH MAY BE RENDERED INACCESSIBLE BY OTHER WORK. EXISTING MATERIALS AND METHODS OF CONSTRUCTION SHALL BE MAINTAINED UNLESS OTHERWISE INDICATED FOR REMOVAL. MATERIALS AND METHODS OF CONSTRUCTION RESULTING IN HIGHER COST, AFTER AWARD OF CONTRACT, NO ALLOWANCE OR EXTRA COMPENSATION WILL BE MADE ON BEHALF OF THE CONTRACTOR DUE TO HIS FAILURE TO MAKE THE WRITTEN REQUESTS AS DESCRIBED ABOVE.
- FAILURE TO REQUEST CLARIFICATION DURING THE BID PHASE OF ANY INADEQUACY, OMISSION, OR CONFLICT WILL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES. THE SIGNING OF THE CONTRACT WILL BE CONSIDERED AS IMPLICITLY DENOTING THAT THE CONTRACTOR HAS A THOROUGH COMPREHENSION OF THE FULL INTENT AND SCOPE OF THE WORKING DRAWINGS AND SPECIFICATIONS.

- SYSTEM OUTAGES SHALL BE MINIMIZED ONLY AT TIMES APPROVED BY OWNER IN WRITING. WORK WHICH COULD RESULT IN AN ACCIDENTAL OUTAGE (BEYOND BRANCH CIRCUITS) SHALL BE PERFORMED WITH THE OWNER'S MAINTENANCE PERSONNEL ADVISED OF SUCH WORK.
- SERVICE SHALL BE MAINTAINED TO EXISTING AREAS DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE PORTABLE GENERATORS, CABLES, OUTLETS, ETC. AS REQUIRED TO MAINTAIN CONTINUITY OF SERVICE. PLACEMENT OF SUCH PORTABLE EQUIPMENT SHALL BE SUBJECT TO OWNER APPROVAL. GENERATOR SYSTEM SHALL BE COMPLETE AND OPERABLE AND SHALL INCLUDE REQUIRED ACCESSORIES: FUEL TANKS, PIPING, MUFFLER, BLOCK HEATER, BATTERY CHARGER, ETC.
- PROVIDE NEW UPDATED PANELBOARD DIRECTORIES FOR EXISTING AND NEW CIRCUITS BEING UTILIZED FOR COMPLETION OF PROJECT.

1.08 PERMITS, FEES & NOTICES

- OBTAIN AND PAY FOR ALL NECESSARY PERMITS, INSPECTIONS AND CERTIFICATES THAT MAY BE NECESSARY FOR THE FULL COMPLETION OF THE WORK. FURNISH THE ARCHITECT WITH A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE AHI AFTER THE INSTALLATION.
- NOTIFY PROPER AUTHORITIES WHEN WORK IS READY FOR INSPECTIONS REQUIRED BY APPLICABLE CODES, RULES AND REGULATIONS, ALLOWING SUFFICIENT TIME FOR INSPECTIONS TO BE MADE WITHOUT INTERRUPTING PROGRESS OF THE WORK. FURNISH TO THE OWNER COPIES OF INSPECTION CERTIFICATES OF ACCEPTANCE.

1.09 TESTS

- UPON COMPLETION OF ALL WORK AND ADJUSTMENT OF ALL EQUIPMENT, PROVIDE COMPLETE OPERATIONAL TESTS OF ALL ELECTRICAL EQUIPMENT PROVIDED UNDER THIS DIVISION.

1.10 WARRANTY

- GUARANTEE THAT ALL WORK GOVERNED BY THIS DIVISION SHALL BE FREE OF DEFECTS IN WORKMANSHIP, MATERIALS AND PARTS FOR A PERIOD OF ONE (1) YEAR AFTER WRITTEN ACCEPTANCE. PROMPTLY REPAIR, REVISE, AND REPLACE DEFECTS AS DIRECTED WITH NO ADDITIONAL COST TO THE OWNER (LAMPS AND FUSES ARE EXEMPT).

1.11 RECORD DRAWINGS

- DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF THE INSTALLATION OF THE ELECTRICAL SYSTEM. UPON COMPLETION OF THE ELECTRICAL INSTALLATION, TRANSFER ALL RECORD DATA TO PRINTS OF THE ORIGINAL DRAWINGS. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERNATES, REWORKS, ETC. AS A CONDITION OF ACCEPTANCE OF THE PROJECT, DELIVER TO THE ARCHITECT ONE COPY OF THE RECORD DRAWINGS.
- PROTECTION
 - OF PEOPLE, ARRANGE BARRIERS, SIGNS, ETC. AS REQUIRED TO MINIMIZE THE HAZARD OF PEOPLE. COMPLY WITH APPLICABLE SAFETY AND HEALTH REGULATIONS. COORDINATE AS NECESSARY WITH THE OWNER AND THE GENERAL CONTRACTOR.
 - OF WORK TAKE ALL MEASURES NECESSARY TO PROTECT THE WORK BOTH BEFORE AND AFTER INSTALLATION, TO ASSURE THAT IT WILL BE IN CLEAN, UNDAUNAGED, UNBLENISHED CONDITION WHEN TURNED OVER TO THE OWNER. REPAIR/REPLACE WORK DAMAGED DURING CONSTRUCTION.

PART 2 - PRODUCTS

2.01 STANDARD FOR MATERIALS

- ALL ELECTRICAL MATERIAL SHALL BE NEW AND OF THE QUALITY AND TYPE SPECIFIED.
- MANUFACTURER AND CATALOG NUMBER SHOWN IN THESE SPECIFICATIONS OR ON DRAWINGS ARE INTENDED AS A GUIDE TO QUALITY. EQUIVALENT MATERIALS AND EQUIPMENT OF OTHER MANUFACTURERS WILL BE CONSIDERED PROVIDED SUCH SUBSTITUTIONS ARE REQUESTED IN ACCORDANCE WITH THE PROVISIONS OF PARAGRAPH 2.03 AND SHALL INCLUDE ALL INFORMATION NECESSARY TO SUPPORT THE CLAIM OF EQUIVALENCY.
- NO EXTENSION OF COMPLETION DATE SHALL BE ALLOWED FOR TIME LOST IN CONSIDERATION, SHOPPING, OR INSTALLATION OF APPROVED SUBSTITUTIONS. REVIEW OF SUBSTITUTIONS SIGNIFIES GENERAL EQUALITY OF MATERIALS AND EQUIPMENT ONLY. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PROPER OPERATION OF THE SYSTEM, COMPLIANCE WITH SPECIFICATIONS AND NECESSARY CHANGES DUE TO DIMENSIONAL DIFFERENCES OR SPACE REQUIREMENTS.

2.02 SHOP DRAWINGS

- SHOP DRAWINGS REQUIRED FOR THIS PROJECT ARE AS FOLLOWS:
 - LIGHTING FIXTURES.
 - LIGHTING CONTROL DEVICES AND/OR SYSTEM.
 - WIRING DEVICES.
 - FIRE ALARM AND DETECTION SYSTEM.
- PRESENT SHOP DRAWING SUBMITTAL DATA AT ONE TIME, IN ELECTRONIC (PDF) FORMAT, INDEXED IN A NEAT AND ORDERLY MANNER. PARTIAL SUBMITTALS WILL NOT BE ACCEPTED. PROVIDE FOUR SETS OF SUBMITTAL DATA, UNLESS NOTED OTHERWISE IN DIVISION 1.
- PLACE ORDERS FOR ALL EQUIPMENT IN TIME TO PREVENT ANY DELAY IN CONSTRUCTION SCHEDULE OR COMPLETION OF PROJECT. IF ANY MATERIALS OR EQUIPMENT ARE NOT ORDERED IN TIME, ADDITIONAL CHARGES MADE BY EQUIPMENT MANUFACTURERS TO COMPLETE THE EQUIPMENT IN TIME TO MEET CONSTRUCTION SCHEDULE, TOGETHER WITH ANY SPECIAL HANDLING CHARGES, SHALL BE BORNE BY THE CONTRACTOR.
- SHOP DRAWINGS: CONTRACTOR AGREES THAT SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS, THAT THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, THAT UNDERSTANDING OF THE DESIGN CONCEPT IS DEMONSTRATED BY INDICATING WHICH EQUIPMENT AND MATERIALS THE CONTRACTOR INTENDS TO PROVIDE AND BY DETAILING THE FABRICATED INSTALLATION METHODS. THE CONTRACTOR INTENDS TO USE. CONTRACTOR FURTHER AGREES THAT IF ANY DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND CONTRACT DOCUMENTS IN THE FORM OF DESIGN DRAWINGS AND SPECIFICATIONS ARE DISCOVERED EITHER PRIOR OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND

SHALL BE FOLLOWED.

2.03 BID ALTERNATE(S)

- REFER TO DIVISION 1 FOR ADDITIONAL INFORMATION.
- ALTERNATE(S) FOR MATERIAL AND EQUIPMENT
 - EQUIPMENT AND MATERIAL BID ALTERNATE(S) SHALL BE PROPOSED AS ADDITIVE OR DEDUCTIVE ALTERNATE(S) TO SPECIFIED ITEMS BY SUBMITTING IT AS A SEPARATE LINE ITEM FROM THE BASE BID OR THE BIDDERS' LETTERHEAD.
 - SUCH BID ALTERNATE PROPOSALS SHALL NOT BE SUBSTITUTED OR INCLUDED IN THE BASE BID. BID ALTERNATE PROPOSAL(S) MUST BE ACCOMPANIED BY FULL DESCRIPTIVE DATA ON THE PROPOSED EQUIPMENT, TOGETHER WITH A STATEMENT OF THE COST TO BE ADDED OR DEDUCTED FOR EACH ITEM. THE BID ALTERNATE SHALL INCLUDE ALL MATERIALS, EQUIPMENT, LABOR, CONNECTIONS, COORDINATION WITH ALL OTHER TRADES, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
 - THE CONTRACTOR SHALL SUBMIT THE BID ALTERNATES AT THE TIME THE BASE BIDS ARE DUE.

2.04 SUBSTITUTIONS

- BIDDER'S CHOICE: MATERIAL OR EQUIPMENT LISTED BY SEVERAL MANUFACTURERS' NAMES ARE INTENDED TO BE BIDDER'S CHOICE, AND ANY OF THE LISTED MANUFACTURERS MAY BE USED IN THE BASE BID.
- PERFORMANCE SPECIFICATIONS: WHEN ANY ITEM IS SPECIFIED BY REQUIREMENTS TO MEET A PERFORMANCE, INDUSTRY OR REGULATING BODY STANDARD, OR IS SPECIFIED BY A GENERIC SPEC. (NO MANUFACTURER'S NAME LISTED) NO PRIOR REVIEW BY THE ENGINEER IS NEEDED UNLESS SPECIFICALLY CALLED FOR IN THESE SPECIFICATIONS.
- CONTRACTOR TO BE RESPONSIBLE FOR ANY CHANGES AND COSTS TO ACCOMMODATE ANY EQUIPMENT EXCEPT THE FIRST NAMED IN THE SPECIFICATION.
- SUBSTITUTIONS OF MATERIAL (CONTRACTOR AND OWNER INITIATED)
 - OTHER ITEMS OF MATERIAL AND EQUIPMENT NOT LISTED AS EQUIVALENTS MAY BE OFFERED (AT THE CONTRACTOR'S OPTION) AS SUBSTITUTIONS TO SPECIFIED ITEMS BY SUBMITTING IT AS A SEPARATE PRICE WITH HIS BASE BID ON THE BIDDERS' LETTERHEAD.
 - SUCH SUBSTITUTE PROPOSALS SHALL NOT BE INCLUDED UNDER THE BASE BID AND MUST BE ACCOMPANIED BY FULL DESCRIPTIVE DATA ON THE PROPOSED EQUIPMENT, TOGETHER WITH A STATEMENT OF THE COST TO BE DEDUCTED FOR EACH ITEM AND ALL DEVIATIONS FROM SPECIFIED ITEMS. HIGHLIGHT ALL DIFFERENCE FROM SPECIFIED EQUIPMENT. IF ANY SUCH SUBSTITUTIONS ARE TO BE CONSIDERED, THE CONTRACTOR SHALL SUBMIT A LIST OF THE PROPOSED SUBSTITUTION ITEMS WITHIN 14 DAYS OF AWARD OF CONTRACT. LATE REQUESTS FOR PROPOSED SUBSTITUTIONS SHALL NOT BE ACCEPTED BY THE ENGINEER DUE TO SCHEDULING OR DELIVERY CONCERNS.
 - IF SUBSTITUTIONS ARE REJECTED, ELECTRICAL CONTRACTOR SHALL SUPPLY BASE BID ITEM AS SPECIFIED.

2.05 PRODUCT HANDLING

- USE ALL THE NECESSARY TO PROTECT ELECTRICAL SYSTEM MATERIALS BEFORE, DURING AND AFTER INSTALLATION AND TO PROTECT THE INSTALLED WORK AND MATERIALS OF ALL OTHER TRADES.
- IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
- UPON COMPLETION OF ALL INSTALLATIONS, LAMPING AND TESTING, THOROUGHLY INSPECT ALL EXPOSED PORTIONS OF THE ELECTRICAL INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOL, MARKINGS, AND FOREIGN MATERIALS.

PART 3 - EXECUTION

3.01 WORKMANSHIP AND COMPLETION OF INSTALLATION

- CONTRACTOR'S PERSONNEL AND SUBCONTRACTORS SELECTED TO PERFORM THE WORK SHALL BE WELL VERSED AND SKILLED IN THE TRADES INVOLVED.
- COORDINATE ELECTRICAL EQUIPMENT AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS.
- SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF ELECTRICAL MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. GIVE PARTICULAR ATTENTION TO LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING-IN THE BUILDING.
- ANY CHANGES OR DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS MUST BE ACCEPTED IN WRITING BY THE ARCHITECT/ENGINEER. ALL ERRORS IN INSTALLATION SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR. ALL SPECIALTIES SHALL BE INSTALLED AS DETAILED ON THE DRAWINGS. WHERE DETAIL OR SPECIFIC INSTALLATION REQUIREMENTS ARE NOT PROVIDED, MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED.
- UPON COMPLETION OF WORK, ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED COMPLETE, THOROUGHLY CHECKED, CORRECTLY ADJUSTED, AND LEFT READY FOR INTENDED USE OR OPERATION. ALL WORK SHALL BE THOROUGHLY CLEANED AND ALL RESIDUE SHALL BE REMOVED FROM SURFACES. EXTERIOR SURFACES OF ALL MATERIAL AND EQUIPMENT SHALL BE DELIVERED IN A PERFECT, UNBLENISHED CONDITION.
- CONTRACTOR SHALL PROVIDE A COMPLETE INSTALLATION, INCLUDING ALL REQUIRED LABOR, MATERIAL, CARTAGE, INSURANCE, PERMITS, AND TAXES.

3.02 PROGRESS OF WORK

- ORDER THE PROGRESS OF ELECTRICAL WORK TO CONFORM TO THE PROGRESS OF THE WORK OF THE OTHER TRADES. COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE CONDITION OF THE MATERIALS AND AS PART OF REQUIRED INDOCTRINATION AND INSTRUCT THE OWNER'S PERSONNEL IN THE CORRECT PROCEDURE IN OBTAINING SERVICE, BOTH DURING AND AFTER THE GUARANTEE PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION THEREOF, WHETHER OR NOT SUCH FACILITY IS TO BE REMOVED OR RELOCATED. MOVING OR REMOVING ANY FACILITY MUST BE DONE SO AS NOT TO CAUSE INTERRUPTION OF THE WORK OF OWNERS OPERATION.

3.03 CUTTING AND PATCHING

- PROVIDE ALL CUTTING, TRENCHING, BACKFILLING, PATCHING AND REFINISHING OR RESURFACING REQUIRED FOR ELECTRICAL WORK IN A MANNER MEETING THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.

- ALL OPENINGS MADE IN FIRE-RATED WALLS, FLOORS, OR CEILINGS SHALL BE PATCHED AND MADE TIGHT IN A MANNER TO CONFORM TO THE FIRE-RATING FOR THE SURFACE PENETRATED.

3.04 DELIVERY AND STORAGE OF MATERIALS

- ARRANGE AND BE HOLD RESPONSIBLE FOR DELIVERY AND SAFE STORAGE OF MATERIALS AND EQUIPMENT FOR ELECTRICAL INSTALLATION.
- CAREFULLY CHECK FOR INSTALLATION AND PROVIDE RECEIPT, ACKNOWLEDGING ACCEPTANCE OF DELIVERY AND CONDITION OF THE MATERIALS RECEIVED. THEREAFTER, ASSUME FULL RESPONSIBILITY FOR ITS SAFEKEEPING UNTIL THE FINAL INSTALLATION HAS BEEN REVIEWED AND ACCEPTED.

3.05 PROTECTION OF WORK AND PROPERTY

- WHERE THERE ARE EXISTING FACILITIES, BE RESPONSIBLE FOR THE PROTECTION THEREOF, WHETHER OR NOT SUCH FACILITY IS TO BE REMOVED OR RELOCATED. MOVING OR REMOVING ANY FACILITY MUST BE DONE SO AS NOT TO CAUSE INTERRUPTION OF THE WORK OF OWNERS OPERATION.
- CLOSE ALL CONDUIT OPENINGS WITH CAPS OR PLUGS DURING INSTALLATION. COVER ALL FIXTURES AND EQUIPMENT AND PROTECT AGAINST INJURY. AT THE FINAL COMPLETION, CLEAN ALL WORK AND DELIVER IN AN UNBLENISHED CONDITION, OR REFINISH AND REPAINT AT THE DISCRETION OF THE ARCHITECT.
- ANY EQUIPMENT OR CONDUIT SYSTEMS FOUND TO HAVE BEEN DAMAGED OR CONTAMINATED ABOVE "MIL" OR "SHOP" CONDITIONS SHALL BE REPLACED OR CLEANED TO THE ENGINEER'S SATISFACTION.

3.06 FINAL ACCEPTANCE

- FINAL ACCEPTANCE BY THE OWNER WILL NOT OCCUR UNTIL ALL OPERATING INSTRUCTIONS ARE RECEIVED AND OWNER'S PERSONNEL HAVE BEEN THOROUGHLY INDOCTRINATED IN THE MAINTENANCE AND OPERATION OF ALL EQUIPMENT.
- OPERATING MANUALS, PARTS LISTS, AND INDOCTRINATION OF OPERATING AND MAINTENANCE PERSONNEL: FURNISH THE SERVICES OF A QUALIFIED REPRESENTATIVE OF THE SUPPLIER FOR EACH ITEM OR SYSTEM IDENTIFIED BELOW WHO SHALL INSTRUCT SPECIFIC PERSONNEL, AS DESIGNATED BY THE OWNER, IN THE OPERATION AND MAINTENANCE OF THAT ITEM OR SYSTEM.
- DELIVER COMPLETE OPERATING MANUALS AND PARTS LISTS TO THE OWNER (OR HIS DESIGNATED REPRESENTATIVE) AT THE TIME OF THE ABOVE REQUIRED INDOCTRINATION. FULLY EXPLAIN THE CONTENTS OF THE MANUALS AS PART OF REQUIRED INDOCTRINATION AND INSTRUCT THE OWNER'S PERSONNEL IN THE CORRECT PROCEDURE IN OBTAINING SERVICE, BOTH DURING AND AFTER THE GUARANTEE PERIOD. THE CONTRACTING MANUALS AND PARTS LISTS SHALL PROVIDE COMPLETE INFORMATION AS TO HOW THE EQUIPMENT IS TO BE USED FOR SERVICE. INCLUDE THE ADDRESS AND PHONE NUMBER, FURNISH EVIDENCE THAT AN AUTHORIZED SERVICE ORGANIZATION REGULARLY CARRIES A COMPLETE LINE OF SERVICE (FOR THESE ITEMS OR SYSTEMS), AND THAT THE ORGANIZATION IS AVAILABLE FOR SERVICE. SERVICE SHALL BE FURNISHED WITHIN TWENTY FOUR (24) HOURS AFTER REQUESTED.
- CLEAN UP: REMOVE ALL MATERIALS, SCRAP, ETC., RELATIVE TO THE ELECTRICAL INSTALLATION AND LEAVE THE PREMISES AND ALL EQUIPMENT, LAMPS, FIXTURES, ETC. IN A CLEAN, ORDERLY CONDITION. ANY COSTS TO THE OWNER FOR CLEAN UP OF THE SITE WILL BE CHARGED AGAINST THE CONTRACTOR.
- ACCEPTANCE DEMONSTRATION: UPON COMPLETION OF THE WORK, AT A TIME TO BE DESIGNATED BY THE ARCHITECT, THE CONTRACTOR SHALL DEMONSTRATE FOR THE OWNER THE OPERATION OF THE ENTIRE INSTALLATION, INCLUDING ALL SYSTEMS PROVIDED UNDER THIS CONTRACT.

3.07 IDENTIFICATION

- GENERAL: PROVIDE THE FOLLOWING SERVICES AND MATERIALS TO ASSIST THE OWNER IN OPERATION AND MAINTENANCE.
 - DIRECTORY CARDS, NAMEPLATES AND LABELS: NO TEMPORARY MARKINGS, WHICH ARE VISIBLE ON EQUIPMENT, SHALL REMAIN AFTER THE PROJECT IS COMPLETE. REPAIR TRIMS, HOUSING, ETC. WHERE SUCH MARKINGS CANNOT BE REMOVED. DEFACED FINISHES MUST BE REFINISHED. ALL ENGRAVED METAL OR PLASTIC NAMEPLATES SHALL BE WHITE LETTERS ON A BLACK OR GRAY BACKGROUND. RAISED LETTER TYPE TYPE SHALL NOT BE USED. NO ABBREVIATIONS IN LABELING WILL BE PERMITTED WITHOUT SPECIAL APPROVAL. ALL PANELBOARDS SHALL BE LABELED AS DESIGNATED ON THE ELECTRICAL DRAWINGS. THOROUGHLY CLEAN SURFACE TO WHICH PRESSURE SENSITIVE TYPE LABELS ARE APPLIED TO ASSURE ADHERENCE OF LABEL. DIRECTORY CARDS, NAMEPLATES, AND LABELS SHALL INDICATE THE GENERAL AREA AND TYPE OF ELECTRICAL LOAD SERVED BY EACH CIRCUIT. PROVIDE THE FOLLOWING TYPES OF LABELS AT THESE LOCATIONS.
 - FOR ALL BRANCH CIRCUIT PANELBOARD DIRECTORIES, PROVIDE NEATLY TYPED, REMOVABLE CARDS AND PROTECTIVE PLASTIC FACES. SPARE CIRCUIT BREAKERS SHALL BE IDENTIFIED AS SUCH.
 - FOR ALL RECEPTACLE DEVICE PLATES, PROVIDE ONE-EIGHTH INCH (1/8") MINIMUM HEIGHT LETTERS ON WHITE (NORMAL POWER) AND RED (EMERGENCY POWER) NAMEPLATES INDICATING PANEL AND CIRCUIT NUMBER.

3.08 ELECTRICAL PROVISIONS FOR ROOFS

- RACEWAYS PENETRATING ROOFS SHALL BE INSTALLED IN A MANNER TO PRESERVE THE INTEGRITY OF THE ROOF. PROVIDE FLASHING AND COUNTER FLASHING FOR ALL ROOF PENETRATIONS REQUIRED FOR THE WORK.
- CONDUITS ROUTED ABOVE ROOFS SHALL BE INSTALLED A MINIMUM OF TWELVE INCHES (12") ABOVE THE FINISHED ROOF SURFACE, SUPPORTED ON METAL STANDS INSTALLED WITH FLASHING AND COUNTER FLASHING, WITH MAXIMUM SPACING OF TEN FEET (10'-0").
- PROVIDE WEATHERPROOF DUPLEX RECEPTACLE ON ROOF SO THAT NO EQUIPMENT INSTALLED ON THE ROOF IS MORE THAN TWENTY-FIVE FEET (25'-0") FROM A RECEPTACLE. CONNECT TO NEAREST RECEPTACLE UNLESS INDICATED ON PLANS.

3.09 CONSTRUCTION LIGHTING AND POWER

- PROVIDE ALL TEMPORARY FACILITIES REQUIRED TO SUPPLY CONSTRUCTION POWER AND LIGHT. INSTALL AND MAINTAIN FACILITIES IN A MANNER THAT WILL PROTECT THE PUBLIC AND WORKMEN. COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS. PERMANENT LUMINAIRES SHALL NOT BE USED FOR TEMPORARY LIGHTING.
- THE GENERAL CONTRACTOR SHALL PAY FOR ALL POWER AND LIGHT USED BY HIM AND HIS SUBCONTRACTORS WHERE CONSTRUCTION POWER IS SEPARATELY METERED, OR IS TAKEN FROM THE PERMANENT PROJECT METERED SERVICE SOLELY FOR CONSTRUCTION USE.

3.10 REMODELING PROVISIONS

- EXISTING SYSTEMS AND CONDITIONS SHOWN ON THE DRAWINGS ARE PROVIDED FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR SHALL FIELD CHECK ALL EXISTING CONDITIONS PRIOR TO BIDDING AND SHALL INCLUDE IN HIS BID AN ALLOWANCE FOR THE REMOVAL AND RELOCATION OF EXISTING CONDUITS, WIRES, DEVICES, FIXTURES, OR OTHER EQUIPMENT AS INDICATED ON THE PLANS OR AS REQUIRED TO COORDINATE AND ADAPT NEW AND EXISTING ELECTRICAL SYSTEMS TO ALL OTHER WORK REQUIRED FOR THIS PROJECT.
- WHERE THE REUSE OF EXISTING CONDUITS, OUTLETS, JUNCTION BOXES, ETC., IS PERMISSIBLE, MAKE CERTAIN THAT THE WIRING FROM THEM IS CONTINUOUS FROM OUTLET TO OUTLET AND THAT SUCH CIRCUIT OR SYSTEMS SHALL PASS THROUGH NO OUTLET OR JUNCTION BOXES WHICH MAY BE RENDERED INACCESSIBLE BY CHANGES TO BE MADE TO THE BUILDING. EXISTING CONDUITS, WIRES, DEVICES, FIXTURES, ETC., WHICH SHALL BE REMOVED SHALL BE CONSIDERED THE PROPERTY OF THIS CONTRACTOR UNLESS OTHERWISE NOTED.
- CONNECT NEW WORK TO EXISTING IN A MANNER THAT WILL ASSURE PROPER RACEWAY GUIDING THROUGHOUT IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE.
- REMODEL WORK CUTTING AND PATCHING: THE CONTRACTOR SHALL PERFORM CUTTING, CHANNELING, CHASING, DRILLING, ETC. AS REQUIRED TO INSTALL OR REMOVE ELECTRICAL EQUIPMENT IN AREAS OF REMODELING. THIS WORK SHALL BE PERFORMED SO AS TO MINIMIZE DAMAGE TO PORTIONS OF WALL FINISHES, SURFACES, PLASTERING, OR THE STRUCTURE WHICH ARE TO BE REUSED, RESURFACED, PLASTERED OR PAINTED UNDER ANOTHER DIVISION OF THESE SPECIFICATIONS.
- CAREFULLY COORDINATE WITH THE REQUIRED REMODELING WORK, CUTTING AND PATCHING ETC., PERFORMED BY THE OTHER TRADES. REMOVE OR RELOCATE EXISTING ELECTRICAL CONDUITS, WIRES, DEVICES, FIXTURES AND OTHER EQUIPMENT AS NECESSARY.
- ALL OUTAGES ON PORTIONS OF EXISTING ELECTRICAL SYSTEMS SHALL BE MINIMIZED AND SHALL BE AT A TIME AND OF DURATION AS ACCEPTED BY THE OWNER.

3.11 ELECTRICAL DEMOLITION

- EXAMINATION
 - VERIFY FIELD MEASUREMENTS AND EXISTING CIRCUITING ARE AS INDICATED ON DRAWINGS.
 - VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES.
- DEMOLITION DRAWINGS ARE BASED ON FIELD OBSERVATION AND EXISTING RECORD DOCUMENTS AND MAY NOT BE COMPREHENSIVE. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING EXISTING INSTALLATION.
- BEGINNINGS OF DEMOLITION MEANS INSTALLER ACCEPTS EXISTING CONDITIONS.
- PREPARATION
 - DISCONNECT ELECTRICAL SYSTEMS IN WALLS, FLOORS, AND CEILINGS SCHEDULED FOR REMOVAL.

- COORDINATION OUTAGES WITH ARCHITECT/OWNER.
- PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.
- FIRE PROTECTION, FIRE ALARM, AND DETECTION SYSTEMS SHALL BE MAINTAINED AND CAPABLE OF PROPER OPERATION DURING CONSTRUCTION. THE LOCAL FIRE MARSHAL SHALL BE NOTIFIED BEFORE CONSTRUCTION STARTS, WHEN SCHEDULED INTERRUPTIONS ARE EXPECTED AND AFTER CONSTRUCTION IS COMPLETE. PROTECT AND SUPPORT LIFE SAFETY SYSTEMS ROUTED THROUGH AREAS OF DEMOLITION.
- EXISTING TELEPHONE SYSTEM, MAINTAIN EXISTING SYSTEM IN SERVICE. DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. NOTIFY OWNER/ARCHITECT IN WRITING AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION.
- DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK
 - DEMOLISH AND EXTEND EXISTING ELECTRICAL WORK UNDER PROVISIONS OF DIVISION 1, DIVISION 2, AND THIS SECTION.
 - REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
 - REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY.
 - REMOVE EXPOSED ABANDONED CONDUIT, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES.
 - DISCONNECT ABANDONED OUTLETS AND REMOVE DEVICES. REMOVE ABANDONED OUTLETS IF CONDUIT SERVICING THEM IS ABANDONED AND REMOVED. PROVIDE BLANK COVER FOR ABANDONED OUTLETS, WHICH ARE NOT TO BE REMOVED.
 - DISCONNECT AND REMOVE ABANDONED PANELBOARDS AND DISTRIBUTION EQUIPMENT.
 - DISCONNECT AND REMOVE ELECTRICAL DEVICES AND EQUIPMENT SERVING UTILIZATION EQUIPMENT THAT HAS BEEN REMOVED.
 - DISCONNECT AND REMOVE ABANDONED LUMINAIRES, REMOVE BRACKETS, STEMS, HANGERS, AND OTHER ACCESSORIES.
 - REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK.
 - MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS, WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANEL AS APPROPRIATE.
 - EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS COMPATIBLE WITH EXISTING ELECTRICAL INSTALLATION, OR AS SPECIFIED IN INDIVIDUAL SECTION.
 - CLEANING AND REPAIR
 - CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT, WHICH REMAIN OR ARE TO BE REUSED.
 - PANELBOARDS: CLEAN EXPOSED SURFACES AND CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AND PROVIDE CLOSURE PLATES FOR VACANT POSITIONS. PROVIDE TYPED CIRCUIT DIRECTORY SHOWING REVERSED CIRCUITING ARRANGEMENT.
 - LUMINAIRES: REMOVE EXISTING LUMINAIRES FOR CLEANING. USE MILD DETERGENT TO CLEAN ALL EXTERIOR AND INTERIOR SURFACES. RINSE WITH CLEAN WATER AND WIPE DRY. REPLACE LAMPS, NON-OPERATIONAL BALLASTS, AND BROKEN ELECTRICAL PARTS.
- INSTALLATION
 - INSTALL RELOCATED MATERIALS AND EQUIPMENT UNDER THE PROVISIONS OF DIVISION 1.

END OF SECTION 26 00 10

SECTION 26 10 00 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL (Not Used)

PART 2 - PRODUCTS

2.01 RACEWAYS AND FITTINGS

A. CONDUIT:

- CONDUITS SUBJECT TO MECHANICAL DAMAGE OR WHERE OTHERWISE REQUIRED BY CODE SHALL BE GALVANIZED RIGID HEAVY WALL CONDUIT; ALL OTHER CONDUIT MAY BE ELECTRIC METALLIC TUBING.
- FLEXIBLE METALLIC CONDUIT SHALL BE USED WHERE VIBRATION OR OTHER REASONS DO NOT ALLOW SOLID CONNECTIONS TO MOTORS, EQUIPMENT, ETC.. FLEX MAY ALSO BE USED TO FIT IN EXISTING WALLS OR WHERE REQUIRED TO CONNECTION IN MILLWORK. THE USE OF FLEX SHALL BE HELD TO A MINIMUM. WHERE FLEXIBLE METALLIC CONDUIT IS USED IN AREAS SUBJECT TO MOISTURE, PVC-COATED FLEX (LQD102H) SHALL BE USED.
- WHERE APPROVED BY APPLICABLE CODES, TYPE "M/C" METAL CLAD CABLE MAY BE USED FOR BRANCH CIRCUITS, WHEN CONCEALED IN WALLS AND ABOVE CEILINGS.

2.02 WIRE AND CABLE

- VOLTAGE RANGE 0 TO 24: HIGH CONDUCTIVITY COPPER, THERMO-PLASTIC INSULATION, 300 VOLT RATING.
- VOLTAGE RANGE 24 TO 600: HIGH CONDUCTIVITY COPPER, MOISTURE-RESISTANT THERMO-PLASTIC INSULATION, 600 VOLT 75°C RATING FOR GENERAL USE. FOR HD FIXTURES AND WIRING WITHIN 3 INCHES OF FLOURESCENT BALLASTS, WIRE SHALL BE COPPER, MINIMUM 90°C RATED, SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30°C AMBIENT. CONDUCTOR AMPACITY SHALL BE DERATED FOR HIGHER AMBIENT INSTALLATIONS.
- CONDUCTORS USED SPECIFICALLY FOR EQUIPMENT OR SERVICE GROUND MAY BE BARE OR HAVE INSULATION TO MATCH CIRCUIT/FEEDEER CONDUCTORS.

2.03 WIRE CONNECTIONS

- ALL ELECTRICAL CONNECTIONS SHALL BE ELECTRICALLY AND MECHANICALLY SECURE, USING THE FOLLOWING METHODS:
 - WIRE SIZE #8 AND SMALLER-PRESSURE TYPE CONNECTORS (SCOTCHLOK) OR EQUIVALENT.
 - WIRE SIZE #10 OR LARGER

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TECHNOLOGY SPECIFICATIONS:

SECTION 27 1513
COMMUNICATIONS COPPER HORIZONTAL CABLING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section consists of furnishing all equipment, supplies and materials, tools, services and facilities and in performing installation of horizontal cabling and outlets in accordance with the specifications and drawings, except as specifically noted otherwise.
- B. The work of this section shall include, but not be limited to installation of the following:
1. Category 6, unshielded twisted-pair plenum horizontal data cables.
 2. Category 6, unshielded twisted-pair plenum horizontal voice cables.
 3. Category 6A, unshielded twisted-pair plenum horizontal wireless cables.
 4. Category 6, unshielded twisted-pair plenum horizontal cables for data connectivity of other building system IP devices such as security cameras, AV components, etc.
 5. Cat 6 Telecommunications Connectors, Cat 6A where required for WAPs.
 6. Telecommunications Outlets and Faceplates.
 7. Category 6 unshielded twisted-pair patch cords for data communications cross-connects in the TR as well as at the workstation. Category 6A where required for WAPs.
 8. Multi-media cables and associated connectors, where shown on drawings for classroom audiovisual cabling infrastructure.

1.05 INSTALLATION

- A. Install all equipment in strict accordance with the manufacturer's recommendations and in compliance with TIA/EIA Category 6 Telecommunications Standards, as specified in the references section. And in compliance with Category 6A for WAPs.
- B. The installation shall be in compliance with the requirements of the NEC, OSHA and the rules, regulations and requirements of the FCC.
- C. The installation shall comply with federal, city, county and state laws, ordinances, regulations, and codes applicable to the installation.
- D. The locations of sub-ups, outlets, panels, equipment racks and other related products as indicated on the drawings are approximately correct and are understood to be subject to such revision as may be found necessary or desirable at the time of installation. Contractor should have precise and definite locations accepted by the Owner before proceeding with the installation.
- E. Telecommunications outlets shall be flush wall mounted or within surface mount boxes, as shown on the drawings:
1. Horizontal cabling shall not be spliced but must be continuous from the TR to the workstation outlets.
 2. The proximity of horizontal and backbone cabling to electrical facilities that generate high levels of electromagnetic interference (EMI) shall be taken into account. These facilities include, but are not limited to copiers, motors, transformers and fluorescent lighting. TIA/EIA 56B standards shall provide separation requirements.
- F. The maximum pulling tensions for 4-pair, 24 AWG horizontal UTP cables should not exceed 25 pounds per cable.
- G. All horizontal cables shall be terminated according to the TIA/EIA T568B wiring scheme.
- H. The connecting hardware used shall be installed to provide minimal signal impairment by preserving wire pair twists as closely as possible to the point of mechanical termination. The amount of untwisting in a pair as a result of termination to connecting hardware shall be no greater than 0.25 inches.
- I. All cables shall be installed with J-hook type supports above ceiling on 5-foot centers. E.C. shall provide conduit stubs up into accessible ceiling space unless otherwise noted on the floor plan drawings.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Protect all materials and equipment from damage during storage at the site and throughout the construction period. Equipment and materials shall be protected during shipment and storage against physical damage, dirt, moisture, cold and rain. If items are damaged, do not install, but take immediate steps to obtain replacement.

2.02 HORIZONTAL DATA / VOICE / WAP / IP DEVICE CABLING

- A. General
1. The cable shall meet all requirements of ANSI/TIA/EIA-568B.
 2. The cable shall meet all requirements of ANSI/ICEA Publication S-80-576 that are applicable to four-pair inside wiring cable for plenum within a building.
 3. Horizontal data cabling shall be Category 6, 4-pair UTP cabling with manufacturer transmission characteristics specified up to 250 MHz. Shall meet Category 6A standard for data cabling run to WAP locations.
 4. Plenum rated cable shall be used in plenum rated spaces.
 5. Cat 6 cable shall be minimum standards compliant, no substitutions for heavy, E or + rated Cat 6 cables.
 - a. Horizontal Cat 6 plenum data cable shall be blue in color.
 - b. Horizontal Cat 6 plenum voice VoIP cable shall be violet in color.
 - c. Horizontal Cat 6 plenum IP security device cable shall be yellow in color.
 - d. Horizontal Cat 6 plenum IP 'BAS, AV, or other building systems' device shall be orange in color.
 6. Cat 6A cable shall be minimum standards compliant, no substitutions for Cat 6A cables.
 - a. Each WAP outlet location requires (2) Cat 6A cables.
 - b. Horizontal Cat 6A plenum WAP cable shall be green in color.
 7. Note all intercom-paging 'speaker cabling' shall be white in color, refer to section 275116.

- B. Manufacturer:
1. Amp Netconnect
 2. No substitution

2.03 CLASSROOM MULTI-MEDIA CABLING

- A. General
1. Audiovisual cabling infrastructure shall be installed from wall mounted teacher workstation multi-media outlet locations through to accessible ceiling space, and routed to wall mount multi-media plate located adjacent to wall-mount short throw projector. Coordinate location with associated power outlet.
 2. For each classroom, (1) wall mounted teacher multi-media outlet location shall be provide, permanently wired. Final location as coordinated with Architect and District.
 3. Conduit and junction boxes provided by the E.C. Conduit to be sized for included cabling, max 40% fill, and routed to accessible ceiling spaces.
 4. Plenum rated cable shall be used in plenum rated spaces.
 5. For wall mounted teacher multi-media outlet location, at minimum, cabling shall be provided for the following:
 - a. (2) HDMI
 - b. (1) VGA
 - c. Other, if specifically requested by District during project planning and design.
 6. All cabling shall be provided with associated modular connector, and plug into bulkhead inserts on faceplate at each end location.
 7. Reference drawings for locations and additional requirements.
 8. Data requirement: TC to provide separate box with 2-port data outlet adjacent to:
 - a. Teacher multi-media outlet plate, wall mount.
 9. Data requirement: TC to provide separate box with 1-port data outlet adjacent to:
 - a. Projector multi-media outlet plate, wall mount near ceiling, near projector
 10. Refer to section 275116 for Classroom Audio System requirements.

2.04 TELECOMMUNICATION DATA OUTLET CONNECTIONS

- A. General
1. For data, voice, security camera, and other IP device locations, telecommunications outlet/connectors shall consist of 8-position, Cat 6 modular RJ-45 jacks, in quantities and locations as shown on the drawings. Contractor shall furnish and install colored IDC inserts that match the color of the cable installed for all systems.
 2. For WAP outlet locations, telecommunications outlet/connectors shall consist of 8-position, Cat 6A modular RJ-45 jacks, in quantities and locations as shown on the drawings. Each WAP outlet location requires (2) Cat 6A connectors. Contractor shall furnish and install colored IDC inserts that match the color of the cable installed for all systems.
 3. All outlets shall be produced by the same manufacturer and shall be designed to snap into and out of the faceplate.
 4. The outlets shall terminate the horizontal cables using insulation displacement type contacts (IDC).
 5. The outlets shall support TIA/EIA T568B color-coding for terminating the horizontal cables.
 6. All outlets shall be high-density modular jacks for high-speed network applications using data transmission rates with frequencies up to 250 MHz. Shall meet Category 6A standard for data cabling run to WAP locations.
 7. The outlets shall be ANSI/TIA/EIA 568B certified and fully comply with ANSI/TIA/EIA- 568B transmission requirements.
 8. Connectors for data cabling shall be Cat 6 blue in color.
 9. Connectors for voice VoIP cabling shall be Cat 6 violet in color.
 10. Connectors for IP security device cabling shall be Cat 6 yellow in color.
 11. Connectors for IP 'BAS, AV, or other building systems' IP device cabling shall be Cat 6 orange in color.
 12. Connectors for WAP cabling shall be Cat 6A green in color. Each WAP outlet location requires (2) Cat 6A connectors.

B. Manufacturer:

1. Amp Netconnect
2. No substitution

2.05 DATA OUTLET FACEPLATES

A. General

1. Telecom contractor shall be responsible for coordinating final faceplate colors and requirements with all electrical outlets and architect prior to install.
2. All faceplates shall be capable of receiving modular inserts. Inserts will include Cat 6, Cat 6A and other multi-media cabling connectors as required.
3. Provide wall mounted, duplex and quad faceplates as noted on the drawings.
4. Provide surface mounted data port boxes above ceiling for WAPs, IP CCTV cameras and any other above ceiling mounted cabling.
5. All unused ports shall be filled with blank inserts.
6. All faceplate types shall provide designation labels with protective clear plastic covers, or equivalent, for circuit identification.
7. Designation labels for faceplates shall be typed and not handwritten.
8. Contractor to reference T9.0 for faceplate, surface box, modular connector details.
9. Reference drawings for requirements, locations, and faceplate details.

B. Manufacturer:

1. Amp Netconnect
2. No substitution

2.06 FACEPLATES FOR WALL MOUNTED VOICE ONLY OUTLETS

A. General

1. Shall be flush mounted single gang wall plates stainless steel.
2. All wall mounted faceplates for voice outlets mounted at +46" A.F.F. shall be wall telephone jacks/faceplates. Faceplates shall be constructed of metal and shall include two (2) screw-mounting studs for wall-mounted phones.

B. Manufacturer:

1. Amp Netconnect
2. No substitution

2.07 PATCH CORDS

- A. Patch cords shall consist of 24 AWG thermoplastic insulated stranded conductors formed into four individually unshielded twisted pairs and enclosed by a thermoplastic jacket.
- B. Patch cords shall be factory-terminated with an 8-position, modular RJ-45 plug on both ends.
- C. Patch cords shall be TIA/EIA 568A certified and comply fully with TIA/EIA 568A Category 6 transmission requirements and shall be 100% transmission tested. Shall meet Category 6A standard for patch cords used for WAP device application.
- D. All patch cables shall be TIA/EIA T568B color-coding compliant to match the installed connector and patch panel products.
- E. Telecom Contractor shall furnish and owners IT staff shall install.
1. One Category 6, 10' patch cord for each installed data cable at device end.
 2. One Category 6, 6' patch cord for each installed data cable at TR end.
 3. One Category 6A, 6' patch cord for each installed WAP data cable at TR end. Note, patch cord not required to be provided for device end.
 4. Color match patch cords to connectors, cable and system as identified above.

- F. Contractor to verify with Owner prior to purchasing any patch cords, the correct lengths, colors, and quantities. Contractor shall calculate required lengths for the Communications room patch cords from the rack elevation drawings.

G. Manufacturer:

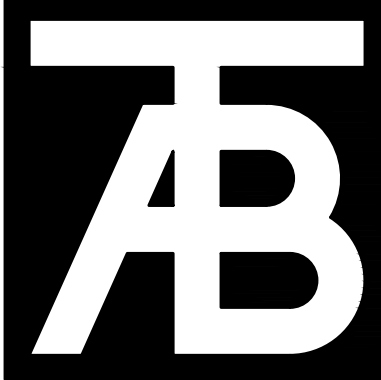
1. Amp Netconnect
2. No substitution

PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 27 0500.

Exhibit A



TAB Associates
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GSHS Annex Reno
1405 Grand Ave
Glenwood Springs CO 81601

Revisions:		
No	Description	Date

Issue Dates:
PERMIT-04/05/2024

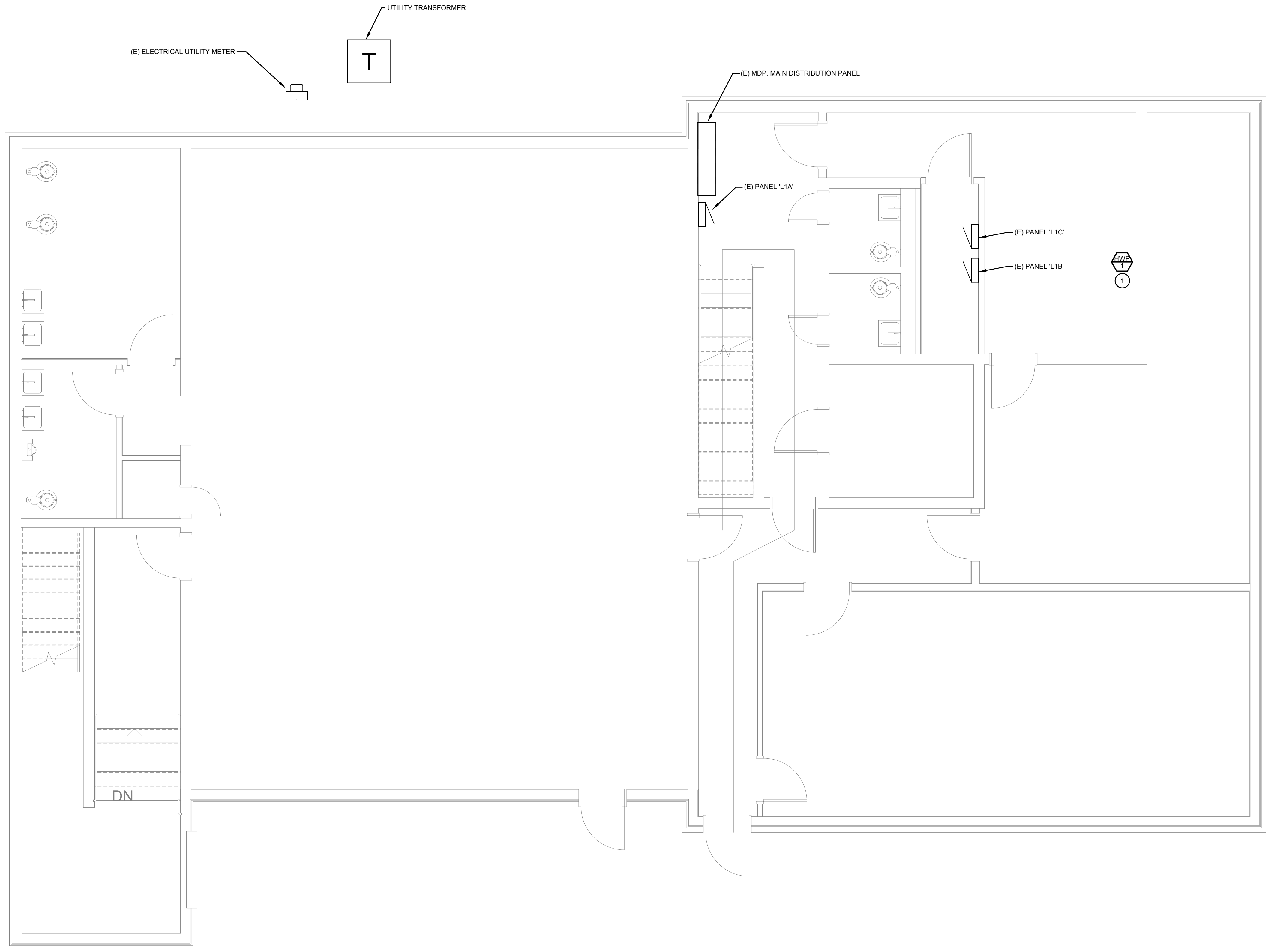
Sheet Title:
ELECTRICAL SCHEDULES

Project No:
2404

Sheet No:
E0.2



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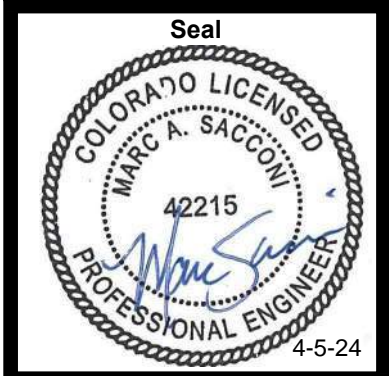
1 ELECTRICAL LOWER LEVEL PLAN
SCALE: 1/4" = 1'-0"

- ② FLAG NOTES:
- 1 DISCONNECT POWER TO EXISTING HEATING WATER PUMP FOR REPLACEMENT. RECONNECT NEW PUMP TO EXISTING CIRCUIT. COORDINATE WITH MECHANICAL CONTRACTOR.

Exhibit A

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Revisions:

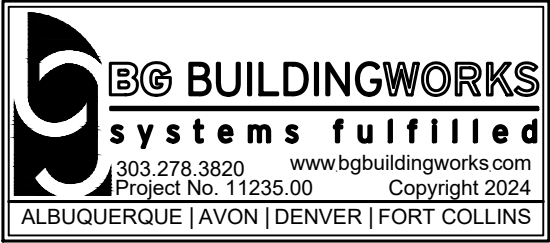
No	Description	Date

Issue Dates:
PERMIT-04/05/2024

Sheet Title:
**ELECTRICAL
LOWER LEVEL
PLAN**

Project No:
2404

Sheet No:
E2.0





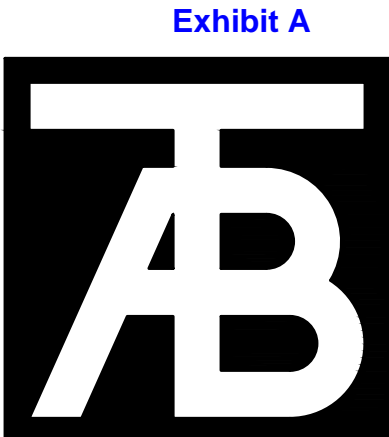
1 ELECTRICAL UPPER LEVEL DEMO PLAN
SCALE: 1/4" = 1'-0"

DEMOLITION NOTES:

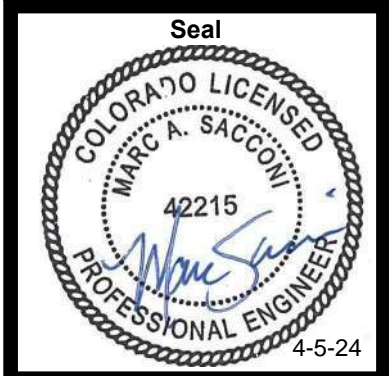
- DEMOLITION PLAN INDICATES A DESIRED SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IN FIELD PRIOR TO START OF WORK.
- CONDITIONS MAY EXIST WHERE (E) CABLING AND/OR EQUIPMENT IS INSTALLED WITHIN AN AREA OF DEMOLITION THAT IS INTENDED TO REMAIN IN ORDER TO KEEP SYSTEMS OUTSIDE OF THE AREA OF DEMOLITION IN OPERABLE CONDITION. CONTRACTOR SHALL PROVIDE APPROPRIATE PROTECTION AND EXERCISE CARE WHEN PERFORMING DEMOLITION AROUND SUCH CABLING AND EQUIPMENT.
- ALL SYSTEMS LOCATED OUTSIDE THE AREA OF DEMOLITION ARE INTENDED TO REMAIN OPERABLE.
- FOR ALL ITEMS TO BE DEMOLISHED REMOVE CIRCUIT BACK TO POINT OF CONNECTION. MAKE BRANCH CIRCUIT WITH REMAINING DEVICES CONTINUOUS.
- ELECTRICAL CONTRACTOR SHALL REMOVE ALL DEMOLISHED ITEMS FROM SITE UNLESS OWNER WISHES TO RETAIN. ITEMS REMOVED FROM SITE SHALL BE DISPOSED OF IN A LEGAL MANNER.
- EVERY ATTEMPT WAS MADE TO LOCATE ALL ITEMS TO BE INCLUDED IN THE DEMOLITION SCOPE IN THIS OCCUPIED SPACE. ELECTRICAL CONTRACTOR SHALL PROVIDE A REASONABLE ALLOWANCE TO INCLUDE THE REMOVAL OF ITEMS NOT INDICATED ON THE ELECTRICAL DEMOLITION PLAN.
- EAST HALF OF BUILDING IS CURRENTLY SERVED BY PANELS L1B AND L1C. THERE IS NO PANEL DIRECTORY FOR PANEL L1B. PROVIDE LINE ITEM ADD ALTERNATE COST TO TRACE CIRCUITS IN PANEL L1B AND PROVIDE UPDATED PANEL DIRECTORY.
- PRESERVE AND PROTECT EXISTING LIGHTING AND RECEPTACLE CIRCUITS SERVING LIGHTING FIXTURES AND RECEPTACLES BEING DEMO AND RELOCATED. RE-USE EXISTING LIGHTING BRANCH CIRCUITS AND ADJUST SWITCHING TO MEET NEW PROGRAM. RE-USE BRANCH CIRCUITS FOR EXISTING RECEPTACLES IN EXISTING WALLS TO BE DEMO FOR NEW OR RELOCATED RECEPTACLES.

DEMO FLAG NOTES:

- REMOVE EXISTING RECEPTACLE AND PRESERVE CIRCUIT FOR RELOCATION. RECEPTACLE SHALL BE REMOVED FOR ADDITION OF DOOR.
- EXISTING LIGHTING FIXTURE TO BE REMOVED AND PRESERVED FOR RELOCATION.
- REMOVE EXISTING RECEPTACLE AND SWITCH FOR EXISTING DISPOSAL. PRESERVE CIRCUIT FOR EXTENSION TO NEW RECEPTACLES.
- REMOVE EXISTING 2X4 LAY-IN TROFFERS. REMOVE AND DISPOSE OF EXISTING FIXTURES FROM SITE. DISPOSE OF EXISTING FLUORESCENT LAMPS IN COMPLIANCE WITH EPA REGULATIONS.
- EXISTING CEILINGS IN EAST CLASSROOM #3105 AND OFFICES #202, 203, & 204. REMOVE ALL LIGHTING FIXTURES AND PROTECT FOR RE-INSTALLATION IN NEW CEILING.



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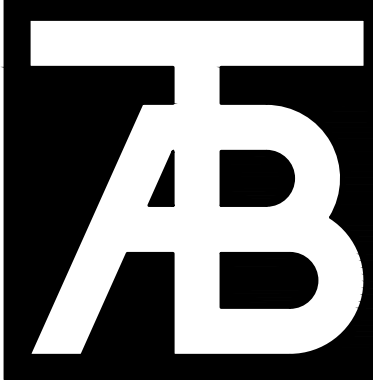
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Sheet Title:
**ELECTRICAL
UPPER LEVEL
DEMO PLAN**

Project No:
2404

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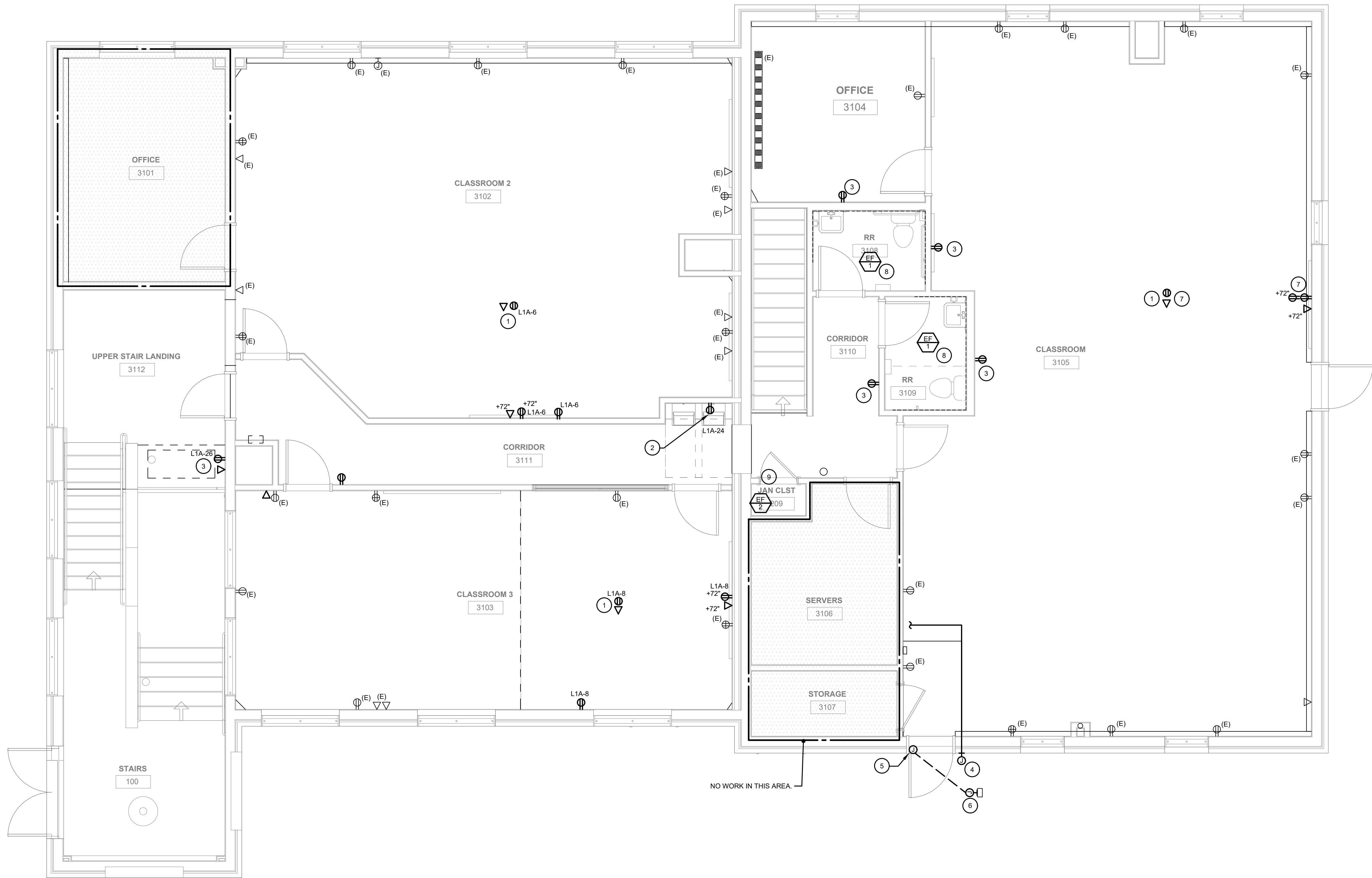
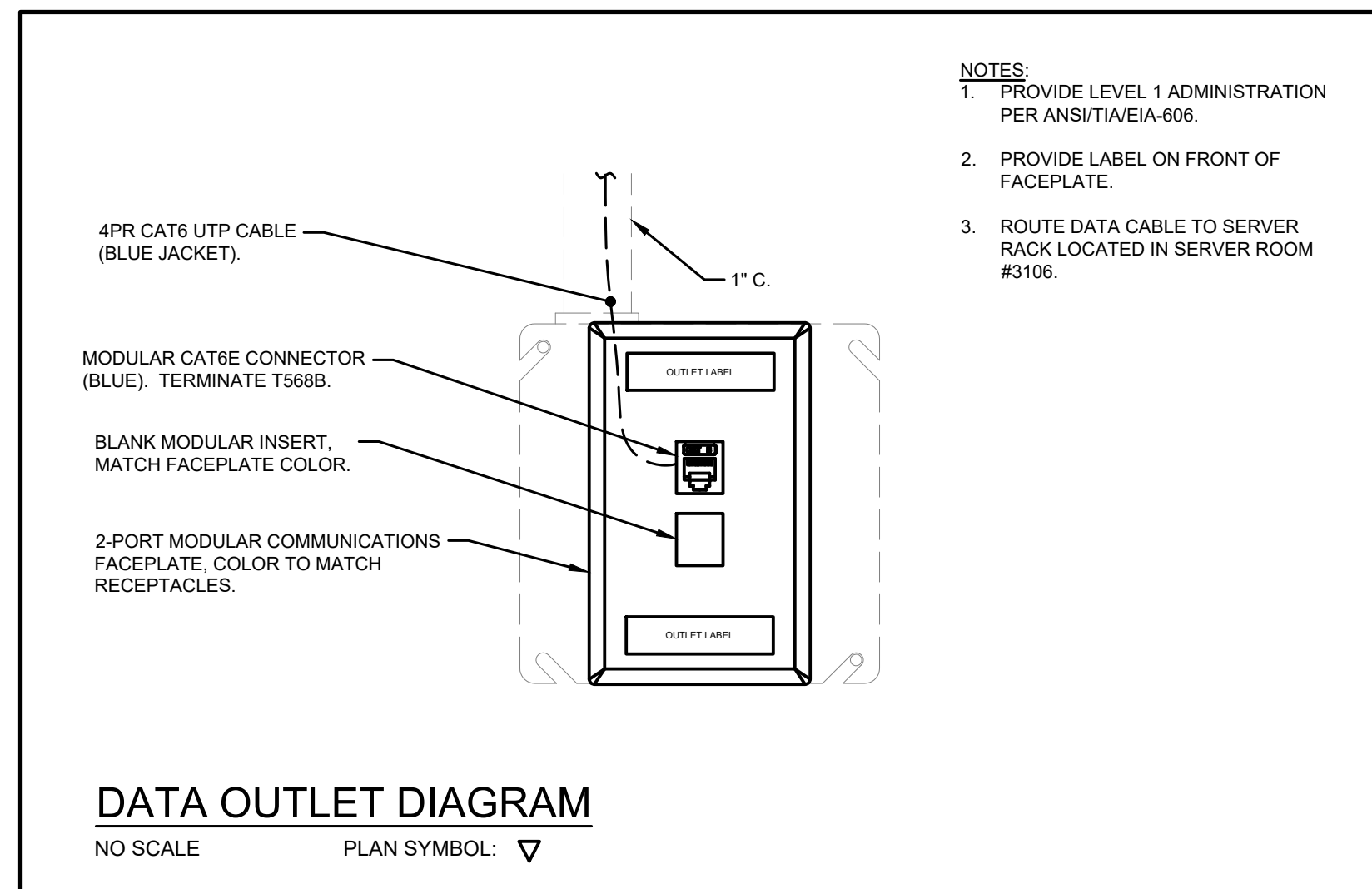
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(970) 949-6108**GSHS Annex Reno**
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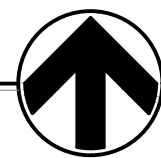
- REFER TO ARCHITECTURAL PLANS AND INTERIOR ELEVATIONS FOR FINAL RECEPTACLE AND DEVICE PLACEMENT. COORDINATE ALL RECEPTACLE MOUNTING LOCATIONS WITH FIXTURES, APPLIANCES, FURNITURE, CABINETRY, AND OTHER EQUIPMENT PRIOR TO ROUGH-IN.
- REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR CIRCUIT, DISCONNECT, AND CONDUCTORS FOR MECHANICAL EQUIPMENT.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIELD COORDINATING THE LOCATION OF ELECTRICAL EQUIPMENT, JUNCTION BOXES, DISCONNECTS, ETC. EC SHALL BE RESPONSIBLE FOR COORDINATION AND THE ROUTING OF FEEDERS, AND BRANCH CIRCUITS.
- COORDINATE POWER CONNECTIONS FOR OWNER PROVIDED EQUIPMENT AND APPLIANCES, AND ALL OTHER EQUIPMENT PROVIDED BY OTHER DIVISIONS WITH SUBMITTAL DATA CUT SHEETS, WIRING DIAGRAMS, AND MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS. FIELD COORDINATE FINAL LOCATIONS OF EQUIPMENT AND POWER CONNECTIONS WITH GENERAL CONTRACTOR AND OTHER DIVISIONS/CONTRACTORS PRIOR TO ROUGH-IN. PROVIDE READILY ACCESSIBLE GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR RECEPTACLES FOR APPLIANCES LISTED AND IN LOCATIONS REQUIRED IN NEC 210.8.

FLAG NOTES:

- PROVIDE CEILING RECEPTACLE AND CEILING MOUNTED DATA PORT (RJ-45). FIELD VERIFY EXACT LOCATION WITH OWNERS REP PRIOR TO ROUGH-IN. PROVIDE CAT 6E PLENUM RATED CABLE FROM CEILING DATA PORT TO TELECOM RACK IN SERVER ROOM.
- PROVIDE DEDICATED 20 AMP, 120 VOLT, GFCI CIRCUIT TO WATER FOUNTAIN/BOTTLE FILLER. VERIFY EXACT CONNECTION TYPE, RECEPTACLE OR HARD WIRED WITH PRODUCT DATA SUBMITTAL.
- CONNECT NEW RECEPTACLE TO PRESERVED CIRCUIT SERVING EXISTING KITCHEN DISPOSAL.
- PROVIDE 4-SQUARE JUNCTION BOX FOR NEW DOOR ACCESS SYSTEM. PROVIDE 1" CONDUIT FROM THE JUNCTION BOX TO SERVER ROOM. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH SCHOOL DISTRICT PRIOR TO ROUGH-IN.
- POWER FOR ADA DOOR OPENER PROVIDE 20 AMP, 120 VOLT CIRCUIT. UTILIZE SPACE IN PANEL L1B MADE VACANT BY REMOVAL OF THE RANGE/OVEN. REMOVAL COORDINATE CONNECTION AND CONTROL DETAILS WITH MANUFACTURERS INSTALLATION LITERATURE PRIOR TO ROUGH-IN.
- JUNCTION BOX FOR ADA DOOR OPENER. PUSH-BUTTON. PROVIDE RACEWAY AS REQUIRED TO DOOR ACTUATOR. VERIFY EXACT LOCATION AND REQUIREMENTS WITH DOOR OPENER INSTALLATION LITERATURE AND INSTALLER.
- CIRCUIT NEW RECEPTACLES TO SPACE VACATED BY THE REMOVAL OF THE MICROWAVE ABOVE RANGE/OVEN.
- CIRCUIT RESTROOM EXHAUST FAN WITH RESTROOM LIGHTING. EXHAUST FAN TO BE CONTROLLED VIA AN OCCUPANCY SENSOR SEPARATE FROM LIGHTING AND TIED TO BAS SYSTEM. MECHANICAL TO PROVIDE EXHAUST FAN OCCUPANCY SENSOR.
- DISCONNECT POWER EXISTING EXHAUST FAN IN JANITORS CLOSET AND RE-CONNECT REPLACEMENT EXHAUST FAN.

**1 ELECTRICAL UPPER LEVEL PLAN**

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



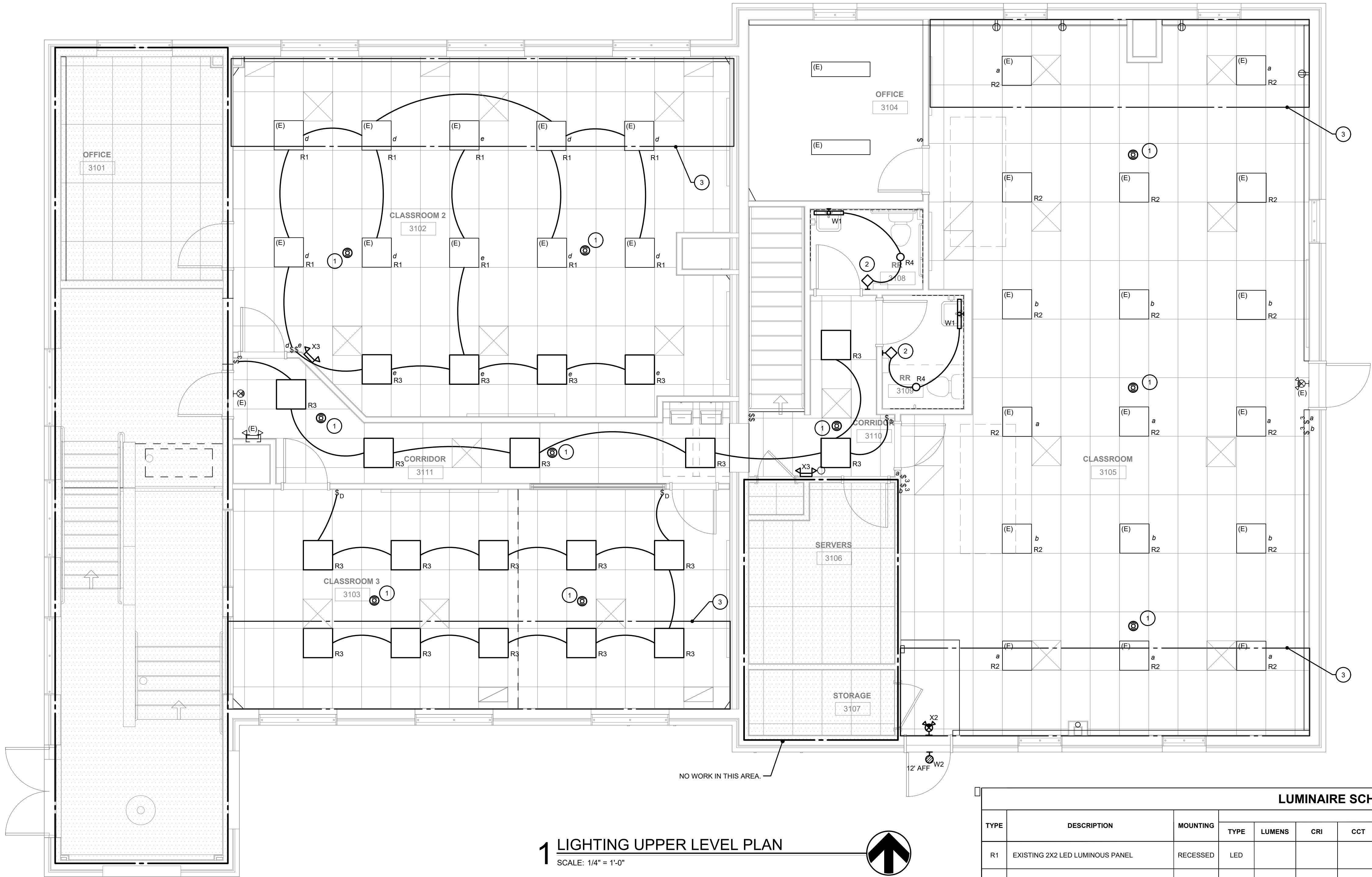
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LUMINAIRE SCHEDULE										
TYPE	DESCRIPTION	MOUNTING				INPUT WATTS	VOLTAGE	MANUFACTURER	CATALOG NUMBER	SPECIFIC NOTES
			TYPE	LUMENS	CRI					
R1	EXISTING 2X2 LED LUMINOUS PANEL	RECESSED	LED			25				1
R2	EXISTING 2X2 VOLUMETRIC TROFFER	RECESSED				25				
R3	2X2 RECESSED LED LUMINOUS PANEL - LOW LUMEN	RECESSED	LED	2664	80	3500	20.5	LITHONIA	CPX 2X2 AL07 20CRI SWW7 SWL 120	2
R4	8" LED RECESSED DOWNLIGHT WITH SEMI-SPECULAR REFLECTOR	RECESSED	LED	1500	80	3000	17.5	LITHONIA	LDN6 30 15 L06 AR LSS TRW 120	
W1	24" LED WALL MOUNTED VANITY LIGHT BRUSHED NICKEL FINISH	SURFACE	LED	1300	90	3000	18	LITHONIA	FMVCSL 24IN MVOLT 30K 90CRI BN M6	
W2	LED EXTERIOR WALL PACK WITH PHOTOCELL AND COLD EMERGENCY BATTERY BACKUP, MOUNT 12' AFG	SURFACE	LED	1200	80	3000	18	LITHONIA	WDGED LED P1SW 30K 80CRI VW MVOLT SRM E20WV PE DGBKD	
X2	COMBO GREEN LED EXIT EMERGENCY LIGHT WITH INTEGRAL BATTERY	SURFACE	LED			3.5	120	LITHONIA	ECRG 50 M6	
X3	DUAL HEAD LED EMERGENCY LIGHT WITH INTEGRAL BATTERY	SURFACE	LED			0.56	120	LITHONIA	EU2C M6	
GENERAL NOTES: THE LUMINAIRE SCHEDULE CAN NOT BE USED INDEPENDENTLY OF THE DRAWINGS AND SPECIFICATIONS TO OBTAIN LUMINAIRE COSTS. THE INDIVIDUAL ESTABLISHING LUMINAIRE COSTS SHALL NOT QUOTE PRICING WITHOUT FIRST SEEING APPLICABLE ELECTRICAL DRAWINGS AND ELECTRICAL DIVISION SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY DRAWINGS AND SPECIFICATIONS TO THE INDIVIDUAL QUOTING LUMINAIRE PRICING. B. REFER TO DRAWINGS FOR FIXTURES REQUIRING EMERGENCY BATTERY BACKUP OPTION (SHOWN BY HATCH IN/OVER SYMBOL). MINIMUM LIGHT OUTPUT FOR EM BALLAST SHALL BE 600 LUMENS. BATTERY SHALL OPERATE FOR A MINIMUM OF 90 MINUTES. SPECIFIC NOTES: (1) CONTRACTOR TO VERIFY COLOR TEMPERATURE OF EXISTING LIGHTING FIXTURES (2) CONTRACTOR TO MATCH COLOR TEMPERATURE OF TYPE R3 FIXTURES WITH THE EXISTING TYPE R2 FIXTURES FOR CONSISTENCY IN SPACE.										

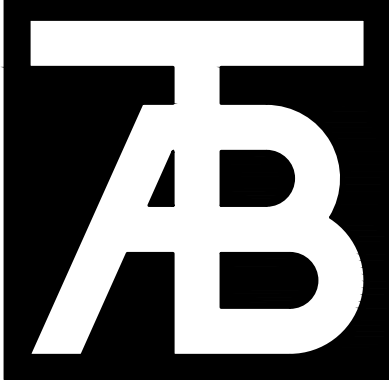
LIGHTING NOTES:

- REFER TO ARCHITECTURAL (RCP) AND MECHANICAL PLANS FOR CEILING COORDINATION. COORDINATE WITH MECHANICAL, FIRE ALARM, TECHNOLOGY AND OTHER TRADES TO AVOID CEILING CONFLICTS WITH OTHER DEVICES, LIGHTS AND HVAC DIFFUSERS.
- WHENEVER POSSIBLE CIRCUIT EXISTING AND NEW LIGHTING TO EXISTING LIGHTING CIRCUITS, U.N.O.
- CIRCUIT ALL EMERGENCY LIGHTING AND EXIT SIGNS TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCHES.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING MOUNTING HARDWARE REQUIRED FOR INSTALLING ALL LIGHT FIXTURES. VERIFY ALL CEILING FINISHES, CEILING TYPES, AND CEILING THICKNESS PRIOR TO FINAL FIXTURE PURCHASE AND PROCUREMENT.
- ELECTRICAL CONTRACTOR SHALL SIZE BRANCH CIRCUIT WIRING TO ACCOMMODATE FOR VOLTAGE DROP.
- ALL DIMMED LIGHTING CIRCUITS ARE TO RECEIVE DEDICATED NEUTRALS. DO NOT SHARE NEUTRALS ON DIMMED LIGHTING CIRCUITS.
- ALL LIGHT SWITCHES SHALL BE SPECIFICATION GRADE, QUIET OPERATION RATED 120/277VOLT, 20 AMPS, UNLESS OTHERWISE NOTED.
- EXIT SIGNS SHALL HAVE INTEGRAL EMERGENCY BATTERY BACK-UP.
- CIRCUIT NEW AND EXISTING RELOCATED LIGHTING FIXTURES TO THE EXISTING CIRCUITS SERVING LIGHTING IN THE AREA.

FLAG NOTES:

- DUAL TECHNOLOGY CEILING VACANCY SENSOR TO CONTROL LIGHTING.
- COMBO WALL SWITCH/OCCUPANCY SENSOR PIR.
- DAYLIGHT ZONE, LIGHTING IN ZONE IS LESS THAN 150 WATTS OF LIGHTING FIXTURE LOAD, THEREFORE DAYLIGHT-RESPONSIVE CONTROLS ARE NOT REQUIRED PER IECC C405.

Exhibit A



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