Contra Costa Community College District

Invitation for Bid D-1190, D-1194, D-1195

DVC Renovations

Diablo Valley College

Addendum #2

May 2, 2022

This Addendum modifies the original Bid Documents and previously issued addenda for the above Bid. Except as noted in this addendum, or prior addenda, all other provisions of the bid documents remain in effect.

Acknowledge receipt of this addendum in the space provided on the BID PROPOSAL FORM. Failure to do so may subject Bidder to disqualification.

Table of contents:

Drawings Specifications See Narrative and 26 Attached Sheets See Narrative and Attached Pages

Architect's Stamp: The drawings, specifications and/or calculations in this addendum have been prepared by the architect and/or other design professionals who are licensed to prepare same in California. These documents have been reviewed by me and appear to be in conformance with applicable parts of Title 24, CCR and project specifications. They have been coordinated with the project plans and specifications and determined by me, the Architect in General Responsible Charge, to be acceptable for incorporation therein.

DRAWINGS

1	G1.00	Revise Note Q
2	G1.01	Sheet index: Add Sheet A12.31, A14.00 Delete Sheet ED1.21 (From Bid Set) Add Sheet ED1.22, E1.11, E1.21 (Since Bid Set)
3	CP1.00	Delete Lot 4, Lot 7, Lot 8 Parking Information. Remove non-compliant area notes.
4	CP3.00	Drawing 8: Operable Part dimension.
5	CP3.02	Revised markerboard dimension.
6	C3.1	Drawing 2: Added note specifying slope requirements.
7	C3.2	Drawing 3: Revised Drop-off area.
8	C4.1	Drawing 3: Note clarifying existing building column.
9	C4.2	Drawing 3: Note clarifying existing building column.
10	C5.0	Drawing 7: Added dimension at ramp wheel guide rail.
		Drawing 12: Revised dimension range.
11	A1.22	Add door detail callout.
12	A1.23	Sign tags added to non-functioning door.
13	A2.50	Drawing 1, 6, 11: Add signage tags.
14	A2.51	Drawings 1, 10: Add signage tags. Existing accessible urinal located correctly.

ADDENDUM TWO

15	A2.52	Drawing 1: Add signage tags
16	A10.50	Keynote 22-02: "CDC" spelling corrected to "CBC"
17	A11.05	Drawing 3: Revise dimensions.
18	A12.31-A14.00	Add Sheets
19	M7.1	Detail 3: Revise dimension and note.
20	E0.1	Update "bell strobe" to "horn-strobe".
21	E2.10	Power Plan: Updates to add fire alarm device keynote and indication of existing devices.
22	E2.20	Remove reference drawing.
23	E2.22	Add exit signs.
24	E2.31	Detail 2: Revise dimension in detail for power pole mounting
25	P0.1	Add general plumbing notes 9, 10, 11.

SPECIFICATIONS

1	00010	Table of Contents Add: Section 101423.16 Room-Identification Panel Signage
2	DSA 103 and CSFM Cut Sheets	Revise CSFM Cut Sheets.
3	101423.16	Add section.
4	284600	Add section.

END OF ADDENDUM

ADDENDUM TWO

GENERAL ABBREVIATIONS

ARCHITECTURAL ABBREVIATIONS

ACC

AD.IT

ALUM

APC

ASPH

AUTO

AVG

AWP

SNV

BLK

BLKG

BLKHD

BM(S)

BOT

BRG

BRKT

BTWN

SCD

SND2

SCR

PTR

WR1

PWS

PWR

PTD3

CBD

CER

CFCI

CFMF

CJA

CLO

CLR

CMU

COL

COM

COMB

COMM

CONF

CORR

CP

CPT

CR

CS

CSTJ

CSWK

СТ

CU

CU

CY

CYL

EGL-1

IGL-1

SND1

DEPR

DEPT

DET

DIAG

DPFG DR

DSN

DW

DWR

EEW

EEWS

EFF

ELAS

ELEV

EMER

ENCL

ENTR

ERF

FUL

EW

EXP

EXP

FHC

FIG

FIX FLASH

FLEX FLG

DWL(S)

COMPR

CONFIG

CF

BRDG

	NUMBER AND AT
ADDN AFF	AMERICANS WITH DISABILITY ACT ADDITION OR ADDITIONAL ABOVE FINISHED FLOOR ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BFL	BUSINESS/FOREIGN LANGUAGE BUILDING
BLDG	BUILDING
BSMT	BASEMENT
CL CLG CM CONC CONN(S) CONST CONT CONTR CONTR CTR	CENTER LINE CEILING CENTIMETER CONCRETE CONNECTION(S) CONSTRUCTION CONTINUOUS CONTRACT(OR) CENTER
) DEG DEMO DIA DIM DIV DN DN DTL DWG(S)	DEPTH DEGREE DEMOLISH OR DEMOLITION DIAMETER DIMENSION SPECIFICATION DIVISION DOWN DETAIL DRAWING(S)
A EC EL ELEC ENG EQ EQUIP EQUIV EXST EXT	EAST EACH ELECTRICAL CONTRACTOR ELEVATION ELECTRICAL ENGINEER EQUAL EQUIPMENT EQUIVALENT EXISTING EXTERIOR
FIN	FINISHED
FL	FLOOR
FT	FEET
FUT	FUTURE
GC	GENERAL CONTRACTOR
GOVT	GOVERNMENT
I	HEIGHT
IORIZ	HORIZONTAL
IT	HEIGHT
e.	THAT IS
BC	INTERNATIONAL BUILDING CODE
N	INCH
NT	INTERIOR
.B(S) A MAX AC AECH AEZZ AFR AIN MISC	POUND(S) THOUSAND METER MAXIMUM MECHANICAL CONTRACTOR MECHANICAL MEZZANINE MANUFACTURER MINIMUM MISCELLANEOUS
/M	MILLIMETER
I	NORTH
I/A	NOT APPLICABLE
IIC	NOT IN CONTRACT
ITS	NOT TO SCALE
DC	ON CENTER
DPP	OPPOSITE
DVHD	OVERHEAD
PAC PAR PENT PLYWD	PERFORMING ARTS CENTER BUILDING PARALLEL PENTHOUSE PLYWOOD QUANTITY
REQ(D)	REQUIRE(D)
REV	REVISION(S)
RM	ROOM
RND	ROUND
S CHED SECT SHT SIM SPEC SSC STD STD STD STOR STOR STRUCT SYM	SOUTH SCHEDULE SECTION SHEET SIMILAR SPECIFICATION(S) STUDENT SUCCESS CENTER STANDARD STEEL STORAGE STRUCTURAL SYMETRICAL
EMP	TEMPORARY
YP	TYPICAL
JNEX	UNEXCAVATED
JNFIN	UNFINISHED
JNO	UNLESS NOTED OTHERWISE
	VERTICAL VESTIBULE VERIFY IN FIELD
V	WEST
V/	WITH
V/O	WITHOUT

EXISTING	FLM FLUOR	FULL LENGTH MI FLUORESCENT
	FO FOC	FINISH OPENING
ARCHITECT/ENGINEER AIR BARRIER	FOF FOM	FACE OF FINISH FACE OF MASON
ASBESTOS ACRYLIC	FOS FOW	FACE OF STUD FACE OF WALL
ACOUSTIC CEILING TILE ACCESS DOOR	FP FR	FIREPROOFING FIRE RESISTANT
ADJUSTABLE ADJACENT	FRP FRT	FIBERGLASS REI FIRE RESISTANC
ADMINISTRATION AUTOMATED EXTERNAL DEFIBRILLATORS	FS FSS	FLOOR SINK FOLDING SHOWE
ALUMINUM	FTG	FOOTING
ALUMINUM ACCESS PANEL	FVC FWC	FIRE VALVE CAB FABRIC WALL CO
ACOUSTIC PANEL CEILING ASPHALT	G	GROUT
AUTOMATIC AVERAGE	GA GAL	GAUGE GALLON
ACOUSTIC WALL PANEL	GALV GB	GALVANIZED GRAB BAR
SANITARY NAPKIN VENDOR	GD GEN	GARBAGE DISPC GENERAL
BOTTOM OF BOARD	GFA GL	GROSS FLOOR A
BLOCK	GMP	GUARANTEED M
BLOCKING BULKHEAD	GR GR	GUARD RAIL GRADE
BEAM(S) BOTTOM	GRS GWB	GALVANIZED RIG GYPSUM WALL B
BRIDGING BEARING	GYP	GYPSUM
BRACKET BATHTUB	SNV1	SANITARY NAPK
BETWEEN	PTD2	PAPER TOWEL D
SEAT COVER DISPENSER, SURFACE-MOUNTED	SD	SOAP DISPENSE
SANITARY NAPKIN DISPOSAL	HC HDF	HOLLOW CORE HIGH DENSITY F
SEAT COVER DISPENSER, RECESSED	HDR	HEADER
PAPER TOWEL DISPENSER, RECESSED	HDWD HDWR	HARDWOOD HARDWARE
WASTE RECEPTACLE, RECESSED	HM HR	HOLLOW METAL HOUR
COMBINATION TOWEL DISPENSER/RECEPTACLE,	HR HS	HANDRAIL HARDWARE SET
SEMI-RECESSED	HSS HVAC	HOLLOW STRUC HEATING VENTIL
COMBINATION TOWEL DISPENSER/RECEPTACLE, RECESSED	IAW	IN ACCORDANCE
PAPER TOWEL DISPENSER, SURFACE-MOUNTED	ID IF	INSIDE DIAMETE
WASTE RECEPTACLE, SURFACE-MOUNTED	IGL-2	20 MINUTE RATE
ROBE HOOK	IJ IJS	ISOLATION JOIN
MIRROR WITH SHELF	INC INSUL	INCLUDE(ING) INSULATION
STAINLESS STEEL SHELF	JAN	JANITOR
CABINET	JBE JCT	JOIST BEARING E
CHALKBOARD CERAMIC	JFB JST	JOINT FILLER BC JOIST
CUBIC FEET CONTRACTOR FURNISHED CONTRACTOR INSTALLED	JT	JOINT
COLD-FORMED METAL FRAMING CAST IRON	KCJ	KEYED CONSTRI
CAST IRON CAST IN PLACE CONTROL JOINT	KD KH	KNOCKDOWN KITCHEN HOOD
CONTROL JOINT ABOVE	KIT	KITCHEN
	PTD1	PAPER TOWEL D
CONCRETE MASONRY UNIT COLUMN	IGL-3 L	ANGLE
COMMON COMBINATION	LAB LAM	LABORATORY
COMMUNICATIONS COMPRESSIBLE	LBR	LUMBER
COMPRESSIBLE CONFERENCE CONFIGURATION	LDG LF	LOADING LINEAR FOOT
CORRIDOR	LG LIN	LENGTH (LONG) LINEAR
COVER PLATE CARPET	LINO LKR	LINOLEUM LOCKER
CHAIR RAIL COUNTERSINK	LOC LONG	LOCATION LONGITUDINAL
CONSTRUCTION JOINT CASEWORK	LSC LTG	LIFE SAFETY CO LIGHTING
CERAMIC TILE COPPER	LV	LOUVER
COMBINATION UNIT	LVT	LUXURY VINYL T
CONDOM VENDOR CUBIC YARD	MAG MAINT	MAGNETIC MAINTENANCE
CYLINDER CLEAR, TEMPERED INSULATING GLASS, EXTERIOR	MAN MAS	MANUAL MASONRY
CLEAR, TEMPERED GLASS, INTERIOR	MATL MB	MATERIAL MOP BASIN
SANITARY NAPKIN DISPOSAL	MBD	MARKER BOARD
	MC MEMB	MEDICINE CABIN MEMBRANE
	MH MTD	MANHOLE MOUNTED
DEPRESS(ION)(ED) DEPARTMENT	MTG MUL	MOUNTING MULLION
DETENTION DRINKING FOUNTAIN	NC	NOISE CRITERIA
DOOR GRILLE DIAGONAL	NFPA NOM	NATIONAL FIRE F
DAMPROOFING		
DOOR DOWNSPOUT NOZZLE	O to O OA	OUT TO OUT OVERALL
DISHWASHER DOWEL(S)	OFCI OFF	OWNER FURNISI OFFICE
DRAWER	OFOI OH	OWNER FURNISI OPPOSITE HAND
EXPANSION BOLT EACH END	OPG(S) OSHA	OPENING(S) OPERATIONAL S
EMERGENCY EYE WASH EMERGENCY EYE WASH SHOWER	OTB OVFL	OPEN TO BELOW OVERFLOW
EFFICIENCY EXPANSION JOINT		
ELASTOMERIC	P PAN B	PAINT PANIC BOLT
ELEVATOR EMERGENCY	PB PC	PARTICLE BOAR PRECAST CONC
ENCLOSURE ENTRANCE	PCD PCT	PAPER CUP DISF PORCELAIN CER
EPOXY RESIN FLOORING ENERGY USE INTENSITY	PD PERF	PANIC DEVICE PERFORATED
EACH WAY EXPANSION	PERP	PERPENDICULA
EXPANSION EXPOSED	PIC PL	PORTABLE INST
FABRIC	PL PL	PROPERTY LINE PLASTIC LAMINA
FACE OF FABRICATE(D)	PLAM PLBG	PLASTIC LAMINA PLUMBING
FACE BRICK FLOOR DRAIN	PR PREFAB	PAIR PREFABRICATED
FOUNDATION	PROJ	PROJECT(OR) (IC
FIRE EXTINGUISHER CABINET	PS PT	PROJECTION SC POINT
FINISH FLOOR FIRE HYDRANT	PT PTN	POINT OF TANGE PARTITION
FIRE HOSE CABINET FIGURE	PVC PWL	POLYVINYL CHLO SOUND POWER
FIXTURE FLASHING	TTD	TOILET TISSUE D
FLEXIBLE	QT	QUARRY TILE
	U I	
FLOORING	QTR RND	QUARTER ROUN

FULL LENGTH MIRROR
FLUORESCENT
FINISH OPENING FACE OF CONCRETE
FACE OF FINISH
FACE OF MASONRY
FACE OF STUD
FACE OF WALL FIREPROOFING
FIRE RESISTANT
FIBERGLASS REINFORCED PANEL
FIRE RESISTANCE TREATED
FLOOR SINK FOI DING SHOWER SEAT
FOOTING
FIRE VALVE CABINET
FABRIC WALL COVERING
GROUT
GAUGE
GALLON
GALVANIZED GRAB BAR
GRAD DAR GARBAGE DISPOSAL
GENERAL
GROSS FLOOR AREA
GLUE LAMINATED GUARANTEED MAXIMUM PRICE
GUARD RAIL
GRADE
GALVANIZED RIGID STEEL
GYPSUM WALL BOARD GYPSUM
GIFSUM
SANITARY NAPKIN VENDOR
PAPER TOWEL DISPENSER, SURFACE-MOUNTED
SOAP DISPENSER, SURFACE-MOUNTED
HOLLOW CORE
HIGH DENSITY FIBERBOARD
HEADER
HARDWOOD
HARDWARE HOLLOW METAL
HOUR
HANDRAIL
HARDWARE SET
HOLLOW STRUCTURAL SHAPE HEATING VENTILATING AND AIR CONDITIONING
IN ACCORDANCE WITH
INSIDE FACE 20 MINUTE RATED TEMPERED GLASS, INTERIOR
ISOLATION JOINT
IN JOIST SPACE
INSULATION
JANITOR
JOIST BEARING ELEVATION
JUNCTION
JOINT FILLER BOARD JOIST
JOINT
KEYED CONSTRUCTION JOINT KNOCKDOWN
KNOCKDOWN KITCHEN HOOD
KITCHEN
PAPER TOWEL DISPENSER, SURFACE-MOUNTED
ANGLE
LABORATORY
LAMINATED
LUMBER LOADING
LINEAR FOOT
LENGTH (LONG)
LINEAR

LINOLEUM
LOCKER
LOCATION
LONGITUDINAL
LIFE SAFETY CODE
LIGHTING
LOUVER
LUXURY VINYL TILE

MAGNETIC MAINTENANCE MANUAL MASONRY MATERIAL MOP BASIN MARKER BOARD MEDICINE CABINET MEMBRANE

MOUNTED MOUNTING NOISE CRITERIA

NATIONAL FIRE PROTECTION ASSOCIATION

OVERALL OWNER FURNISHED CONTRACTOR INSTALLED

OWNER FURNISHED OWNER INSTALLED OPPOSITE HAND

OPENING(S) OPERATIONAL SAFETY AND HEALTH ADMINISTRATION

OPEN TO BELOW OVERFLOW

PANIC BOLT PARTICLE BOARD PRECAST CONCRETE

PAPER CUP DISPENSER PORCELAIN CERAMIC TILE PANIC DEVICE PERFORATED

PERPENDICULAR PORTABLE INSTRUMENT CONNECTION

PROPERTY LINE PLASTIC LAMINATE PLASTIC LAMINATE

PREFABRICATED PROJECT(OR) (ION)

PROJECTION SCREEN

POINT OF TANGENCY PARTITION POLYVINYL CHLORIDE

SOUND POWER LEVEL TOILET TISSUE DISPENSER, SURFACE-MOUNTED

QUARRY TILE QUARTER ROUND RISER RADIUS RUBBER BASE REMOTE CONTROL REFLECTED CEILING PLAN ROOF DRAIN REFERENCE REFLECTED REMOVABLE RESILIENT **RESILIENT FLOORING** RUBBER FLOOR RECESSED FLOOR MAT ROUGH IN AND CONNECT SINK SPRAYED ACOUSTIC TREATMENT SOUND ABSORBING WALL UNITS SPLASH BLOCK SOLID CORE SHOWER CURTAIN SHOWER CURTAIN HOOK STRUCTURAL CLAY TILE

RAD

RB

RCP

RD

REF

REFL

REM

RESIL

RFM

RI&C

SAT

SB

SCH

SCT

SF

SGL

SHM

SM

SPL

SQ

SS

SSA

SST

STAG'D

STC

STGR

SUBFL

SURF

SUSP

SVF

T&G

T.O.

TAN

TBD

TCP

TH

THK

TMF

TOIL

TOP

TW

UL

UR

US

VB

VB

VF

VOC

VOL

VP

VT

WB

WC

WCL

WD

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WRB

WWF

WW

YD

VWC

VCB

UTIL

TRANS

TERR

SLNT

SECY

SAW

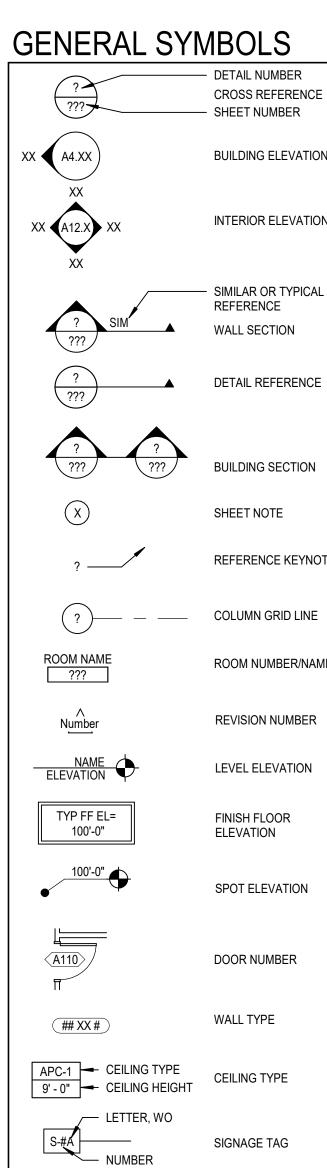
SECRETARY SQUARE FEET SINGLE SHOWER SECURITY HOLLOW METAL SEALANT SHEET METAL SOUND PRESSURE LEVEL SQUARE SOLID SURFACE STORM SHELTER AREA STAINLESS STEEL STONE STAIR STAGGERED SOUND TRANSMISSION CLASS STRINGER SUBFLOOR SURFACE SUSPENDED SHEET VINYL FLOORING

TREAD TONGUE AND GROOVE TOP OF TANGENT TOWEL BAR TACK BOARD TOILET COMPARTMENT PARTITION TERRAZZO THRESHOLD THICK(NESS) TENANT IMPROVEMENT TILT MIRROR UNIT TOILET TOP OF PAVING TRANSVERSE TERRAZZO TILE TACK WALL

UNDERWRITERS LABORATORIES URINAL UTILITY SHELF UTILITY

VAPOR BARRIER VINYL BASE VENTED COVE BASE VINYL FLOOR VOLITILE ORGANIC COMPOUND VOLUME VENEER PLASTER VINYL TILE VINYL WALL COVERING WIDE

WALL BASE WALL COVERING WATER CLOSET/LAVATORY COMBINATION WOOD WOOD FLOORING WINDOW WROUGHT IRON WALK OFF MAT WEATHER RESISTANT BARRIER WARM WHITE WELDED WIRE FABRIC YARD



DETAIL NUMBER EARTH CROSS REFERENCE - SHEET NUMBER ္က ၀ိုလ္ပ်ိဳ GRAVEL BUILDING ELEVATION SAND CONCRETE -INTERIOR ELEVATION PRECAST CONCRETE STEEL STONE - SIMILAR OR TYPICAL REFERENCE CONCRETE MASONRY UNIT WALL SECTION BRICK VENEER STEEL (LARGE SCALE) DETAIL REFERENCE GYM FLOOR WOOD (CONTINUOUS BLOCKING) WOOD BUILDING SECTION (NON-CONTINUOUS BLOCKING) WOOD (TRIM/FINISH) SHEET NOTE GLASS ulli REFERENCE KEYNOTE SHINGLES PLYWOOD (LARGE SCALE) GYPSUM WALL BOARD ROOM NUMBER/NAME BLANKET INSULATION ΊΧΧΧ REVISION NUMBER SPRAY FOAM INSULATION LEVEL ELEVATION MINERAL WOOL INSULATION PROTECTION BOARD FINISH FLOOR ELEVATION ____ CARPET (LARGE SCALE) ACOUSTIC TILE (LARGE SCALE) SPOT ELEVATION TILE (LARGE SCALE) DOOR NUMBER WALL TYPE

A. GENERAL NOTES APPLY TO ALL SHEETS. B. DIMENSIONS ARE ACTUAL AND ARE TO FACE OF STUDS, FACE OF CONCRETE WALLS, FACE OF CMU WALLS, FACE OF FRAMES, OR CENTERLINE OF COLUMNS, UNLESS NOTED OTHERWISE. VERIFY EXISTING CONDITIONS IN FIELD TO CONFIRM LOCATION OF NEW CONSTRUCTION WORK. COORDINATE CONFLICTS WITH ARCHITECT PRIOR DEMOLITION AND CONSTRUCTION. . THE OWNER SHALL FURNISH AND INSTALL THE FOLLOWING ITEMS: FURNITURE AND CUBICLES, PRINTERS AND ASSOCIATED EQUIPMENT, AND TELEVISION SCREENS.). INCLUDE ALL OWNER-FURNISHED AND INSTALLED ITEMS AND OWNER-FURNISHED AND CONTRACTOR-INSTALLED ITEMS IN THE CONSTRUCTION SCHEDULE, AND CONTRACTOR SHALL COORDINATE WITH THE OWNER TO ACCOMMODATE THESE ITEMS. EXISTING EQUIPMENT INCLUDING BUT NOT LIMITED TO STORAGE CABINETS AND SHELVES REQUIRING ATTACHMENT TO WALLS, FLOORS, OR CEILINGS SHALL BE INSTALLED ACCORDING TO THE DRAWINGS. COORDINATE ALL MECHANICAL CHASE SIZES WITH THE MECHANICAL CONTRACTOR. ARCHITECTURAL FLOOR ELEVATION 0' - 0" IS ESTABLISHED BY THE EXISTING FLOOR STRUCTURE, EXCLUSIVE OF FINISHES B. SEE PLANS FOR LOCATIONS AND SHEET A8.00 FOR TYPE OF WALLS OF FIRE-RESISTANCE-RATED CONSTRUCTION. ALL WALLS OF FIRE-RESISTANCE-RATED CONSTRUCTION SHALL EXTEND TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE. H. ALL PENETRATIONS THROUGH WALLS SHALL BE SEALED WITH PENETRATION FIRE STOPPING MATERIAL AS REQUIRED TO ACHIEVE THE RESPECTIVE FIRE-RESISTANCE RATING AND SMOKE STOPPAGE. SEE SPECIFICATION SECTION 078413. FIRE-RESISTANCE-RATED ENCLOSURES AROUND ALL STEEL COLUMNS SHALL BE CONTINUOUS FROM FLOOR TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE FOR EACH LEVEL.

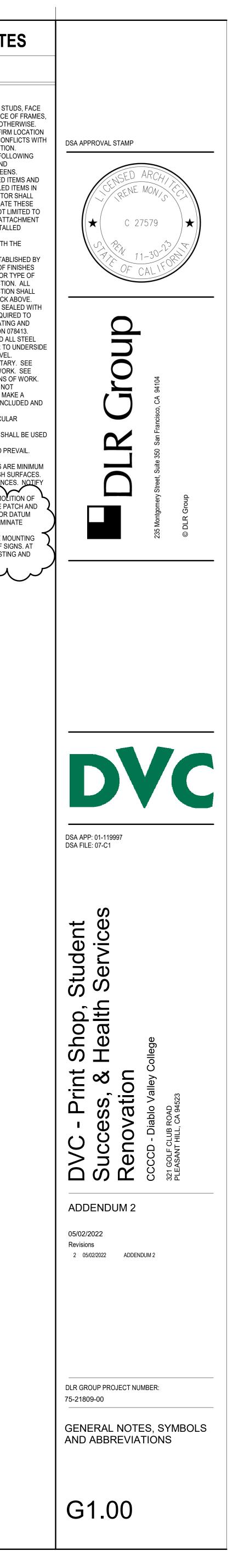
FINISHES.

LEGEND AND NOTES

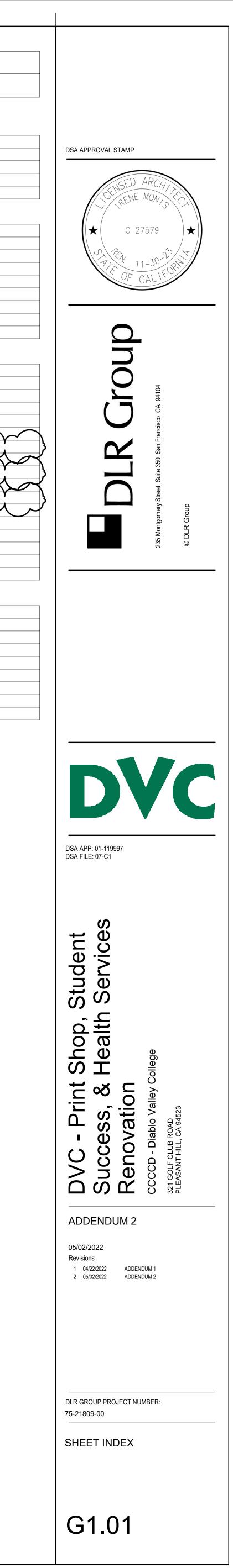
GENERAL NOTES

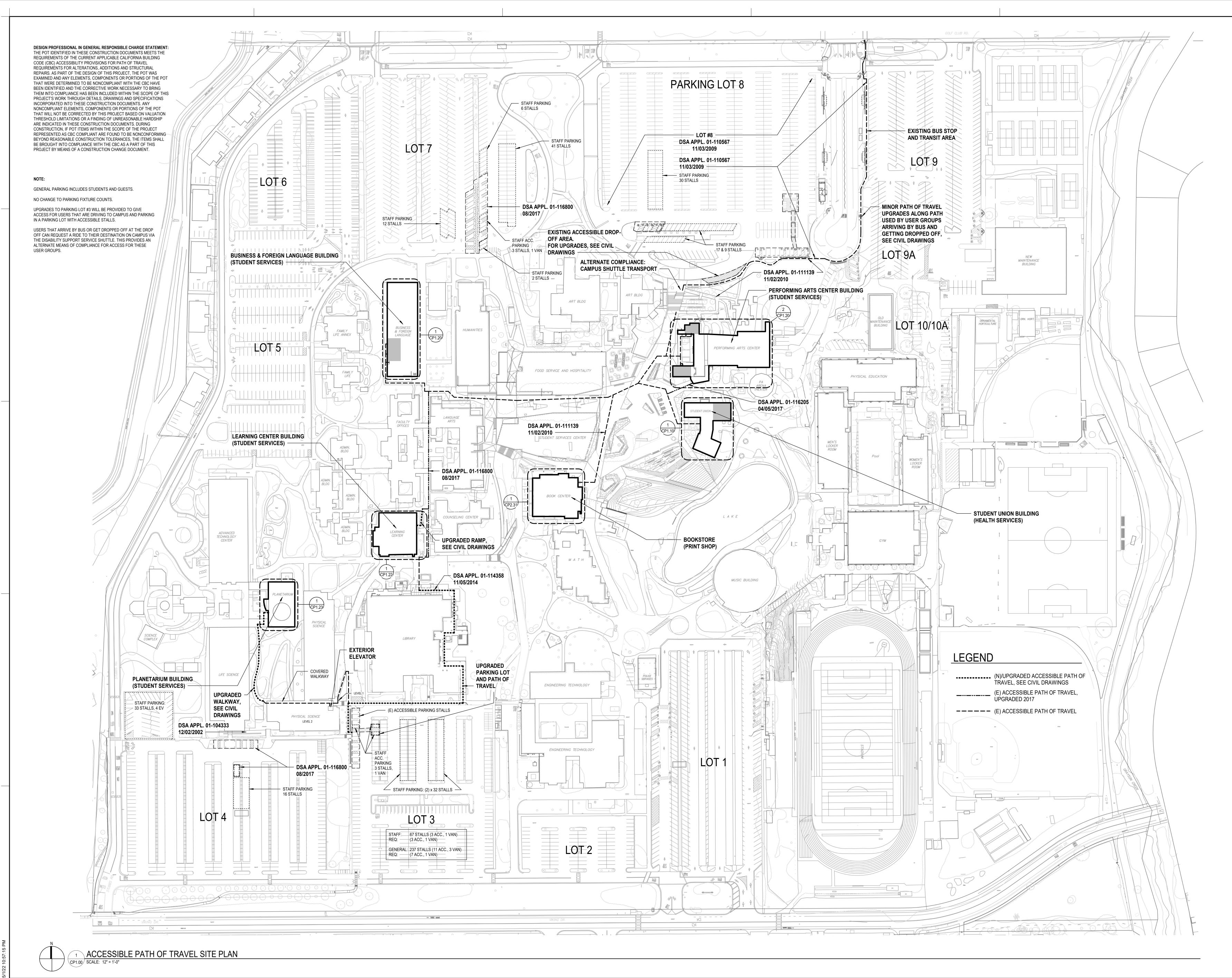
- CONSTRUCTION DOCUMENTS ARE COMPLEMENTARY. SEE
- DRAWING FOR QUANTITIES AND LOCATION OF WORK. SEE SPECIFICATIONS FOR QUALITIES AND CONDITIONS OF WORK. K. WORK: ALL ASPECTS OF THE WORK AND ITEMS NOT SPECIFICALLY MENTIONED, BUT NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION, SHALL BE INCLUDED AND
- INDICATED IN THE CONTRACTOR'S BID. GENERAL SHEET NOTES ONLY APPLY TO PARTICULAR DRAWING OR SERIES OF DRAWINGS. M. NO ASBESTOS OR PCB CONTAINING MATERIALS SHALL BE USED ON THIS PROJECT.
- N. DO NOT SCALE DRAWINGS. DIMENSIONS NOTED PREVAIL. NOTIFY ARCHITECT IN CASE OF DISCREPANCY. O. HORIZONTAL AND VERTICAL CLEAR DIMENSIONS ARE MINIMUM DIMENSIONS. CLEARANCES ARE GIVEN TO FINISH SURFACES.
- GENERAL CONTRACTOR TO VERIEY ALL CLEARANCES. NOTIFY ARCHITECT IN CASE OF DECREPANCY P. AT RESTROOMS, WHEN MODIFICATIONS OR DEMOLITION OF WALL FRAMING AND FINISHES IS REQUIRED, THE PATCH AND REPAIR SHALL EXTEND TO THE NEAREST WALL OR DATUM POINT ESTABLISHED BY THE ARCHITECT TO TERMINATE
- 2. REFER TO CP SHEETS AND A14.00 FOR SIGNAGE MOUNTING REQUIREMENTS. SEE PLANS FOR LOCATIONS OF SIGNS. AT LOCATIONS WITH EXISTING SIGNS, REMOVE EXISTING AND SALVAGE FOR OWNER USE.

SIGNAGE TAG

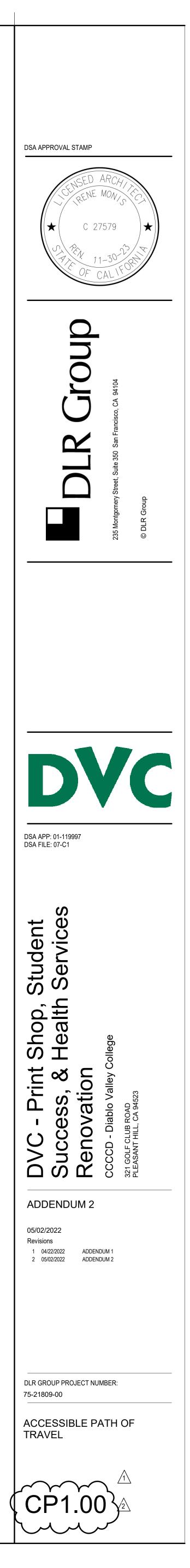


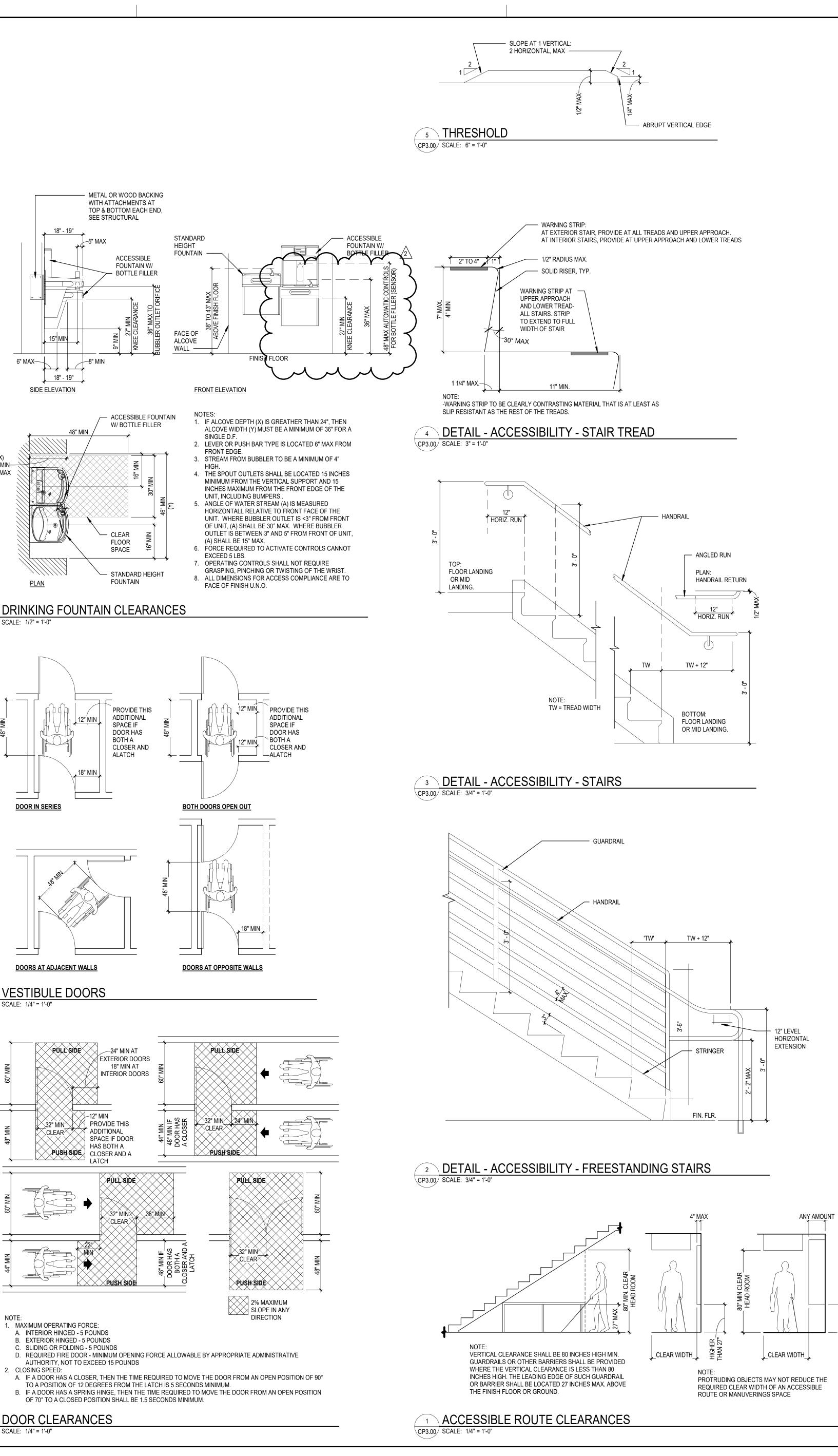
		Sheet List			Sheet List
	Sheet			Sheet	
Discipline	Number	Sheet Name	Discipline	Number	Sheet Name
00 - GENERAL					
00 - GENERAL	G0.00		20 - STRUCTURAL	00.4	
00 - GENERAL	G1.00	GENERAL NOTES, SYMBOLS AND ABBREVIATIONS	20 - STRUCTURAL	S0.1	GENERAL STRUCTURAL NOTES & SPECIAL INSPECTIONS
00 - GENERAL	G1.01	SHEET INDEX	20 - STRUCTURAL 20 - STRUCTURAL	S1.20 S6.1	STUDENT SERVICES - PERFORMING ARTS CENTER - STRUCTURAL STRUCTURAL DETAILS
05 - CODE			20 - STRUCTURAL	S6.2	STRUCTURAL DETAILS
05 - CODE	CP0.00	CODE PLAN - SUMMARY	20 - STRUCTURAL	S6.3	STRUCTURAL DETAILS
05 - CODE	CP1.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 CODE PLAN			
05 - CODE	CP1.20	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG AND PERFORMING ARTS CENTER - LEVEL 1 CODE PLAN	30 - MECHANICAL		
05 - CODE	CP1.22	STUDENT SERVICES - LEARNING CENTER - LEVEL 1 CODE PLAN	30 - MECHANICAL	M0.1	MECHANICAL SYMBOLS, ABBREVIATIONS & NOTES
05 - CODE	CP1.23	STUDENT SERVICES - PLANETARIUM - LEVEL 1 CODE PLAN	30 - MECHANICAL	M0.2	
05 - CODE	CP2.31	PRINT SHOP - BOOKSTORE - LEVEL 2 CODE PLAN ACCESSIBILITY DETAILS - BUILDING	30 - MECHANICAL 30 - MECHANICAL	MD1.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 01 - HVAC DEMOLITION PLAN PRINT SHOP - BOOKSTORE - LEVEL 02 - HVAC DEMOLITION PLAN
05 - CODE 05 - CODE	CP3.00 CP3.01	ACCESSIBILITY DETAILS - BOILDING ACCESSIBILITY DETAILS - RESTROOMS	30 - MECHANICAL	MD1.31 M1.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 01 - HVAC PLAN
05 - CODE	CP3.02	ACCESSIBILITY DETAILS - TYPICAL MOUNTING HEIGHTS	30 - MECHANICAL	M1.22	STUDENT SERVICES - PLANETARIUM - LEVEL 01 - HVAC PLAN
			30 - MECHANICAL	M1.31	PRINT SHOP - BOOKSTORE - LEVEL 02 - HVAC PLAN
08 - CIVIL			30 - MECHANICAL	M1.32	PRINT SHOP - BOOKSTORE - ROOF - HVAC PLAN
08 - CIVIL	C1.0	NOTES SHEET	30 - MECHANICAL	M7.1	MECHANICAL DETAILS
08 - CIVIL	C2.0	TOPOGRAPHIC & DEMOLITION PLAN			
08 - CIVIL	C2.1	TOPOGRAPHIC & DEMOLITION PLAN - LOT 3	40 - ELECTRICAL		
08 - CIVIL	C2.2	TOPOGRAPHIC AND DEMOLITION PLAN - LOT 8	40 - ELECTRICAL	E0.1	ELECTRICAL SYMBOLS, ABBREVIATIONS & NOTES
08 - CIVIL	C3.0	PAVING & DIMENSIONING PLAN	40 - ELECTRICAL	E0.3	TITLE 24 FORMS
08 - CIVIL	C3.1	PAVING & DIMENSIONING PLAN - LOT 3	40 - ELECTRICAL	E0.4	TITLE 24 FORMS
08 - CIVIL 08 - CIVIL	C3.2 C4.0	PAVING & DIMENSIONING PLAN - LOT 8 GRADING AND UTILITY PLAN	40 - ELECTRICAL 40 - ELECTRICAL	E0.5 ED1.10	TITLE 24 FORMS HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 ELECTRICAL DEMOLITION PLAN
08 - CIVIL 08 - CIVIL	C4.0	GRADING AND UTILITY PLAN GRADING AND UTILITY PLAN - LOT 3	40-ELECTRICAL		STUDENT SERVICES - STUDENT UNION BLDG - LEVEL TELECTRICAL DEMOLITION PLAN
08 - CIVIL	C4.2	GRADING AND UTILITY PLAN - LOT 8	40 - ELECTRICAL	ED1.22	STUDENT SERVICES - LEARNING CENTER - LEVEL 1 ELECTRICAL DEMOLITION PLAN
08 - CIVIL	C5.0	DETAILS I	HOTELECIBICA		HEALTH SEBACKS-STODENI WOOK BUDG-TE VELOT- A GHEARGE AND CONTACT OF CONTACT
9 - DEMOLITION 9 - DEMOLITION	AD1.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 DEMOLITION PLAN	40 - ELECTRICAL 49 ELECTRICAL 40 - ELECTRICAL	E ¹ .11 E ¹ .21	
9 - DEMOLITION	AD1.20	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG AND PERFORMING ARTS CENTER- LEVEL 1 DEMOLITION PLAN			
9 - DEMOLITION 9 - DEMOLITION	AD1.22 AD1.23	STUDENT SERVICES - LEARNING CENTER - LEVEL 1 DEMOLITION PLAN STUDENT SERVICES - PLANETARIUM - LEVEL 1 DEMOLITION PLAN	40 - ELECTRICAL 40 - ELECTRICAL	E2.20 E2.22	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG AND PAC - LEVEL 01 - POWER PLANS STUDENT SERVICES - PLANETARIUM - LEVEL 01 - POWER PLAN
9 - DEMOLITION	AD1.23 AD2.31	PRINT SHOP - BOOKSTORE - LEVEL 2 - DEMOLITION PLAN	40 - ELECTRICAL	E2.31	PRINT SHOP - BOOKSTORE - LEVEL 02 - POWER PLAN
9 - DEMOLITION	AD3.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 REFLECTED CEILING DEMOLITION PLAN	40 - ELECTRICAL	E2.32	PRINT SHOP - BOOKSTORE - ROOF - POWER
9 - DEMOLITION	AD3.30	PRINT SHOP - BOOKSTORE - LEVEL 2 REFLECTED CEILING DEMOLITION PLAN	40 - ELECTRICAL	E7.1	ELECTRICAL SCHEDULES
10 - ARCHITECTURAL			50 - PLUMBING		
10 - ARCHITECTURAL	A0.10		50 - PLUMBING	P0.1	PLUMBING GENERAL NOTES, SCHEDULES, SYMBOLS & ABBREVIATIONS
10 - ARCHITECTURAL 10 - ARCHITECTURAL	A1.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 FLOOR PLAN STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG AND PERFORMING ARTS CENTER - LEVEL 1 FLOOR PLAN	50 - PLUMBING 50 - PLUMBING	PD2.10 PD2.21	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 01 - PLUMBING DEMOLITION PLAN STUDENT SERVICES - LEARNING CENTER - LEVEL 01 - PLUMBING DEMOLITION PLAN
10 - ARCHITECTURAL	A1.20 A1.22	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG AND PERFORMING ARTS CENTER - LEVEL TFLOOR PLAN STUDENT SERVICES - LEARNING CENTER - LEVEL 1 FLOOR PLAN	50 - PLUMBING	PD2.21 PD2.22	STUDENT SERVICES - LEARNING CENTER - LEVEL 01 - PLOMBING DEMOLITION PLAN STUDENT SERVICES - PLANETARIUM - LEVEL 01 - PLUMBING DEMOLITION PLAN
		STUDENT SERVICES - PLANETARIUM - LEVEL 1 FLOOR PLAN	50 - PLUMBING	P2.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 01 - PLUMBING PLAN
10 - ARCHITECTURAL	A2.31	PRINT SHOP - BOOKSTORE - LEVEL 2 - FLOOR PLAN	50 - PLUMBING	P2.21	STUDENT SERVICES - LEARNING CENTER - LEVEL 01 - PLUMBING PLAN
10 - ARCHITECTURAL	A2.50	PARTIAL FLOOR PLANS - RESTROOMS	50 - PLUMBING	P2.22	STUDENT SERVICES - PLANETARIUM - LEVEL 01 - PLUMBING PLAN
10 - ARCHITECTURAL	A2.51	PARTIAL FLOOR PLANS - RESTROOMS	50 - PLUMBING	P2.31	PRINT SHOP - BOOKSTORE - LEVEL 02 - PLUMBING PLAN
10 - ARCHITECTURAL	A2.52	PARTIAL FLOOR PLANS - RESTROOMS	50 - PLUMBING	P2.51	BFL - RESTROOMS - PLUMBING DEMOLITION & NEW PLANS
10 - ARCHITECTURAL	A2.91	PRINT SHOP - BOOKSTORE - ROOF PLAN	-		
10 - ARCHITECTURAL	A3.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 REFLECTED CEILING PLAN	_		
10 - ARCHITECTURAL	A8.00		_		
10 - ARCHITECTURAL 10 - ARCHITECTURAL	A8.10 A9.00	DOOR & FRAME, WINDOW TYPES & SCHEDULE EXTERIOR DETAILS	-		
10 - ARCHITECTURAL	A10.00	INTERIOR ELEVATIONS	-		
10 - ARCHITECTURAL	A10.50	CASEWORK ELEVATIONS	-		
10 - ARCHITECTURAL	A11.00	INTEROR DETAILS - TYPICAL	-		
10 - ARCHITECTURAL	A11.01	INTERIOR DETAILS			
10 - ARCHITECTURAL	A11.02	INTERIOR DETAILS - FLOOR	_		
10 - ARCHITECTURAL	A11.05	INTERIOR DETAILS - CASEWORK	-		
10 - ARCHITECTURAL	A11.20	INTERIOR DETAILS - DOOR	-		
10 - ARCHITECTURAL	A11.30	INTERIOR DETAILS - CEILING - SUSPENDED ACP	-		
10 - ARCHITECTURAL 10 - ARCHITECTURAL	A11.31 A11.32	INTERIOR DETAILS - CEILING - GWB INTERIOR DETAILS - CEILING - HANGER AND BRACING WIRES	-		
10 - ARCHITECTURAL	A11.32	INTERIOR DETAILS - CEILING - HANGER AND BRACING WIRES INTERIOR DETAILS - CEILING - COMPRESSION STRUTS	-		
10 - ARCHITECTURAL	A12.00	FINISH SCHEDULES	-		
10 ARCHITESTURAL			-		
10 - ARCHITECTURAL	A12.31	PRINT SHOP - BOOKSTORE - LEVEL 2 FINISH PLAN	Ъ		

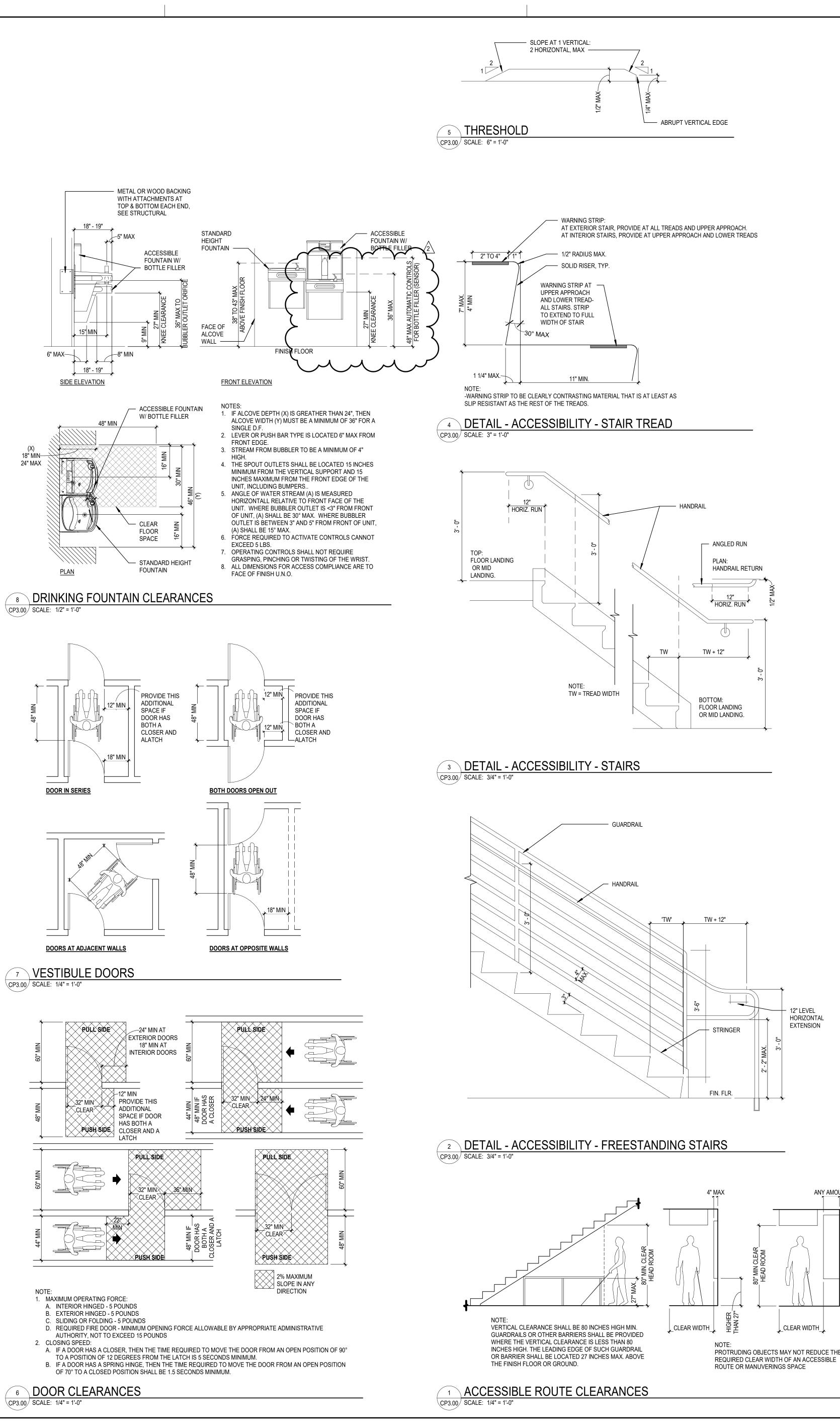


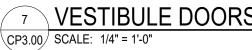


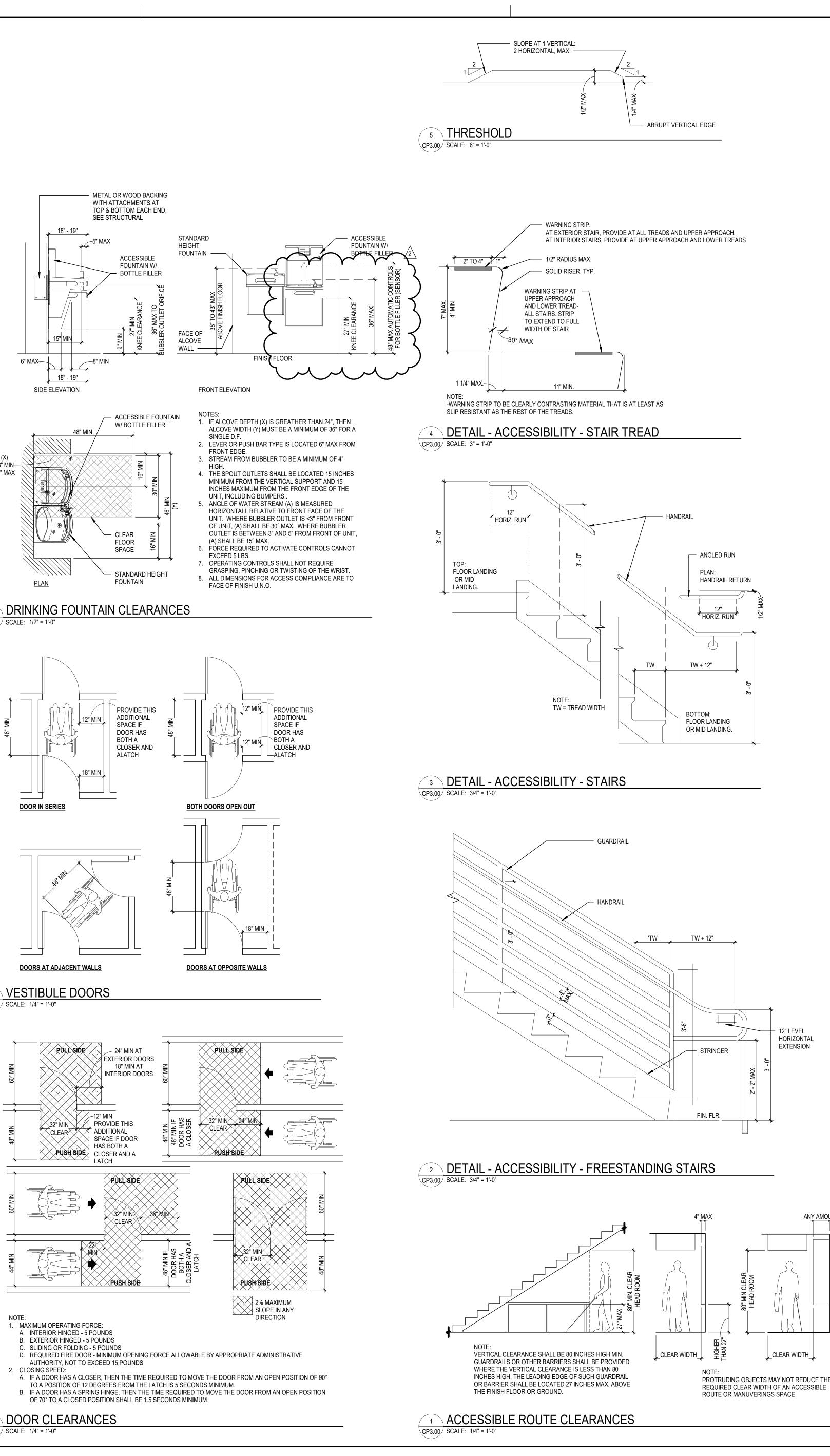
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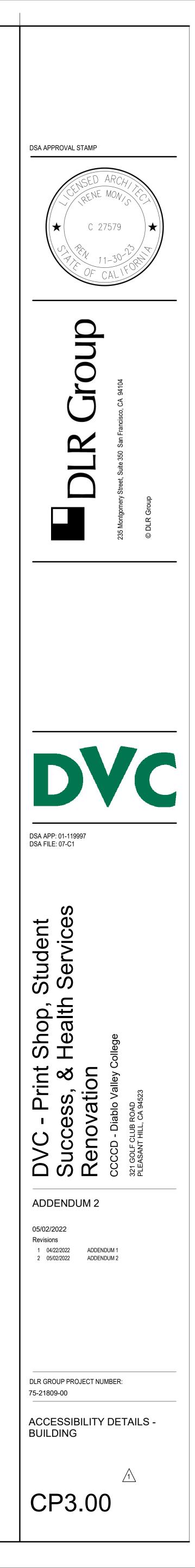


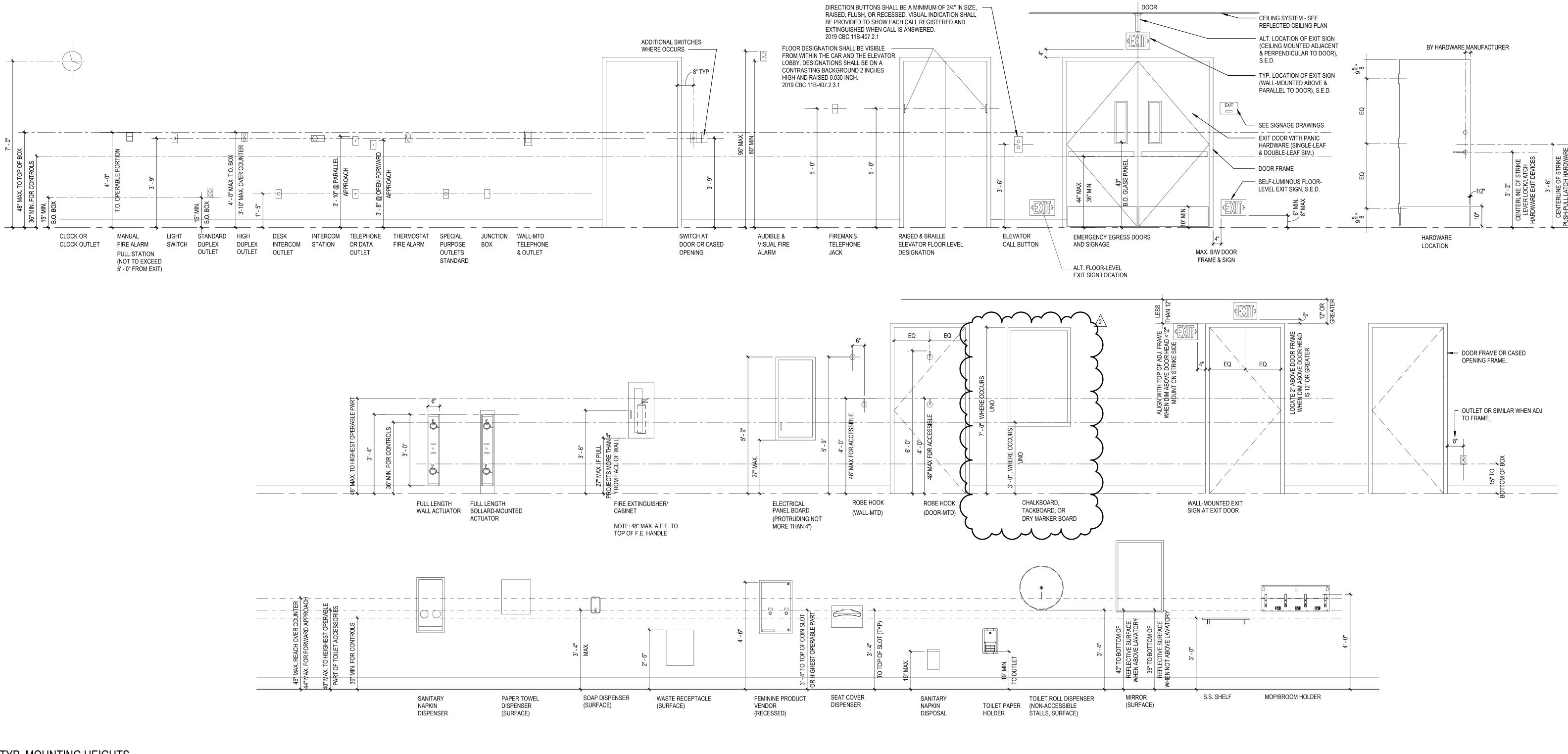


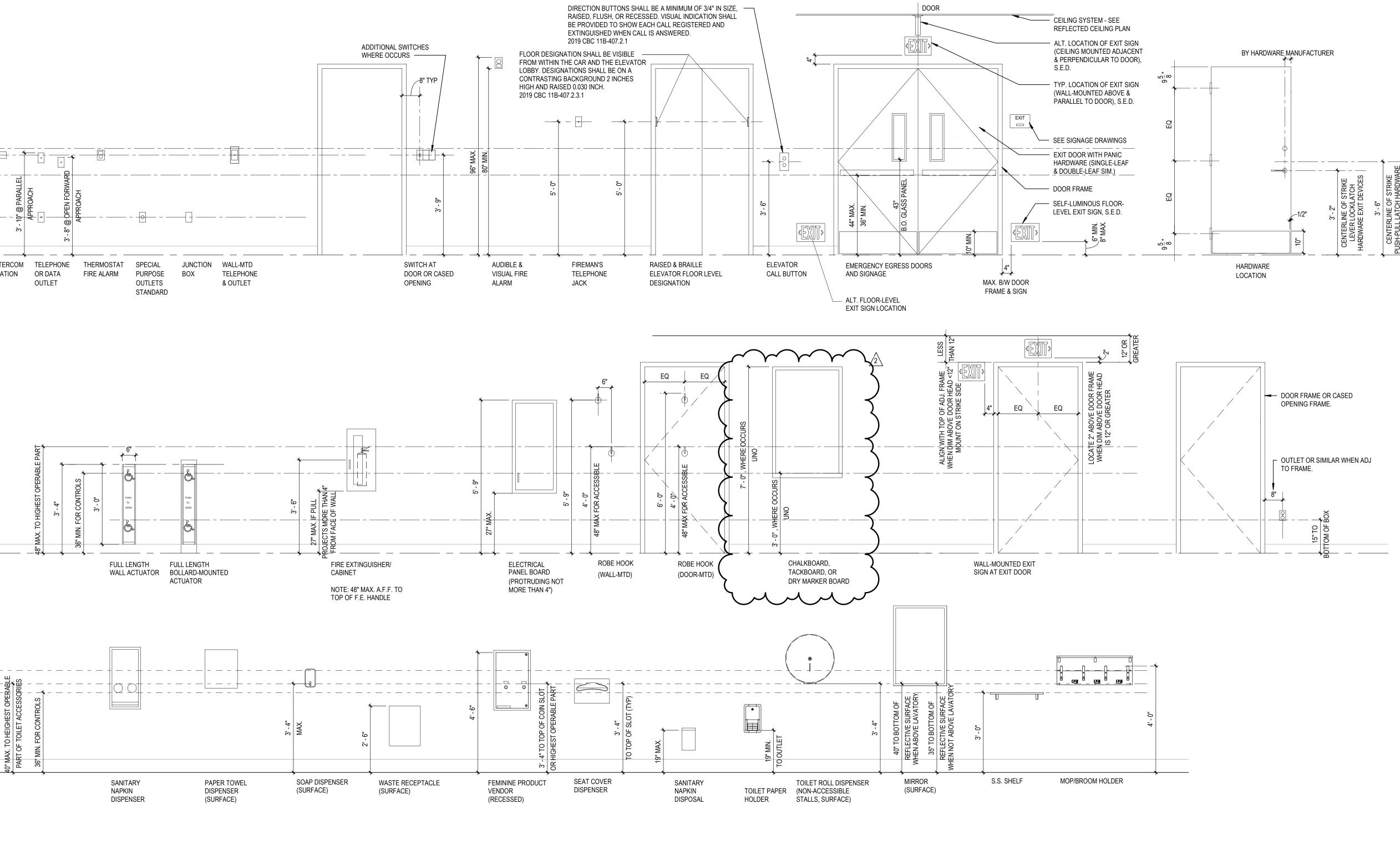


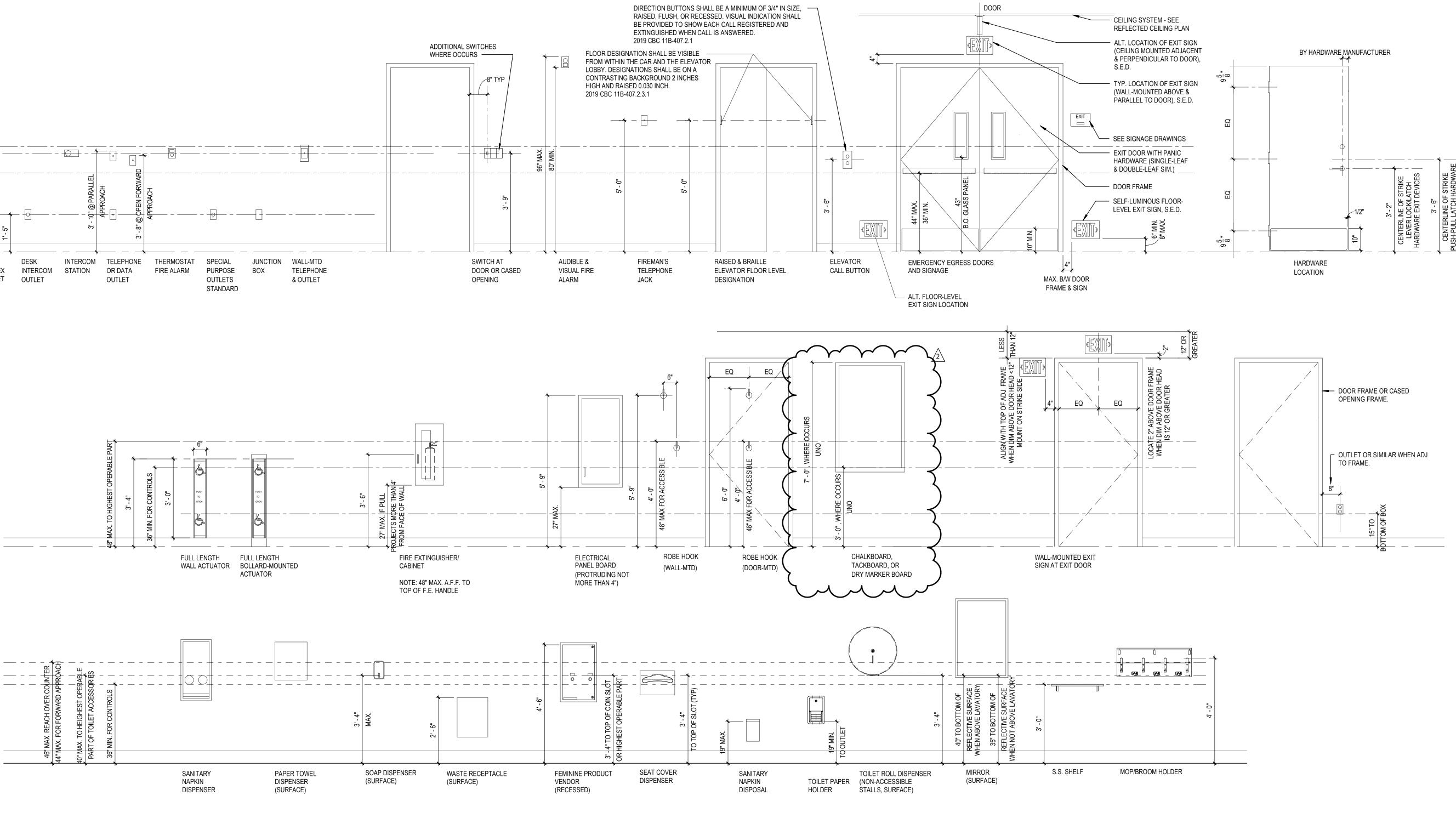


- CP3.00 SCALE: 1/4" = 1'-0"









INFORMATION. 9. MOUNTING HEIGHTS, DIMENSIONS, CLEARANCES, AND ACCESS REQUIREMENTS FOR TOILET ACCESSORIES SHOWN ON THIS SHEET ARE BASED UPON SPECIFIC MANUFACTURERS AND MODELS AS INDICATED BY THE "TOILET ACCESSORY SCHEDULE." WHEN SIMILAR ACCESSORIES OF OTHER SPECIFIED AND ACCEPTABLE MANUFACTURERS (IF ANY) ARE UTILIZED, MOUNTING HEIGHTS, DIMENSIONS, CLEARANCES, AND ACCESS REQUIREMENTS OF THE SIMILAR ACCESSORIES MAY

FUNCTIONAL DESIGN INTENT ILLUSTRATED BY THAT SHOWN ON THE DRAWINGS.

8. TYPICAL MOUNTING CONFIGURATIONS FOR ADDITIONAL GROUPINGS NOT SHOWN ON THIS SHEET MAY BE SHOWN ON OTHER SHEETS. REFER TO THE INDEX OF DRAWINGS FOR ADDITIONAL

7. MOUNTING CONFIGURATION DIAGRAMS ARE ELEVATIONS WHICH ILLUSTRATE TYPICAL RULES GOVERNING THE RELATIONSHIPS BETWEEN, AND PLACEMENT OF, ITEMS WHICH OCCUR IN GROUPS OF RELATED ITEMS (SUCH AS TOILET ACCESSORIES) OR IN CLOSE PROXIMITY TO OTHER PARTS OF THE WORK (SUCH AS SWITCHES AND DOOR FRAMES). UNLESS OTHER MOUNTING CONFIGURATIONS ARE SPECIFICALLY NOTED, DIMENSIONED, OR ELEVATED, THE TYPICAL RELATIONSHIPS, ARRANGEMENTS, AND DIMENSIONS SHOWN BY THE TYPICAL CONFIGURATION DIAGRAMS APPLY THROUGHOUT THE WORK OF THIS PROJECT.

6. TYPICAL MOUNTING HEIGHTS FOR ADDITIONAL ITEMS NOT SHOWN ON THIS SHEET MAY BE ILLUSTRATED BY OTHER SHEETS. REFER TO THE INDEX OF DRAWINGS FOR ADDITIONAL INFORMATION.

5. FOR ADDITIONAL INFORMATION REGARDING THE PRECEDENCE OF DRAWINGS FOR DETERMINING THE EXACT LOCATION OF EACH EXPOSED PART OF THE WORK, REFER TO THE "ARCHITECTURAL GENERAL NOTES" AND TO THE "TYP RULES FOR DETERMINING MOUNTING HEIGHTS AND LOCATIONS" - SEE THE INDEX OF DRAWINGS FOR SHEET NUMBERS.

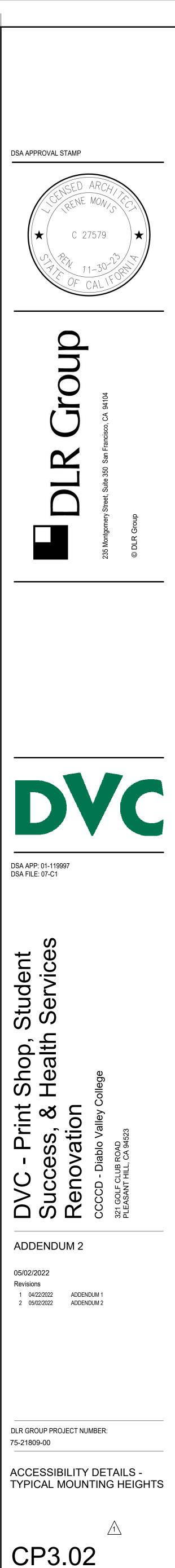
MECHANICAL TRADES. 4. SPECIAL OR NON-TYPICAL MOUNTING HEIGHTS OCCUR ONLY WHERE INDICATED BY ANNOTATED SYMBOLS; BY KEY NOTES; BY NOTES ON PLANS, ELEVATIONS, OR DETAILS; OR BY UNIQUE DIMENSIONS ON ELEVATIONS OR DETAILS.

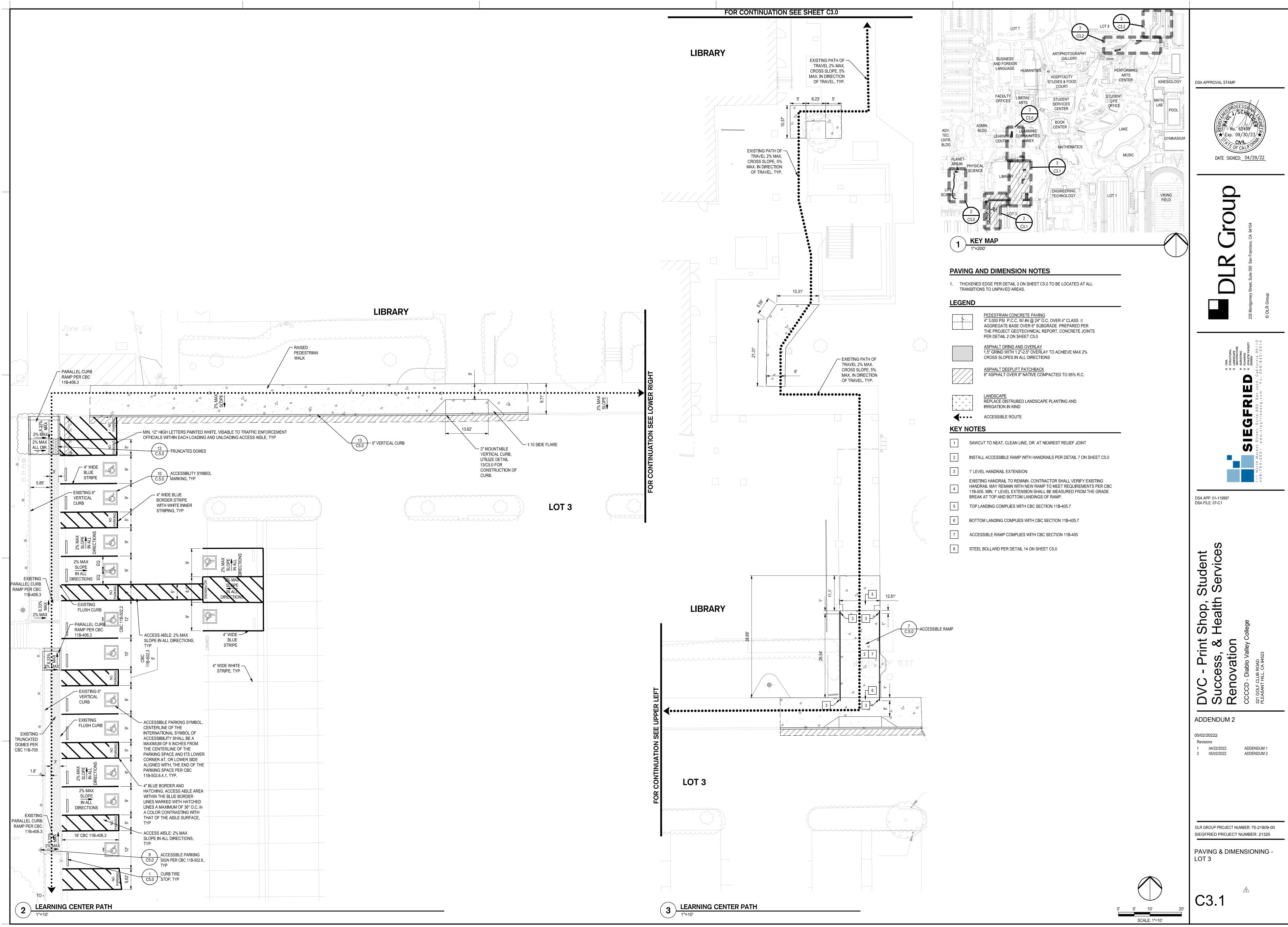
3. THE HEIGHTS, CLEARANCES, AND CONFIGURATIONS SHOWN ON THIS SHEET ARE TYPICAL AND SHALL APPLY TO ALL INSTANCES OF THE ITEM (OR GROUP OF ITEMS) SHOWN UNLESS SPECIFICALLY NOTED OR DIMENSIONED OTHERWISE. THE TYPICAL DIMENSIONS SHOWN ON THIS SHEET TAKE PRECEDENCE OVER TYPICAL DIMENSIONS SHOWN ON THE ELECTRICAL OR MECHANICAL DRAWINGS FOR THE MOUNTING OF ITEMS INSTALLED BY THE ELECTRICAL OR

CONFIGURATIONS FOR A VARIETY OF ITEMS. ATTENTION: THIS SHEET MAY ILLUSTRATE ITEMS OR CONFIGURATIONS WHICH DO NOT OCCUR AS PART OF THE WORK OF THIS PROJECT. REFER TO THE PLANS. ELEVATIONS, SECTIONS, DETAILS. AND SCHEDULES TO DETERMINE WHICH ITEMS AND CONFIGURATIONS APPLY TO THE WORK OF THIS PROJECT.

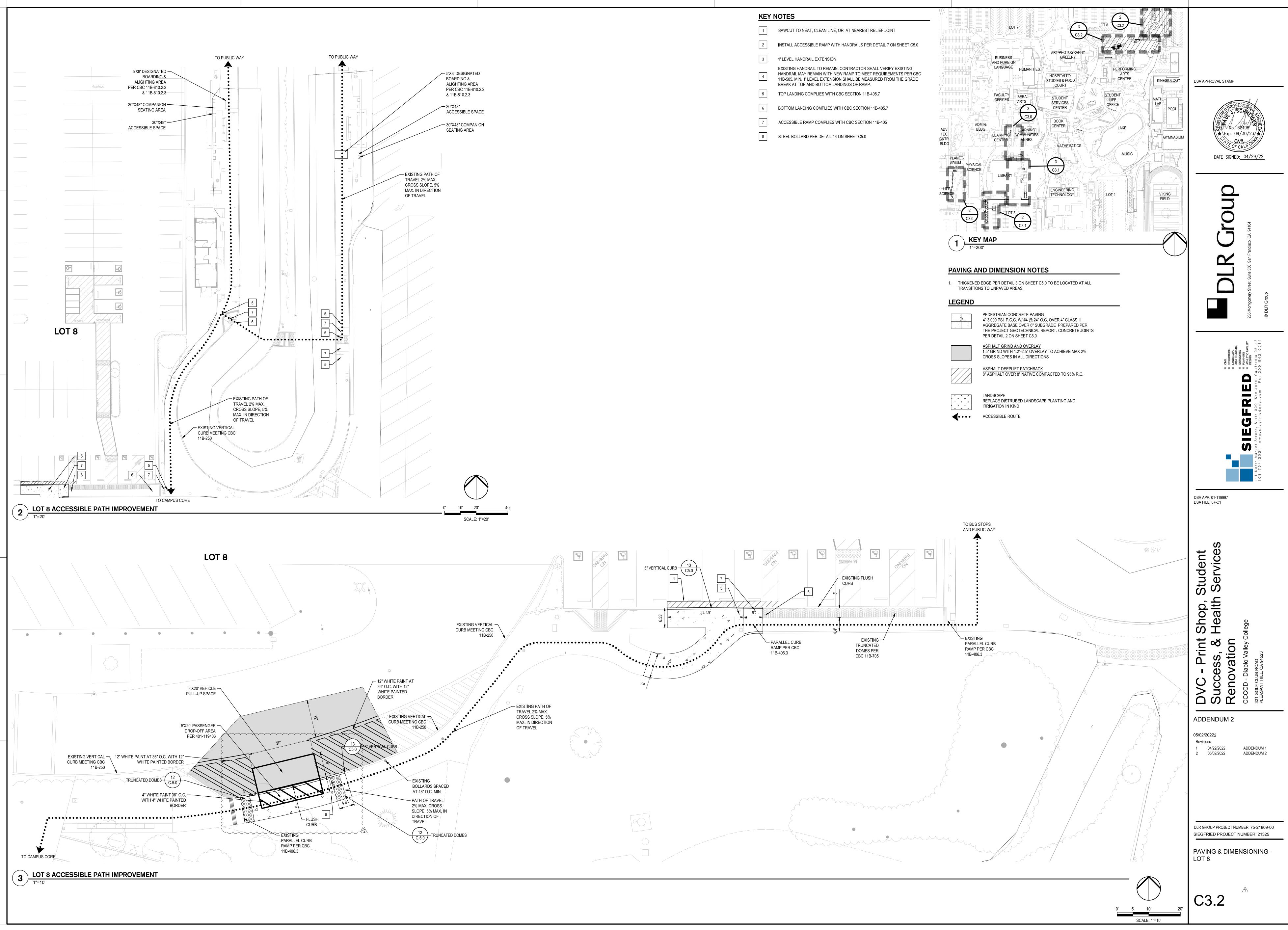
NOTES: 1. IT IS THE INTENT OF THE DESIGN THAT ALL ITEMS SHOWN MOUNTED AT TYPICAL HEIGHTS BE ACCESSIBLE TO PERSONS WITH DISABILITIES, UNLESS NOTED OTHERWISE. 2. THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE TYPICAL MOUNTING HEIGHTSAND, WHERE APPLICABLE, TYPICAL MINIMUM OR MAXIMUM CLEARANCES, AND/OR TYPICAL MOUNTING

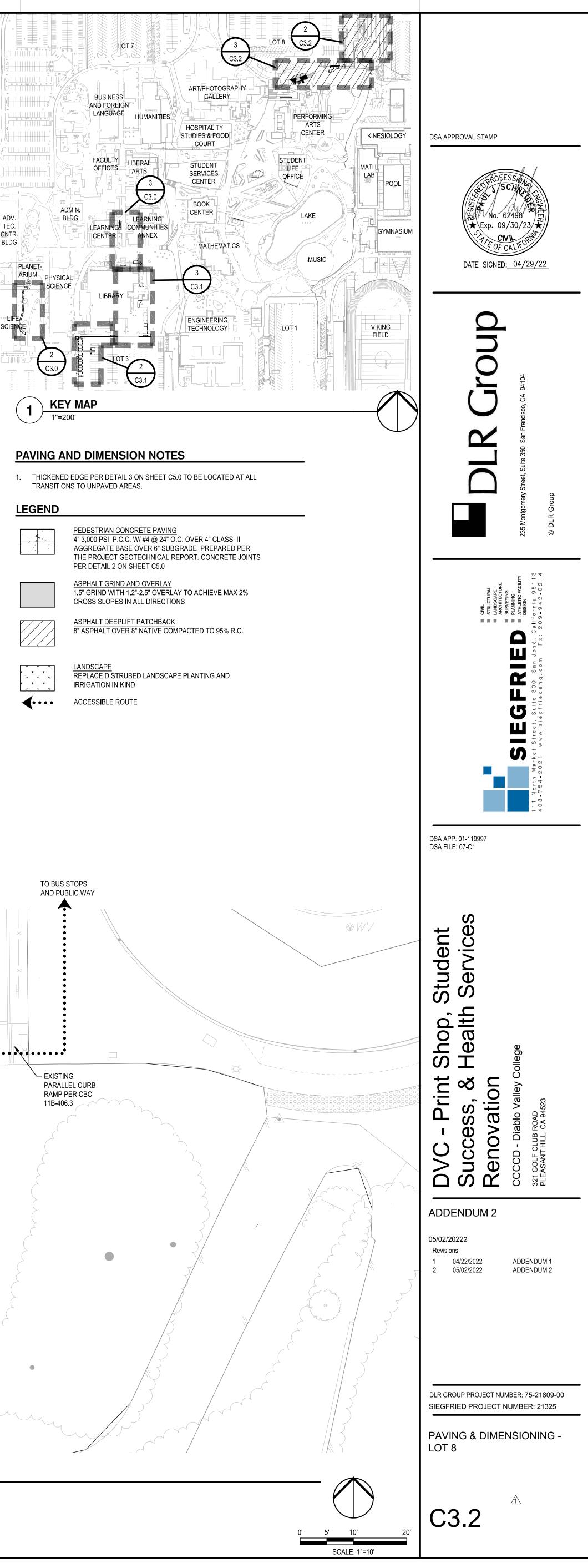
VARY FROM THOSE SHOWN. WHEN SIMILAR ACCESSORIES ARE UTILIZED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIRED TO ACHIEVE THE SAME AESTHETIC AND



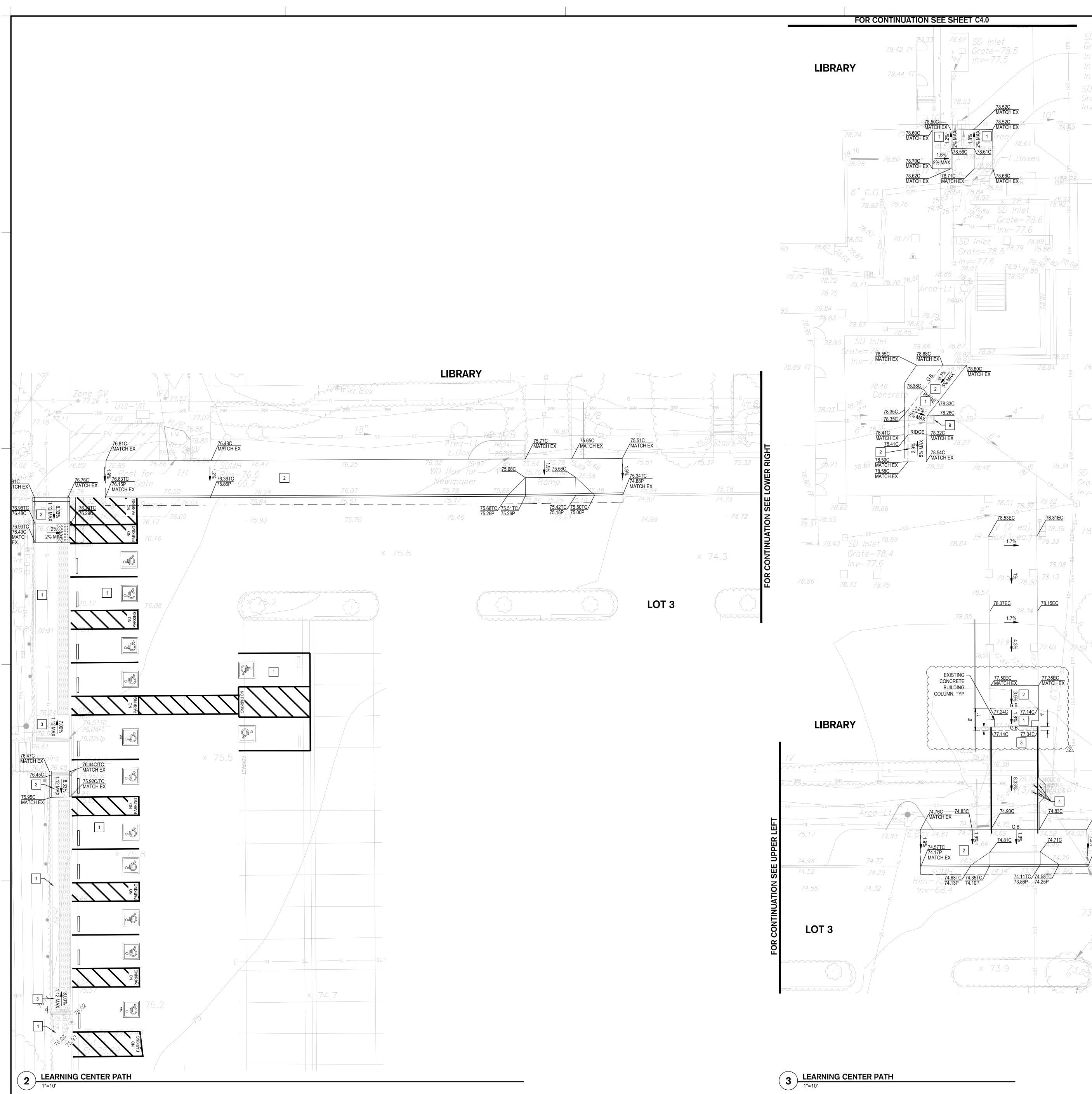


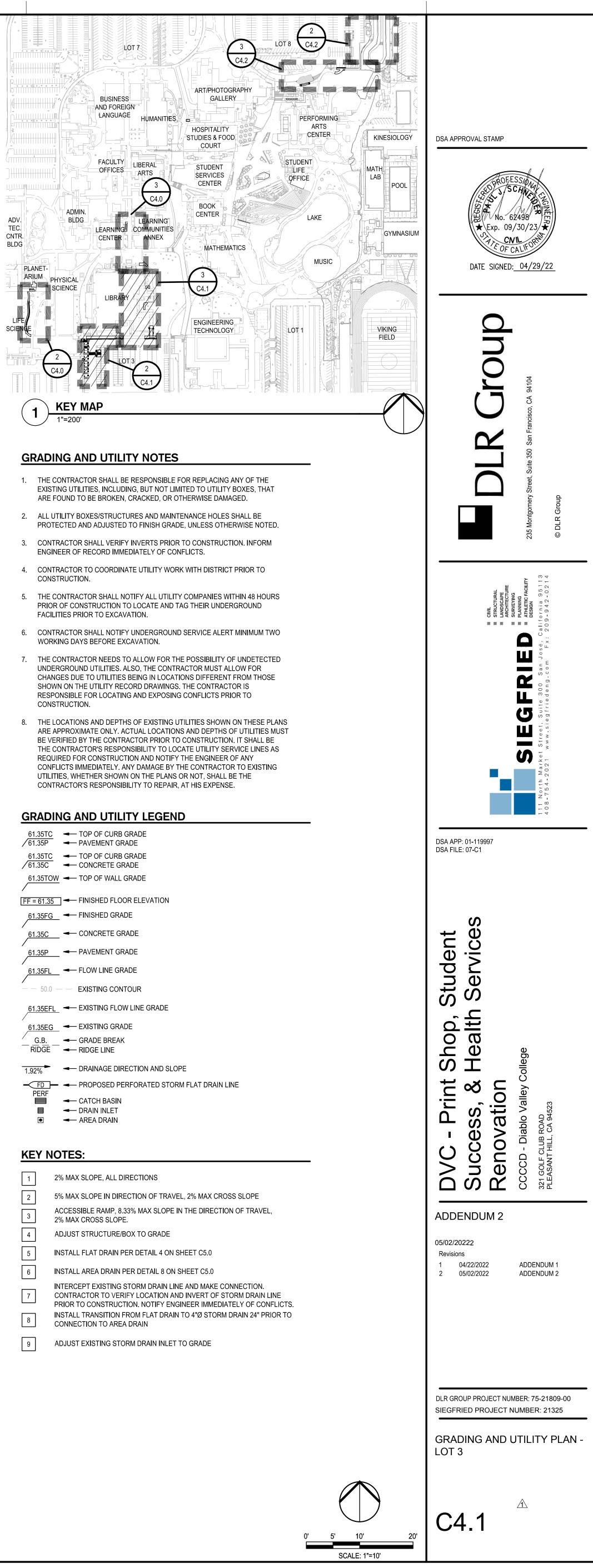
TRA	TRANSITIONS TO UNPAVED AREAS.				
LEGEND					
	PEDESTRIAN CONCRETE PAVING 4" 3,000 PSI P.C.C. W/ #4 @ 24" O.C. OVER 4" CLASS II AGGREGATE BASE OVER 6" SUBGRADE PREPARED PER THE PROJECT GEOTECHNICAL REPORT. CONCRETE JOINTS PER DETAIL 2 ON SHEET C5.0				
	ASPHALT GRIND AND OVERLAY 1.5" GRIND WITH 1.2"-2.5" OVERLAY TO ACHIEVE MAX 2% CROSS SLOPES IN ALL DIRECTIONS				
	ASPHALT DEEPLIFT PATCHBACK 8" ASPHALT OVER 8" NATIVE COMPACTED TO 95% R.C.				
* * V * * V * * V	LANDSCAPE REPLACE DISTRUBED LANDSCAPE PLANTING AND IRRIGATION IN KIND				
∢ …	• • ACCESSIBLE ROUTE				
KEY N	NOTES				
1	SAWCUT TO NEAT, CLEAN LINE, OR AT NEAREST RELIEF JOINT				
2	INSTALL ACCESSIBLE RAMP WITH HANDRAILS PER DETAIL 7 ON SHEET C5.0				
3	1' LEVEL HANDRAIL EXTENSION				
4	EXISTING HANDRAIL TO REMAIN. CONTRACTOR SHALL VERIFY EXISTING HANDRAIL MAY REMAIN WITH NEW RAMP TO MEET REQUIREMENTS PER CBC 11B-505. MIN. 1' LEVEL EXTENSION SHALL BE MEASURED FROM THE GRADE				





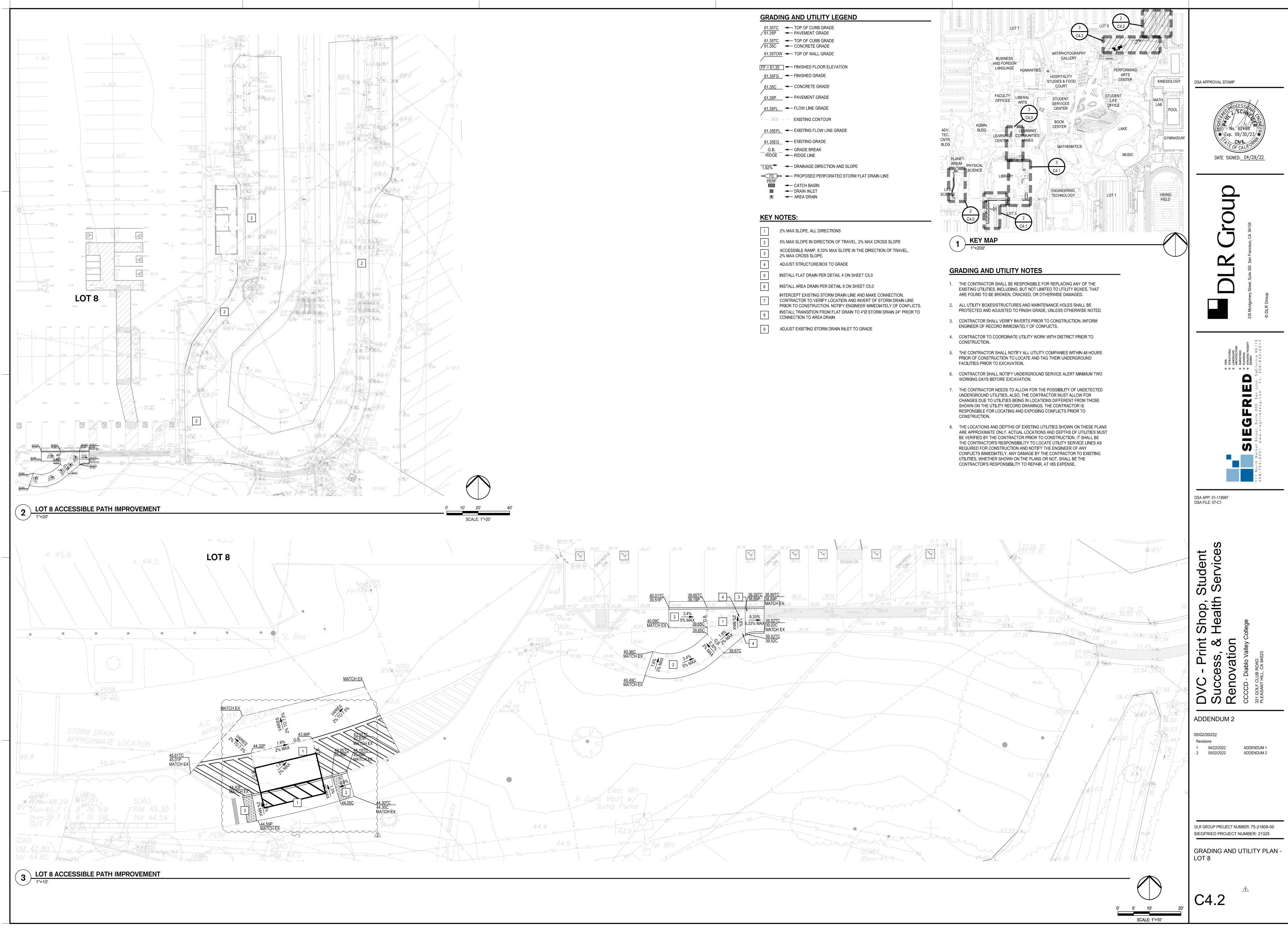
TRANSITIONS TO UNPAVED AREAS.			
LEGEND			
	PEDESTRIAN CONCRETE PAVING 4" 3,000 PSI P.C.C. W/ #4 @ 24" O.C. OVER 4" CLASS II AGGREGATE BASE OVER 6" SUBGRADE PREPARED PER THE PROJECT GEOTECHNICAL REPORT. CONCRETE JOINTS PER DETAIL 2 ON SHEET C5.0		
	ASPHALT GRIND AND OVERLAY 1.5" GRIND WITH 1.2"-2.5" OVERLAY TO ACHIEVE MAX 2% CROSS SLOPES IN ALL DIRECTIONS		
	ASPHALT DEEPLIFT PATCHBACK 8" ASPHALT OVER 8" NATIVE COMPACTED TO 95% R.C.		
* * * * * * * * * * * *	LANDSCAPE REPLACE DISTRUBED LANDSCAPE PLANTING AND IRRIGATION IN KIND ACCESSIBLE ROUTE		
4	AUUESSIDLE RUUTE		





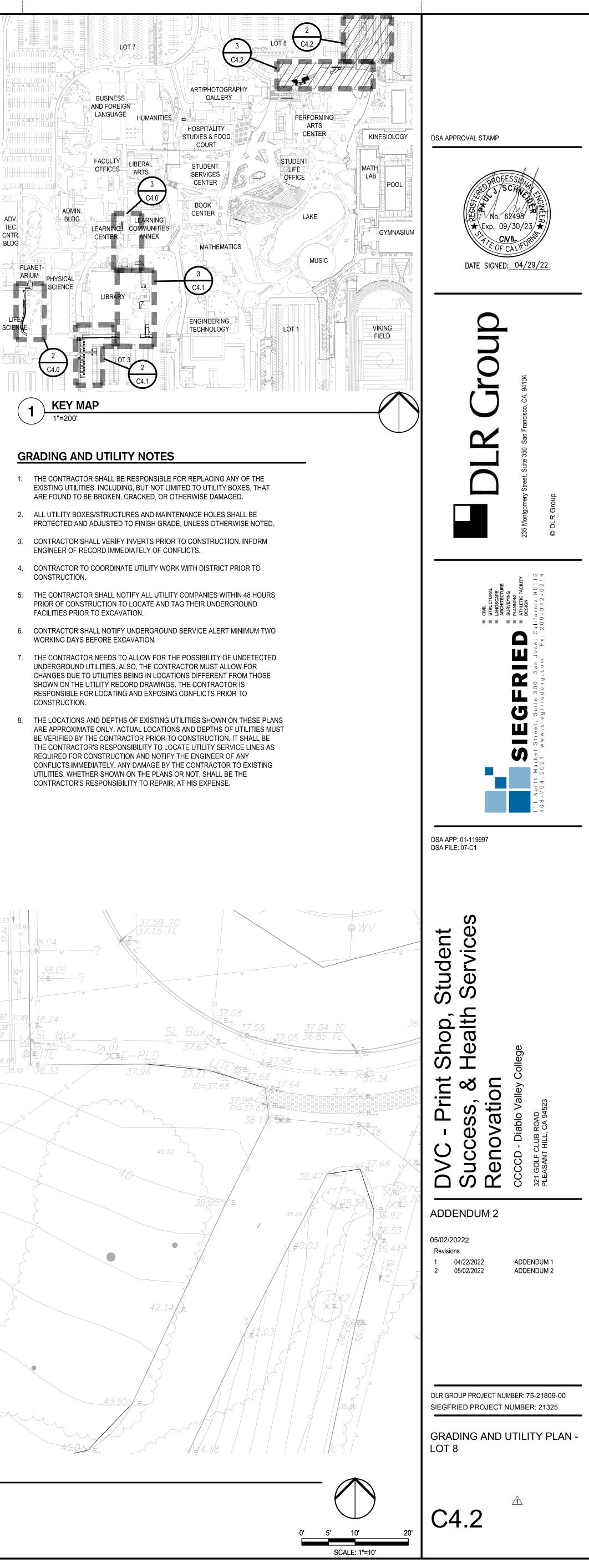
61.35TC
FF = 61.35 - FINISHED FLOOR ELEVATION
61.35FG - FINISHED GRADE
61.35C CONCRETE GRADE
61.35P PAVEMENT GRADE
61.35FL - FLOW LINE GRADE
50.0 — EXISTING CONTOUR
61.35EFL - EXISTING FLOW LINE GRADE
61.35EG - EXISTING GRADE
G.B GRADE BREAK
1.92% - DRAINAGE DIRECTION AND SLOPE
FD PROPOSED PERFORATED STORM FLAT DRAIN LINE PERF
CATCH BASIN
 DRAIN INLET AREA DRAIN

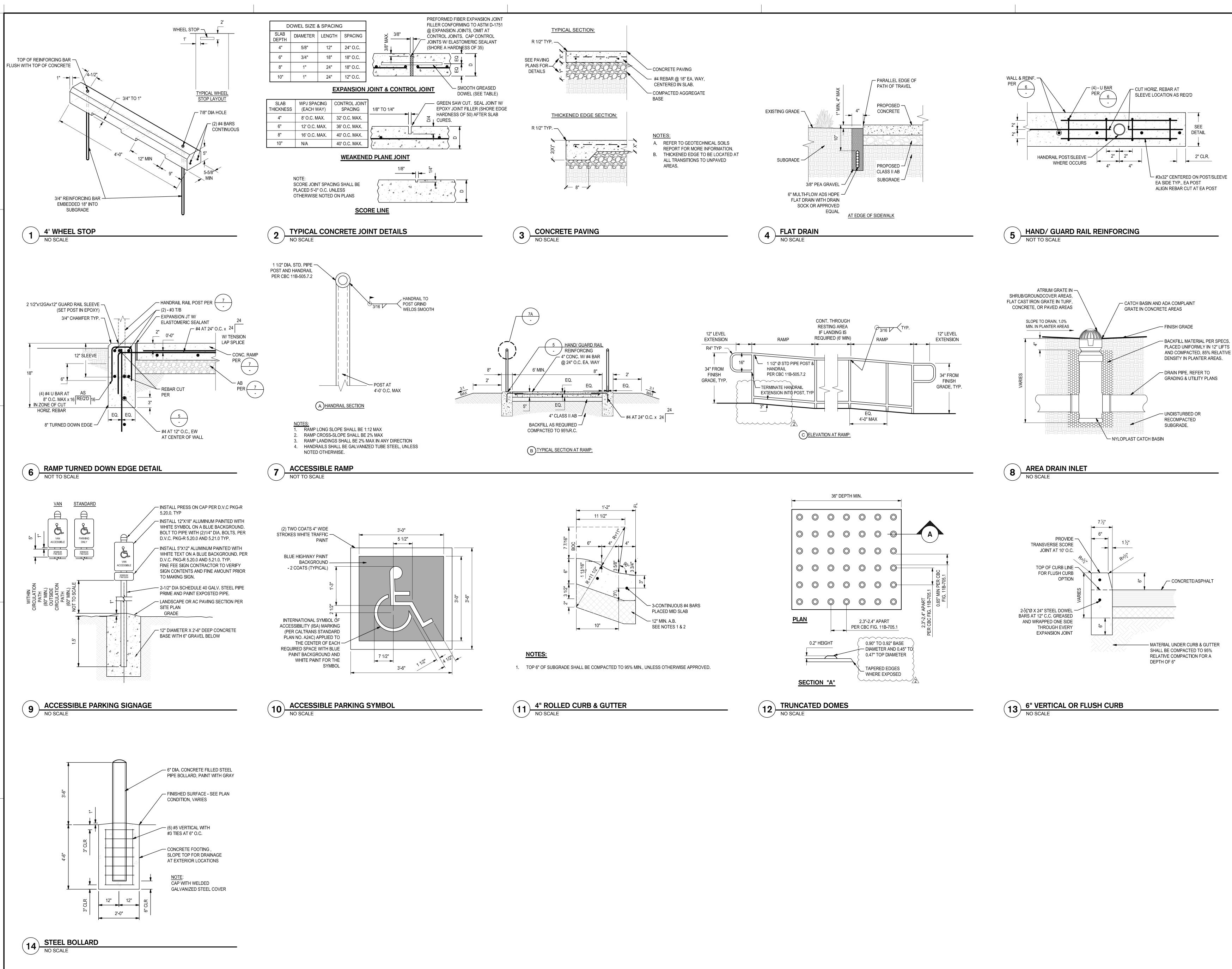
_	
1	2% MAX SLOPE, ALL DIRECTIONS
2	5% MAX SLOPE IN DIRECTION OF TRAVEL, 2% MAX CROSS SLOPE
3	ACCESSIBLE RAMP, 8.33% MAX SLOPE IN THE DIRECTION OF TRAVEL, 2% MAX CROSS SLOPE.
4	ADJUST STRUCTURE/BOX TO GRADE
5	INSTALL FLAT DRAIN PER DETAIL 4 ON SHEET C5.0
6	INSTALL AREA DRAIN PER DETAIL 8 ON SHEET C5.0
7	INTERCEPT EXISTING STORM DRAIN LINE AND MAKE CONNECTION. CONTRACTOR TO VERIFY LOCATION AND INVERT OF STORM DRAIN LINE PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF CONFLICT
8	INSTALL TRANSITION FROM FLAT DRAIN TO 4"Ø STORM DRAIN 24" PRIOR T CONNECTION TO AREA DRAIN
9	ADJUST EXISTING STORM DRAIN INLET TO GRADE



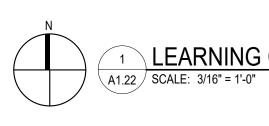
61.35TC / 61.35P	 TOP OF CURB GRADE PAVEMENT GRADE
61.35TC ⁄61.35C	 TOP OF CURB GRADE CONCRETE GRADE
61.35TOW	TOP OF WALL GRADE
FF = 61.35	FINISHED FLOOR ELEVATION
61.35FG	- FINISHED GRADE
<u>61.35C</u>	- CONCRETE GRADE
61.35P	- PAVEMENT GRADE
61.35FL	- FLOW LINE GRADE
50.0 -	EXISTING CONTOUR
61.35EFL	- EXISTING FLOW LINE GRADE
61.35EG	- EXISTING GRADE
G.B.	- GRADE BREAK
RIDGE	
1.92%	- DRAINAGE DIRECTION AND SLOPE
	PROPOSED PERFORATED STORM FLAT DRAIN LINE
PERF	- CATCH BASIN

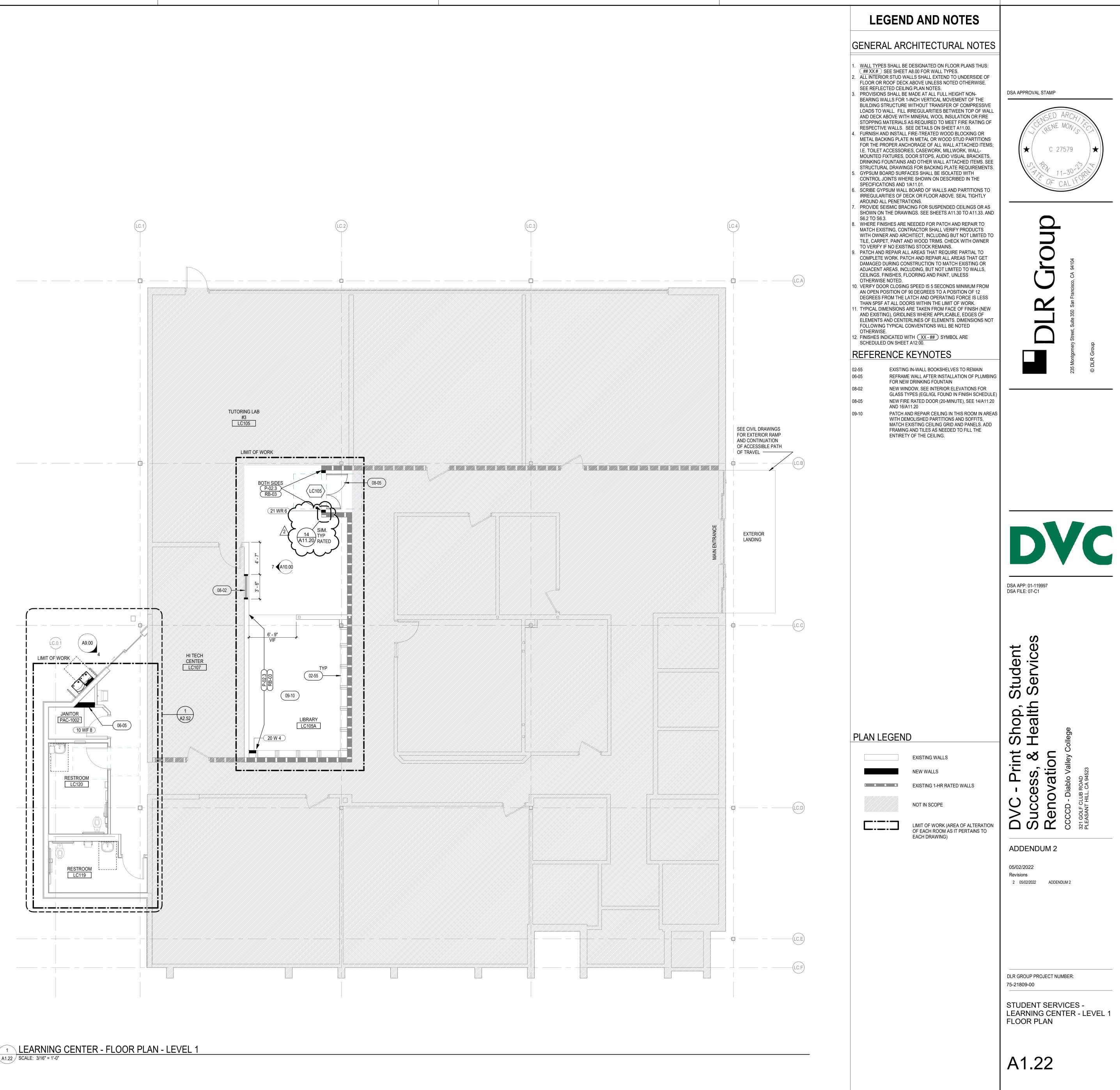
1	2% MAX SLOPE, ALL DIRECTIONS
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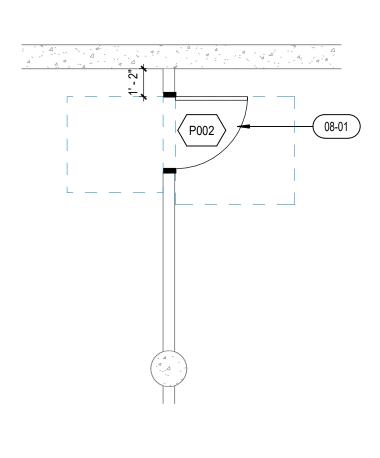




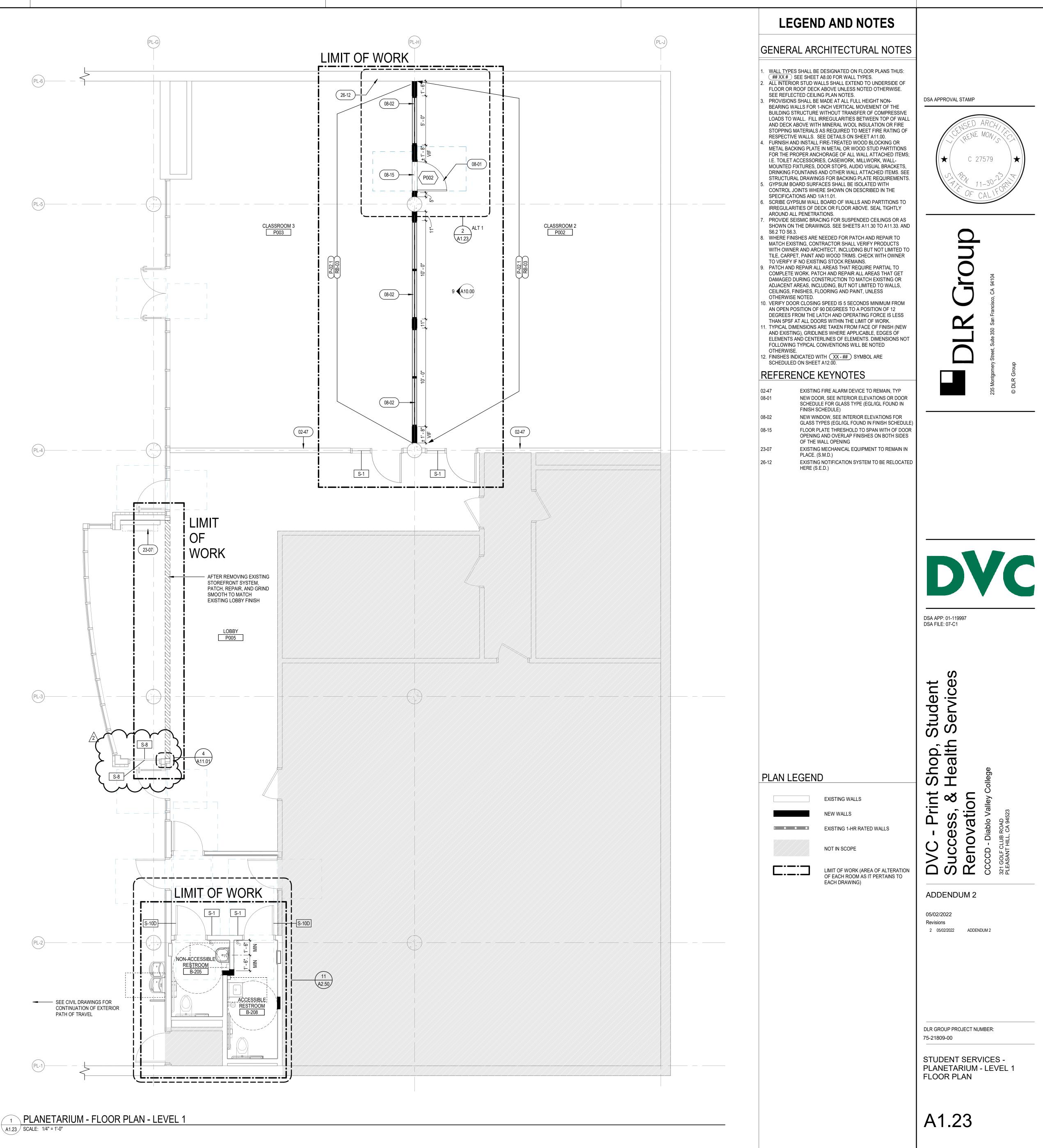






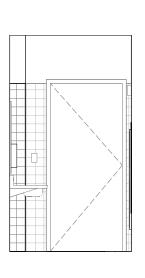


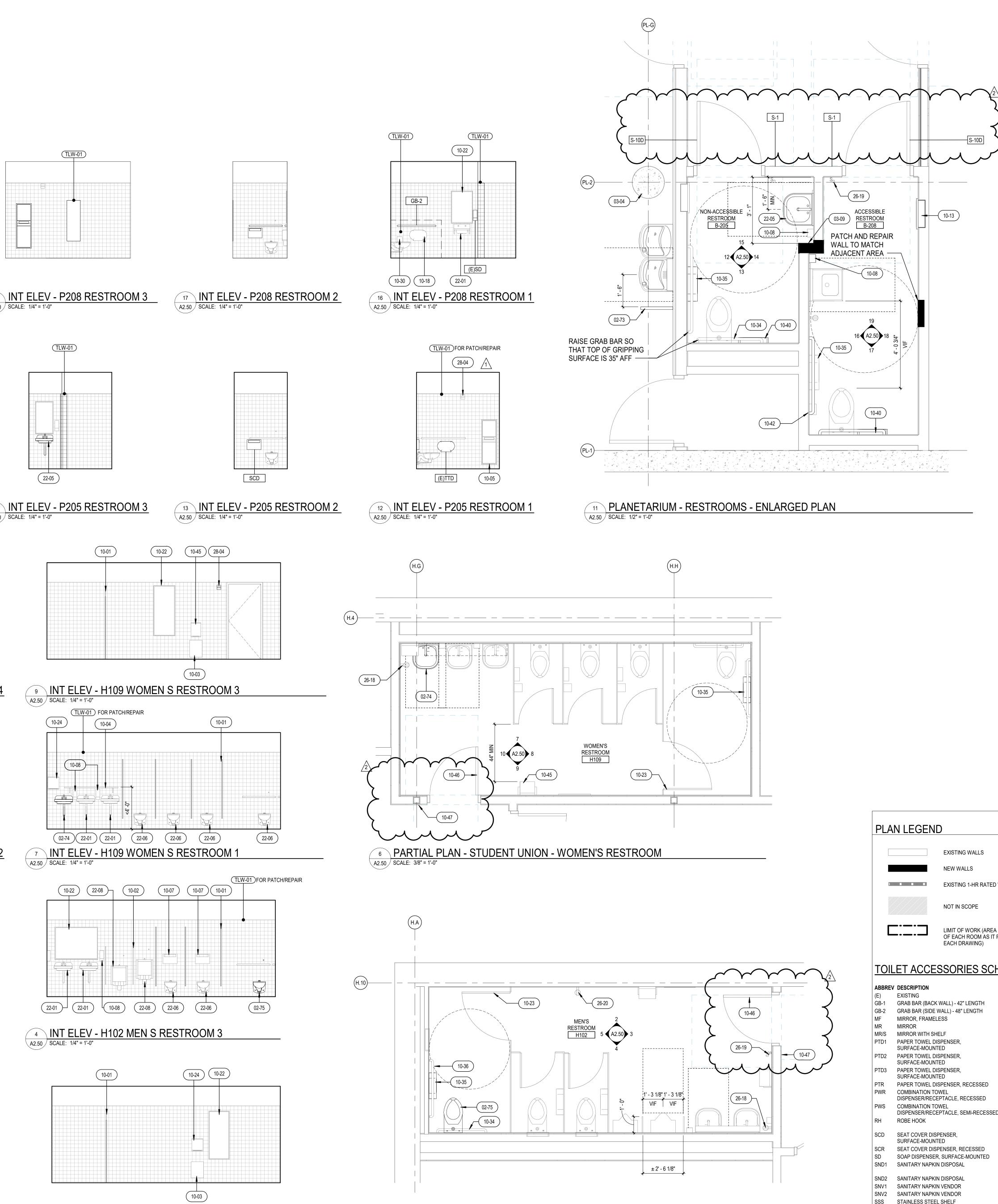
2 PLANETARIUM - CLASSROOM - PARTIAL PLAN - ALT 1 A1.23 SCALE: 1/4" = 1'-0"



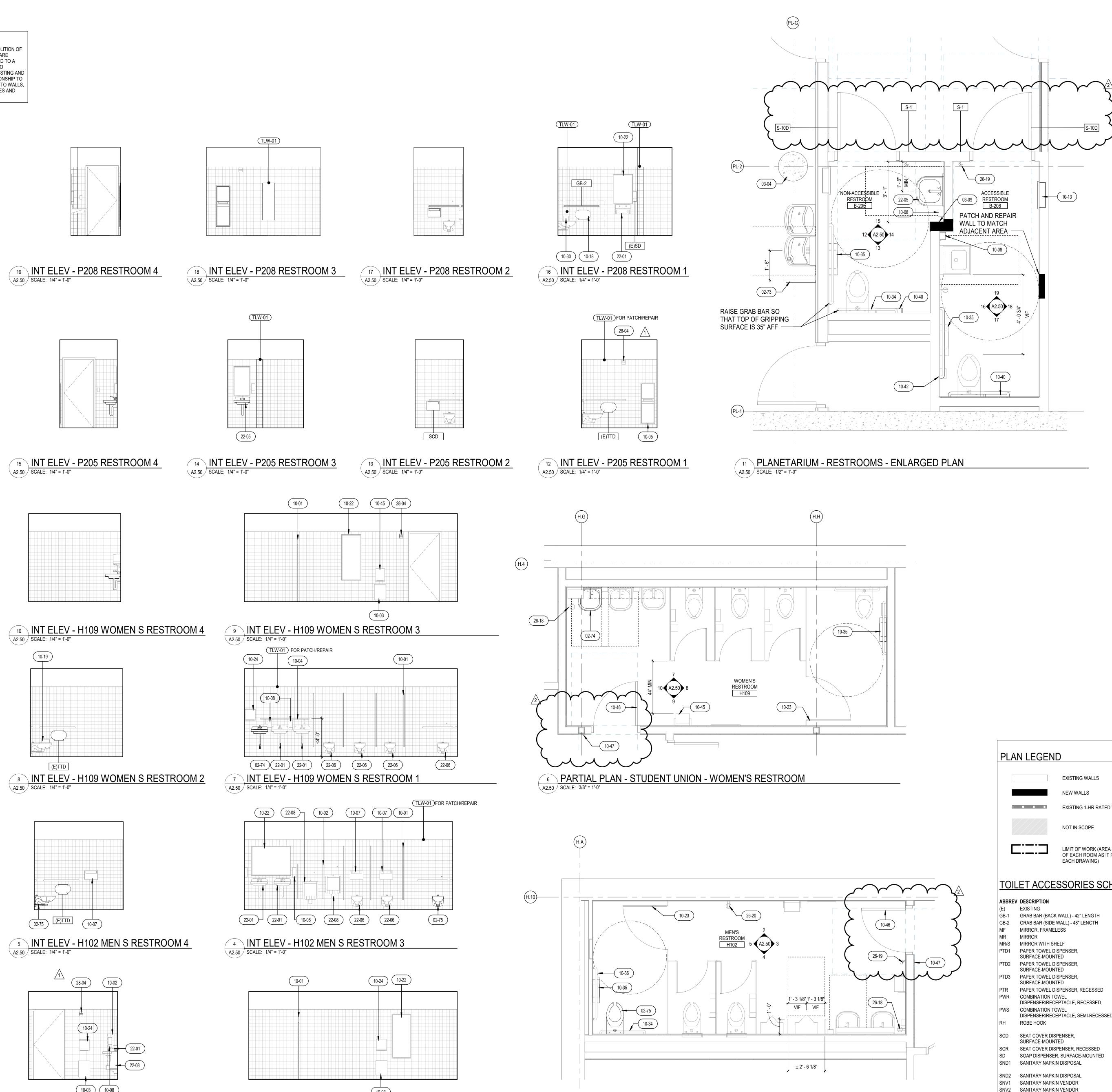


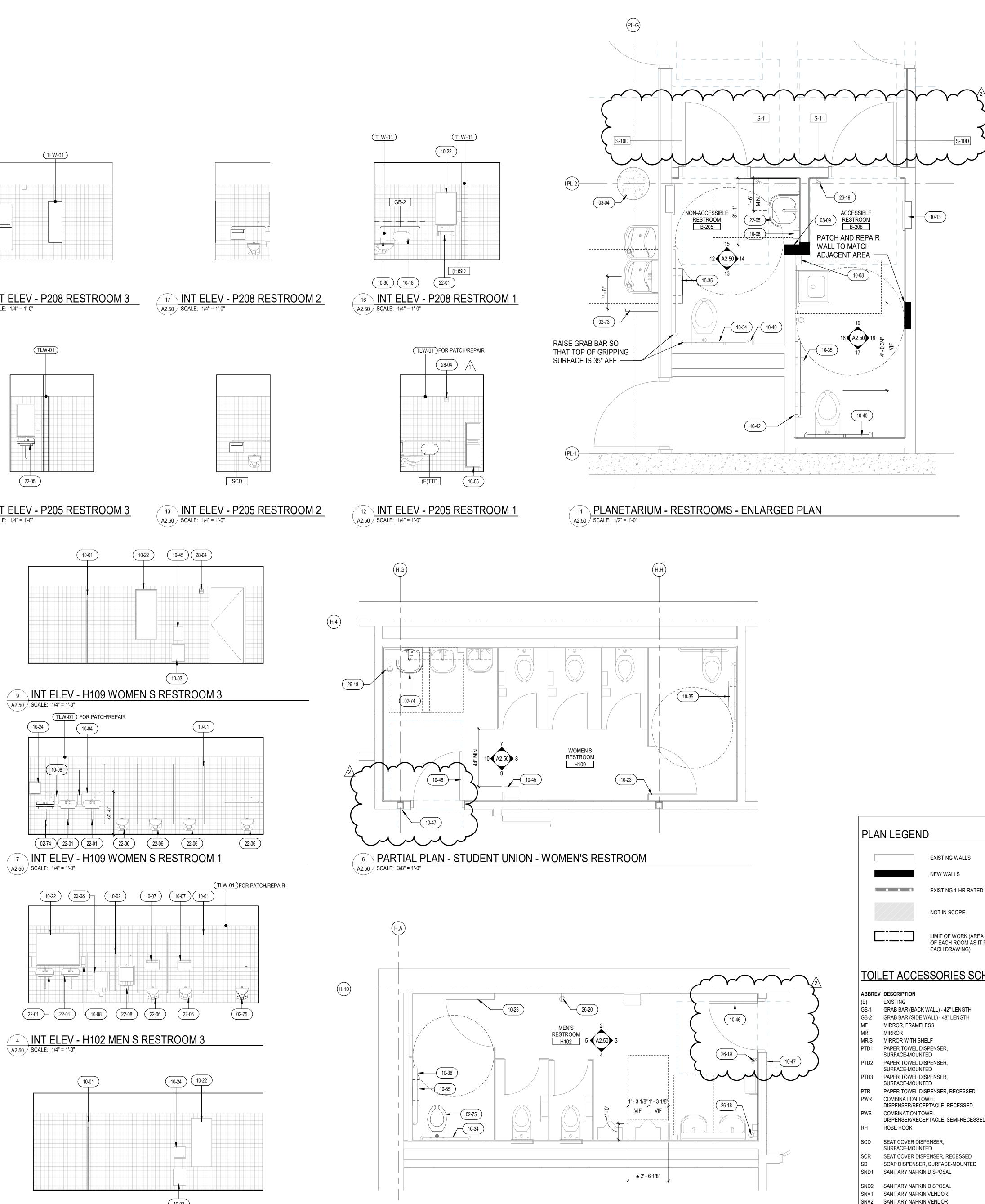
AT RESTROOMS, WHEN MODIFICATIONS OR DEMOLITION OF WALL FRAMING AND/OR WALL & FLOOR FINISHES ARE REQUIRED, THE PATCH AND REPAIR SHALL EXTEND TO A DATUM POINT ESTABLISHED BY THE ARCHITECT TO TERMINATE FINISHES. BOUNDARIES BETWEEN EXISTING AND NEW FINISHES SHALL BE ESTABLISHED IN RELATIONSHIP TO NEARBY ELEMENTS, INCLUDING BUT NOT LIMITED TO WALLS, RESTROOM PARTITIONS, RESTROOM ACCESSORIES AND EXISTING FINISH EXTENTS.





19 INT ELEV - P208 RESTROOM 4 A2.50 SCALE: 1/4" = 1'-0"



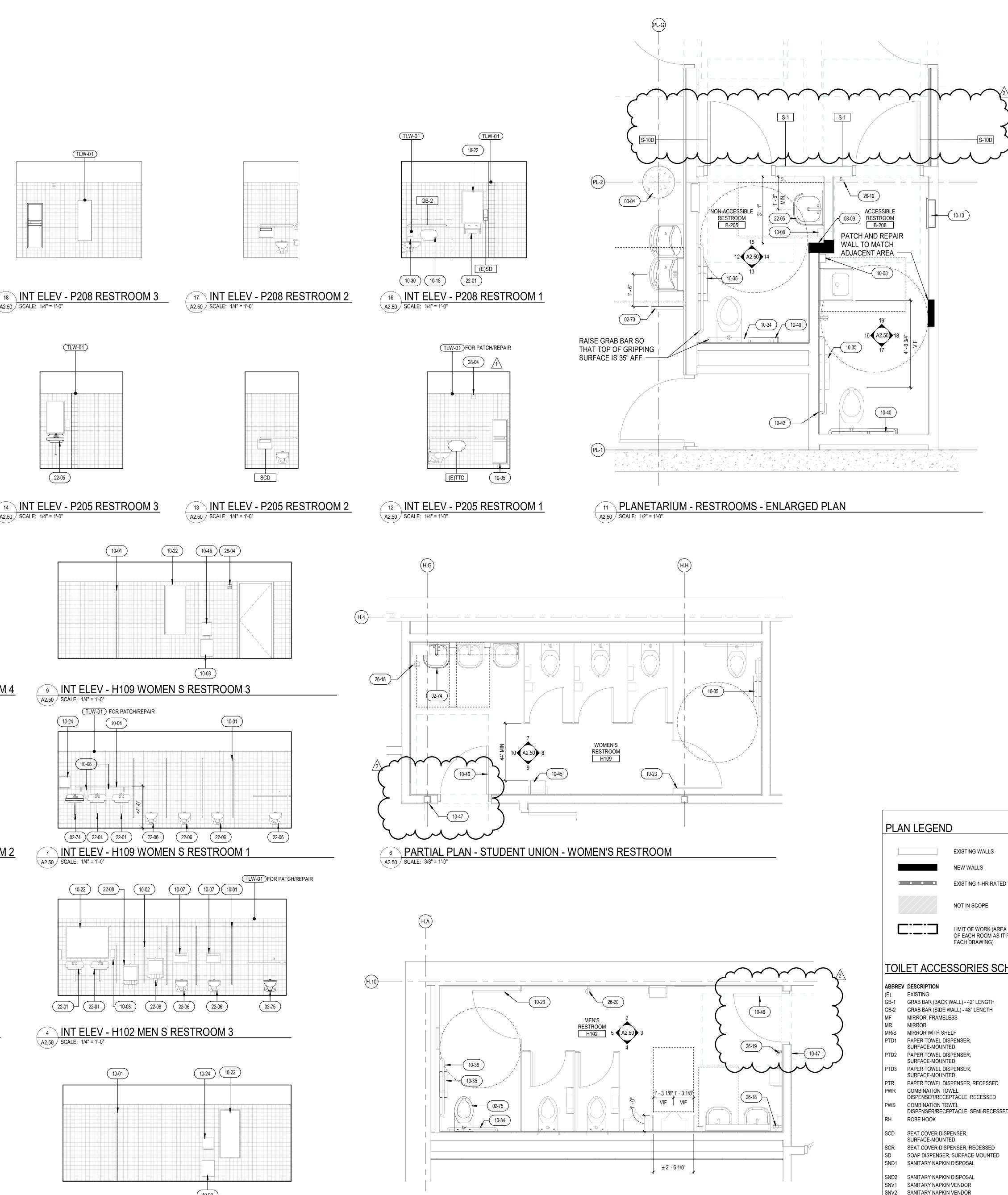


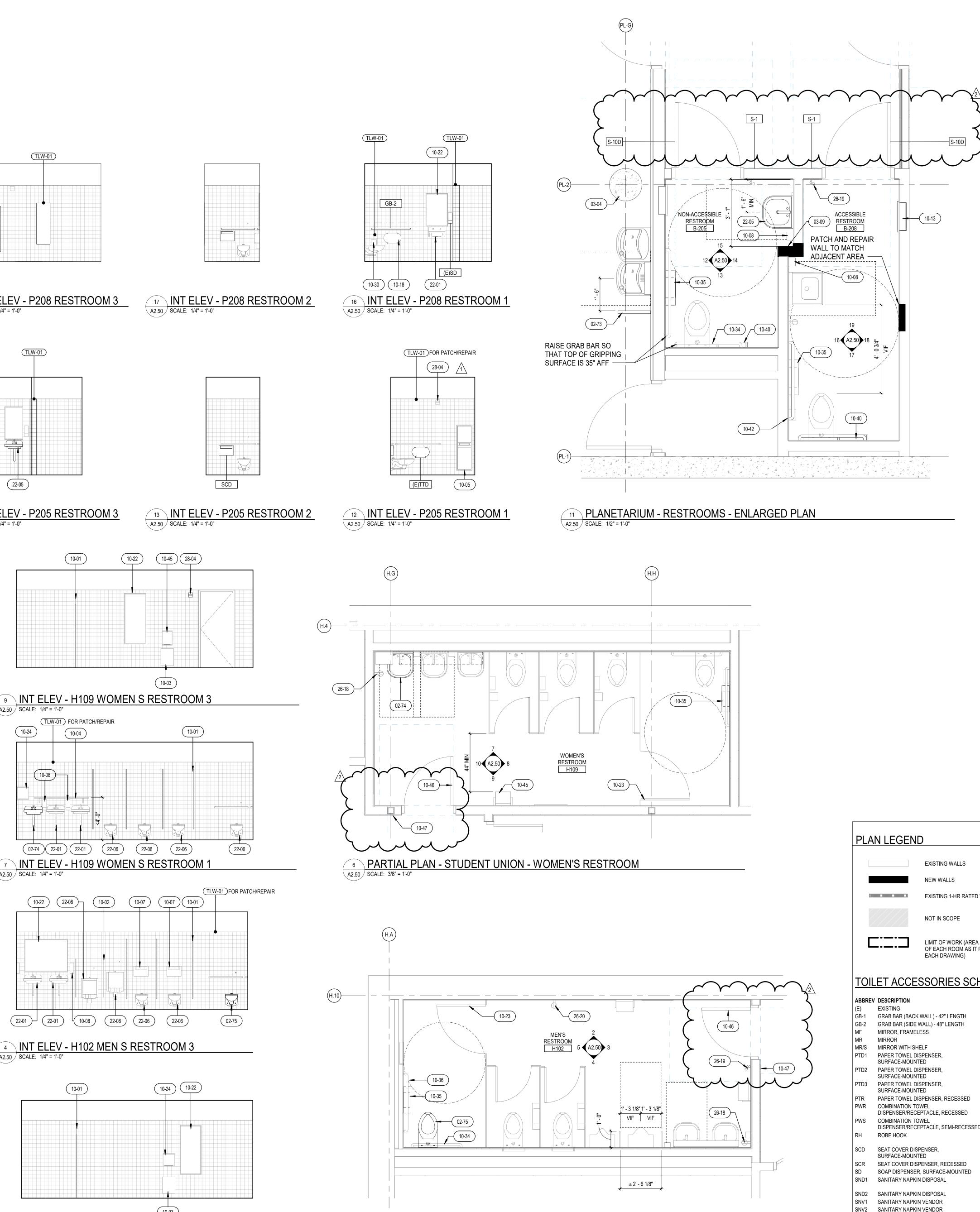
15 INT ELEV - P205 RESTROOM 4 A2.50 SCALE: 1/4" = 1'-0"

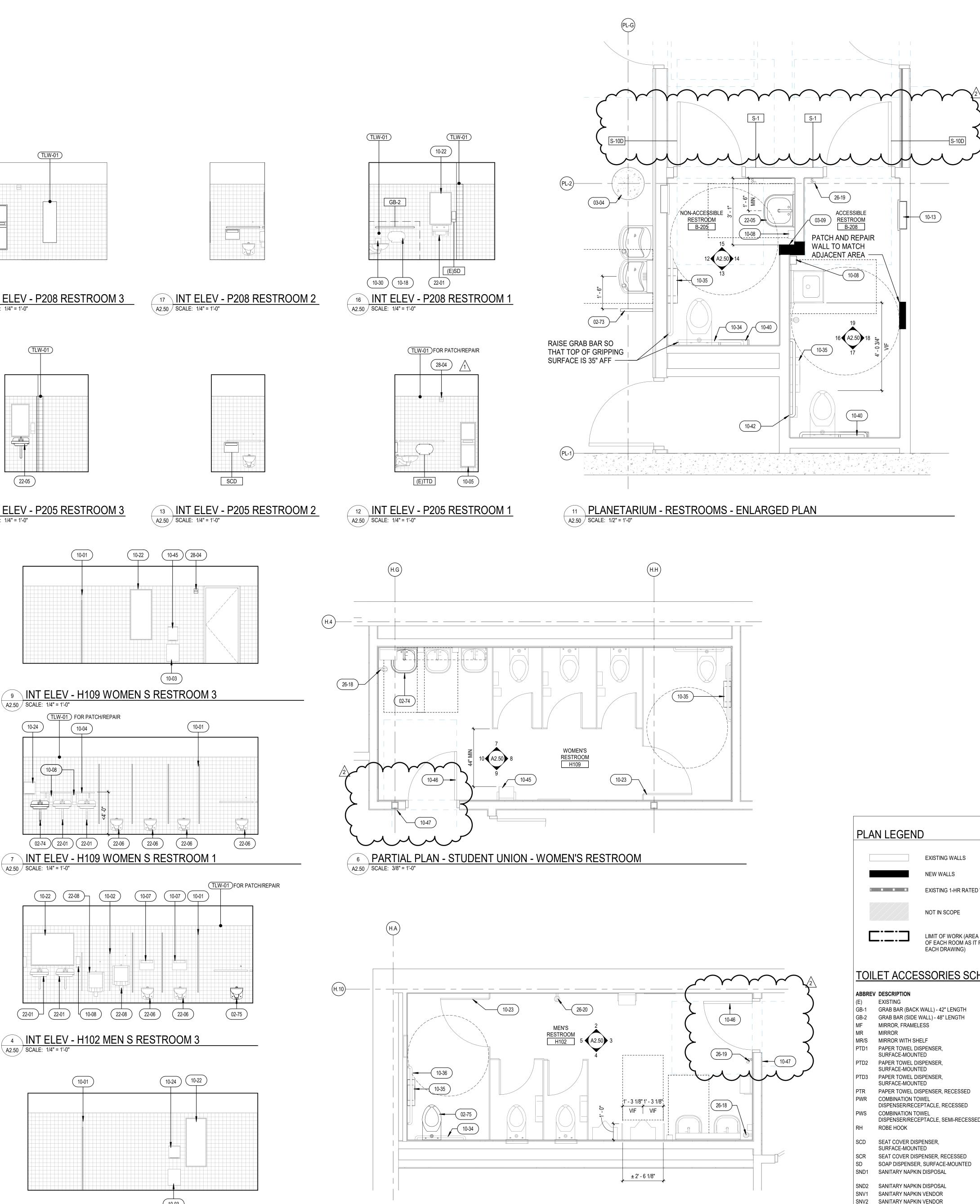
10-19

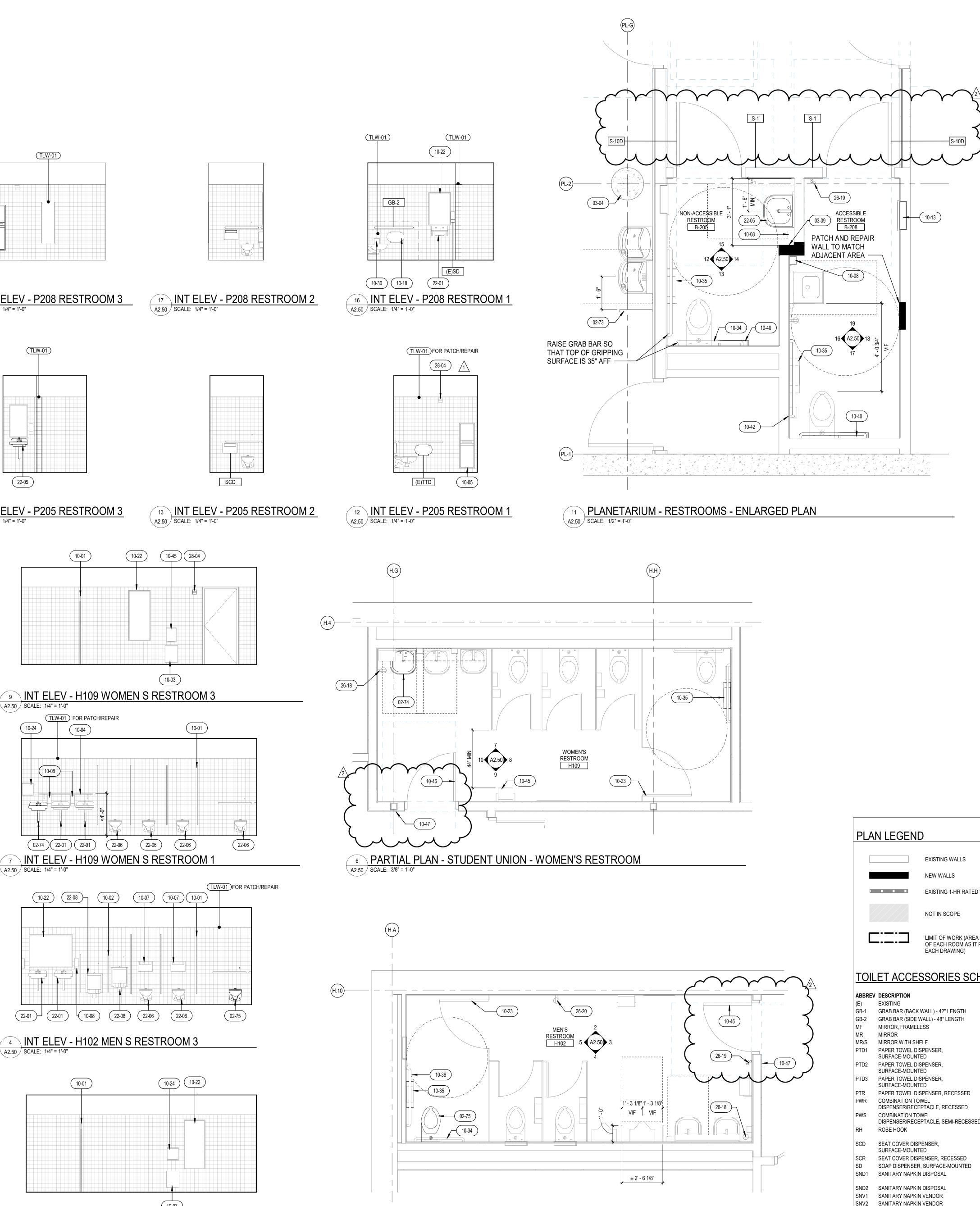
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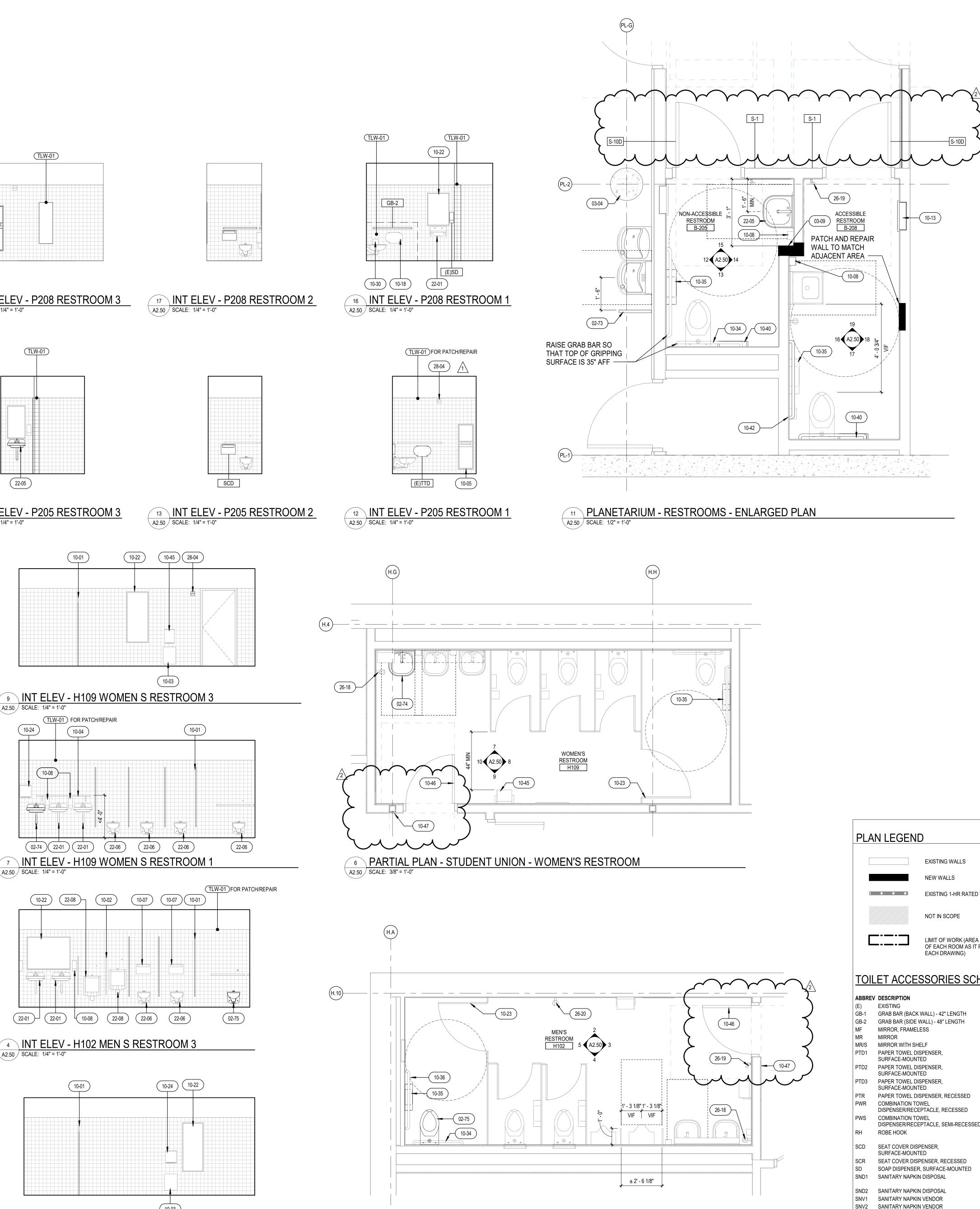
02-75 (E)TTD

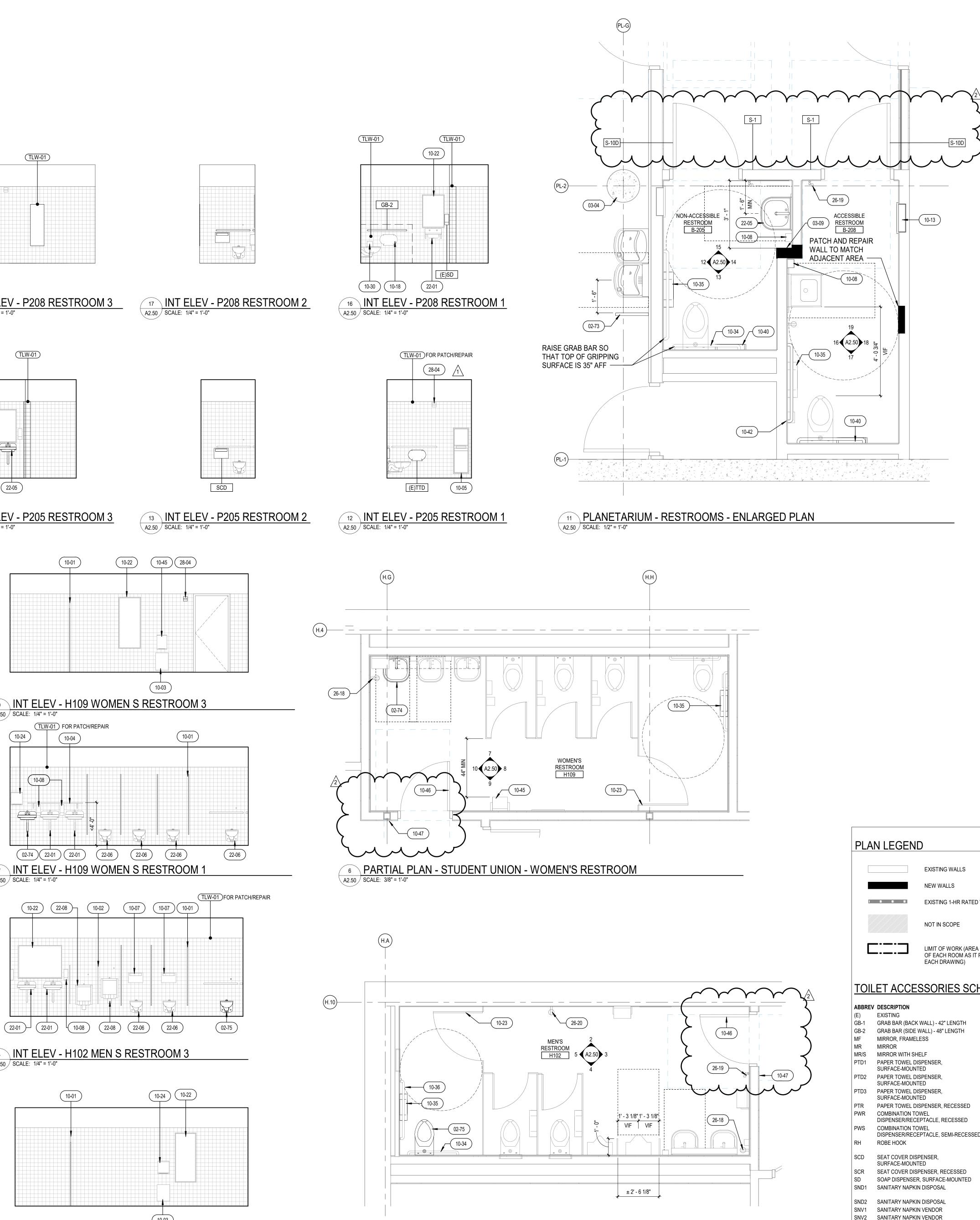


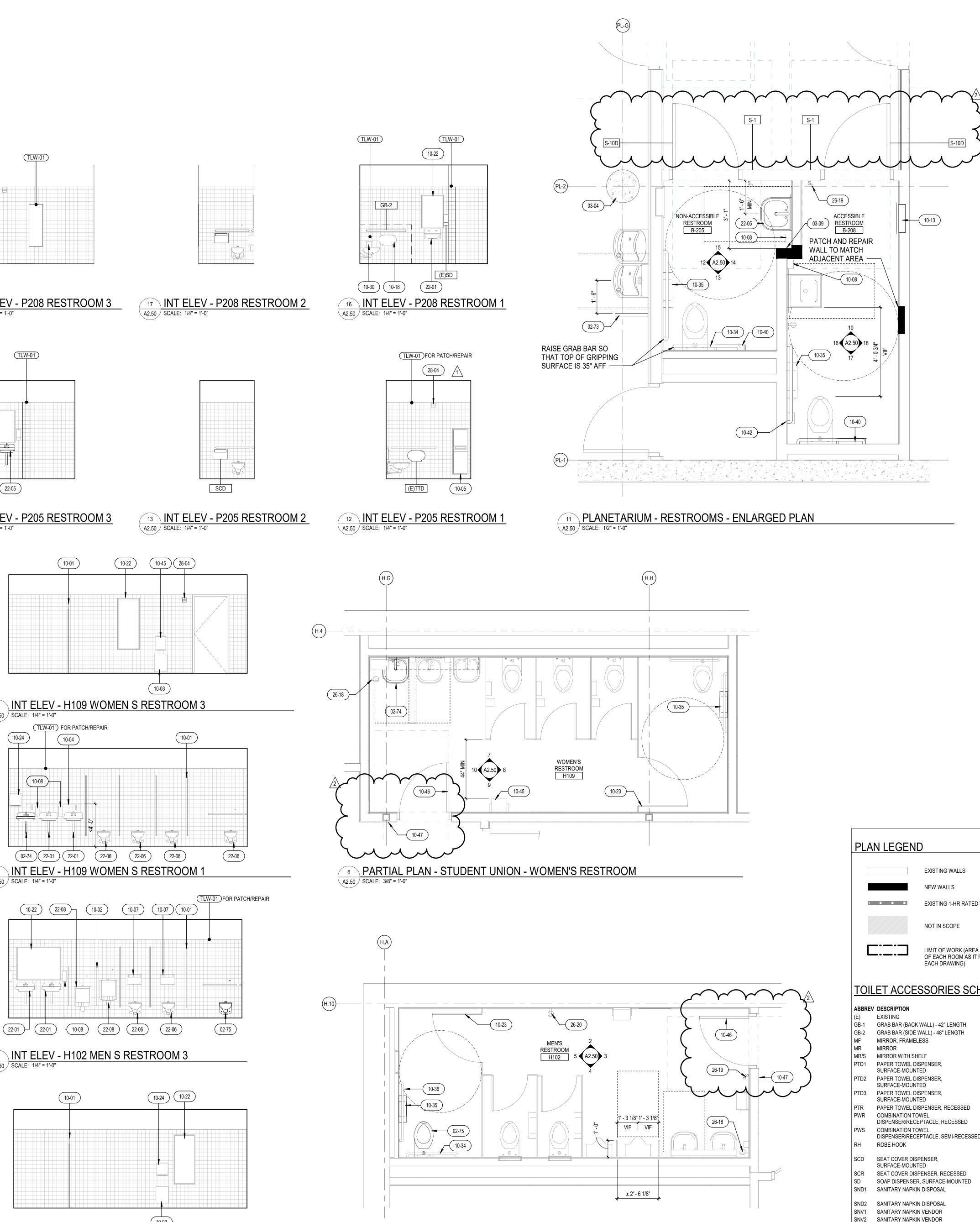










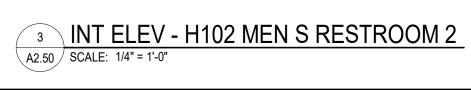


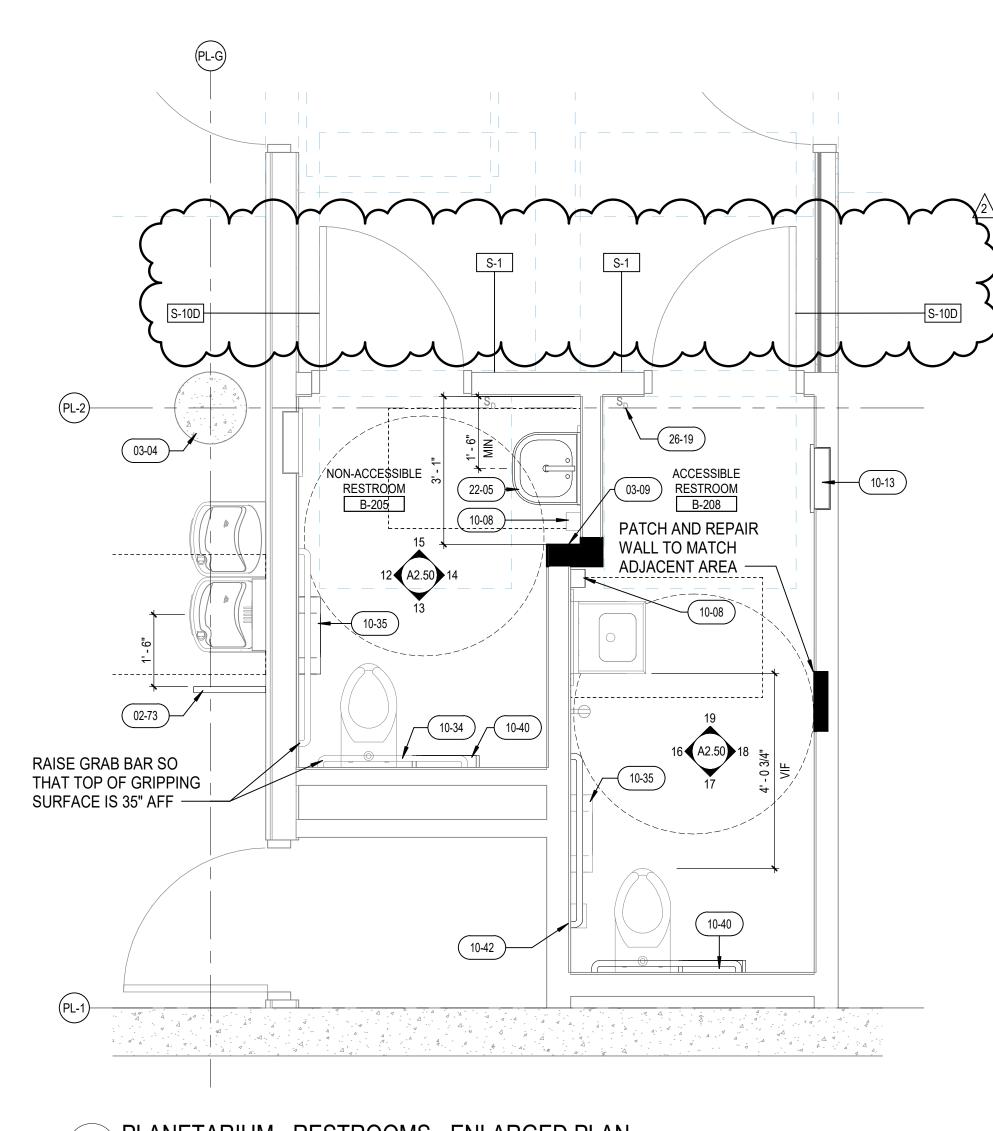
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2 INT ELEV - H102 MEN S RESTROOM 1 A2.50 SCALE: 1/4" = 1'-0"

5 INT ELEV - H102 MEN S RESTROOM 4 A2.50 SCALE: 1/4" = 1'-0" \smile 28-04 10-02 (10-24) 22-01 - (22-08) (10-03) (10-08)

(10-07)

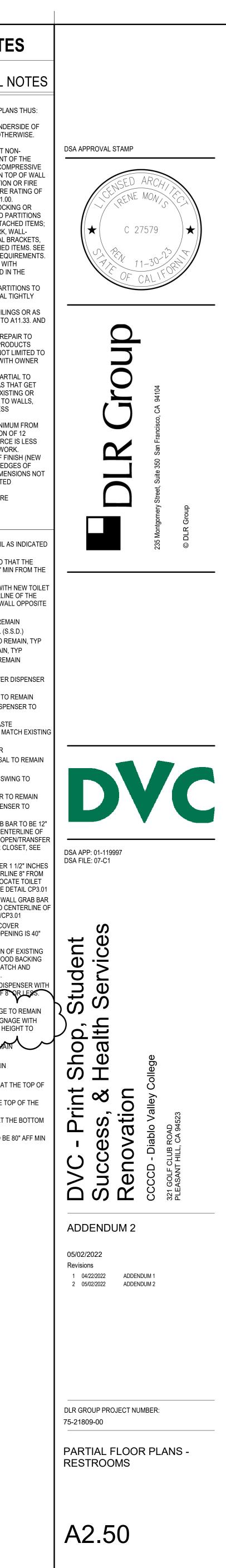


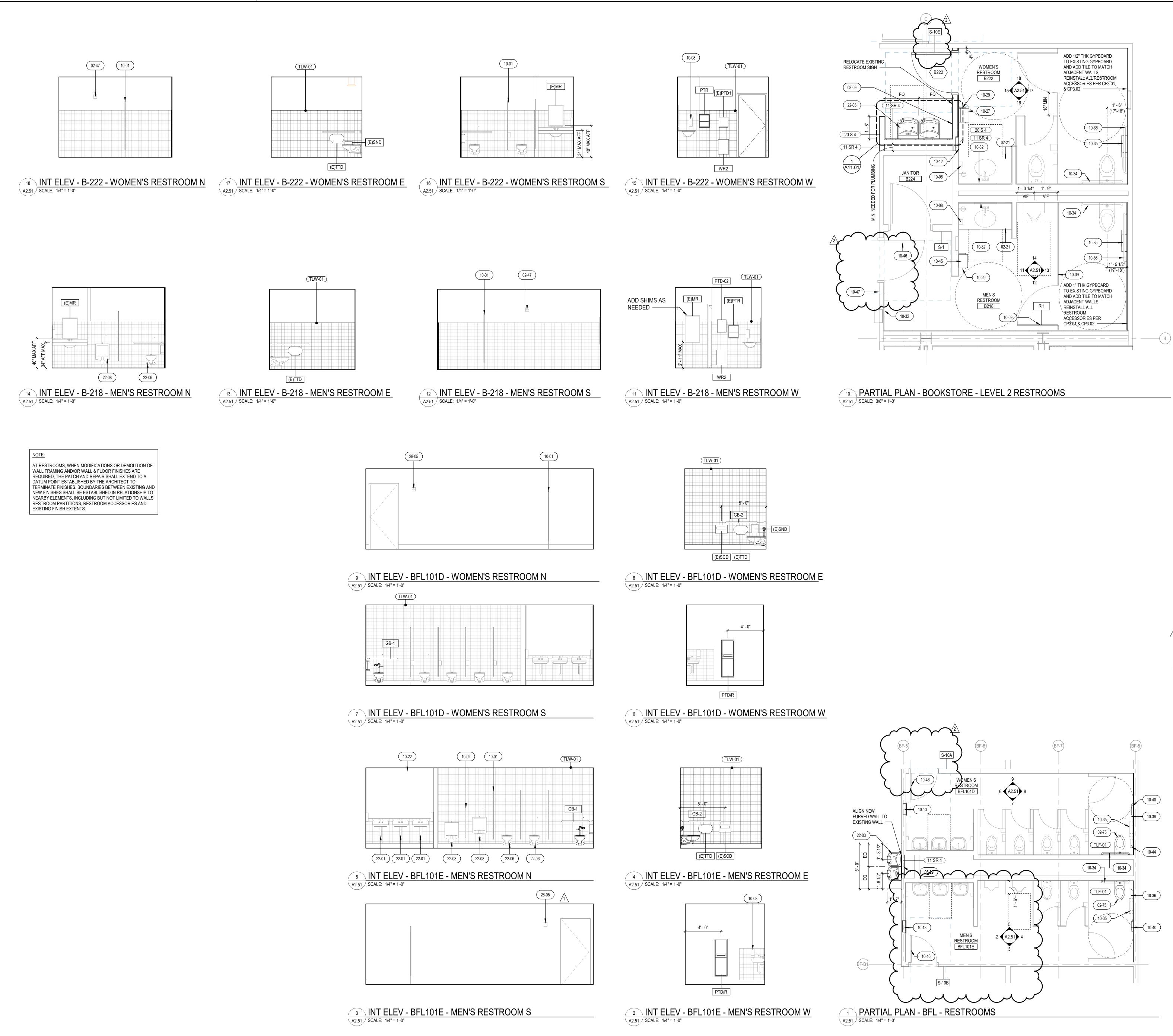




				10-35	RE MII FR PA
				10-36	RE 12' ES
				10-40	RE DIS AF
				10-42	AD SII AN
				10.45	RE
				10-45	RE
			2	Y Y	BC
			(10-46 10-47	EX EX
			7	10-47	BR
			<u>\</u>		RE
				22.01	
PLA	N LEGEND)		22-05 22-06	NE EX
/				22-00	EX
				26-18	LO
		EXISTING WALLS	Λ		TH
		NEW WALLS		26-19	LO SV
				26-20	RA OF
		EXISTING 1-HR RATED V	VALLS	28-04	RE
		NOT IN SCOPE			
		LIMIT OF WORK (AREA (OF EACH ROOM AS IT P EACH DRAWING)	OF ALTERATION ERTAINS TO		
TOIL	ET ACCES	SORIES SCH	EDULE		
	DESCRIPTION		MANUFACTURER / MODEL		
(E)	EXISTING				
GB-1	GRAB BAR (BACK W		BOBRICK B-6806		
GB-2	GRAB BAR (SIDE W		BOBRICK B-6806		
MF	MIRROR, FRAMELE				
MR		SS	BOBRICK B-1556		
MR/S	MIRROR		BOBRICK B-290		
MR/S PTD1	MIRROR MIRROR WITH SHEI	_F	BOBRICK B-290 BRADLEY B-3644		
MR/S PTD1	MIRROR	_F PENSER,	BOBRICK B-290		
	MIRROR MIRROR WITH SHEI PAPER TOWEL DISI SURFACE-MOUNTE PAPER TOWEL DISI	_F PENSER, D PENSER,	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA		
PTD1 PTD2	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE	_F PENSER, D PENSER, D	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A		
PTD1	MIRROR MIRROR WITH SHEI PAPER TOWEL DISI SURFACE-MOUNTE PAPER TOWEL DISI	_F PENSER, D PENSER, D PENSER,	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA		
PTD1 PTD2	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE SURFACE-MOUNTE	_F PENSER, D PENSER, D PENSER,	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK		
PTD1 PTD2 PTD3	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW	LF PENSER, D PENSER, D PENSER, D PENSER, RECESSED /EL	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-72860 BOBRICK B-359 BOBRICK		
PTD1 PTD2 PTD3 PTR	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW	_F PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-72860 BOBRICK B-359		
PTD1 PTD2 PTD3 PTR PWR	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW	LF PENSER, D PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-72860 BOBRICK B-359 BOBRICK B-359 BOBRICK B-3944 BRADLEY		
PTD1 PTD2 PTD3 PTR PWR PWS	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-72860 BOBRICK B-359 BOBRICK B-39003 BOBRICK B-3944		
PTD1 PTD2 PTD3 PTR PWR PWR RH	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-72860 BOBRICK B-359 BOBRICK B-359 BOBRICK B-3944 BRADLEY 9114-US		
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PTD1 PTD2 PTD3 PTR PWR PWS RH SCD SCR SD SND1	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SOAP DISPENSER, SANITARY NAPKIN	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED /EL TACLE, SEMI-RECESSED SURFACE-MOUNTED DISPOSAL	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-72860 BOBRICK B-359 BOBRICK B-3903 BOBRICK B-3944 BRADLEY 9114-US BOBRICK B-221 BOBRICK B-221 BOBRICK B-301 GOJO ADX-12 CONTINENTAL 250W		
PTD1 PTD2 PTD3 PTR PWR PWS RH SCD SCR SD SND1 SND2	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SOAP DISPENSER, SANITARY NAPKIN	LF PENSER, D PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED /EL TACLE, SEMI-RECESSED SURFACE-MOUNTED DISPOSAL	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-72860 BOBRICK B-359 BOBRICK B-39003 BOBRICK B-39044 BRADLEY 9114-US BOBRICK B-221 BOBRICK B-301 GOJO ADX-12 CONTINENTAL 250W BOBRICK B-270		
PTD1 PTD2 PTD3 PTR PWR PWS RH SCD SCR SD SND1 SND2 SNV1	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SOAP DISPENSER, SANITARY NAPKIN SANITARY NAPKIN	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED ENSER, D ENSER, RECESSED SURFACE-MOUNTED DISPOSAL VENDOR	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-359 BOBRICK B-359 BOBRICK B-3944 BRADLEY 9114-US BOBRICK B-301 GOJO ADX-12 CONTINENTAL 250W BOBRICK B-270 GAMCO 352 25		
PTD1 PTD2 PTD3 PTR PWR PWS RH SCD SCR SD SND1 SND2 SNV1 SNV2	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SOAP DISPENSER, SANITARY NAPKIN SANITARY NAPKIN	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED /EL TACLE, SEMI-RECESSED /ENSER, D ENSER, RECESSED SURFACE-MOUNTED DISPOSAL VENDOR	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-359 BOBRICK B-359 BOBRICK B-3944 BRADLEY 9114-US BOBRICK B-301 GOJO ADX-12 CONTINENTAL 250W BOBRICK B-270 GAMCO 352 25 ASI 204684		
PTD1 PTD2 PTD3 PTR PWR PWS RH SCD SCR SD SND1 SND2 SNV1	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SOAP DISPENSER, SANITARY NAPKIN SANITARY NAPKIN	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED /EL TACLE, SEMI-RECESSED SURFACE-MOUNTED DISPOSAL VENDOR VENDOR SHELF	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-359 BOBRICK B-359 BOBRICK B-3944 BRADLEY 9114-US BOBRICK B-301 GOJO ADX-12 CONTINENTAL 250W BOBRICK B-270 GAMCO 352 25		
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PTD1 PTD2 PTD3 PTR PWR PWS RH SCD SCR SD SND1 SND2 SNV1 SNV2 SSS TTD WR1	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SURFACE-MOUNTE SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN STAINLESS STEEL S TOILET TISSUE DIS SURFACE-MOUNTE WASTE RECEPTAC	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED ENSER, D ENSER, RECESSED SURFACE-MOUNTED DISPOSAL VENDOR VENDOR VENDOR SHELF PENSER, D LE, RECESSED	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-359 BOBRICK B-359 BOBRICK B-3944 BOBRICK B-3944 BOBRICK B-301 GOJO ADX-12 CONTINENTAL 250W BOBRICK B-270 GAMCO 352 25 ASI 204684 BRADLEY SA49 PALMER FIXTURE RD0027 BOBRICK B-3644		
PTD1 PTD2 PTD3 PTR PWR PWS RH SCD SCR SD SND1 SND2 SNV1 SNV2 SSS TTD	MIRROR MIRROR WITH SHEI PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF SURFACE-MOUNTE PAPER TOWEL DISF COMBINATION TOW DISPENSER/RECEP COMBINATION TOW DISPENSER/RECEP ROBE HOOK SEAT COVER DISPE SURFACE-MOUNTE SEAT COVER DISPE SURFACE-MOUNTE SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN SANITARY NAPKIN STAINLESS STEEL	LF PENSER, D PENSER, D PENSER, RECESSED /EL TACLE, RECESSED /EL TACLE, SEMI-RECESSED /EL TACLE, SEMI-RECESSED SURFACE-MOUNTED DISPOSAL VENDOR VENDOR VENDOR SHELF PENSER, D	BOBRICK B-290 BRADLEY B-3644 KIMBERLY CLARK 09996 GEORGIA PACIFIC 54338A BOBRICK B-359 BOBRICK B-359 BOBRICK B-3944 BOBRICK B-3944 BOBRICK B-301 GOJO ADX-12 CONTINENTAL 250W BOBRICK B-270 GAMCO 352 25 ASI 204684 BRADLEY SA49 PALMER FIXTURE RD0027 BOBRICK B-3644		

LE	EGEND AND NOTES
GENEF	AL ARCHITECTURAL NOTES
	ES SHALL BE DESIGNATED ON FLOOR PLANS THUS:
ALL INTER) SEE SHEET A8.00 FOR WALL TYPES. RIOR STUD WALLS SHALL EXTEND TO UNDERSIDE OF
SEE REFL	R ROOF DECK ABOVE UNLESS NOTED OTHERWISE. ECTED CEILING PLAN NOTES.
	NS SHALL BE MADE AT ALL FULL HEIGHT NON- WALLS FOR 1-INCH VERTICAL MOVEMENT OF THE
	STRUCTURE WITHOUT TRANSFER OF COMPRESSIVE WALL. FILL IRREGULARITIES BETWEEN TOP OF WAL
	K ABOVE WITH MINERAL WOOL INSULATION OR FIRE G MATERIALS AS REQUIRED TO MEET FIRE RATING OF
	IVE WALLS. SEE DETAILS ON SHEET A11.00. AND INSTALL FIRE-TREATED WOOD BLOCKING OR
	CKING PLATE IN METAL OR WOOD STUD PARTITIONS PROPER ANCHORAGE OF ALL WALL ATTACHED ITEMS
	T ACCESSORIES, CASEWORK, MILLWORK, WALL- D FIXTURES, DOOR STOPS, AUDIO VISUAL BRACKETS,
DRINKING	FOUNTAINS AND OTHER WALL ATTACHED ITEMS. SEE RAL DRAWINGS FOR BACKING PLATE REQUIREMENTS
GYPSUM	BOARD SURFACES SHALL BE ISOLATED WITH . JOINTS WHERE SHOWN ON DESCRIBED IN THE
SPECIFIC	ATIONS AND 1/A11.01. YPSUM WALL BOARD OF WALLS AND PARTITIONS TO
IRREGUL/	ARITIES OF DECK OR FLOOR ABOVE. SEAL TIGHTLY ALL PENETRATIONS.
PROVIDE	SEISMIC BRACING FOR SUSPENDED CEILINGS OR AS IN THE DRAWINGS. SEE SHEETS A11.30 TO A11.33. ANI
S6.2 TO S	
MATCH EX	NISHES ARE NEEDED FOR PATCH AND REPAIR TO XISTING, CONTRACTOR SHALL VERIFY PRODUCTS NER AND ARCHITECT, INCLUDING BUT NOT LIMITED TO
TILE, CAR	PET, PAINT AND WOOD TRIMS. CHECK WITH OWNER Y IF NO EXISTING STOCK REMAINS.
PATCH AN	Y IF NO EXISTING STOCK REMAINS. ID REPAIR ALL AREAS THAT REQUIRE PARTIAL TO E WORK. PATCH AND REPAIR ALL AREAS THAT GET
DAMAGE	DURING CONSTRUCTION TO MATCH EXISTING OR
CEILINGS	T AREAS, INCLUDING, BUT NOT LIMITED TO WALLS, , FINISHES, FLOORING AND PAINT, UNLESS
). VERIFY D	SE NOTED. OOR CLOSING SPEED IS 5 SECONDS MINIMUM FROM
DEGREES	POSITION OF 90 DEGREES TO A POSITION OF 12 FROM THE LATCH AND OPERATING FORCE IS LESS
1. TYPICAL [F AT ALL DOORS WITHIN THE LIMIT OF WORK. DIMENSIONS ARE TAKEN FROM FACE OF FINISH (NEW
ELEMENT	TING), GRIDLINES WHERE APPLICABLE, EDGES OF S AND CENTERLINES OF ELEMENTS. DIMENSIONS NO
OTHERWI	
FINISHES	INDICATED WITH (XX - ##) SYMBOL ARE ED ON SHEET A12.00.
EFER	ENCE KEYNOTES
2-73	RELOCATE DRINKING FOUNTAIN RAIL AS INDICATE
	ON FLOOR PLAN
-74	RELOCATE WALL-MOUNTED SINK SO THAT THE CENTERLINE OF THE FIXTURE IS 18" MIN FROM TH
-75	SIDE WALL REPLACE WALL-MOUNTED TOILET WITH NEW TOIL
-75 -04 -09 -01 -02 -03 -04	AND INSTALL SO THAT THE CENTERLINE OF THE FIXTURE IS 17"-18" FROM THE SIDE WALL OPPOSIT
8-04	THE SIDE THE DOOR IS ON EXISTING CONCRETE COLUMN TO REMAIN
-04 -09	CONCRETE CURB AT FRAMED WALL (S.S.D.)
)-01)-02	EXISTING RESTROOM PARTITION TO REMAIN, TYP EXISTING URINAL SCREEN TO REMAIN, TYP
-03 -04	EXISTING TRASH RECEPTACLE TO REMAIN EXISTING SHELF TO REMAIN
-04 -05	EXISTING TOILET PAPER/ SEAT COVER DISPENSEF
-07	COMBO TO REMAIN EXISTING SEAT COVER DISPENSER TO REMAIN
-08	EXISTING WALL-MOUNTED SOAP DISPENSER TO REMAIN
-13	NEW PAPER TOWEL DISPENSER/WASTE RECEPTACLE (SEMI-RECESSED) TO MATCH EXISTI
	IN RESTROOM B-205
)-18)-19	EXISTING TOILET PAPER DISPENSER EXISTING SANITARY NAPKIN DISPOSAL TO REMAIN
)-22)-23	EXISTING MIRROR TO REMAIN ADJUST DOOR TO AUTOMATICALLY SWING TO
	CLOSED POSITION (SELF-CLOSING)
-24 -30	EXISTING PAPER TOWEL DISPENSER TO REMAIN EXISTING FEMININE PRODUCT DISPENSER TO
)-34	REMAIN RELOCATE EXISTING 36" REAR GRAB BAR TO BE 12
U-1	TOWARDS PARALLEL WALL FROM CENTERLINE OF
	WATER CLOSET AND 24" TOWARDS OPEN/TRANSF SIDE FROM CENTERLINE OF WATER CLOSET, SEE DETAIL 5/CP3 01
-35	DETAIL 5/CP3.01 RELOCATE TOILET PAPER DISPENSER 1 1/2" INCHE
	MIN BELOW GRAB BAR WITH CENTERLINE 8" FROM FRONT EDGE OF WATER CLOSET. LOCATE TOILET
36	PAPER DISPENSER 19" AFF MIN., SEE DETAIL CP3.
JU	RELOCATE EXISTING 42" PARALLEL WALL GRAB BA 12" ABSOLUTE FROM REAR WALL TO CENTERLINE
-40	ESCUTCHEON PLATE, SEE DETAIL 5/CP3.01 RELOCATE EXISTING TOILET SEAT COVER
	DISPENSER SO THAT THE TOP OF OPENING IS 40" AFF MAX
-42	ADD BACKING FOR RE-INSTALLATION OF EXISTING SIDE GRAB BAR, SEE 23/S6.2 FOR WOOD BACKING
	AND 21/S6.3 FOR STEEL BACKING. PATCH AND REPAIR AREA AFTER INSTALLATION.
-45	REPLACE EXISTING PAPER TOWEL DISPENSER WI
\sim	ADISPENSER THAT HAS A DEPTH OF 8 OR LESS. BOD: KIMBERLYCLARK
)-46)-47	EXISTING RESTROOM DOOR SIGNAGE TO REMAIN EXISTING ROOM IDENTIFICATION SIGNAGE WITH
	BRAILLE MOUNTED AT ACCESSIBLE HEIGHT TO REMAIN
201	EXISTING FINK AND EAUCET TO REMAIN
2-05 2-06	NEW LAVATORY (S.P.D.) EXISTING WATER CLOSET TO REMAIN
2-08 5-18	EXISTING URINAL TO REMAIN LOWER ELECTRICAL OUTLET SO THAT THE TOP OF
	THE OUTLET BOX IS 48" MAX AFF
6-19	LOWER LIGHT SWITCH SO THAT THE TOP OF THE SWITCH BOX IS 48" MAX AFF
6-20	RAISE ELECTRICAL OUTLET SO THAT THE BOTTON OF THE OUTLET BOX IS 15" MIN AFF
-04	RELOCATE FIRE ALARM STROBE TO BE 80" AFF MI AND 96" AFF MAX
	ענער און WIAA עזיר ענער I WIAA



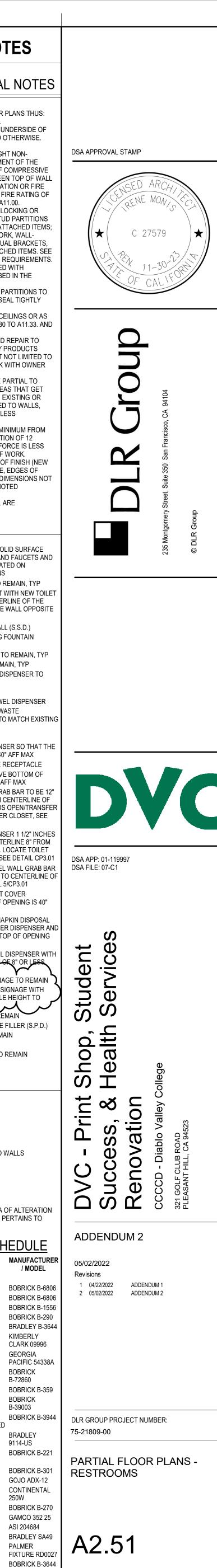


	LEG	GEND) A	ND	NO ⁻	ΓE
	GENERA	L ARC	HIT	ECT	URA	
	1. WALL TYPES S ## XX # SE	E SHEET A	8.00 F0	OR WALI	TYPES.	
	2. ALL INTERIOR FLOOR OR RC SEE REFLECT	OF DECK A	BOVE	UNLESS	NOTED (
	3. PROVISIONS S BEARING WAL BUILDING STR	LS FOR 1-IN	NCH VI	ERTICAL	MOVEME	ENT (
	LOADS TO WA AND DECK AB STOPPING MA	ALL. FILL IRI OVE WITH N	regui Miner	LARITIES AL WOO	BETWEE	in to Tion
	RESPECTIVE 4. FURNISH AND	WALLS. SE	E DET/ RE-TR	AILS ON	SHEET A1 NOOD BL	11.00 OCK
	METAL BACKII FOR THE PRO I.E. TOILET AC	PER ANCHO	ORAGE	E OF ALL	WALL AT	TAC
	MOUNTED FIX DRINKING FOI STRUCTURAL	JNTAINS AN	ID OTH	HER WA	L ATTACI	HED
	5. GYPSUM BOA CONTROL JOI SPECIFICATIO	NTS WHERI	E SHO			
	6. SCRIBE GYPS IRREGULARIT	UM WALL B IES OF DEC	oard K or I			
	AROUND ALL 7. PROVIDE SEIS SHOWN ON TH	MIC BRACI	NG FO			
	S6.2 TO S6.3. 8. WHERE FINISI MATCH EXIST					
	WITH OWNER TILE, CARPET TO VERIFY IF	, PAINT AND	WOO	D TRIMS	. CHECK	
	9. PATCH AND R COMPLETE W DAMAGED DU	ORK. PATC	h and	REPAIR	ALL ARE	AS T
	ADJACENT AR CEILINGS, FIN OTHERWISE N	REAS, INCLU ISHES, FLO	JDING,	BUT NO	T LIMITED	DTO
	10. VERIFY DOOR AN OPEN POS	CLOSING S) DEGF	REES TO	A POSITI	ON (
	DEGREES FRO THAN 5PSF AT 11. TYPICAL DIME	ALL DOOR	S WIT	HIN THE	LIMIT OF	WO
	AND EXISTING ELEMENTS AN FOLLOWING T	D CENTER	LINES	OF ELEM	MENTS. DI	MEN
	OTHERWISE. 12. FINISHES INDI SCHEDULED (CATED WIT	н (Х	X - ##)		
	REFEREN				ES	
	02-21					
		COUNTER / RAISE/LOW RESTROOM	/ER TO	HEIGHT	S INDICAT	ΓED
	02-47 02-75	EXISTING F REPLACE V AND INSTA	VALL-N	OUNTE		WITH
		FIXTURE IS THE SIDE T	17"-18 HE DC	9" FROM OR IS O	THE SIDE N	WAL
	03-09 05-29	CONCRETE PROVIDE B MOUNTING	ACKIN			`
	10-01 10-02	EXISTING F	RESTR			
	10-08	EXISTING V REMAIN ROBE HOO		IOUNTE	D SOAP DI	SPE
	10-09 10-12 10-13	NEW WALL	MOUN			
	10.00	RECEPTAC IN RESTRO	OM B-2	205) MA
	10-22 10-27	EXISTING M RELOCATE TOP OF TH	PAPE	R TOWE	DISPENS	
	10-29 10-32	NEW SURF	ISTING	MIRROF	R TO HAVE	Е ВО
	10-34	REFLECTIV RELOCATE TOWARDS	EXIST PARAL	ING 36" LEL WA	REAR GRA	AB BA
		WATER CLO SIDE FROM DETAIL 5/C	I CENT			
	10-35	RELOCATE MIN BELOW FRONT EDO	/ GRAE	BAR W	TH CENTE	ERLI
	10-36	PAPER DIS RELOCATE	PENSE EXIST	ER 19" AF ING 42"	F MIN., SE Parallel	EE D . WA
	10-40	12" ABSOLU ESCUTCHE RELOCATE	ON PL	ATE, SE	E DETAIL 5	5/CP
	10-44	DISPENSEF AFF MAX RELOCATE				
	10-44	TO BE BET	WEEN WALL (THE TOI OF THE	LET PAPE	R DI
	10-45	SHOULD BE REPLACE E A DISPENS	XISTIN	NG PAPE		
^	10-46	BOD. RIMBE EXISTING F	RESTRO	OOM DO		
كر		EXISTING F BRAILLE MO REMAIN				
7	22-01 22-03		KING F	OUNTAI	N/BOTTLE	FILL
	22-06 22-08 28-05	EXISTING V EXISTING U EXISTING F	JRINAL	. TO REM	IAIN	
	PLAN LE	GEND				
			EXIST	ING WA	LS	
			NEW	WALLS		
			EXIST	'ING 1-HI	R RATED \	NAL
			NOT II	N SCOPI	E	
			LIMIT	OF WOF	RK (AREA)	
			EACH	DRAWI	/	
	TOILET A	CCES	<u>SO</u>	RIES	SSCF	<u>IE</u> MA
	ABBREV DESCRII (E) EXISTIN	G				
	GB-2 GRAB B	AR (BACK W AR (SIDE WA L, FRAMELES	ALL) - 4			BO BO BO
	MR MIRROR	,				BO BR
	PTD1 PAPER 1 SURFAC	FOWEL DISF E-MOUNTEI	PENSEI D			KIN CL
	SURFAC	fowel disf E-Mountei Fowel disf	d Pensei			GE PA BO
	SURFAC	E-MOUNTEI	D PENSEI	,	SSED	B-7 BO
	DISPENS PWS COMBIN	ATION TOW SER/RECEP ATION TOW	TACLE EL			BO B-3 BO
		SER/RECEP		, SEMI-R	ECESSED	BR
		over dispe E-mountei				91 [.] BO
	SD SOAP DI	OVER DISPE	SURFA	CE-MOU		BO GC
		ry napkin [Ry napkin [-			CO 250 BO

 \mathbb{Z}

SND2 SANITARY NAPKIN DISPOSAL SNV1 SANITARY NAPKIN VENDOR SNV2 SANITARY NAPKIN VENDOR SSS STAINLESS STEEL SHELF TOILET TISSUE DISPENSER, TTD SURFACE-MOUNTED WR1 WASTE RECEPTACLE, RECESSED

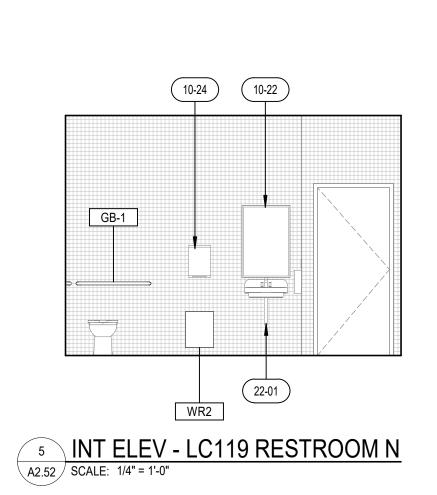
WR2 WASTE RECEPTACLE, SURFACE-MOUNTED BRADLEY 357

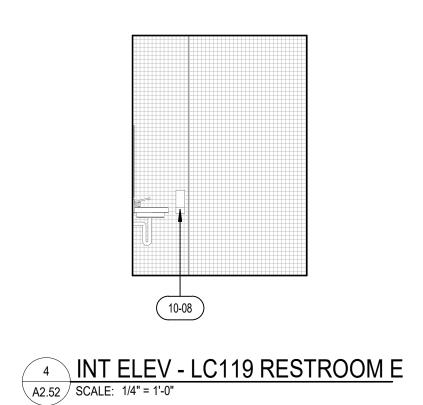


NOTE:

AT RESTROOMS, WHEN MODIFICATIONS OR DEMOLITION OF WALL FRAMING AND/OR WALL & FLOOR FINISHES ARE REQUIRED, THE PATCH AND REPAIR SHALL EXTEND TO A DATUM POINT ESTABLISHED BY THE ARCHITECT TO TERMINATE FINISHES. BOUNDARIES BETWEEN EXISTING AND NEW FINISHES SHALL BE ESTABLISHED IN RELATIONSHIP TO NEARBY ELEMENTS, INCLUDING BUT NOT LIMITED TO WALLS, RESTROOM PARTITIONS, RESTROOM ACCESSORIES AND EXISTING FINISH EXTENTS.



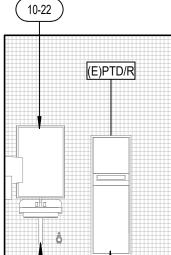




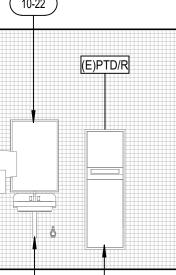
(E)SND (E)SCD (E)TTD 8 INT ELEV - LC120 RESTROOM E A2.52 SCALE: 1/4" = 1'-0"

(E)SNV

GB-2



22-01



10-05

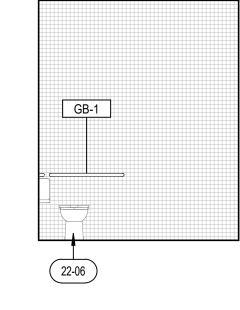
9 INT ELEV - LC120 RESTROOM N A2.52 SCALE: 1/4" = 1'-0"







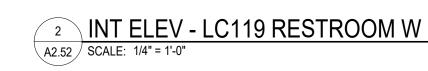


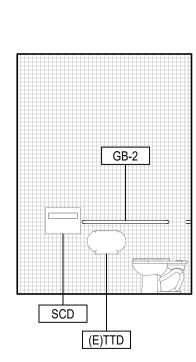


7 INT ELEV - LC120 RESTROOM S A2.52 SCALE: 1/4" = 1'-0"

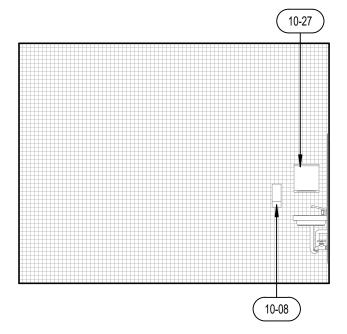
08-14

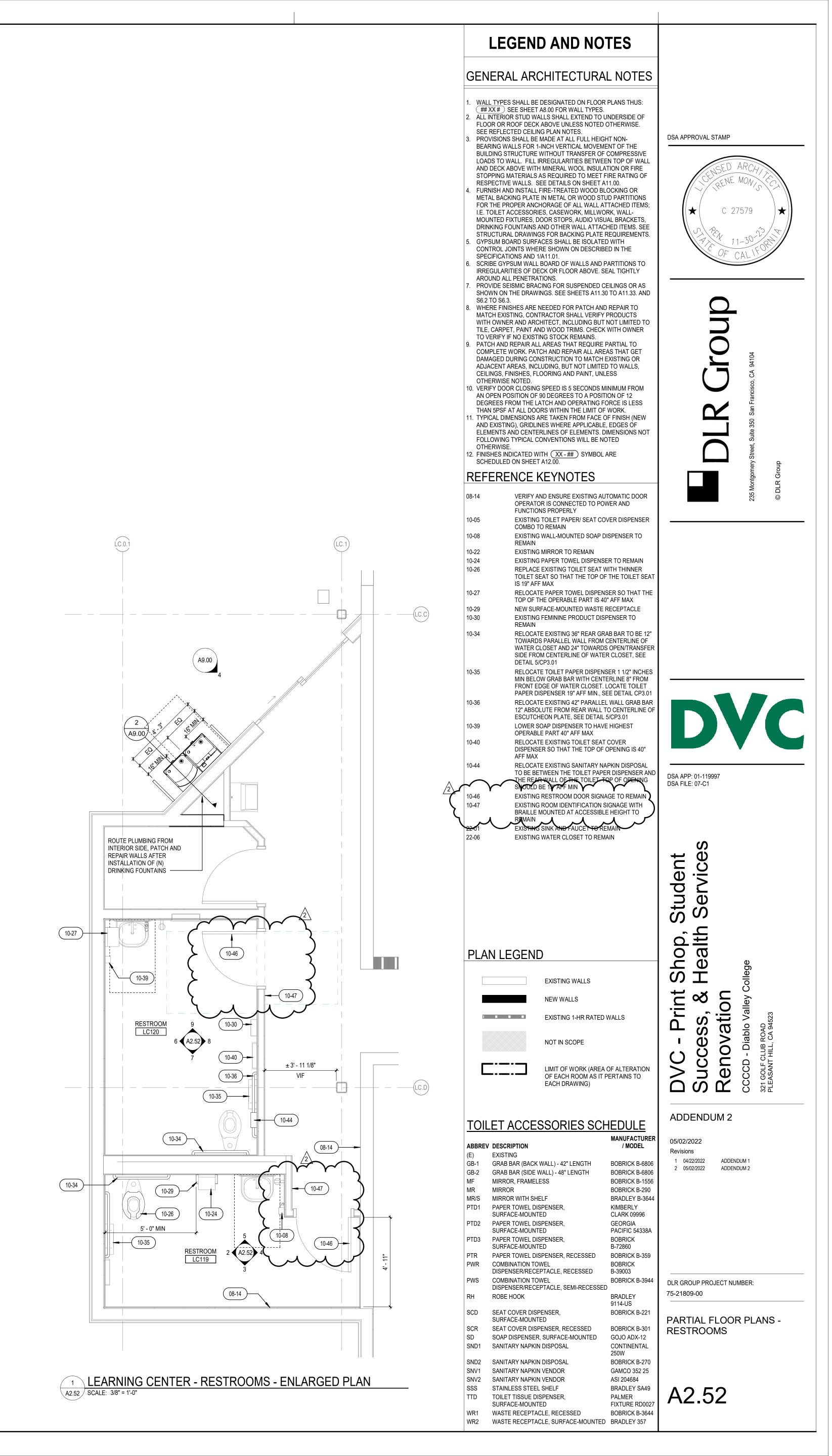
3 INT ELEV - LC119 RESTROOM S A2.52 SCALE: 1/4" = 1'-0"

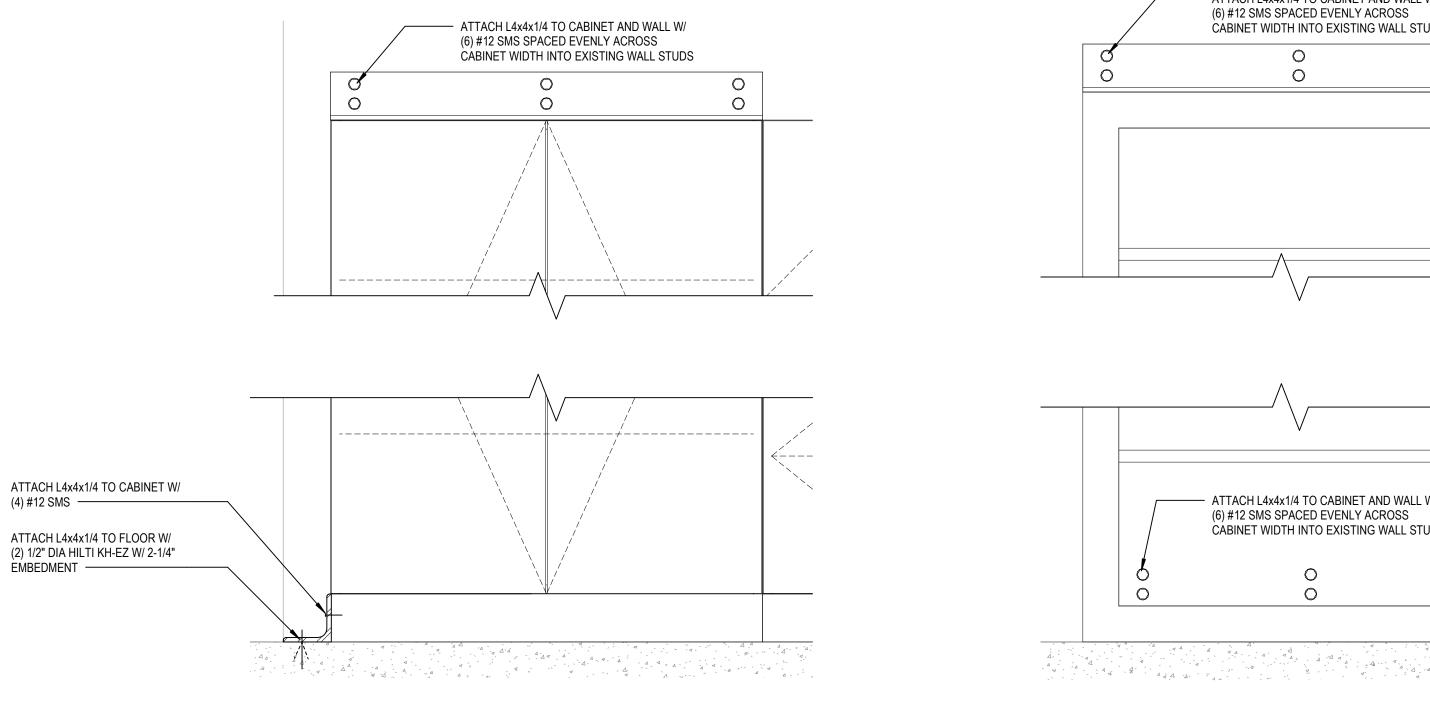




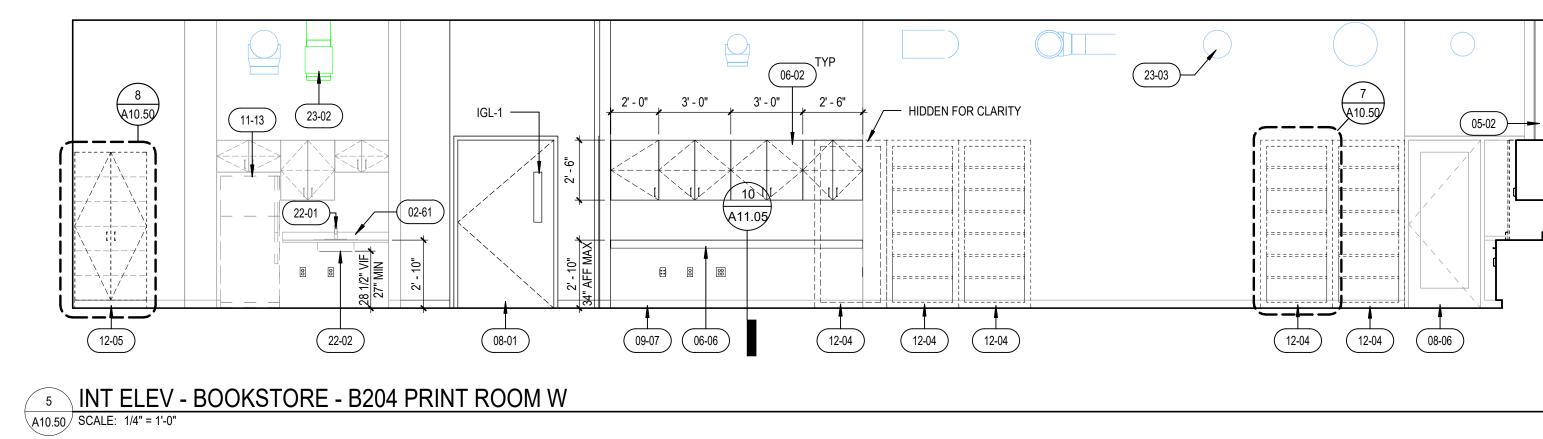
6 INT ELEV - LC120 RESTROOM W A2.52 SCALE: 1/4" = 1'-0"



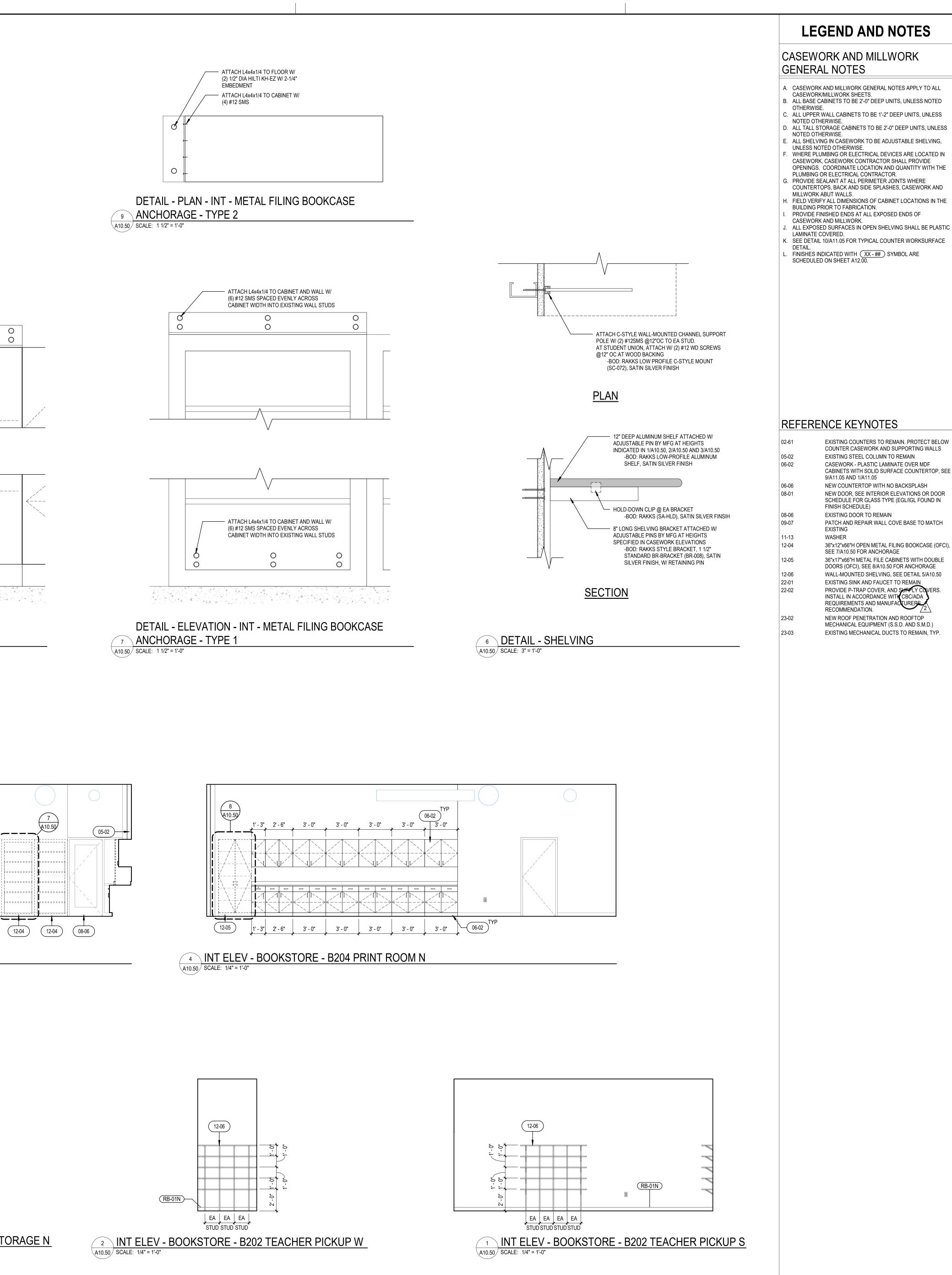


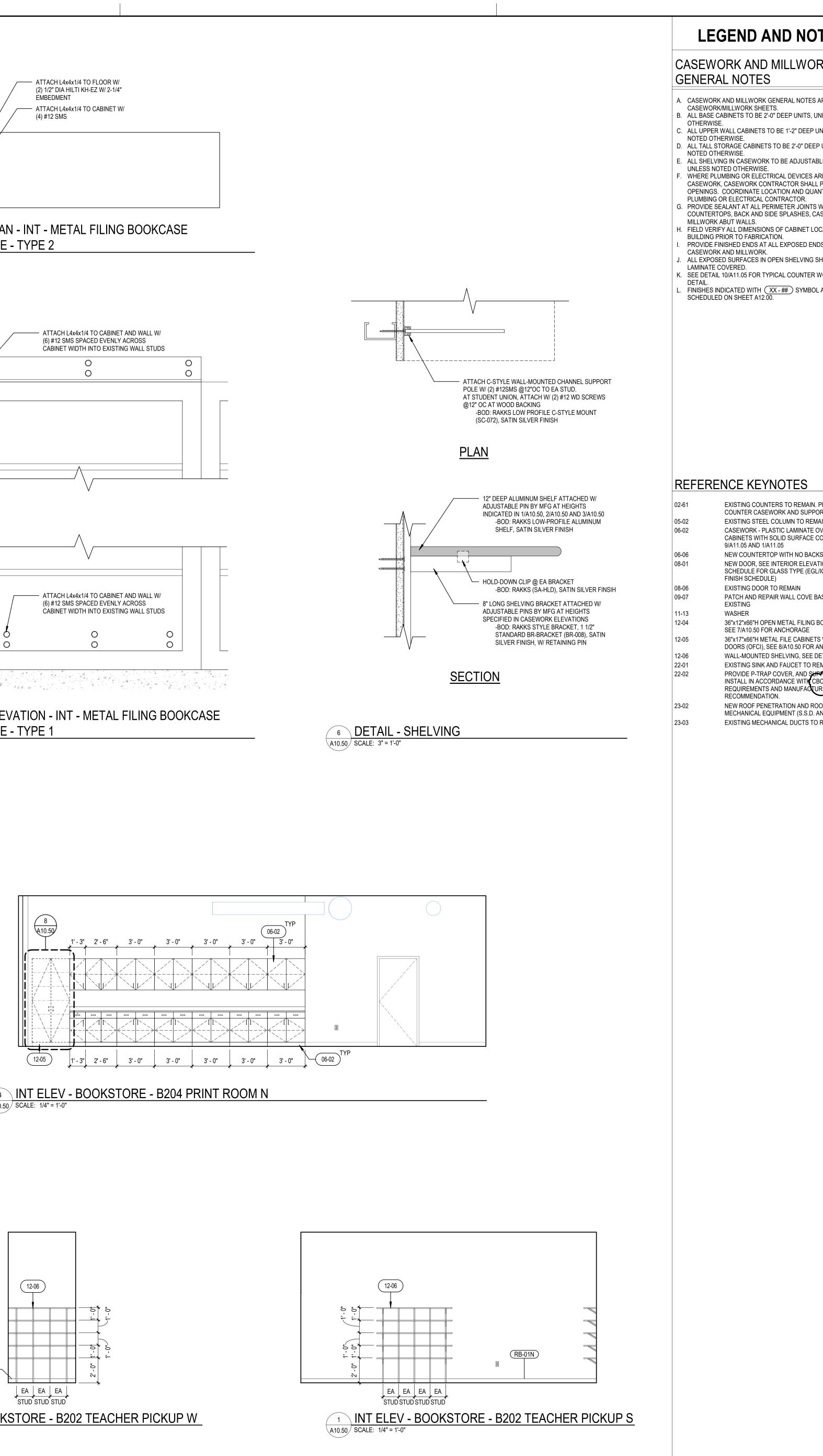


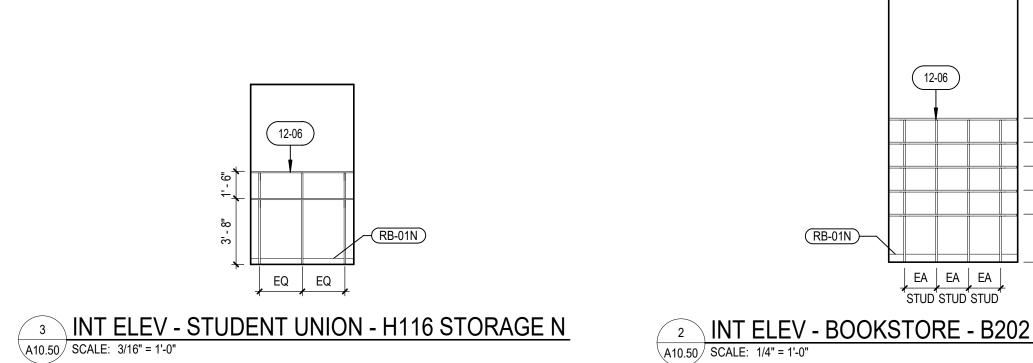
8 DETAIL - ELEVATION - INT - METAL FILE CABINET ANCHORAGE A10.50 SCALE: 1 1/2" = 1'-0"

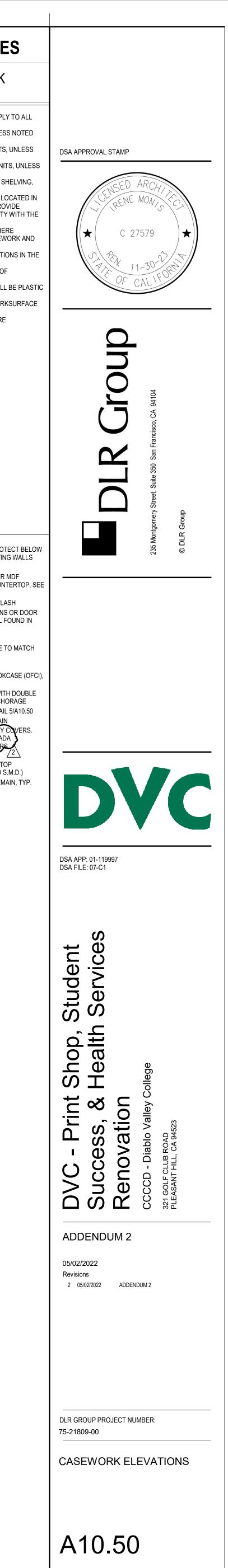


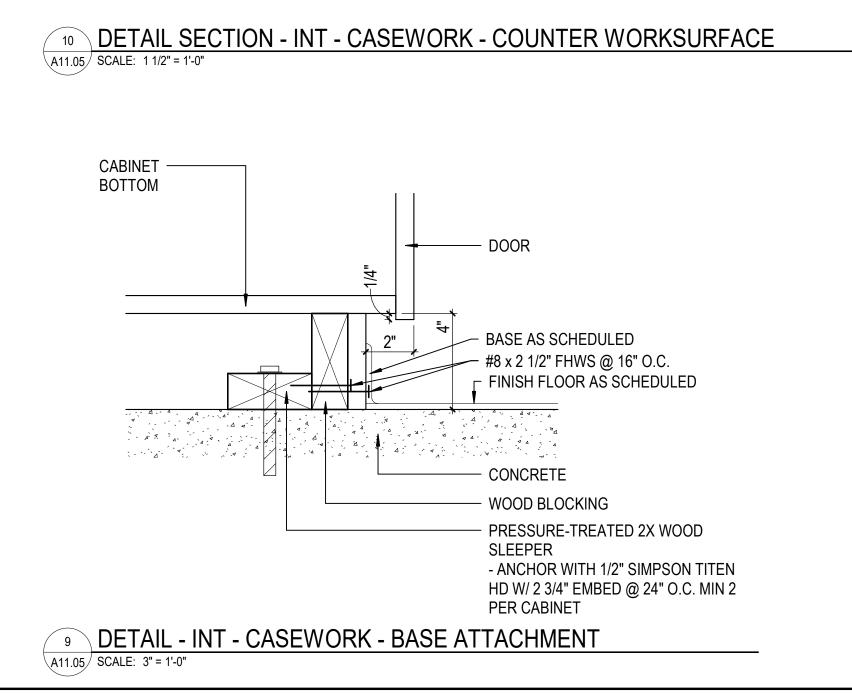


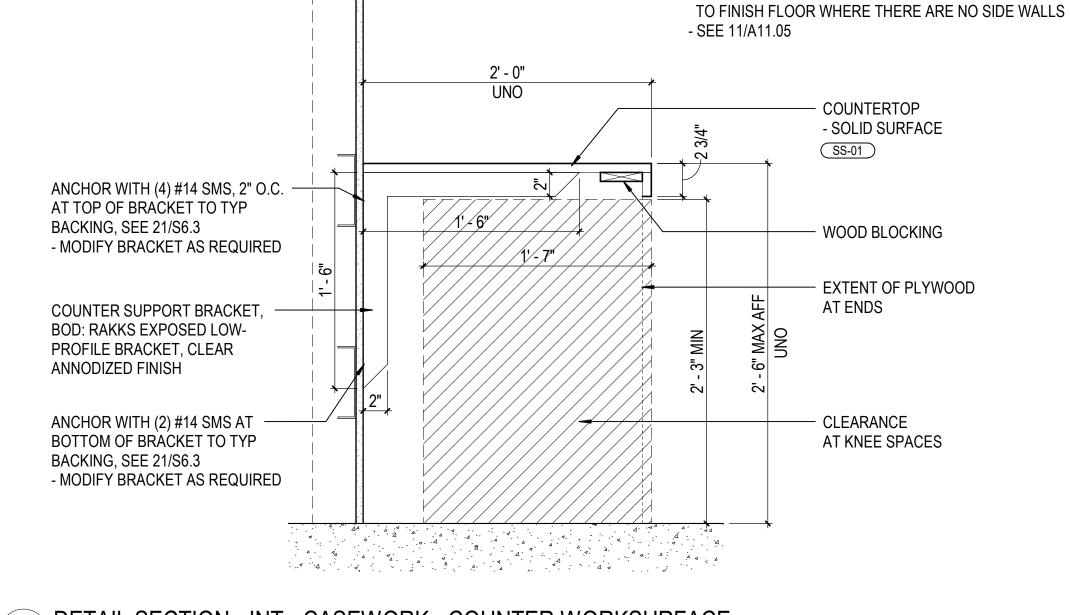






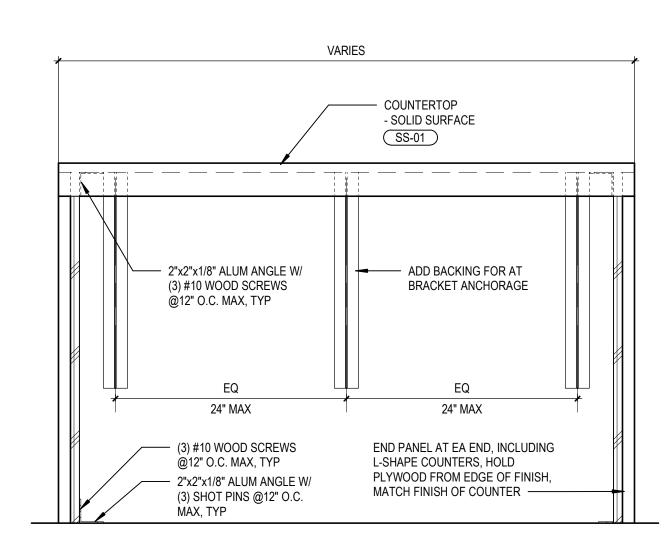


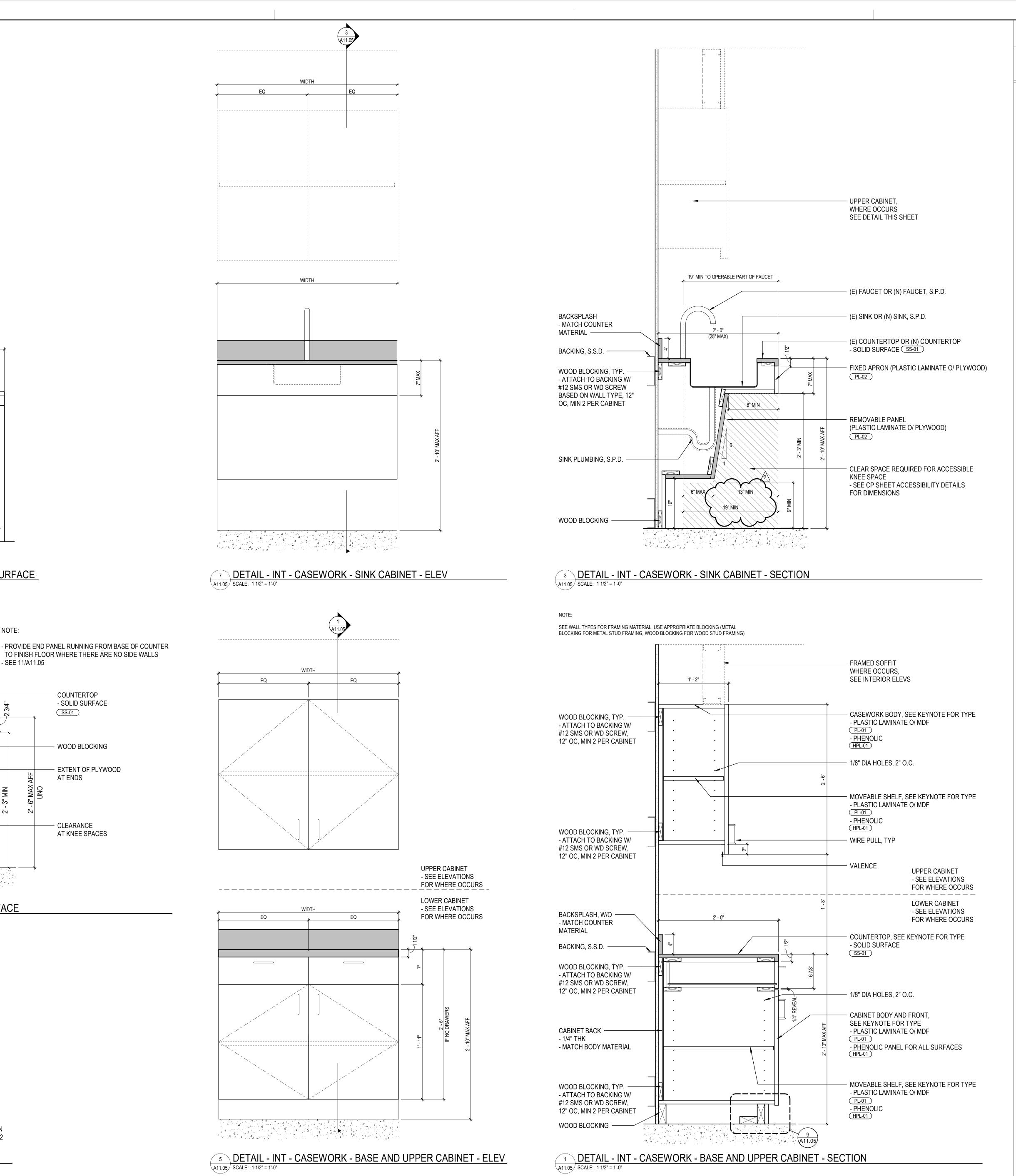




NOTE:

11 DETAIL - ELEVATION - INT - CASEWORK - COUNTER WORKSURFACE A11.05 SCALE: 1 1/2" = 1'-0"



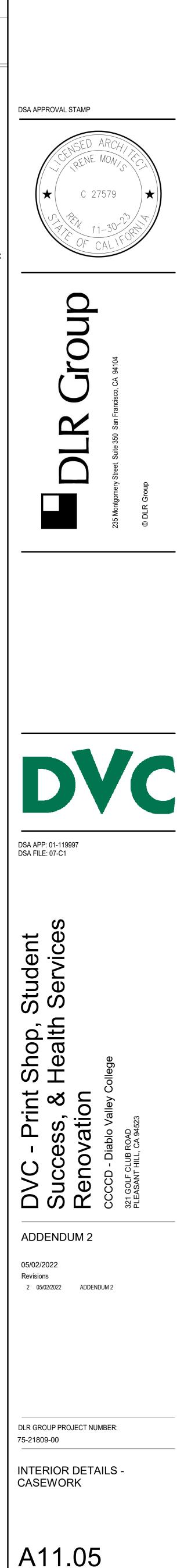


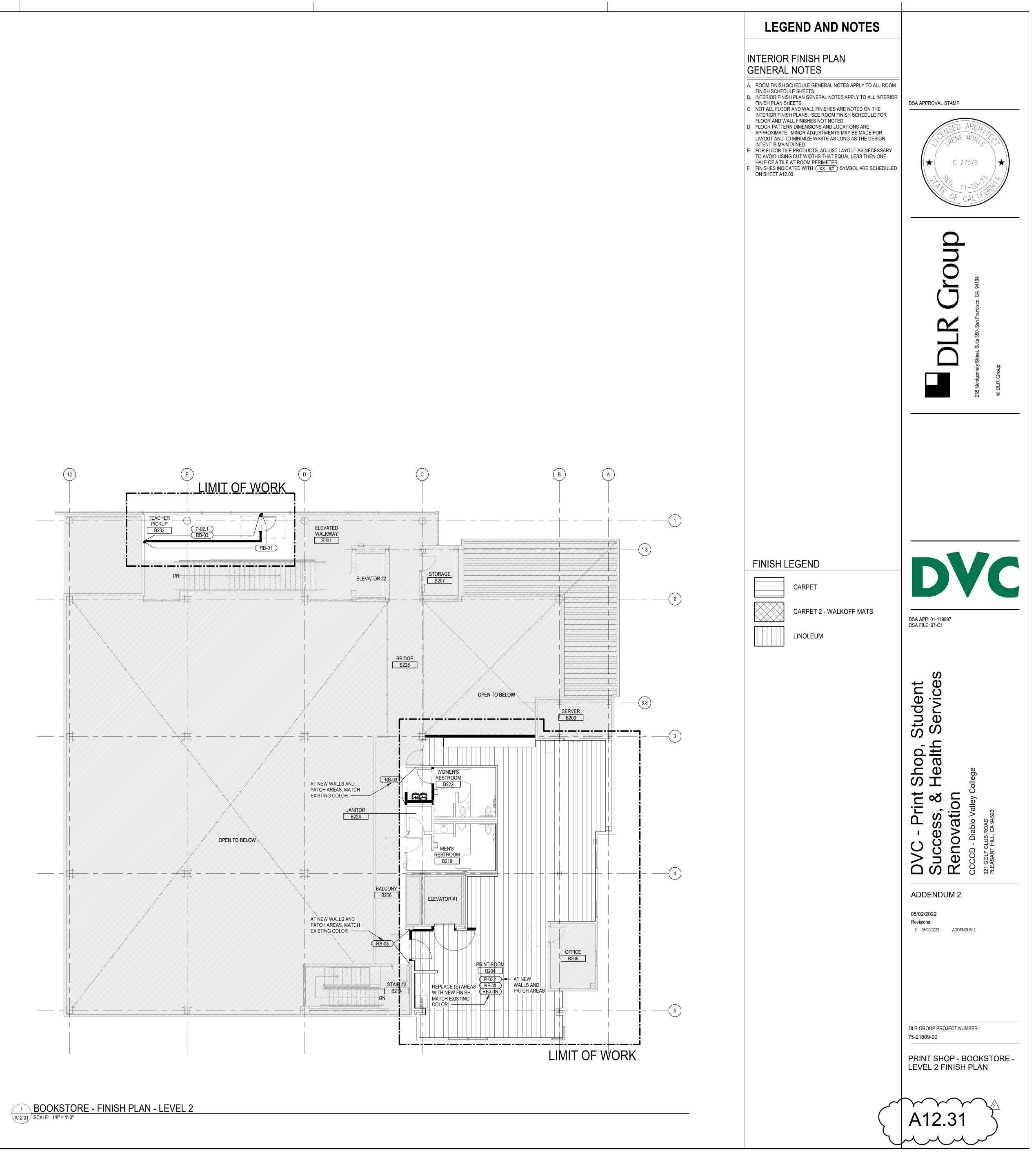
LEGEND AND NOTES

CASEWORK AND MILLWORK GENERAL NOTES

- A. CASEWORK AND MILLWORK GENERAL NOTES APPLY TO ALL CASEWORK/MILLWORK SHEETS. B. ALL BASE CABINETS TO BE 2'-0" DEEP UNITS, UNLESS NOTED OTHERWISE. C. ALL UPPER WALL CABINETS TO BE 1'-2" DEEP UNITS, UNLESS NOTED OTHERWISE. D. ALL TALL STORAGE CABINETS TO BE 2'-0" DEEP UNITS, UNLESS NOTED OTHERWISE. E. ALL SHELVING IN CASEWORK TO BE ADJUSTABLE SHELVING, UNLESS NOTED OTHERWISE
- . WHERE PLUMBING OR ELECTRICAL DEVICES ARE LOCATED IN CASEWORK, CASEWORK CONTRACTOR SHALL PROVIDE OPENINGS. COORDINATE LOCATION AND QUANTITY WITH THE PLUMBING OR ELECTRICAL CONTRACTOR.
- G. PROVIDE SEALANT AT ALL PERIMETER JOINTS WHERE COUNTERTOPS, BACK AND SIDE SPLASHES, CASEWORK AND MILLWORK ABUT WALLS.
- H. FIELD VERIFY ALL DIMENSIONS OF CABINET LOCATIONS IN THE BUILDING PRIOR TO FABRICATION.
- PROVIDE FINISHED ENDS AT ALL EXPOSED ENDS OF CASEWORK AND MILLWORK. . ALL EXPOSED SURFACES IN OPEN SHELVING SHALL BE PLASTIC
- LAMINATE COVERED. SEE DETAIL 10/A11.05 FOR TYPICAL COUNTER WORKSURFACE
- DFTAII FINISHES INDICATED WITH XX - ##) SYMBOL ARE SCHEDULED ON SHEET A12.00.







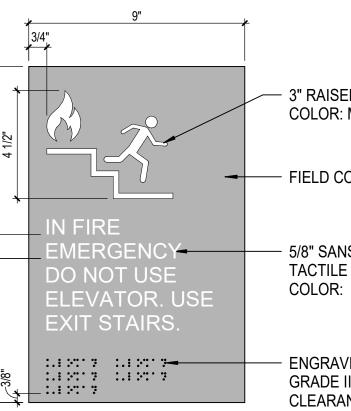
SIGNAGE - GENERAL NOTES

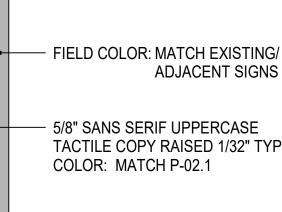
- 1. SEE PLANS FOR LOCATIONS OF SIGNAGE, INDICATED BY SIGN TYPE NUMBER. SEE CP SHEETS FOR TYPICAL MOUNTING HEIGHTS AND PROXIMITY TO DOORS AND OTHER ELEMENTS.
- 2. EACH SIGN SHALL BE FABRICATED FROM A PLATE OF 1/8" THICK PHOTO SENSITIZED ACRYLIC ETCHED TO FORM A SINGLE PLAQUE. SIGNS WILL BE TWO-COLOR DESIGN WITH LIGHT BACKGROUND & DARK CHARACTERS TO MATCH CAMPUS SIGNAGE COLORS. (SUBMIT COLORS WITH LRV DATA TO ARCHITECT FOR APPROVAL; ASSUME GRAY COLOR BACKGROUND >90% LRV WITH BLUE COLOR CHARACTERS <20% LRV FOR BIDDING PURPOSES.) SIGN CHARACTERS AND BACKGROUNDS TO BE NON-GLARE FINISH.
- 3. EACH TYPICAL SIGN SHALL BE SUPPLIED WITH A BACKING PLATE WHICH MATCHES THE SIGN SHAPE. ATTACH TYPICAL SIGN BACKING PLATE USING AT LEAST (2) TWO FLATHEAD COUNTERSUNK SCREWS TO SOLID BACKING. ADHERE SIGN TO BACKING PLATE. SEE DETAIL 12/A14.00.
- 4. FOR TYPICAL MOUNTING HEIGHTS SEE DETAIL 11/A14.00.
- 5. BRAILLE: CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHEREVER BRAILLE IS REQUIRED.
- 6. CHARACTER TYPE: TACTILE CHARACTERS ON SIGNS SHALL BE RAISED 1/32" (0.8 mm) MINIMUM. ALL CHARACTERS SHALL BE SANS SERIF UPPERCASE CHARACTERS ACCOMPANIED BY CONTRACTED GRADE 2 BRAILLE.
- 7. CHARACTER SIZE: RAISED CHARACTERS SHALL BE MINIMUM OF 5/8" INCH (15.9 mm) AND MAXIMUM OF 2" (51mm) IN HEIGHT.
- 8. PICTOGRAMS
- A. PICTOGRAM FIELDS SHALL BE 6" MIN IN HEIGHT B. BRAILLE SHALL NOT BE LOCATED IN THE PICTOGRAM FIELD
- C. PICTOGRAMS AND BACKGROUND SHALL HAVE NON-GLARE FINISH PER CBC 11B-703.6.2
- D. PICTOGRAMS SHALL CONTRAST WITH THEIR BACKGROUND PER CBC 11B-703.6.2 E. TEXT DESCRIPTORS SHALL BE PROVIDED DIRECTLY BELOW THE PICTOGRAM PER CBC 11B-703.6.3
- 9. RESTROOM DOOR SIGNS:
- A. SHALL BE 1/4" THICK, TYP. PER 11B-703.7.2.6 B. SHALL BE MOUNTED WITH THEIR HORIZONTAL CENTERLINE BTW 58" AND 60" AFF PER CBC 11B-703.7.2.6
- C. SHALL BE MOUNTED WITH THEIR VERTICAL CENTERLINE WITHIN 1" OF THE CENTER OF THE DOOR PER CBC 11B-703.7.2.6
- D. SYMBOL EDGES SHALL BE EASED OR ROUNDED 1/16" MINIMUM OR CHAMFERED 1/8" MAX, VERTICES SHALL BE RADIUSED BTW 1/8" AND 1/4"

- 9. VISUAL CHARACTERS:
- C. CHARACTERS SHALL BE 40" MIN AFF.
- LIGHT).
- 12. TYPE STYLE
- HEIGHT OF THE CHARACTER.
- INSTALLATION.
- 15. TYPOGRAPHY SHALL BE: A. AVENIR MEDIUM





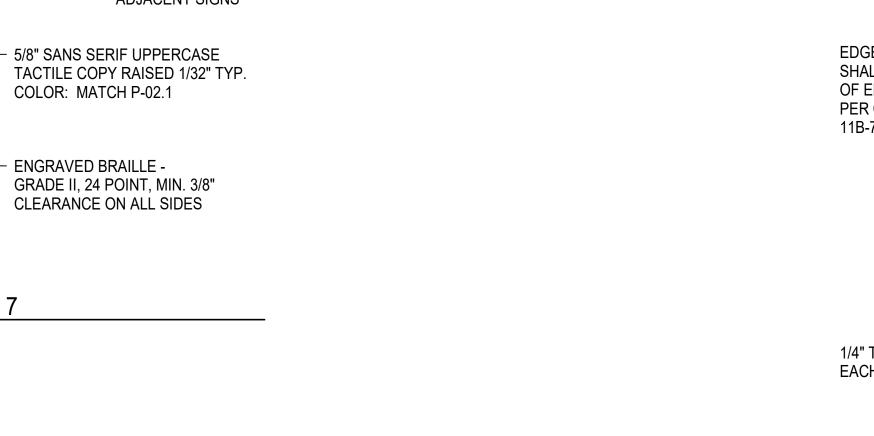


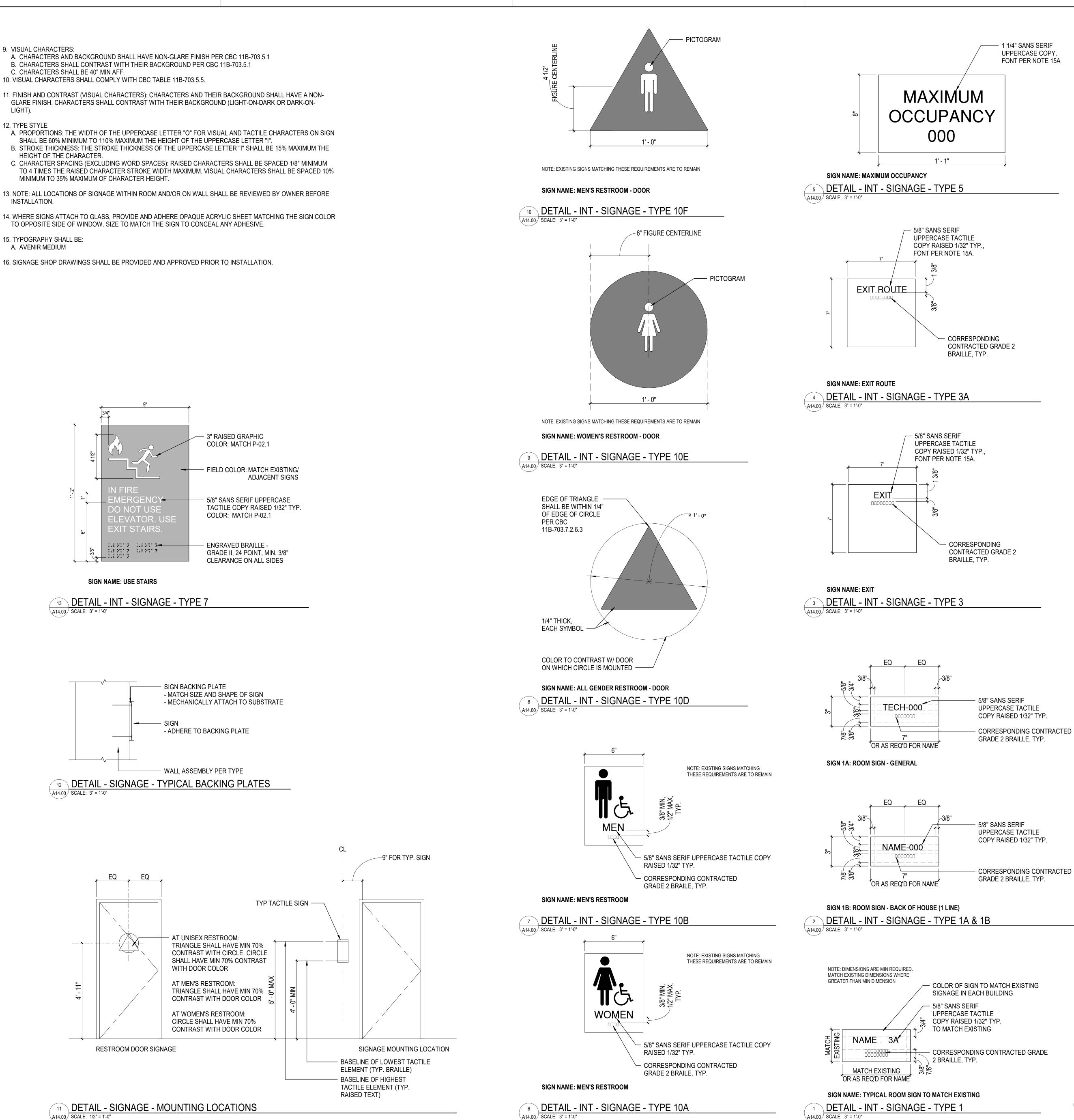


SIGN BACKING PLATE - MATCH SIZE AND SHAPE OF SIGN - MECHANICALLY ATTACH TO SUBSTRATE

SIGN - ADHERE TO BACKING PLATE

- WALL ASSEMBLY PER TYPE

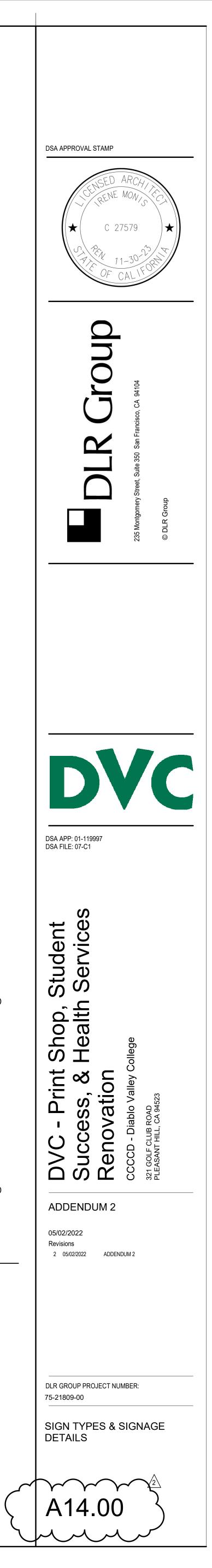


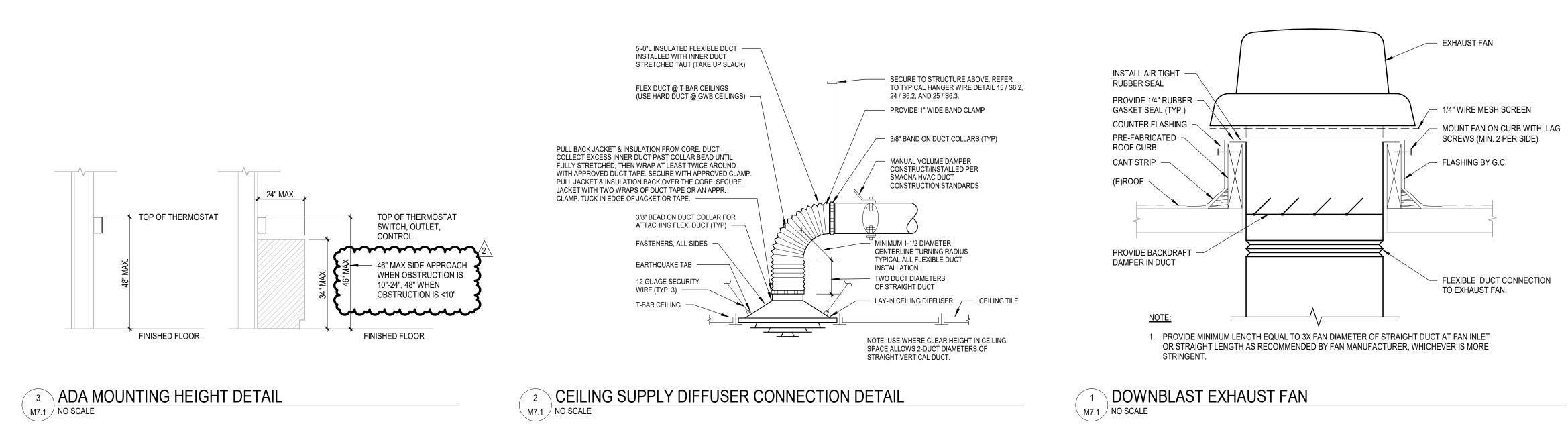




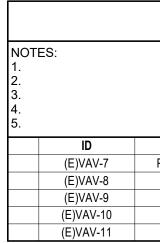


A14.00 SCALE: 3" = 1'-0"

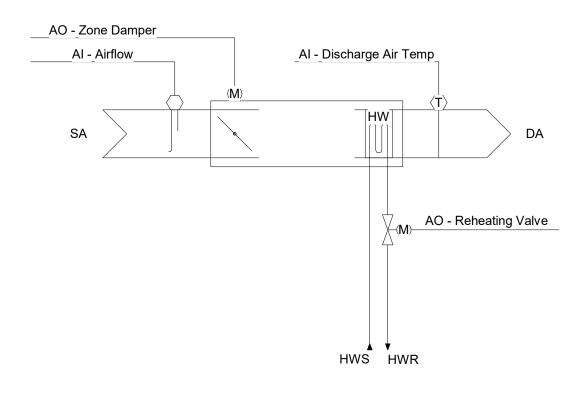








AI - Zone Temp



		IARDWAF	RE POINT	S		5					
POINT NAME	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	SHOW ON GRAPHIC
AIRFLOW	Х								Х		Х
ZONE TEMP	Х								Х		Х
REHEATING VALVE		Х							Х		Х
ZONE DAMPER		Х							Х		Х
AIRFLOW SETPOINT					Х				Х		Х
COOLING SETPOINT					Х				Х		Х
HEATING SETPOINT					Х				Х		Х
HEATING MODE						Х			Х		
SCHEDULE								Х			
HIGH ZONE TEMP										Х	
LOW ZONE TEMP										Х	
TOTALS	2	2	0	0	3	1	0	1	8	2	7

4 SEQUENCE OF OPERATION - VAV M7.1 NO SCALE

(E)VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE

AREA SERVE	AIRFLOW MIN	AIRFLOW MAX	HEATING AIRFLOW MAX	EAT (DB)	LAT (DB)	HEATING COIL WATER FLOW	EWT	LWT	NOTES
PLANETARIUM	1050 CFM	3440 CFM	1720 CFM	55 F	90 F	4.3 GPM	160 F	130 F	
PRINT SHOP	1400 CFM	2840 CFM	1400 CFM	55 F	90 F	3.5 GPM	160 F	130 F	
PRINT SHOP	300 CFM	870 CFM	430 CFM	55 F	90 F	1.1 GPM	160 F	130 F	
PRINT SHOP	250 CFM	780 CFM	390 CFM	55 F	90 F	1.0 GPM	160 F	130 F	
PRINT SHOP	300 CFM	945 CFM	470 CFM	55 F	90 F	1.2 GPM	160 F	130 F	

VARIABLE AIR VOLUME - VAV

RUN CONDITIONS - SCHEDULED: THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES: OCCUPIED MODE: THE UNIT SHALL MAINTAIN

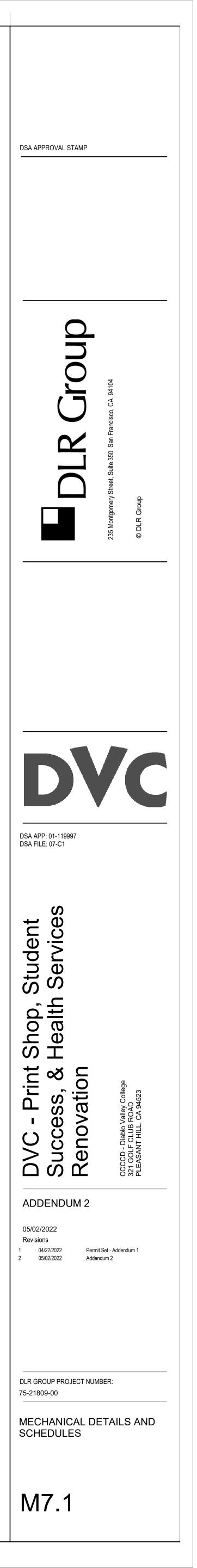
- A 75°F (ADJ.) COOLING SETPOINT A 70°F (ADJ.) HEATING SETPOINT.
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A 85°F (ADJ.) COOLING SETPOINT. • A 55°F (ADJ.) HEATING SETPOINT.
- ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.). LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

REVERSING VARIABLE VOLUME TERMINAL UNIT - FLOW CONTROL: THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

- OCCUPIED: WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM REQUIRED ZONE VENTILATION (ADJ.). WHEN ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE
- CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT ITS HEATING SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- UNOCCUPIED: WHEN THE ZONE IS UNOCCUPIED THE ZONE DAMPER SHALL CONTROL TO ITS MINIMUM UNOCCUPIED AIRFLOW (ADJ.). WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE
- IS SATISFIED. WHEN ZONE TEMPERATURE IS LESS THAN ITS UNOCCUPIED HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT THE SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE AUXILIARY HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.

REHEATING COIL VALVE: THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE REHEATING COIL VALVE OPEN ON DROPPING TEMPERATURE TO MAINTAIN ITS HEATING SETPOINT.

WHEN COLD AIR IS AVAILABLE FROM THE AHU AND THERE IS NO FAN PRESENT IN THE BOX, THE ZONE DAMPER SHALL MODULATE TO THE MINIMUM OCCUPIED AIRFLOW (ADJ.). IF MORE HEAT IS REQUIRED, THE ZONE DAMPER SHALL MODULATE TO THE AUXILIARY HEATING AIRFLOW (ADJ.).



ABBREVIATIONS

BBR	EVIATIONS
D)	DEMOLISHED
E)	EXISTING
R)	RELOCATED
Ø	PHASE
A	AMPERE
AC	ABOVE COUNTER
AF	AMP FRAME (CIRCUIT BREAKER)
AIC	AMPERE INTERRUPTING CAPACITY
AIC	ALUMINUM
AMP	AMPERE
AP	WIRELESS ACCESS POINT
AT	AMP TRIP (CIRCUIT BREAKER OR FUSE)
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO-VIDEO, AUDIO-VISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BJ	BONDING JUMPER
BKR	BREAKER
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CKT	CIRCUIT
CTL	CONTROL
CU	COPPER
DB	DECIBEL
DC	DIRECT CURRENT
DISC	DISCONNECT
DP	DISTRIBUTION PANELBOARD
DW	DISHWASHER
ECS	EMERGENCY COMMUNICATION SYSTEM
EGB	ELECTRICAL GROUNDING BUSBAR
EMD	ESTIMATED MAXIMUM DEMAND
EMGB	ELECTRICAL MAIN GROUNDING BUSBAR
EP	EXPLOSION PROOF
ER	EXISTING (TO BE) RELOCATED
ERMS	ENERGY REDUCTION MAINTENANCE SWITCH
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FLA	FULL LOAD AMPS
FS	FLOW SWITCH
FSD	FIRE SMOKE DAMPER
G	EQUIPMENT GROUNDING CONDUCTOR
GEN	GENERATOR
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT
GND	EQUIPMENT GROUNDING CONDUCTOR
HH	HANDHOLE
HOA	HAND-OFF-AUTOMATIC
HP	HORSE POWER
C	INTERCOM
G	ISOLATED GROUND
IB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CIRCUIT
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KW	KILOWATT
_T	LIGHT
_TG	LIGHTING
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MRTS	MOTOR RATED TOGGLE SWITCH
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
MTG	MOUNTING
MTS	MAIN TRANSFER SWITCH
N N.C. N.O. NF NL	L NEUTRAL NORMALLY CLOSED NORMALLY OPEN NON-FUSED NIGHT LIGHT
DFCI	OWNER FURNISHED CONTRACTOR INSTALLED
DS&Y	OUTSIDE SCREW AND YOKE
PA PB PH PIV PNL PWR	POLE(S) PUBLIC ADDRESS PULL BOX PHASE POST INDICATOR VALVE PANEL POWER
RCP	REFLECTED CEILING PLAN
RECPT	RECEPTACLE
REF	REFERENCE
RESP	RESPONSIVE
SCCR	SHORT CIRCUIT CURRENT RATING
SD	SMOKE DAMPER
SEC	SECONDARY
SPD	SURGE PROTECTION DEVICE
SWBD	SWITCHBOARD
rbb	TELECOMMUNICATIONS BONDING BACKBONE
FC	TIME CLOCK
FGB	TELECOMMUNICATIONS GRONDING BUSBAR
FMGB	TELECOMMUNICATIONS MAIN GRONDING BUSBAR
FO	TELECOMMUNICATIONS OUTLET
FR	TELECOMMUNICATIONS ROOM
FS	TAMPER SWITCH
FV	TELEVISION
JG	UNDERGROUND
JPS	UNINTERRUPTABLE POWER SUPPLY
/	VOLT
/A	VOLT-AMPERE
/FD	VARIABLE FREQUENCY DRIVE
N	WIRE
NA	TELECOMMUNICATIONS WORK AREA
NG	WIRE GUARD
NP	WEATHER-PROOF (NEMA 3R)
KFMR	TRANSFORMER

E0.1	ELECTRICAL SYMBOLS, ABBREVIATIONS & NOTES
E0.3	TITLE 24 FORMS
E0.4	TITLE 24 FORMS
E0.5	TITLE 24 FORMS
E1.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 01 - LIGHTING PLAN
E1.11	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 EM PHOTOMETRICS
E1.20	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG AND PAC - LEVEL 01 - LIGHTING PLANS
E1.21	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLVD AND PAC - LEVEL 01 EM PHOTOMETRICS
E2.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 01 - POWER PLAN
E2.20	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG AND PAC - LEVEL 01 - POWER PLANS
E2.22	STUDENT SERVICES - PLANETARIUM - LEVEL 01 - POWER PLAN
E2.31	PRINT SHOP - BOOKSTORE - LEVEL 02 - POWER PLAN
E2.32	PRINT SHOP - BOOKSTORE - ROOF -POWER
E7.1	ELECTRICAL SCHEDULES
ED1.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 1 ELECTRICAL DEMOLITION PLAN
ED1.20	STUDENT SERVICES - BUSINESS/FOREIGN LANGUAGE BLDG - LEVEL 1 ELECTRICAL DEMOLITION PLAN
ED1.22	STUDENT SERVICES - LEARNING CENTER - LEVEL 1 ELECTRICAL DEMOLITION PLAN

SHEET INDEX

CAL GREEN BUILDING CODE

- 1. A FINAL REPORT FOR THE TESTING AND ADJUSTING OF ALL SYSTEMS SHALL BE COMPLETED PRIOR TO FINAL APPROVAL BY THE FIELD INSPECTOR. THIS REPORT SHALL BE SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.
- 2. AN OPERATION AND SYSTEMS MANUAL SHALL BE PROVIDED TO THE OWNER OR REPRESENTATIVE AND TO THE FIELD INSPECTOR AT THE TIME OF FINAL INSPECTION.
- 3. FOLLOW ALL REQUIREMENTS OUTLINED ON THIS SPEC 260800 FOR COMMISSIONING.

LIGHTING CONTROLS PROGRAMMING NOTES

- 1. FURNISH COPIES OF CONSTRUCTION DOCUMENTS, ADDENDA, CHANGE ORDERS, AND APPROVED SUBMITTALS AND DESIGN DRAWINGS RELATED TO LIGHTING CONTROLS EQUIPMENT TO CLIENT. 2. PROVIDE ADDITIONAL REQUESTED DOCUMENTATION. PRIOR TO NORMAL
- O&M MANUAL SUBMITTALS, TO CLIENT FOR DEVELOPMENT OF START-UP AND FUNCTIONAL TEST PROCEDURES. 3. HELP DEVELOP START-UP AND CHECKOUT PLAN FOR LIGHTING CONTROLS
- EQUIPMENT BASED ON MANUFACTURER'S RECOMMENDATIONS AND PRE-FUNCTIONAL TEST PROCEDURES FROM CA. 4. DURING START-UP AND CHECKOUT PROCESS, EXECUTE PRE-FUNCTIONAL CHECKLISTS FOR LIGHTING CONTROLS EQUIPMENT
- 5. PERFORM FUNCTIONAL PERFORMANCE TESTING, UNDER DIRECTION OF CLIENT, FOR COMMISSIONED EQUIPMENT. 6. RESOLVE EQUIPMENT OR SYSTEM DEFICIENCIES AND RETEST AS REQUIRED TO VERIFY COMPLICIT CONFORMANCE TO CONTRACT DOCUMENTS. ADDITIONAL COSTS INCURRED BY RETESTING TO THE RESPONSIBILITY OF THE PARTY WHO SIGNS OFF ON PRE-FUNCTIONAL CHECKLISTS.
- 7. PREPARE 0&M MANUALS ACCORDING TO CONTRACTO DOCUMENTS, INCLUDING UPDATING ORIGINAL SEQUENCE OF OPERATIONS TO RECORD CONDITIONS 8. PROVIDE TRAINING OF OWNER'S OPERATING PERSONNEL
- 9. STANDARD TESTING EQUIPMENT REQUIRED TO PERFORM START-UP AND INITIAL CHECKOUT REQUIRED FUNCTIONAL PERFORMANCE TESTING TO BE PROVIDED B DIVISION CONTRACTOR FOR EQUIPMENT BEING TESTED. LIGHTING IS PROVIDED THROUGH LED'S AND CONTROLLED THROUGH LOCAL DIMMING IN ALL SPACES. THIS IS IN ADDITION TO OCCUPANCY SENSORS THROUGHOUT THE SPACE PROVIDING AUTOMATIC SHUT-OFF CONTROLS.
- WALLPLATE. ABOVE FINISHED CEILING. 5 FLOOR BOXES CONTAINING TELECOMMUNICATIONS OUTLETS: FOR EACH 7 SLEEVES FOR LOW VOLTAGE CABLES: PROVIDE 2-INCH SLEEVES UNLESS NOTED

DIVISION 26

FOR DOOR HARDWARE, ACCESS CONTROL, FIRE ALARM AND VIDEO STRINGS FOR ALL SYSTEM COMPONENTS.

* NOTE * ALL NOTES ON THIS SHEET ARE APPLICABLE TO ALL OTHER SHEETS IN

THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE APPLICABLE IN THIS SET OF DRAWINGS.

GENERAL NOTES

A/E IF DEVICES OR FIXTURES ARE DAMAGED.

1 MODIFICATIONS TO EXISTING POWER DISTRIBUTION EQUIPMENT: MATCH EXISTING MANUFACTURER, SWITCH TYPE, FUSE TYPE, BREAKER TYPE AND KAIC RATING FOR ALL INSTALLED DEVICES.

EXISTING PANEL DIRECTORIES AT PANELS AFFECTED BY WORK: PROVIDE UPDATED TYPED PANEL DIRECTORY. CONSULT OWNER FOR INPUT ON LABELING OF ALL EXISTING CIRCUITS. DEVICES AND LIGHT FIXTURES DENOTED 'ER' ARE EXISTING TO BE RELOCATED. NOTIFY

GENERAL SITE DEMOLITION NOTES

1 SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PHASES OF DEMOLITION AND CONSTRUCTION. COORDINATE WITH GENERAL CONSTRUCTION. 2 DISCONNECT AND REMOVE ALL ELECTRICAL DEVICES AND LIGHTING FIXTURES IN DEMOLITION AREAS UNLESS NOTED OTHERWISE. 3 COORDINATE AND VERIFY REQUIREMENTS WITH NEW WORK IN AREA.

GENERAL POWER NOTES

1 VERIFY ANY NEUTRAL WIRES REQUIRED ON 10 OR 30 MECHANICAL UNITS FURNISHED UNDER DIVISION 23. IF REQUIRED, PROVIDE NEUTRAL. PROVIDE DEDICATED 120-VOLT CIRCUITS TO ALL HVAC BAS CONTROL DEVICES AND PANELS. COORDINATE QUANTITY WITH DIVISION 23. UTILIZE NEAREST SPARE 120-VOLT, 20/1 BREAKER. LABEL TYPED PANEL DIRECTORY ACCORDING

TO LOAD BEING SERVED. 3 IN ADDITION TO DEVICES SHOWN, SEE SCHEDULE SHEETS FOR CONNECTIONS TO ALL MECHANICAL EQUIPMENT 4 LOCATE SWITCHES FOR CONTROL OF FANS IN TWO-GANG BOX WITH LIGHT

SWITCH WHERE APPLICABLE. PROVIDE #10AWG CONDUCTORS FOR ALL WARM AIR DRYER CIRCUITS. PROVIDE

GENERAL LIGHTING NOTES

LOCKOUT DEVICE AT ALL BREAKERS SERVING WARM AIR DRYERS.

1 SEE LIGHT FIXTURE SCHEDULE AND SYMBOLS LEGEND FOR MOUNTING HEIGHTS, UNLESS NOTED OTHERWISE. PROVIDE #10AWG MINIMUM CONDUCTORS FOR ALL EXTERIOR LIGHTING CIRCUITS.

SEE ARCHITECTURAL BUILDING ELEVATIONS FOR LOCATION OF BUILDING MOUNTED EXTERIOR LIGHT FIXTURES. 4 PROVIDE BEAD OF SILICON SEALANT AROUND RECESSED BACK BOX PERIMETER AT ALL

BUILDING MOUNTED EXTERIOR LIGHT FIXTURE LOCATIONS. CIRCUIT FIXTURES DENOTED WITH 'NL' AS UNSWITCHED NIGHT LIGHTS. FIXTURES DENOTED WITH LOWER CASE LETTERS SHALL BE CONTROLLED BY SWITCHES DENOTED WITH THE SAME LOWER CASE LETTER IN EACH ROOM.

GENERAL DEVICE BOX NOTES

1 SEE SYMBOLS LEGEND THIS SHEET FOR MOUNTING HEIGHTS UNLESS NOTED OTHERWISE ON DRAWINGS. 2 ALL MOUNTING HEIGHTS ARE TO CENTERLINE OF BOXES UNLESS NOTES OTHERWISE. 3 PROVIDE BOX EXTENDER FOR FLUSH INSTALLATION OF DEVICES LOCATED IN ARCHITECTURAL CASEWORK THAT IS FLUSH WITH ADJACENT WALL (SUCH AS

RECEPTACLES FOR GARBAGE DISPOSERS). 4 FLOOR BOXES: OBTAIN OWNER APPROVAL OF ALL BOX LOCATIONS PRIOR TO ROUGH IN. PROVIDE DEVICE PLATES AT DEVICES AND BLANK PLATES AT ALL UNUSED

COMPARTMENTS. 5 COORDINATE LOCATION OF DEVICE BOXES FOR SWITCHES, RECEPTACLES, AND SYSTEMS DEVICES WITH MARKERBOARDS. ADJUST BOX LOCATIONS TO AVOID

MARKERBOARDS. COORDINATE LOCATION OF DEVICE BOXES FOR SWITCHES, RECEPTACLES, AND SYSTEMS DEVICES WITH TACKBOARDS. ADJUST BOX LOCATIONS TO AVOID TACKBOARDS. PROVIDE BOX EXTENDER FOR A FLUSH INSTALLATION WHERE DEVICES

MUST BE MOUNTED AT TACKBOARD/TACKWALL 7 CEILING MOUNTED RECEPTACLES: AT SUSPENDED CEILINGS, ROUTE POWER TO RECEPTACLE VIA FLEXIBLE METALLIC CONDUIT WITH 6-FOOT SERVICE LOOP. FEED FMC FROM A J-BOX RIGIDLY SUPPORTED A MAXIMUM OF 24-INCHES ABOVE SUSPENDED CEILING OR AT BOTTOM OF STRUCTURE ABOVE, WHICHEVER IS LOWER. LOCATE J-BOX DIRECTLY ABOVE RECEPTACLE AND SUPPORT VIA STRUCTURE, OR VIA THREAD ROD AND UNISTRUT HUNG FROM STRUCTURE ABOVE IN HIGH STRUCTURE APPLICATIONS. DEVICES RECESSED IN MULLIONS: BACK BOXES TO BE RECESSED FOR FLUSH NSTALLATION OF DEVICE AND WALLPLATE. EXTEND CONCEALED CONDUIT IN MULLION UP TO WALL ABOVE AND STUB OUT ABOVE ACCESSIBLE CEILING. IN AREAS WITH NO CEILING, EXTEND CONDUIT TOWARDS CABLING SOURCE TO ABOVE NEAREST ACCESSIBLE CEILING.

GENERAL SYSTEMS NOTES

1 TELECOMMUNICATIONS OUTLETS: PROVIDE TWO-GANG BOX (2.25-INCH DEEP MINIMUM) WITH SINGLE-GANG STRAP MOUNT PLASTER RING AND 1-INCH CONDUIT STUBBED INTO ACCESSIBLE SPACE ABOVE FINISHED CEILING (EXCEPTION: VOICE-ONLY OR VIDEO-ONLY OUTLETS PER NOTE BELOW).

TELECOMMUNICATIONS OUTLET INDICATED AS ROUGH IN ONLY (NO SUBSCRIPTS): INSTALL PER NOTE ABOVE, WITH BLANK 302SS SINGLE-GANG

3 VOICE-ONLY OR VIDEO-ONLY TELECOMMUNICATIONS OUTLET: PROVIDE SINGLE-GANG BOX WITH 1-INCH CONDUIT STUBBED INTO ACCESSIBLE SPACE

4 MISCELLANEOUS LOW VOLTAGE OUTLETS (CALL STATIONS, HANDSETS, VOLUME CONTROL, MICROPHONE OUTLETS, SURFACE-MOUNT WALL SPEAKERS AND FIRE ALARM DEVICES): PROVIDE SINGLE-GANG BOX WITH 3/4-INCH CONDUIT STUBBED INTO ACCESSIBLE SPACE ABOVE FINISHED CEILING. INSULATED BUSHINGS: PROVIDE BUSHINGS ON ALL CONDUIT STUB UPS, INCLUDING BUT NOT LIMITED TO, OUTLETS FOR TELECOMMUNICATIONS, FIRE

ALARM, SECURITY, ACCESS CONTROL, MASS NOTIFICATION, PUBLIC ADDRESS, ALL OTHER LOW VOLTAGE INTERCOMMUNICATIONS AND UNUSED STUB-UPS OR STUB-UPS INDICATED FOR FUTURE USE.

LOW-VOLTAGE COMPARTMENT, ROUTE 1-INCH CONDUIT WITH PULL STRING UNDERFLOOR, UP NEAREST WALL, AND STUB INTO ACCESSIBLE SPACE ABOVE FINISHED CEILING. LABEL CONDUIT END 'FLOOR BOX'

OTHERWISE. COORDINATE WITH PATH OF DUCTWORK AND GWB CEILING TO ENSURE ACCESSIBILITY, EXTEND SLEEVES AS REQUIRED. INSTALL ALL SLEEVES 4-INCHES ABOVE HIGHER CEILING OF TWO ADJACENT SPACES. REFER TO ROOM FINISH SCHEDULES AND REFLECTED CEILING PLANS FOR CEILING HEIGHTS. STUB SLEEVES INTO JOIST SPACE OF FINISHED ROOMS WITH EXPOSED STRUCTURE. PROVIDE INSULATED BUSHINGS ON BOTH ENDS OF ALL SLEEVES, INCLUDING UNUSED SLEEVES. PROVIDE GROUT OR ESCUTCHEONS TO SECURE

SLEEVES TO WALL. PROVIDE FIRE-RATED SLEEVES AT ALL FIRE-RATED WALLS. PROVIDE ADDITIONAL CONDUIT, BOXES, CONDUCTORS AND OVERCURRENT PROTECTION FOR 120-VOLT BRANCH CIRCUITS NOT SPECIFICALLY COVERED UNDER DIVISION 26 WORK, BUT REQUIRED TO COMPLETE DIVISION 08 AND 28 WORK. DEVICES SHALL INCLUDE, BUT NOT BE LIMITED TO, POWER SUPPLIES

SURVEILLANCE. 9 PROVIDE WATERFALL DROPOUTS AT ALL CABLE TRAY LOCATIONS ABOVE RUNWAYS, WALL/FLOOR MOUNTED RACKS, AND EQUIPMENT ENCLOSURES. 10 AUDIO VISUAL (AV) SYSTEMS: PROVIDE RECESSED BOXES, CONDUIT AND PULL

GENERAL DEMOLITION NOTES

1 ITEMS INDICATED ON DEMOLITION PLANS ARE BASED ON AS-BUILT DRAWINGS AND FIELD OBSERVATIONS AND ARE INTENDED TO GIVE THE BIDDER A GENERAL REPRESENTATION OF EXISTING CONDITIONS.

REMOVE ALL ITEMS SHOWN FULL-TONE OR NOTED ELSEWHERE IN THE DOCUMENTS TO BE REMOVED OR DEMOLISHED. DEMOLISH ADDITIONAL ITEMS NOT SHOWN ON DRAWINGS, BUT WHICH MUST BE REMOVED TO COMPLETE THE PROJECT. 3 ITEMS SHOWN HALF-TONE ARE EXISTING TO REMAIN. 4 RELOCATE ITEMS DENOTED 'ER'. SEE LIGHTING, POWER AND/OR SPECIAL SYSTEM

SHEETS FOR NEW LOCATIONS. 'ER' IS DEFINED AS EXISTING (TO BE) RELOCATED. EXISTING CONDUIT MAY REMAIN IF ALL THE FOLLOWING ARE TRUE: A. IT CAN BE REUSED TO FEED DEVICES INSTALLED UNDER THIS CONTRACT. B. IT DOES NOT INTERFERE WITH OTHER TRADES. C. IT WAS ORIGINALLY INSTALLED MEETING SPECIFICATIONS RELATED TO THIS PROJECT.

D. IT WILL NOT BE EXPOSED IN A FINISHED AREA (UNLESS NOTED OTHERWISE). 6 PROVIDE ELECTRICAL DEMOLITION ASSOCIATED WITH MECHANICAL EQUIPMENT TO BE REMOVED. IN ADDITION TO DEVICES SHOWN, REFER TO MECHANICAL AND ARCHITECTURAL DEMOLITION SHEETS TO DETERMINE EQUIPMENT TO BE REMOVED. 7 6.MAINTAIN FUNCTIONALITY OF ALL EXISTING LOW VOLTAGE SYSTEMS INCLUDING. BUT NOT LIMITED TO, TELECOM CABLING NETWORKS, INTERCOM, CLOCKS, FIRE ALARM, SAFETY AND SECURITY DURING ALL PHASES OF CONSTRUCTION. PROVIDE TEMPORARY INTERCONNECTIONS AS REQUIRED TO ACCOMMODATE CONSTRUCTION SCHEDULE.

GENERAL SYMBOLS

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POINT OF DISCONNECT - DEMOLITION REMOVED FROM EXISTING POINT OF CONNECTION - NEW CONNECTS TO EXISTING AREA NOT IN CONTRACT

ELECTRICAL SYMBOLS

<u>LIGHTING</u>

LIGHTING FIXTURE TAG SWITCHES AND WALL-BOX CONTROLS FIXTURE TYPE SWITCHES: MOUNT 42-INCHES AFF UNO - CKT DESIGNATION (PNL - CKT NO.) ___ XXX-X-SUPERSCRIPT . SWITCH SHALL XXX-X 🛰 CONTROL FIXURE DENOTED WITH RELAY PANEL - RELAY NO. OR SAME LOWER CASE LETTER LOCAL SWITCH DESIGNATION SWITCH SYMBOL LIGHTING FIXTURES SUBSCRIPT, SWITCH TYPE - SEE BELOW LIGHTING FIXTURE LINE THRU SWITCH INDICATES A KEY OPERATED SWITCH BATTERY SYSTEM * LIGHTING FIXTURE ON EMERGENCY BUILT-IN S SWITCH, SINGLE POLE SWITCH, DOUBLE POLE O CEILING FIXTURE, SURFACE, RECESSED OR PENDANT SWITCH, 3-WAY LIGHTING FIXTURE ON EMERGENCY BUILT-IN BATTERY SYSTEM * SWITCH, 4-WAY SWITCH, DIMMER LIGHTING TRACK, TRACK MOUNTED LIGHT FIXTURES SWITCH, EMERGENCY └──────────────────────── LIGHTING FIXTURE SWITCH, LOW VOLTAGE S_{MC} SWITCH, MOMENTARY CONTACT SOS SWITCH, WALL-BOX OCCUPANCY SENSOR WALL WASHER * SOS2 SWITCH, WALL-BOX OCCUPANCY SENSOR, 2-POLE SWITCH WITH PILOT LIGHT HIGH BAY LIGHTING FIXTURE SWITCH, LOW VOLTAGE, ASSOCIATED WITH RELAY PANEL HO WALL MOUNTED LIGHTING FIXTURE SWITCH, TIMER EXIT SIGN S_{FS} SWITCH, ECO-SYSTEM AREA LIGHTING S_{FP} SWITCH, EXPLOSION-PROOF SITE LIGHTING - POLE POLE MOUNTED AREA LIGHTING FIXTURE ← POLE WITH POLE MOUNTED AREA LIGHTING FIXTURE

RMJS-8T-DV-B 8T

(POWPAK)

POWER

WALL MOUNTED AREA LIGHTING FIXTURE

IN GRADE LIGHT FIXTURE

OS LRG2-OCR2B-P (OCCUPANCY SENSOR)

P2RL PJ2-2BRL-GW-L01 (PICO WALL CONTROLS)

MRF2S-8SD010-WH (DIMMING SWITCH)

MRF2S-8SS-WH (MANUAL ON/OFF SWITCH)

CAR2S-20-DTR-WH (WIRELESS RECEPTACLES)

BOLLARD LIGHT FIXTURE

LUTRON LIGHTING CONTROL DEVICES

FCJS-010 (POWPAK)

(*) - PROVIDE 90 MIN. BATTERY BACKUP

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R20

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NOTES:

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CIRCUIT HOME RUN

RECEPTACLES: MOUNT 18-INCHES AFF, UNO

CONDUIT TURNING UP	DIAGONAL LINE THROUGH SYMBOL OR DENOTED 'AC'						
CONDUIT TURNING DOWN		ES MOUNT DEVICE ABOVE COUNTER. INDICATED AS 'MOUNT ABOVE COUNTER' MOUNT					
CONDUIT STUB-UP	BOTTON	OTTOM OF BOX 2-INCHES ABOVE TOP OF BACKSPLASH					
CONDUIT SLEEVE	OR 6-IN EXISTS.	CHES ABOVE COUNTERTOP IF NO BACKSPLASH					
CONDUIT SEAL		SHALL BE MACHINE PRINTED, UNO					
CONDUIT CONCEALED IN CEILING OR WALLS, POWER		SIMPLEX RECEPTACLE					
CONDUIT CONCEALED IN CEILING OR WALLS, OTHER (* = SEE ABBREVIATIONS)		DUPLEX RECEPTACLE DUPLEX RECEPTACLE, GFI TYPE					
CONDUIT CONCEALED IN FLOOR OR UNDERGROUND, POWER	₹ =	DUPLEX RECEPTACLE, MOUNT ABOVE COUNTER					
CONDUIT CONCEALED IN FLOOR OR UNDERGROUND, OTHER (* = SEE ABBREVIATIONS)		DUPLEX RECEPTACLE, GFI TYPE, MOUNT ABOVE COUNTER					
EXPOSED CONDUIT, POWER	=	FOURPLEX RECEPTACLE					
EXPOSED CONDUIT, OTHER (* = SEE ABBREVIATIONS)	₩₩	FOURPLEX RECEPTACLE, GFI TYPE FOURPLEX RECEPTACLE, MOUNT ABOVE COUNTER FOURPLEX RECEPTACLE, GFI TYPE, MOUNT ABOVE COUNTER					
	—	DUPLEX RECEPTACLE, FLUSH IN CEILING					
BRANCH CIRCUIT PANELBOARD MOUNT 72-INCHES TO TOP	⊢⊕ ⊢Ш	DUPLEX RECEPTACLE, HORIZONTALLY MOUNTED DUPLEX RECEPTACLE, HORIZ. MTD, GFI TYPE					
DISTRIBUTION PANELBOARD MOUNT 72-INCHES TO TOP	HS HS	DUPLEX RECEPTACLE, HORIZ. MTD, ABOVE COUNTER DUPLEX RECEPTACLE, HORIZ. MTD, GFI TYPE, MOUNT ABOVE COUNTER					
EQUIPMENT CABINET, AS NOTED	-	DUPLEX RECEPTACLE, LOWER SWITCH					
	-	DUPLEX RECEPTACLE, SWITCHED					
SWITCHBOARD	\Rightarrow	RANGE RECEPTACLE, MOUNT 8-INCHES AFF					
MOTOR STARTER OR DRIVE	$\vdash $	SPECIAL RECEPTACLE, DEEP WELL BOX					
DISCONNECT SWITCH	۲	FLUSH FLOOR OUTLET BOX UNO					
COMBINATION STARTER / DISCONNECT SWITCH	•	FLUSH FLOOR BOX WITH DUPLEX RECEPTACLE UNO					
	>0	MULTI-DEVICE FLOOR BOX WITH DUPLEX RECEPTACLE AND TELECOMMUNICATIONS					
MANUAL CONTROLLER WITH THERMAL OVERLOAD	J	OUTLETS FLUSH JUNCTION BOX, CEILING MOUNTED					
MANUAL CONTROLLER W/O THERMAL OVERLOAD	U H	FLUSH JUNCTION BOX, CEILING MOUNTED					
CIRCUIT BREAKER ENCLOSURE	ΗJ	SURFACE JUNCTION BOX, WALL MOUNTED					

PULL BOX

EQUIPMENT CONNECTION **<u>±**+</u>**±**+<u>+</u></u> CABLE TRAY, LADDER TYPE OR RUNWAY

____ CABLE TRAY

MULTI-OUTLET ASSEMBLIES MOUNT 18-INCHES AFF, UNO

WHERE DENOTED 'AC', MOUNT ABOVE COUNTER , DIVIDED SURFACE RACEWAY **_____**

MOUNT 18-INCHES AFF, UNO WHERE DENOTED 'AC', MOUNT ABOVE COUNTER

COMMUNICATIONS

TELECOMMUNICATIONS OUTLETS: MOUNT 18-INCHES AFF UNO, AND WITHIN 8-INCHES OF ADJACENT RECEPTACLE WHERE DENOTED 'AC', MOUNT ABOVE COUNTER

- TELECOMMUNICATIONS OUTLET PROVIDE JACKS UNDER A COMMON FACEPLATE: X = QTY OF VOICE JACKS Y = QTY OF DATA JACKS
- TELECOMMUNICATIONS OUTLET WITH HDMI OUTLET FOR TV CONNECTION

FIRE LIFE SAFETY F HORN-STROBE MANUAL PULL STATION mmmmm

SURFACE JUNCTION BOX, CEILING MOUNTED

DUPLEX/USB COMBINATION RECEPTACLE,

HORIZONTALLY MOUNTED

TELE-POWER POLE

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PE CONSTRUCTION DESCRIPTION -01E RECESSED ARCHITECTURAL FLOOD LIGHT RECESSED, CEIL L-02 SURFACE MOUNTED COMMERCIAL LIGHTING CEILING MOUNTE L-03 EXTERIOR ABOVE DOOR WALLPACK SURFACE MOUNT SINGLE FACE EXIT SIGN CEILING MOUNTE DOUBLE FACED EXIT SIGN CEILING MOUNTED SINGLE FACED EXIT SIGN WALL MOUNTED Specific Notes: . Contractor shall coordinate with lighting floor plans for the required length of fixture required Provide all necessary hardware for a complete working system

WHERE DENOTED 'C', MOUNT FLUSH IN CEILING

Z = QTY OF VIDEO JACKS

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND

- DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30: ALL PERMANENT EQUIPMENT AND COMPONENTS.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY. GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA. THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED
- NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE
- CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS: A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT. B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL. THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED
- PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS. MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP	MD	PP	E	OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND
MP 🗌	MD	PP	ΕV	DETAILS. OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #)
				#_ <u>0052-13</u> .

CODE ANALYSIS

	<u>LIST OF APPLICABLE CODES AS OF January 1, 2020*</u> ifornia Administrative Code (CAC), Part 1, Title 24 CCR*
2019 Cal	ifornia Building Code (CBC), Part 2, Title 24 CCR
(2018 Int	ernational Building Code, Vol. 1 & 2, and 2019 California amendments)
2019 Cal	ifornia Electrical Code (CEC), Part 3, Title 24 CCR
(2017 Na	tional Electrical Code and 2019 California Amendments)
2019 Cal	ifornia Mechanical Code (CMC), Part 4, Title 24 CCR
(2018 IA	PMO Uniform Mechanical Code and 2019 California amendments)
2019 Cal	ifornia Plumbing Code (CPC), Part 5, Title 24 CCR
(2018 IA	PMO Uniform Plumbing Code and 2019 California amendments)
2019 Cal	ifornia Energy Code (CEC), Part 6, Title 24 CCR
2019 Cal	ifornia Fire Code (CFC), Part 9, Title 24 CCR
(2018 Int	ernational Fire Code and 2019 California Amendments)
2019 Cal	ifornia Existing Building Code (CEBC), Part 10, Title 24 CCR
(2018 Int	ernational Existing Building Code and 2019 California Amendments)
2019 Cal	ifornia Green Building Standards Code (CALGreen), Part 11, Title 24 CCR
2019 Cal	ifornia Referenced Standards Code, Part 12, Title 24 CCR
Title 19 C	CCR, Public Safety, State Fire Marshal Regulations
2016 ASI	ME A17.1/CSA B44-13 Safety Code for Elevators and Escalators (per 2019 CBC Part 2 Ch 35
Note: Ca	al/OSHA Elevator Unit enforces CCR Title 8 and uses the 2004 ASME A17.1 by adoption

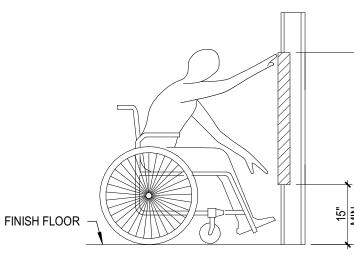
PARTIAL LIST OF APPLICABLE STANDARDS

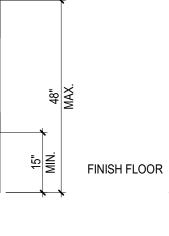
NFPA 13 - Standard for the Installation of Sprinkler Systems (CA amended)	.2016 Edition
NFPA 14 - Standard for the Installation of Standpipe and Hose Systems (CA amended)	2016 Edition
NFPA 17 - Standard for Dry Chemical Extinguishing Systems	2017 Edition
NFPA 17A - Standard for Wet Chemical Extinguishing Systems	2017 Edition
NFPA 20 - Standard for the Installation of Stationary Pumps for Fire Protection	.2016 Edition
NFPA 22 - Standard for Water Tanks for Private Fire Protection	2013 Edition
NFPA 24 - Standard for the Installation of Private Fire Service Mains and	
Their Appurtenances (CA amended)	2016 Edition
NFPA 72 - National Fire Alarm and Signaling Code (CA amended)	.2016 Edition
NFPA 80 - Standard for Fire Doors and Other Opening Protectives	2016 Edition
NFPA 2001 - Standard on Clean Agent Fire Extinguishing Systems (CA amended)	.2015 Edition
UL 300 - Standard for Fire Testing of Fire Extinguishing Systems for	
Protection of Commercial Cooking Equipment	2005 (R2010)
UL 464 - Audible Signaling Devices for Fire Alarm and Signaling Systems,	
Including Accessories	2003 Edition
UL 521 - Standard for Heat Detectors for Fire Protective Signaling Systems	
UL 1971 - Standard for Signaling Devices for the Hearing Impaired	2002 (R2010)
ICC 300 - Standard for Bleachers, Folding and Telescopic Seating, and Grandstands	.2017 Edition

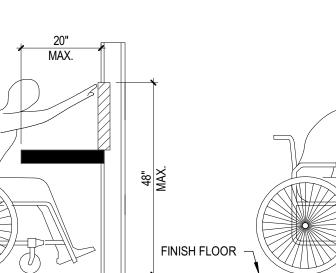
For a complete list of applicable NFPA standards refer to 2019 CBC (SFM) Chapter 35 and California Fire Code Chapter 80.

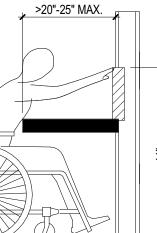
See California Building Code Chapter 35 for State of California amendments to the NFPA Standards. *All parts of the 2019 California Building Code become effective January 1, 2020 except the effective date for the

use of the 2019 Building Energy Efficiency Standards (Title 24, Part 1, Chapter 10) is January 8, 2019 and the effective date for the use of the California Administrative Code (Title 24, Part 1, Chapter 4) is January 8, 2019.

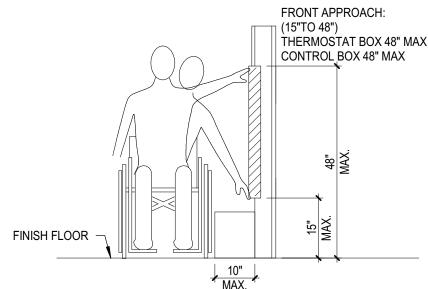






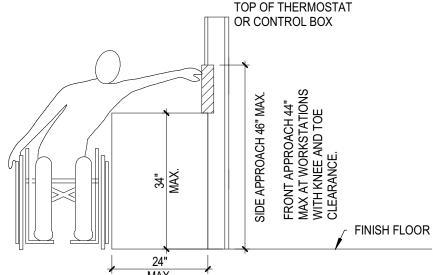


UNOBSTRUCTED FORWARD REACH



UNOBSTRUCTED SIDE REACH

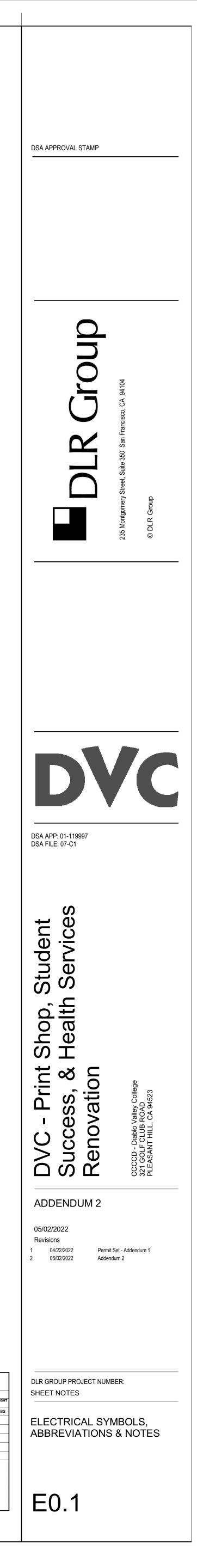
OBSTRUCTED HIGH FORWARD REACH



UNOBSTRUCTED HIGH SIDE REACH

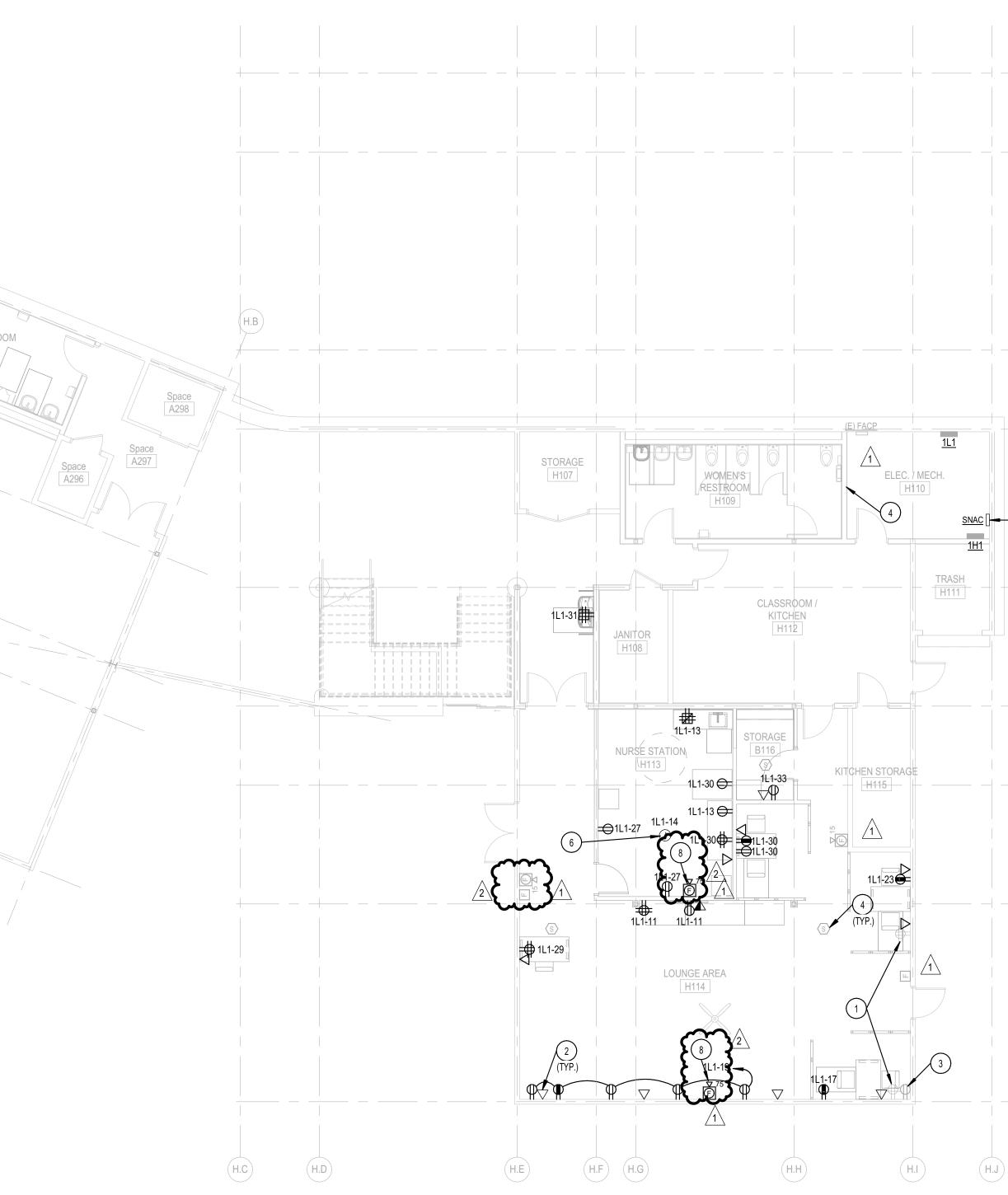
- 1. FIXTURES AND DEVICES ARE BASED ON 2019 CBC, FIGURE 11B-308.2.1 FOR UNOBSTRUCTED FORWARD REACH, FIGURE 11B-3082.2 FOR OBSTRUCTEDHIGH REACH, FIGURE 11B-308.3.1 FOR
- JNOBSTRUCTED SIDE REACH, AND FIGURE 11B-308.3.2 FOR OBSTRUCTED HIGH SIDE REACH 2. ALL THERMOSTATS AND CONTROLS SHALL BE INSTALLED AND COMPLIANT PER 2019 CBC 11B-308.
- 3. PROVIDE 30"WX27"HX19"-25"D MIN. TOE/KNEE CLEARANCE FOR FRONT APPROACH OVER OBSTRUCTION

								Li	ghting Fixture Schedule					
	LIGHTS	SOURCE		ELECTRICAL			PRODUCT							
	LAMP	LUMENS	ССТ	BALLAST/DRIVER	VOLT WATTS	EFFICACY WATTS PER FOOT	MFR	MODEL	CATALOG NUMBER	NOTES	WEIGH			
CEILING	LED	2341 LM	I 3000 K	0-10V, DIM 10%	UNV 27W	0.89	WESTGATE	RADIUS SERIES	CRL4-27W-30K	FOR FIXTURES SHOWN AS A DARK SOLID, PROVIDE EM BATTERY PACK (OPT-EM-HB1EXT OR SIMILAR AS RECOMMENDED BY MANUFACTURER)	8LBS			
JNTED	LED	4480 LM	1 3000 K	0-10V, DIM 10%	UNV 40W		WESTGATE	SCX SERIES	SCX-4FT-40W-30K-D					
		4320 LM	3000 K	0-10V, DIM 10%	UNV 32W		WESTGATE	WPX SERIES	WPX-32W-MCTP-OPT-EM-0D1INT	PROVIDE PHOTOCELL IN EACH ASSEMBLY				
JNTED					UNV 4W		WESTGATE	XT SERIES	XT-CL-RW-EM-DUAL VOLTAGE-SINGLE-WHITE-NI_CAD-RED					
JNTED					UNV 5W				XT-CL-RW-EM-DUAL VOLTAGE-DOUBLEWHITE-NI_CAD-RED					
TED	LED				UNV 5W		WESTGATE	XT SERIES	XT-CL-RW-EM-DUAL VOLTAGE-DOUBLEWHITE-NI_CAD-RED	PROVIDE BRACING AND STEEL PLATE FOR END MOUNTING.				



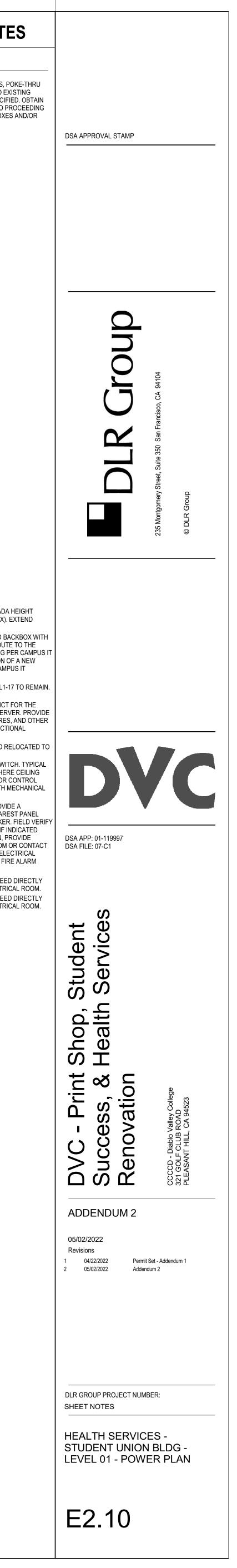
(H.10 (H.11) (H.15 (H.14)



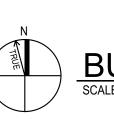


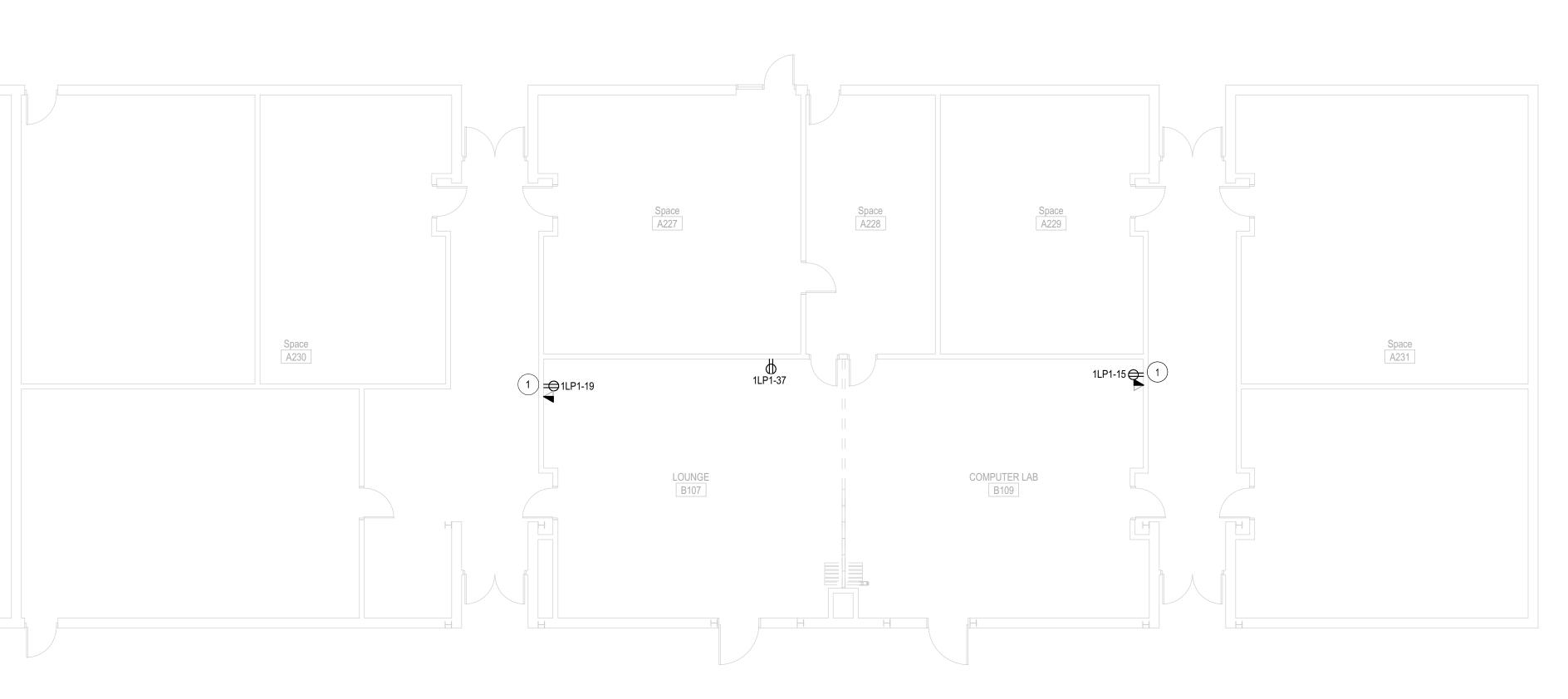
HEALTH SERVICES INSIDE OF THE STUDENT UNION BUILDING - LEVEL 1 - POWER PLAN

			LEGEND AND NOTE
		A	AVOID INSTALLING ANY NEW FLOOR BOXES, POP DEVICES, OR MAKING PENETRATIONS INTO EXIS FLOOR/CEILINGSUNLESS OTHERWISE SPECIFIED APPROVAL FROM EEOR AND AOR PRIOR TO PRO WITH AN WORK INVOLVING NEW FLOOR BOXES / POKE-THRU DEVICES.
———(H.N)			
————(H.M)			
————(H.L			
H.4			SHEET NOTES
		2	MOVE EXISTING OUTLET TO COMPLY WITH ADA HI REQUIREMENTS (15"AFF, FROM BASE OF BOX). EX CIRCUIT CONNECTIONS AS NECESSARY. INSTALL A SINGLE GANG 4 11/16"SQ X 2 1/8"D BACI (2) DATA JACKS. PROVIDE 3/4"C MIN. AND ROUTE T EXISTING DATA RACK. PROVIDE CAT CABLING PEF
(H.5)		3	REQUIREMENTS. COORDINATE INSTALLATION OF BLADES SERVER IN EXISTING RACK WITH CAMPUS DEPARTMENT. (E) DUPLEX OUTLET @7-FT AFF FED FROM 1L1-17 PROTECT IN PLACE. CONTRACTOR TO COORDINATE WITH DISTRICT FO
———(Н.б)		4	ADDITION OF BLADES TO EXISTING BLADE SERVE ALL NECESSARY CONDUITS, SUPPORTS, WIRES, A REQUIREMENTS FOR A COMPLETE AND FUNCTION INSTALLATION (E) SMOKE DETECTOR. TO BE REMOVED AND REL LOCATION INDICATED ON DRAWING SET. PROVIDE 125VAC, 1PH., 30A, DISCONNECT SWITCH
———(H.7)		7	FOR ALL VAV'S. PROVIDE ACCESS PANEL WHERE DOES NOT PERMIT ACCESS. PROVIDE 1"C FOR CC WIRING. COORDINATE EXACT LOCATION WITH ME DRAWINGS. (N) REMOTE BOOSTER POWER SUPPLY. PROVIDE DEDICATED 120V POWER SUPPLY FROM NEAREST BOARD. PROVIDE LOCK ON DEVICE ON BRAKER. F
			LOCATION IF SUITABLE FOR INSTALLATION. IF IND AREA IS UNACCEPTABLE FOR INSTALLATION, PRC ALTERNATIVES LOCATIONS WITHIN THE ROOM OR EEOR/AOR FOR INSTALLATION OUTSIDE OF ELECT ROOM. PROVIDE CONNECTION TO EXISTING FIRE CONTROL PANEL. (N) HORN-STROBE TO BE WALL MOUNTED. FEED D
———(H.8)		8	FROM NEW SNAC PANEL LOCATED AT ELECTRICA (N) HORN-STROBE TO BE WALL MOUNTED. FEED E FROM NEW ANAC PANEL LOCATED AT ELECTRICA
———(H.9)			

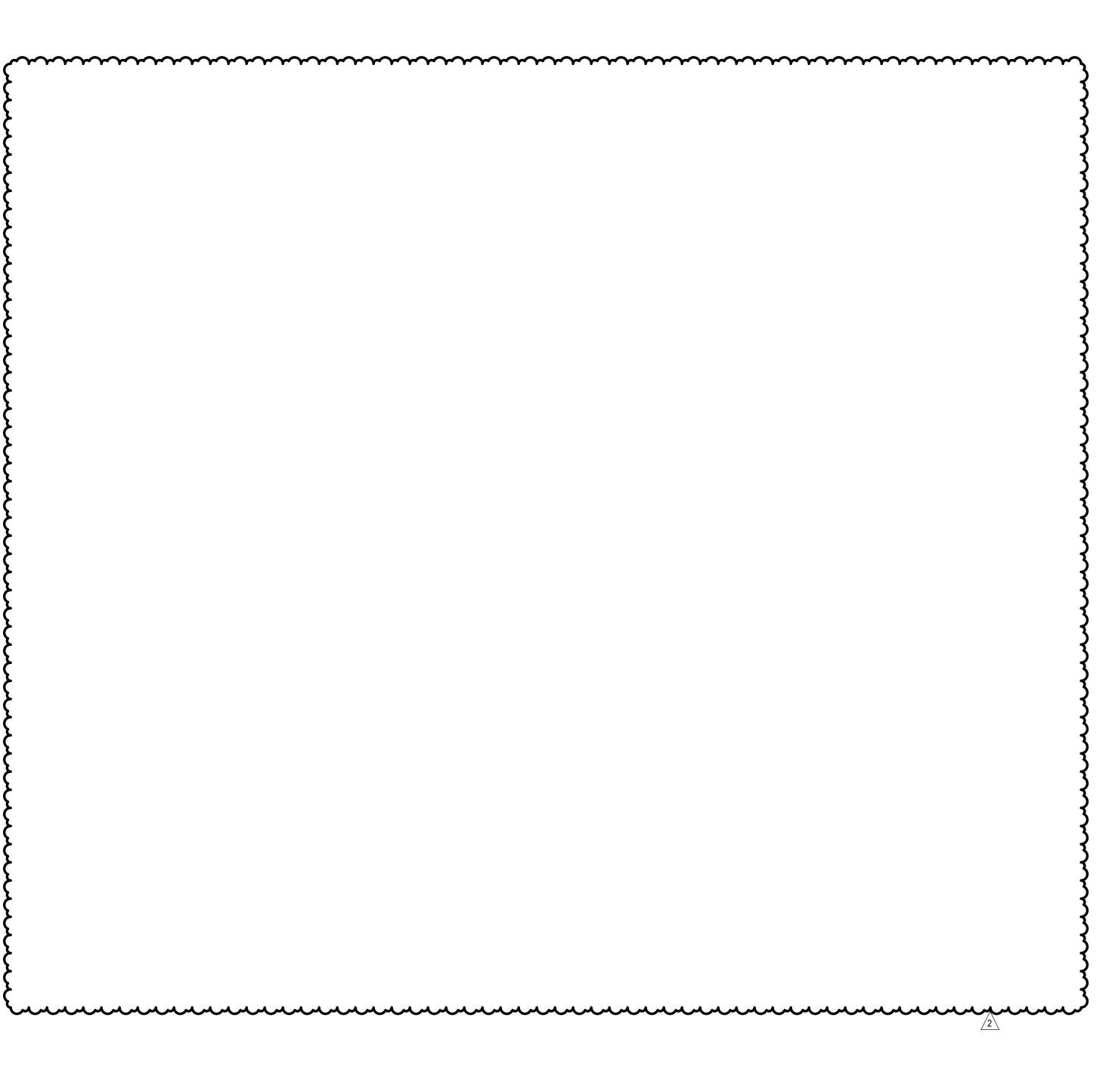








BUSINESS / FOREIGN LANGUAGE BUILDING - LEVEL 01 - POWER PLAN



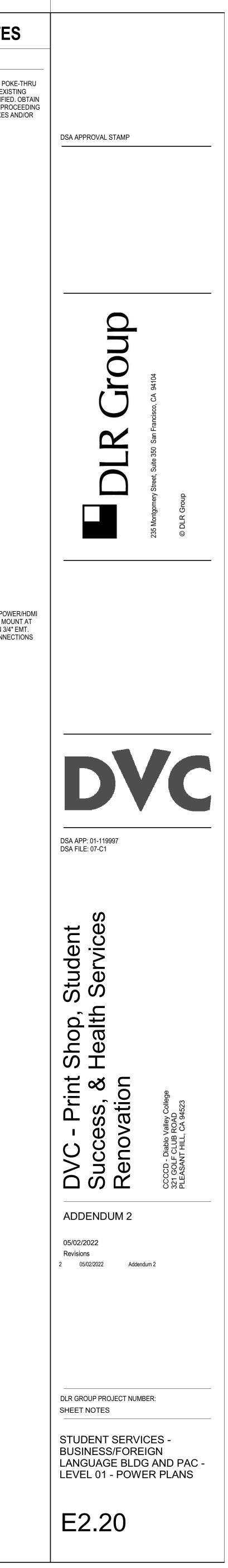
LEGEND AND NOTES

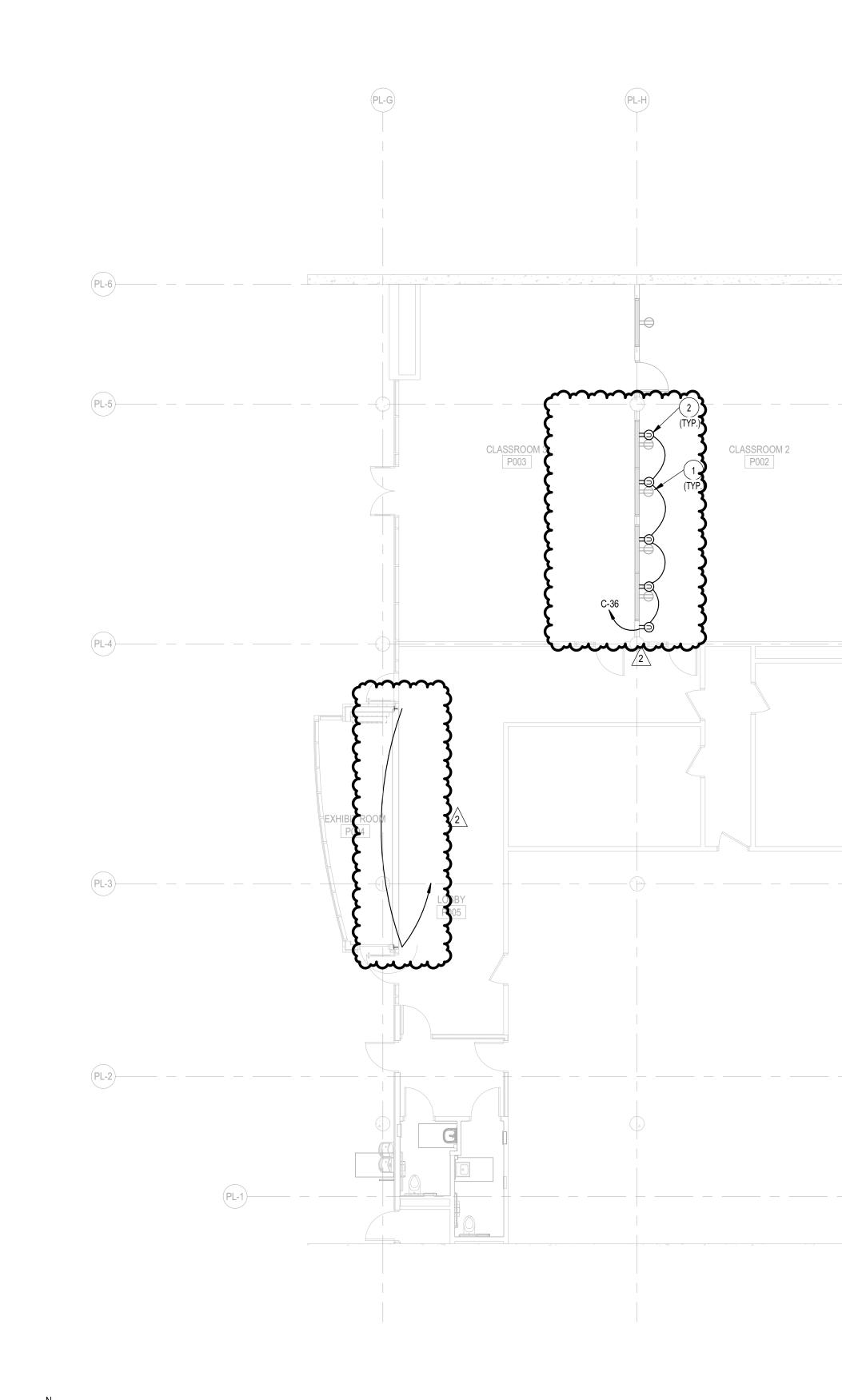
GENERAL NOTES

A AVOID INSTALLING ANY NEW FLOOR BOXES, POKE-THRU DEVICES, OR MAKING PENETRATIONS INTO EXISTING FLOOR/CEILINGSUNLESS OTHERWISE SPECIFIED. OBTAIN APPROVAL FROM EEOR AND AOR PRIOR TO PROCEEDING WITH AN WORK INVOLVING NEW FLOOR BOXES AND/OR POKE-THRU DEVICES.

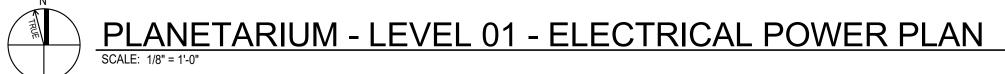
SHEET NOTES

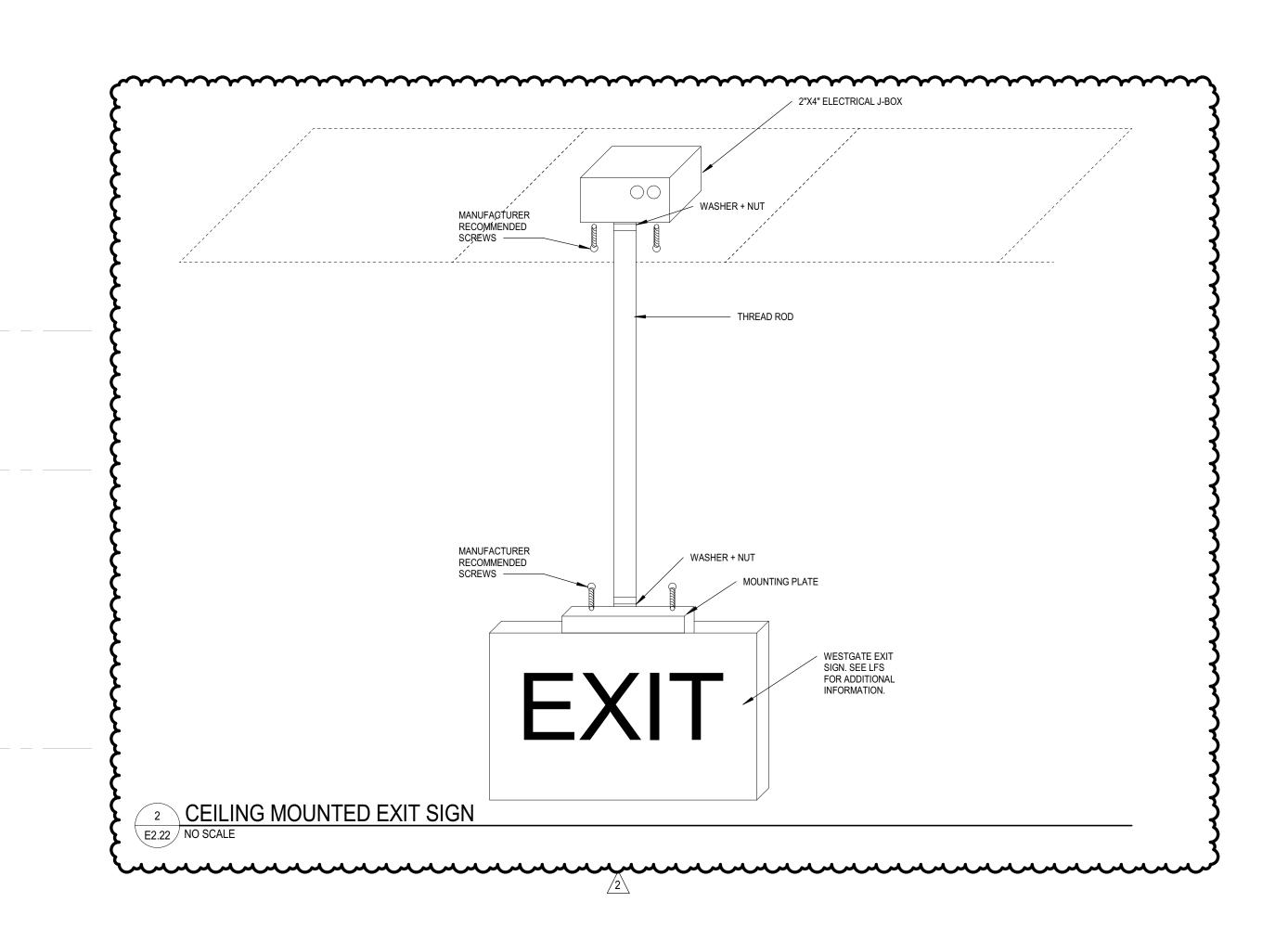
REMOVE OUTLET AND INSTALL NEW DUPLEX POWER/HDMI COMBO BOX (LEGRAND TV1WTVS OR EQUAL). MOUNT AT 48"AFF. PROVIDE 3#12 AWG COPPER WIRES IN 3/4" EMT. COORDINATE WITH CAMPUS TO CONFIRM CONNECTIONS WITH TV/MONITOR CUT-SHEET.





(PL-J)



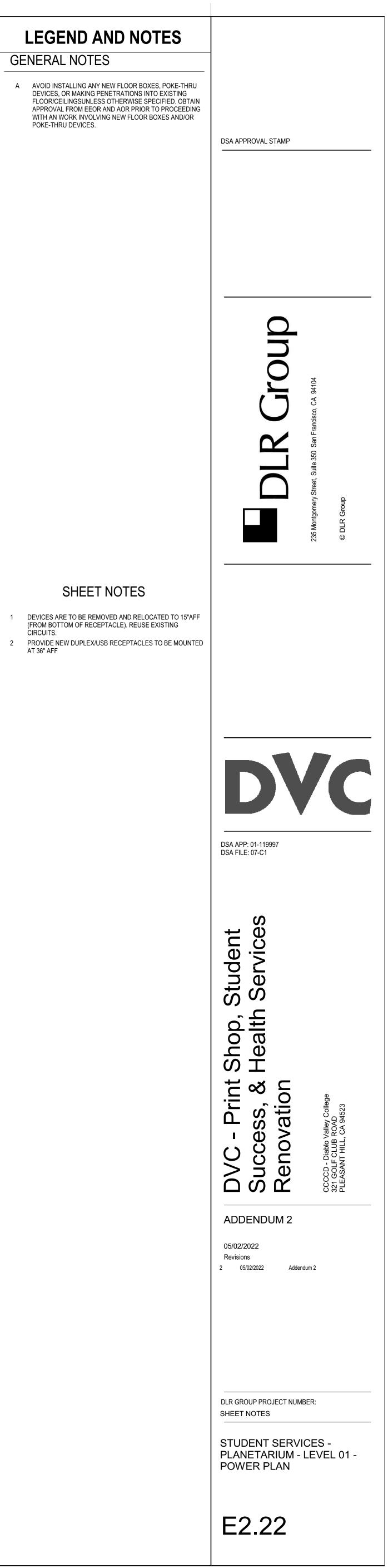


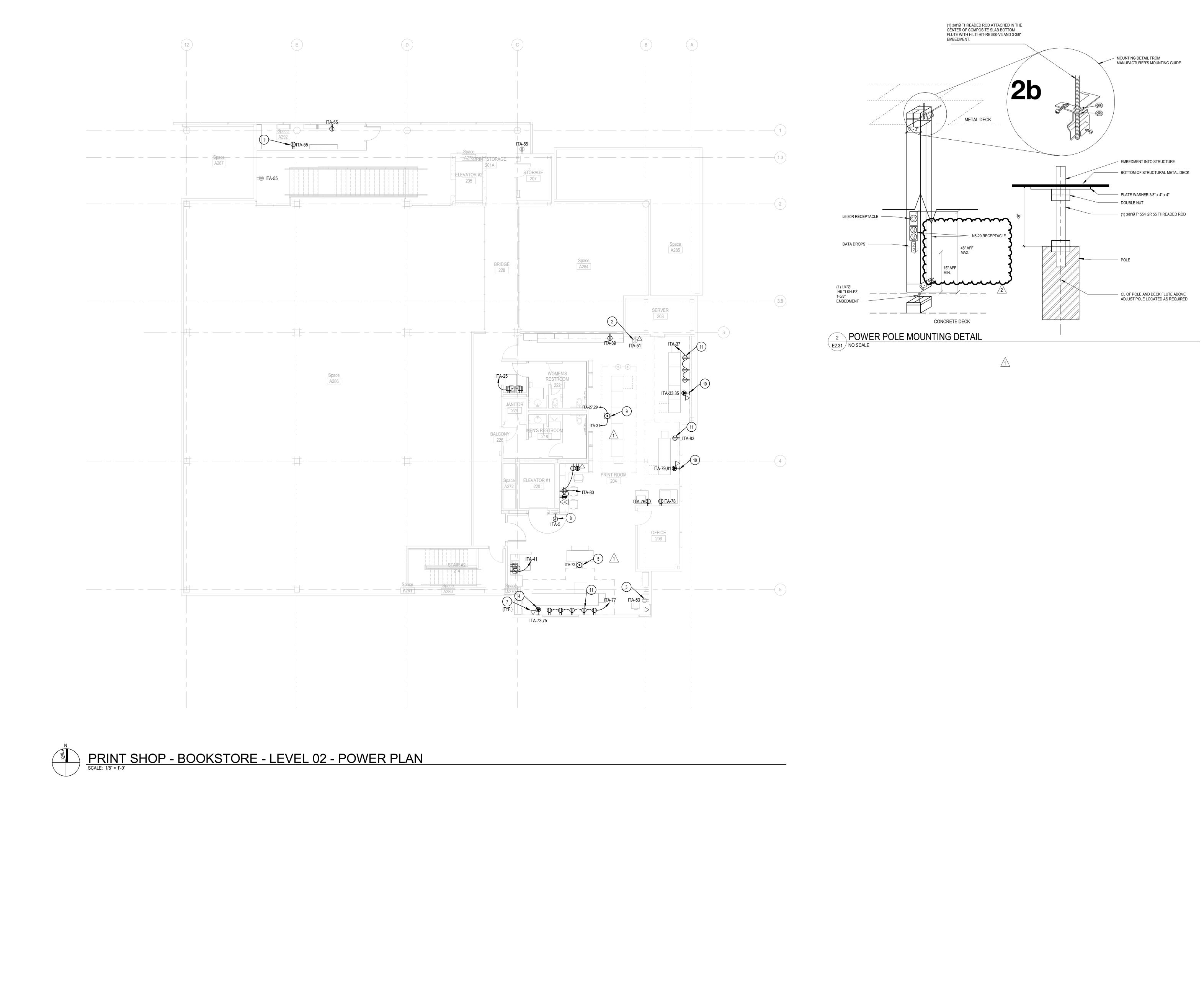
LEGEND AND NOTES GENERAL NOTES

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SHEET NOTES

DEVICES ARE TO BE REMOVED AND RELOCATED TO 15"AFF (FROM BOTTOM OF RECEPTACLE). REUSE EXISTING CIRCUITS.





LEGEND AND NOTES

GENERAL NOTES

A AVOID INSTALLING ANY NEW FLOOR BOXES, POKE-THRU DEVICES, OR MAKING PENETRATIONS INTO EXISTING FLOOR/CEILINGSUNLESS OTHERWISE SPECIFIED. OBTAIN APPROVAL FROM EEOR AND AOR PRIOR TO PROCEEDING WITH AN WORK INVOLVING NEW FLOOR BOXES AND/OR POKE-THRU DEVICES.

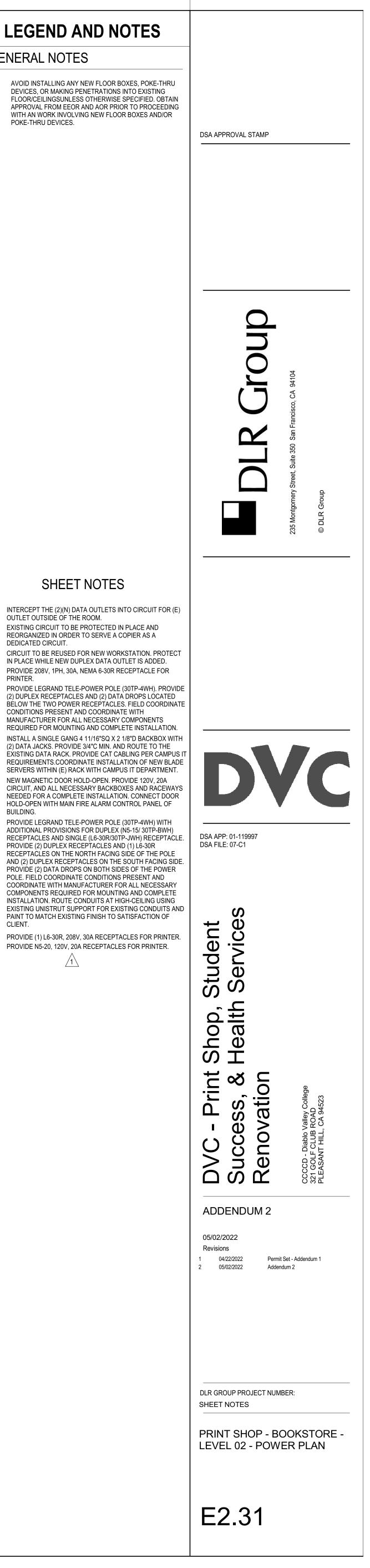
SHEET NOTES

- INTERCEPT THE (2)(N) DATA OUTLETS INTO CIRCUIT FOR (E) OUTLET OUTSIDE OF THE ROOM.
- EXISTING CIRCUIT TO BE PROTECTED IN PLACE AND REORGANIZED IN ORDER TO SERVE A COPIER AS A DEDICATED CIRCUIT. CIRCUIT TO BE REUSED FOR NEW WORKSTATION. PROTECT IN PLACE WHILE NEW DUPLEX DATA OUTLET IS ADDED.

- 3

- 4 PROVIDE 208V, 1PH, 30A, NEMA 6-30R RECEPTACLE FOR PRINTER.
- 5 PROVIDE LEGRAND TELE-POWER POLE (30TP-4WH). PROVIDE (2) DUPLEX RECEPTACLES AND (2) DATA DROPS LOCATED BÉLOW THE TWO POWER RECEPTACLES. FIELD COORDINATE CONDITIONS PRESENT AND COORDINATE WITH MANUFACTURER FOR ALL NECESSARY COMPONENTS REQUIRED FOR MOUNTING AND COMPLETE INSTALLATION.
- INSTALL A SINGLE GANG 4 11/16"SQ X 2 1/8"D BACKBOX WITH (2) DATA JACKS. PROVIDE 3/4"C MIN. AND ROUTE TO THE EXISTING DATA RACK. PROVIDE CAT CABLING PER CAMPUS IT REQUIREMENTS.COORDINATE INSTALLATION OF NEW BLADE SERVERS WITHIN (E) RACK WITH CAMPUS IT DEPARTMENT. NEW MAGNETIC DOOR HOLD-OPEN. PROVIDE 120V, 20A
- CIRCUIT, AND ALL NECESSARY BACKBOXES AND RACEWAYS NEEDED FOR A COMPLETE INSTALLATION. CONNECT DOOR HOLD-OPEN WITH MAIN FIRE ALARM CONTROL PANEL OF BUILDING. 9 PROVIDE LEGRAND TELE-POWER POLE (30TP-4WH) WITH ADDITIONAL PROVISIONS FOR DUPLEX (N5-15/ 30TP-BWH)
- RECEPTACLES AND SINGLE (L6-30R/30TP-JWH) RECEPTACLE. PROVIDE (2) DUPLEX RECEPTACLES AND (1) L6-30R RECEPTACLES ON THE NORTH FACING SIDE OF THE POLE AND (2) DUPLEX RECEPTACLES ON THE SOUTH FACING SIDE. PROVIDE (2) DATA DROPS ON BOTH SIDES OF THE POWER POLE. FIELD COORDINATE CONDITIONS PRESENT AND COORDINATE WITH MANUFACTURER FOR ALL NECESSARY COMPONENTS REQUIRED FOR MOUNTING AND COMPLETE INSTALLATION. ROUTE CONDUITS AT HIGH-CEILING USING EXISTING UNISTRUT SUPPORT FOR EXISTING CONDUITS AND
- 10 PROVIDE (1) L6-30R, 208V, 30A RECEPTACLES FOR PRINTER. 11 PROVIDE N5-20, 120V, 20A RECEPTACLES FOR PRINTER. 1

CLIENT.



ABBREVIATIONS

AA\

ACC

AD

AD, AGF

AHU

AR

AV

BC

BFF BFP BFV

BLKG BLKHD BOT BPIP

CD CF CL

CL

CIP CIRC

CLR

CO

CR

CS

CS

CSF

CTL

CU

CW

DBI

DE DEPT

DF

DFR

DFS

DFV

DSN

DSP

DW

EA

EEW

EEWS

EFF

ELEV

EMER

ENT

EWC

EXP

F.V.

FAE

FCO

FCU

FDC

FDN

FF

FH

FHC

FLEX

FIX

FM

FΜ

FOF

FOR

FOS

FOV

FPD

FPM

FS

FS

FVC

GA

GAL

GCO

GPD

GPH

GPM

GV

GV

GVBF

GW

HB

HGR HID HP

HP

HR HUM HVAC

HW

IAW

ID

IES INSU

IW

JAN

LAV LF LG

LIN

LPG LS LVG

LWT

MAINT

MAN MATL

MAV

MFRG

MOUNTED

MOUNTING

MEDICAL VACUUM

MEDIUM PRESSURE GAS

MH

MPG

· MV

HWC

FDNDR

FD

COMB

ANCH

ASCE

AUTO

<i></i>	
	DEMOLISHED EXISTING RELOCATED DEGREES CELSIUS DEGREES FAHRENHEIT DIAMETER
	AIR CONDITIONING(ER) AUTOMATIC AIR VENT ACCESSIBLE AREA DRAIN ADJUSTABLE
	AIR GAP FITTING AIR HANDLING UNIT ANCHOR ACID RESISTING AMERICAN SOCIETY OF CIVIL ENGINEERS
	AUTOMATIC AUDIO-VIDEO, AUDIO-VISUAL ACID VENT AIR VENT BOILER BLOW OFF
	BALANCING COCK BOILER FEED BELOW FINISH FLOOR BACKFLOW PREVENTER BUTTERFLY VALVE BLOCKING
	BULKHEAD BOTTOM BOILER PLANT INSTRUMENTATION PANEL BALL VALVE
	CONDUIT CONDENSER WATER CONDENSATE DRAIN CONSTRUCTION DOCUMENTS CUBIC FEET CAST IRON
	CURB INLET CAST IRON PIPE CIRCULATING CLEAR CLEAN OUT COMBINATION
	CORROSION RESISTANT COUNTERSINK COMBINATION SEWER COMBINATION STANDPIPE COOLING TOWER CONTROL
	CONDENSING UNIT COLD WATER DRAIN DOUBLE DEIONIZED WATER
	DEPARTMENT DRINKING FOUNTAIN DIESEL FUEL RETURN DIESEL FUEL SUPPLY DIESEL FUEL VENT DISCHARGE
	DOWNSPOUT NOZZLE DRY STANDPIPE DISHWASHER EACH EMERGENCY EYE WASH
	EMERGENCY EYE WASH SHOWER EFFICIENCY ELEVATOR EMERGENCY ENTERING ELECTRIC WATER COOLER EXPOSED
	FAHRENHEIT FIRELINE FIELD VERIFY FABRICATE(D) FLOOR CLEAN OUT
	FAN COIL UNIT FLOOR DRAIN FIRE DEPARTMENT CONNECTION FOUNDATION FOUNDATION DRAIN FINISH FLOOR
	FIRE HYDRANT FIRE HOSE CABINET FIXTURE FLEXIBLE FIRE MAIN FORCE MAIN
	FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FUEL OIL VENT FIRE PUMP DISCHARGE FEET PER MINUTE
	FLOW SWITCH FLOOR SINK FIRE VALVE CABINET NATURAL GAS GAUGE
	GALLON GRADE CLEAN OUT GALLONS PER DAY GALLONS PER HOUR GALLONS PER MINUTE GATE VALVE
	GREASE VENT GREASE VENT BELOW FLOOR GREASE WASTE HOSE BIB HANGER
	HIGH INTENSITY DISCHARGE HEAT PUMP HIGH PRESSURE HOUR HUMIDIFIER HEATING VENTILATING AND AIR CONDITIONING
	DOMESTIC HOT WATER DOMESTIC HOT WATER RECIRCULATING IN ACCORDANCE WITH INSIDE DIAMETER
	INVERT ELEVATION ILLUMINATING ENGINEERING SOCIETY INSULATION IRON PIPE INDIRECT WASTE
	JANITOR LAVATORY LINEAR FOOT LENGTH (LONG) LINEAR
	LIQUIFIED PETROLEUM GAS LAWN SPRINKLER LEAVING LEAVING WATER TEMPERATURE
	MAINTENANCE MANUAL MATERIAL MANUAL AIR VENT MANUFACTURING MANHOLE MEDIUM RESSURE CAS

NITROGEN NITROUS OXIDE NORMALLY CLOSED NORMALLY OPEN NUMBER NITROGEN DIOXIDE NOMINAL	
OPERATION AND MAINTENANCE OUTSIDE DIAMETER OVERFLOW ROOF DRAIN OUTSIDE SCREW AND YOKE OVERFLOW OXYGEN	
PUMP PRESSURE/TEMPERATURE TEST PORT PUMPED CONDENSATE POUNDS PER CUBIC FOOT PRESSURE DROP PUMP DISCHARGE PLUMBING & DRAINAGE INSTITUTE PRESSURE GAUGE PRESSURE INDICATOR POST INDICATOR VALVE PLUMBING POINT OF CONNECTION PAIR POUNDS PER SQUARE INCH PLASTER TRAP POLYVINYL CHLORIDE	
RISER RADIUS REFLECTED CEILING PLAN REINFORCED CONCRETE PIPE ROOF DRAIN REMOVABLE REFRIGERANT SUCTION ROOF TOP UNIT	
SANITARY SEWER SPRINKLER LINE SANITARY WASTE SOFT COLD WATER STORM DRAIN STEAM EXHAUST VENT SHOWER SOFT HOT WATER SINK SPRINKLER MAIN STATIC PRESSURE (H2O) STAND PIPE SURGE PROTECTION DEVICE SPRINKLER SQUARE STAINLESS STEEL	
SERVICE SINK SECONDARY STORM DRAINAGE STORM DRAINAGE STORAGE SUSPENDED TEMPERED	

N20

OS&

ΟX

STOF

SUSP

TEMP

THK

TMV TOIL

TPV

TS

TT

UC

UG

UR

UTIL

VA

VBF

VCP

VOL

VP

VTR

WC

WCC

WCL

WCO

WF

WH

WH

WHA

WPB

WSP

YH

ZCB

ZCV

WFMD

TEMPERED TEMPERATURE THICK(NESS) THERMOSTATIC MIXING VALVE TOILET TRAP PRIMER TEMPERATURE SENSOR TEMPERATURE TRANSMITTER UNIT COOLER UNDERGROUND URINAL UTILITY VENT VACUUM VALVE VENT BELOW FLOOR VITRIFIED CLAY PIPE VOLUME VACUUM PUMP VENT THROUGH ROOF

WASTE (PLUG) WATER COLUMN WATER CLOSET WATER COOLED CONDENSER WATER CLOSET/LAVATORY COMBINATION WALL CLEAN OUT WASH FOUNTAIN WATER FLOW MEASURING DEVICE WALL HYDRANT WATER HEATER WATER HAMMER ARRESTOR WHIRLPOOL BATH WET STAND PIPE

YARD HYDRANT

WATER SERVICE

ZONE CONTROL BOX ZONE CONTROL VALVE

				BLE FIXTUR						ARCHITURAL DRAWINGS. SULATE ALL EXPOSED HOT WATER AND DRAIN PIPING BELOW ACCESSIBLE LAVATORIES AND SINKS
				D			INI			
ID	DESCRIPTION	QTY	WASTE			· · · ·		WATER GAS		SPECIFICATION
			PRIMARY	AUX	INDIRECT	VENT	COLD	НОТ	GAS	
WC-1	WATER CLOSET (WALL HUNG, ADA)	3	4"			2"	1"			AMERICAN STANDARD (A/S) NO. 3351.101 "AFWALL MILLENNIUM FLOWISE ELONGATED FLUSHOMETER TOILET", SIPHO JET, WALL HUNG, ELONGATED BOWL, TOP SPUD. COMPLETE WITH 1.28 GPF FLUSH VALVE, MANUAL, SLOAN ROYAL NO 111-1.28 GPF FLUSH VALVE, OLSONITE NO. 95SSCT SEAT, AND ZURN 1201 & 1202 SERIIES CARRIER. MOUNT AD ADA ACCESSIBLE HEIGHT.
L-1	LAVATORY (WALL HUNG, ADA)	1	1-1/2"			1-1/2"	1/2"	1/2"		REINSTALL WALL HUNG LAVATORY FROM DEMOLITION PLAN. COMPLETE WITH CHICAGO 3400-ABCP METER FAUCET WITH E2805AB 0.5 GPM NON-AERATING SPRAY AND VANDAL RESISTANT COVER PLATE, McGUIRE NO. 155A 1-1/4" OUTLET "OPEN GRID P.O. PLUG", McGUIRE NO. PW2125 1-1/4" L.A. PATTERN P-TRAP WITH TRAP, TRAP ARM AND SUPPL COVERS, CHICAGO NO. 1017-ABCP LOOSE KEY STOP WITH RIGID SUPPLY, AND ZURN NO. Z-1231-EZR-WL ADJUSTABLE CONCEALED ARM CARRIER W/ SLEEVE FOR WASTE. MOUNT IN ACCORDANCE WITH ADA REQUIREMENTS.
L-2	LAVATORY (WALL HUNG, ADA)	1	1-1/2"			1-1/2"	1/2"	1/2"		KOHLER NO. L-2805 "HUDSON WALL HUNG LAVATORY" 19" X 17", WALL HUNG. CHICAGO NO. 3400-ABCP METER FAUCE" WITH E2805AB 0.5 GPM NON-AERATING SPRAY AND VANDAL RESISTANT COVER PLATE, McGUIRE NO. 155A 1-1/4" OUTLET "OPEN GRID P.O. PLUG", McGUIRE NO. PW2125 1-1/4" L.A. PATTERN P-TRAP WITH TRAP, TRAP ARM AND SUPPL COVERS, CHICAGO NO. 1017-ABCP LOOSE KEY STOP WITH RIGID SUPPLY, AND ZURN NO. Z-1231-EZR-WL ADJUSTABLE CONCEALED ARM CARRIER W/ SLEEVE FOR WASTE. MOUNT IN ACCORDANCE WITH ADA REQUIREMENTS.
S-1	SINGLE BOWL SINK (ADA)	1	1-1/2"			1-1/2"	1/2"	1/2"		ELKAY NO. LRAD221955 "LUSTERTONE SINGLE BOWL SINK", SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, SELF-RIMMING, 22" X 19" X 5-1/2" DEEP. COMPLETE WITH CHICAGO NO. 786-E35VPCABCP DECK MOUNTED, BLADE HANDLES, GOOSENECK FAUCET E35VPAB 1.5 GPM SOFTFLO AERATOR AND VANDAL RESISTANT COVER PLATE McGUIRE NO. 152 1-1/2" OUTLET "WIDE TOP SINK STRAINER", McGUIRE NO. PW2150NC0 1-1/2" L.A. PATTERN P-TRAP WITH TRAP AND SUPPLY COVERS, AND CHICAGO NO. 1017-ABCP LOOSE KEY STOPS WITH RIGID SUPPLIES. MOUNT IN ACCORDANCE WITH ADA REQUIREMENTS.
EWC-1	ELECTRIC WATER COOLER (DUAL HEIGHT, BOTTLE FILLER, ADA)	2	1-1/4"	1 1/4"		2"	1/2"			ELKAY NO. LZSTL8WSSP "ezH2O", DUAL HEIGHT WITH BOTTLE FILLING STATION, SURFACE WALL MOUNTED, STAINLESS-STEEL WITH STAINLESS-STEEL MOUNTING BRACKET, BARRIER FREE, FILTERED, 8 GPH OF 50° F. WATER WITH 80° F. INLET WATER AT 90° F. AMBIENT, 1/5 HP, 115 VOLT, 1 PHASE. COMPLETE WITH CHICAGO NO. 45LKABCP ANGLE STOP WITH 1/2" FEMALE INLET & OUTLET. MOUNT AT ADA ACCESSIBLE HEIGHT.
EWC-2	ELECTRIC WATER COOLER (OUTDOOR, DUAL HEIGHT, BOTTLE FILLER, ADA)	2	1-1/4"	1 1/4"		2"	1/2"			ELKAY NO. VRCTL8WSK "ezH2O", DUAL HEIGHT WITH BOTTLE FILLING STATION, SURFACE WALL MOUNTED, STAINLESS-STEEL WITH STAINLESS-STEEL MOUNTING BRACKET, BARRIER FREE, 8 GPH OF 50° F. WATER WITH 80° F. INLET WATER AT 90° F. AMBIENT, 1/5 HP, 115 VOLT, 1 PHASE. COMPLETE WITH CHICAGO NO. 45LKABCP ANGLE STOP WITH 1/2" FEMALE INLET & OUTLET. MOUNT AT ADA ACCESSIBLE HEIGHT.

SHEET INDEX

P0.1	PLUMBING GENERAL NOTES, SCHEDULES, SYMBOLS & ABBREVIATIONS
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PD2.21	STUDENT SERVICES - LEARNING CENTER - LEVEL 01 - PLUMBING DEMOLITION PLAN
PD2.22	STUDENT SERVICES - PLANETARIUM - LEVEL 01 - PLUMBING DEMOLITION PLAN
P2.10	HEALTH SERVICES - STUDENT UNION BLDG - LEVEL 01 - PLUMBING PLAN
P2.21	STUDENT SERVICES - LEARNING CENTER - LEVEL 01 - PLUMBING PLAN
P2.22	STUDENT SERVICES - PLANETARIUM - LEVEL 01 - PLUMBING PLAN
P2.31	PRINT SHOP - BOOKSTORE - LEVEL 02 - PLUMBING PLAN
P2.51	BFL - RESTROOMS - PLUMBING DEMOLITION & NEW PLANS

MATERIALS

I	SANITARY SOIL WASTE AND VENT SYSTEMS ABOVE AND BELOW GRADE: PIPING WITHIN THE BUILDING ITSELF AND OUTSIDE WITHIN FIVE FEET (5') OF THE FOUNDATION, SHALL BE NO-HUB CAST IRON SERVICE WEIGHT PIPE AND FITTINGS, ASPHALTUM COATED, FREE FROM DEFECTS, AND SHALL COMPLY WITH C.I.S.P.I. STANDARD 301 OR ASTM A-888. FITTINGS SHALL BE MADE UP WITH "HUSKY" SD 4000 SERIES OR "CLAMP ALL" 125 SERIES STAINLESS-STEEL TYPE 304 NO-HUB COUPLINGS AND SHALL CONFORM TO ASTM C1540 & ASTM C564 EXCEPT ALL ABOVE GROUND VENT PIPE FITTINGS MAY BE INSTALLED WITH "ANACO" OR "TYLER" STAINLESS-STEEL TWO BAND COUPLINGS CONFRMING TO C.I.S.P.I. STANDARD 310.
2	WATER PIPING WITHIN THE BUILDING AND ABOVE GRADE SHALL BE TYPE "L" ASTM B88, HARD DRAWN COPPER TUBING WITH WROUGHT COPPER SWEAT FITTINGS ANSI B16.22 WITH 95-5 SILVER SOLDIER.
3	INSULATION: ALL HOT WATER PIPING SHALL BE INSULATED WITH "PPG" INDUSTRIES, CERTAIN-TEED SAINT GOBAIN SNAP-ON OR JOHNS-MANVILLE MICRO-LOC AIR, AIR CONDITIONING CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH "IMCOA" IMCOLOCK CLOSED-CELL PIPE INSULATION.

- 4 CLEANOUTS: SHALL BE MANUFACTURED BY J.R. SMITH, ZURN OR JOSAM AS FOLLOWS: A.FINISHED ROOM FLOORS: J.R. SMITH NO. 4163 W/ N.B. TOP AND GASKETED WATERTIGHT COVER. B.WALLS: J.R. SMITH 4532 W/ BRONZE PLUG AND CHROME PLATED COVER. C.YARD AND PARKING LOT: J.R. SMITH NO. 4253 CAST IRON SURFACE LEVEL CLEANOUT.
- 5 VALVES: GATE VALVES 1-1/2" AND SMALLER SHALL BE NIBCO NO. T-113-LF, GATE VALVES 2" TO 3" SHALL BE NIBCO NO. F-607-RW OS&Y, BALL VALVES 2" AND SMALLER SHALL BE NIBCO NO. T-685-66-LF. 6 CORROSION PROTECTION:
- A.ALL BELOW GROUND METALLIC FITTINGS, VALVES, FLANGES, BOLTS, SHALL BE PROTECTED AGAINST CORROSION AS FOLLOWS: 1.ALL METALLIC COMPONENTS AS DESCRIBED ABOVE SHALL RECIEVE A HEAVY COATINGOF "HENRY'S" OIL BASE ROOF MASTIC. 2.AFTER MASTIC COATING IS COMPLETED AND INSPECTED, WRAP ENTIRE METALLIC COMPONENT WITH A MINIMUM OF 10 MIL. POLYETHELYLENE WRAP OVERLAPPED 50% OF THE CIRCUMFERENCE AND EXTENDED BEYOND ENDS OF COMPONENT AS REQUIRED FOR POLYETHYLENE TO BE SECURED TO PIPING. THE OVERLAP SEAM SHALL BE LOCATED TO AVOID BACKFILL MATERIAL FROM ENTERING THE ENCAPSULATED AREA. THE ENDS AND SEAM OF THE POLYETHYLENE MATERIAL SHALL BE SECURED TO THE PIPING AND SEALED WITH 3M SCOTCH/ WRAP NO. 50, 10 MIL., 2' WIDE, PRINTED, PIPE WRAP SEALING TAPE. 3. THE MASTIC COATING SHALL BE INSPECTED AND APPROVED PRIOR TO THE FINISH APPLICATION OF THE POLYETHY LENE MATERIAL, WHICH SHALL ALSO BE INSPECTED.
- 7 BEFORE ANY USE OF SYSTEM IS MADE FOR DOMESTIC PURPOSES, IT SHALL BE STERILIZED BY SLOWLY FILLING WITH WATER TO WHICH A STERILIZING AGENT HAS BEEN APPLIED, AT A REATE GIVING 50 PPM OF CHLORINE, AS DETERMINED BY RESIDUAL CHLORINE TEST AT EXTREMETIES OF THE LINE. AFTER LINES HAVE BEEN FILLED FOR A PERIOD OF THREE € HOURS, TESTS FOR RESIDUAL CHLORINE SHALL SHOW NOT LESS THA 50 PPM. IF LESS THAN 50 PPM IS INDICATED, DRAIN OR FLUSH OUT THE LINE AND REPEAT STERILIZATION TREATMENT UNTIL TESTS INDICATE AT LEAST 50 PPM OF RESIDUAL CHLORINE AFTER THREE (3) HOURS. THE LINES SHALL BE FLUSHED UNTIL ALL TRACES OF CHEMICAL HAVE BEEN REMOVED.

GENERAL PLUMBING NOTES

- BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF ALL UTILITIES AND PIPING, AND
- SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES. ALL VALVES, UNIONS, ETC. TO BE SAME SIZE AS PIPE UNLESS OTHERWISE INDICATED ON
- DRAWINGS. ALL PLUMBING FIXTURE VENTS TO TERMINATE A MINIMUM OF 12 INCHES FROM ANY
- VERTICAL SURFACE AND 10 FEET FROM ANY OUTSIDEAIR INTAKES. CONNECTION BETWEEN INCOMPATIBLE MATERIALS ABOVE GRADE AND INSIDE BUILDING
- SHALL BE MADE WITH TWO (2) DIELECTRIC UNIONS SEPARATED BY A TWELVE INCH (12") SECTION OF RED BRASS PIPE.
- 5 ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. THE CONTRACTOR SHALL COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC., AND
- THE ARCHITECT PRIOR TO ANY INSTALLATION. 6 ALL PLUMBING WORK SHALL BE INSTALLED SO AS TO AVOID INTERFERENCE WITH
- ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING.
- 7 ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH CALIFORNIA PLUMBING CODE 2019.

8	INSULATION (SEE SPECIFICATION FOR TYPE REQUIRED) AND COVERING ON PIPE AND TUBING SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH 2019 C.B.C. SECTION 720.3
<pre>{°</pre>	ANY ALTERATIONS TO A STRUCTURAL MEMBER, SUCH AS CUTTING, BORING, BRAZING, DRILLING, WELDING, ETC. SHALL HAVE PRIOR WRITTEN APPROVAL OF ARCHITECT, STRUCTURAL ENGINEER AND DSA.
Č ¹⁰	M.E.P. COMPONENT ANCHORAGE NOTE:
	ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30

26 AND 30. 1.ALL PERMANENT EQUIPMENT AND COMPONENTS. 2.TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRE) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. 3. TEMPORARY, MOVABLE, OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR AHS A CENTER MASS LOCATED 4 FEET OR MOVE ABOVE THE ADJACENT FLOOR OR

ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPNENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVER BY DSA. THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE

WITH THE REVERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENTS IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

1.COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT. 2.COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL, AND PLUMBING COMONENTS SHAL BE THE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE THE DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

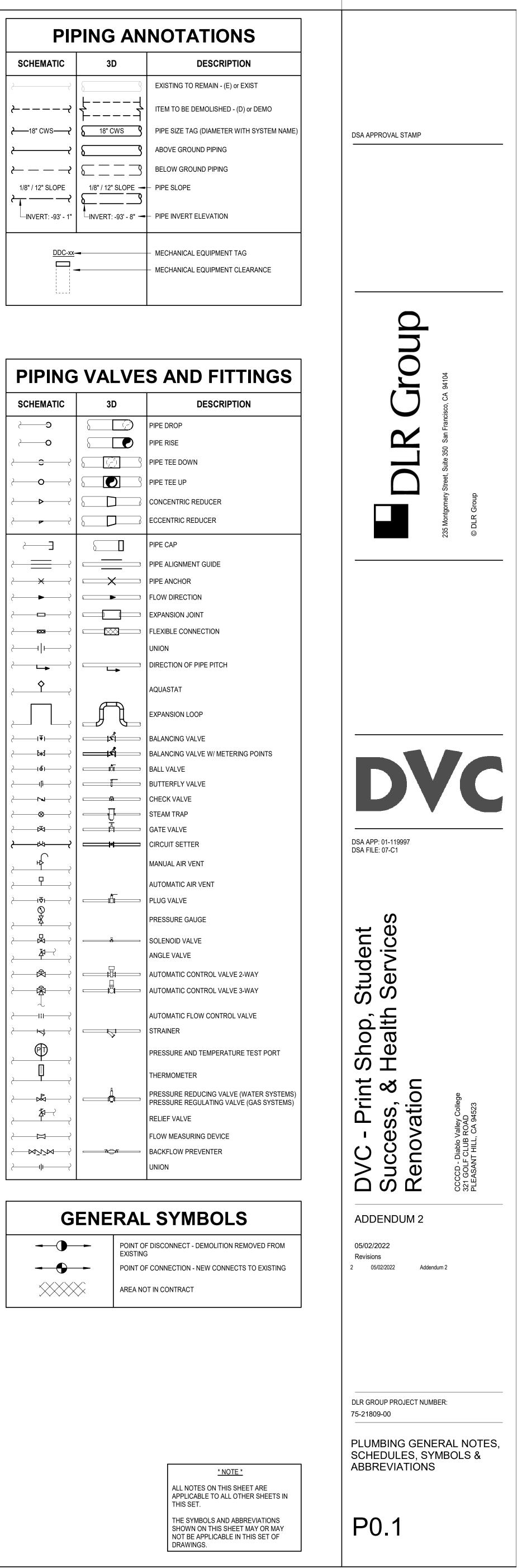
PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCE AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3, AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8, AND 2019 CBC SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26.

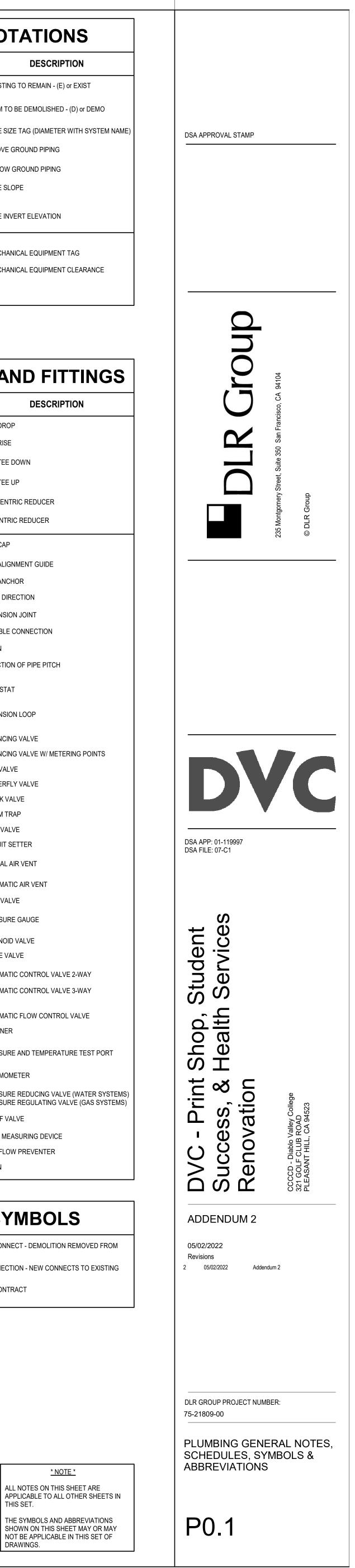
THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G. OSHPD OPM FOR 2019 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS. MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP [] MD [] PP [] E [] - OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFICNOTES AND DETAILS. MP [] MD [] PP [X] E [] - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #) # 0043-13.

PLUMBING SYMBOLS		
SCHEMATIC	3D	DESCRIPTION
≻ CW `	6CW\$	DOMESTIC COLD WATER
→	<u>د </u>	DOMESTIC COLD WATER (LINETYPE)
у —_мн у	6HW\$	DOMESTIC HOT WATER
← →	<u>د = = _</u>	DOMESTIC HOT WATER (LINETYPE)
⊱ Hwc }	E HWC	DOMESTIC HOT WATER RECIRCULATING
⊱ →		DOMESTIC HOT WATER RECIRC (LINETYPE)
<u>۲</u>		SANITARY WASTE ABOVE FLOOR
,	<u>د</u>	SANITARY WASTE BELOW FLOOR
⊱	€= = = _ 3	SANITARY VENT
$\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \end{array} \end{array} \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} $	CO ⊻ ECO ECO ECO ECO ECO ECO ECO ECO	CLEAN OUT WALL CLEAN OUT FLOOR CLEAN OUT GRADE CLEAN OUT (DOUBLE CLEAN OUT) FLOOR DRAIN / FLOOR SINK ROOF DRAIN / OVERFLOW DRAIN DOWNSPOUT NOZZLE WALL HYDRANT HOSE BIBB
	XX	RISER TAG
© → <u>8" ORD-</u> 1,500 SF		ROOF DRAIN TAG
	<u>—3" FS-</u>	PLUMBING FIXTURE TAG



PIPING VALVES AND FITTINGS		
SCHEMATIC	3D	DESCRIPTION
c5		PIPE DROP
o —		PIPE RISE
		PIPE TEE DOWN
∠o <		PIPE TEE UP
		CONCENTRIC REDUCER
·>		ECCENTRIC REDUCER
		PIPE CAP
	<u>ــــــــــــــــــــــــــــــــــــ</u>	PIPE ALIGNMENT GUIDE
		PIPE ANCHOR
→ → →	8	FLOW DIRECTION
		EXPANSION JOINT
		FLEXIBLE CONNECTION
		UNION
		DIRECTION OF PIPE PITCH
ج ب		AQUASTAT
		EXPANSION LOOP
<u>∠</u> , 1 ¥1,		BALANCING VALVE
₩		BALANCING VALVE W/ METERING POINTS
<u></u>		BALL VALVE
		CHECK VALVE STEAM TRAP
		GATE VALVE
		CIRCUIT SETTER
, H		MANUAL AIR VENT
		AUTOMATIC AIR VENT
		PLUG VALVE
N N N		PRESSURE GAUGE
	ą	
		SOLENOID VALVE ANGLE VALVE
		AUTOMATIC CONTROL VALVE 2-WAY
		AUTOMATIC CONTROL VALVE 2-WAY
→ III → Z		AUTOMATIC FLOW CONTROL VALVE
		STRAINER
		PRESSURE AND TEMPERATURE TEST PORT
		THERMOMETER
		PRESSURE REDUCING VALVE (WATER SYSTEMS PRESSURE REGULATING VALVE (GAS SYSTEMS
		RELIEF VALVE
		FLOW MEASURING DEVICE
	7_5	BACKFLOW PREVENTER
		UNION
		I



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CONTRA COSTA COMMUNITY COLLEGE DISTRICT DVC - PRINT SHOP, STUDENT SUCCESS, & HEALTH SERVICES RENOVATION

75-21809-00 APRIL 22, 2022 PERMIT SET

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CONTRA COSTA COMMUNITY COLLEGE DISTRICT DVC - PRINT SHOP, STUDENT SUCCESS, & HEALTH SERVICES RENOVATION

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FIRE ALARM CUTSHEETS AND DSA 103

1. FIRE ALARM CUTSHEETS



HPF24S6 and



Description

The HPF24S6 and HPF24S8 are compact, cost-effective, 6 amp. or 8 amp. remote power supplies with integral battery chargers. These adaptable power supplies may be connected to any 12 or 24 volt Fire Alarm Control Panel (FACP) or the power supplies may stand-alone. Primary applications include the following:

- · Notification Appliance Circuits (NAC) expansion to support ADA requirements and NAC synchronization
- · Auxiliary power to support 24 volt system accessories

These power supplies provide regulated and filtered 24 VDC power to four (4), notification appliance circuits, configured as either four (4), Class B (Style Y) or Class A (Style A, with ZNAC-4 Option Module). Alternately, the four outputs may be configured as follows:

- all non-resettable
- · all resettable
- · two non-resettable
- two resettable

The power supplies also contain a battery charger with a charging capacity of up to 18 Amp Hour batteries.

The HPF24S6 and HPF24S8 power supplies comply with the following Agency standards:

- NEPA 72 National Fire Alarm Code
- · UL Standard 864, 9th Edition for control units for Fire Alarm Systems (NAC expander mode).
- · UL 1481 Power Supplies for Fire Alarm Systems (stand-alone mode).

Power Supplies with Battery Chargers



dh1061.jpg

Features

- UL[®] Listed NAC synchronization using System Sensor, Cooper-Wheelock or Gentex (Commander Series) appliances
- Uses a cascade of up to ten (10), power supplies or (four (4), power supplies with Gentex) with strobe timing maintained
- Operates as a sync follower or a sync generator (default)
- Contains two (2), fully -isolated input/control circuits energized from FACP notification appliance circuit (NAC expander mode) or jumpered permanently on (stand-alone mode)
- · Configured to internally house an addressable SLC control module for alarm activation
- Supports four (4), Class B (Style Y) or four (4), Class A (Style Z) (with ZNAC-4 Module) notification appliance circuits
- Provides 6.0A or 8.0A (depending on model) full load output (3.0A maximum per circuit) in NAC expander mode (UL Standard 864)
- Uses 4.0A or 6.0A continuous output in the stand-alone mode (UL Standard 1481)



UI[®] is a registered trademark for Underwriter's Laboratories Inc.



FIRE ALARM CUTSHEETS AND DSA 103

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vell-FCI for their use

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Features (Continued)

- · In stand-alone mode, output power circuits are configured as resettable, (using the FACP reset switch), non-resettable, or a combination of both
- · Fully regulated and filtered power output (optimal for powering four-wire smoke detectors, annunciators and other system peripherals requiring regulated/filtered power)
- · Class 2 Power-Limited technology complies with UL Class 2 Power-Limited requirements
- · Includes a normally-closed trouble relay
- · Provides fully, supervised power supply, battery and notification appliance circuits
- · Selectable earth fault detection
- · AC trouble report selectable for immediate or up to an 8 hour delay
- · Compatible with any UL Standard 864 fire alarm control panel which uses an industry standard, reverse polarity, and notification circuit (including unfiltered and unregulated bell power)
- · Requires input trigger voltage of 9.0 -32 VDC
- · Built with a self-contained compact, lockable cabinet 15" H x 14.5" W x 2.75" D (38.1 H x 36.8 W x 7.0 D cm)
- · Includes an integral battery charger capable of charging up to 18 AH batteries. The cabinet has the capacity of housing 7.0 AH batteries
- · Battery charger may be disabled via a DIP (Dual In-Line Package) switch for applications requiring larger batteries
- · Offers fixed, clamp-type terminal blocks that accommodate up to 12 AWG (3.1 mm²) wire

Specifications

Primary (AC) Power

- HPF24S6: 120 VAC 60 Hz, 3.2A maximum
- HPF24S8: 120 VAC 60 Hz. 3.2A maximum
- Wire size: minimum 14 AWG (2.0 mm²) with 600V insulation

Control Input Circuit

- Input Voltage: 9.0 to 32 VDC
- Input Current: 2.0 mA (16 32 V) per input 1.0 mA (9 - 16 V)

Trouble Contact Rating

5.0A at 24 VDC

Auxiliary Power Output

- Specific Application Power 500 mA maximum **Output Circuits**
- +24 VDC filtered, regulated
- · 3.0A maximum for any one circuit

Specifications (Continued)

Output Circuits (Continued)

- 4.0A maximum total continuous current for all outputs (Stand-alone mode) for the HPF24S6 and 6A for the HPF24S8
- 6A or 8A, depending on the model, maximum total short-term current for all outputs (NAC Expander mode).

Secondary Power (Battery) Charging Circuit

- Supports lead-acid batteries only
- Float Charge Voltage: 27.6 VDC
- Maximum Charge Current: 1.5A Maximum Battery Capacity: 18 AH

Ordering Information

Part Number	Description
HPF24S6	Remote charger 6A power supply (120 VAC). Includes the main printed circuit board, transformers, red enclosure, and installation instructions
HPF24S8	Remote charger 8A power supply (120 VAC). Includes the main printed circuit board, transformers, red enclosure, and installation instructions
FCPS-24S6RB	Replacement mother board
ZNAC-4 - BAT-1270 -	Class A (Style Z) NAC option module Battery, 12 volt, 7.0 AH (two required)

FIRE ALARM CUTSHEETS AND DSA 103

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GAMEWELL-FCI 12 Clintonville Road, Northford, CT 06472-1610 USA • Tel: (203) 484-7161 • Fax: (203) 484-7118 ge 2 of 2 www.gamewell-fci.com CS-60062 Rev. B page 2 of 2

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION OFFICE OF THE STATE FIRE MARSHAL FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM



LISTING SERVICE

LISTING No.	7315-1637:0102	Page 1 of 1
CATEGORY:	7315 POWER UNITS	
LISTEE:	Honeywell International Inc.One Fire-Lite Place, Northford, CT 06472 Contact: Lisa Brant (203) 484-6105 Fax (203) 484-7309 Email: lisa.brant@honeywell.com	
DESIGN:	Models HPF24S6, HPF24S8, HPFF8, HPFF8E, HPFF8CM, HPFF8CME, HPFF1 HPFF12E, *HPFF12CM and *HPFF12CME power limited power supply/battery c used for supervision and expanded power driving capability of up to four Notifical Appliance Circuits (FACP Fire Circuits, Signaling Devices) or resettable/non rese outputs. Model ZNAC-4 Class A converter. Refer to listee's data sheet for addition product description and operational considerations.	hargers tion ttable
RATING <mark>:</mark>	120 VAC, 24 VDC	
INSTALLATION:	In accordance with listee's printed installation instructions, applicable codes and and in a manner acceptable to the authority having jurisdiction.	ordinances
MARKING:	Listee's name, product designation, electrical rating and UL label.	
APPROVAL:	Listed as power supply/battery chargers for use with separately listed compatible control units.	fire alarm
XLF:	7315-0075:0206	

*Rev. 10-20-10 bh



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: July 01, 2021

01, 2021

Listing Expires June 30, 2022

Authorized By: DAVID CASTILLO,, M.E., F.P.E.

Fire Engineering Division

FIRE ALARM CUTSHEETS AND DSA 103

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Indoor Selectable-Output Speaker Strobes and Dual Voltage Evacuation Speakers for Wall Applications

System Sensor L-Series selectable output speaker strobes and dual-voltage evacuation speakers can reduce ground faults and enable faster installation with lower current draw and modern aesthetics.

Features

- · Plug-in design and protective cover reduce ground faults
- Universal mounting plate with an onboard shorting spring tests
 wiring continuity before installation
- · No extension ring required
- Field selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, 185
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Rotary switch simplifies field selection of speaker voltage (25 and 70.7 Vrms) and power settings (¼, ½, 1 and 2 watts)
- Seakers offer high fidelity and high volume sound output
- · Compatible with System Sensor synchronization protocol
- Electrical compatibility with existing SpectrAlert and SpectrAlert Advance products
- · Tamper-resistant construction
- · Updated modern aesthetics

Agency Listings





The System Sensor L-Series of speakers and speaker strobes reduce costly ground faults using a plug-in design and universal mounting plate that allow the installer to pre-wire mounting plates, dress the wires, and confirm wiring continuity before plugging in the speakers. In addition, a protective plastic cover prevents nicked wires by covering exposed speaker components.

These devices also enable faster installations by providing instant feedback to ensure that wiring is properly connected, rotary switches to select voltage and power settings, and 7 field-selectable candela settings for wall speaker strobes.

The low total harmonic distortion of the speaker offers high fidelity sound output while still offering high volume sound output for use in high ambient noise applications.

System Sensor L-Series makes installation easy

- Attach a universal mounting plate to a 4 × 4 × 21/8 inch back box.
 Flush-mount applications do not require an extension ring.
- Connect the notification appliance circuit or speaker wiring to the terminals on the mounting plate.
- Attach the speaker or speaker strobe to the mounting plate by inserting the product tabs into the mounting plate grooves. Hinge the device into position to lock the product pins into the mounting plate terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

FIRE ALARM CUTSHEETS AND DSA 103

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L-Series Speaker and Speaker Strobe Specifications

Architectural/Engineering Specifications General

L-Series speaker and speaker strobes shall mount to a 4 × 4 × 21/8-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, L-Series speaker strobes, when used with the Syno•Circuit[™] Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Syno•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 8.5 and 32°F and 120°F from a regulated DC, or full-wave rectified, unfiltered power supply. Wall-mount speaker strobes shall have field-selectable candela settings including 15, 30, 75, 95, 110, 135, 185.

Speaker

The speaker shall be a System Sensor L-Series model ______ dual-voltage transformer speaker capable of operating at 25.0 or 70.7 nominal Vrms. It should be listed to UL 1480 and shall be approved for fire protective service. The speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature between 32°F and 120°F. The speaker shall have power taps and voltage that are selected by rotary switches.

Speaker Strobe combination

The speaker strobe shall be a System Sensor L-Series model ________ listed to UL1480 and UL 1971 and be approved for fire protective signaling systems. The speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms selected via rotary switch, and shall have a frequency range of 400 to 4,000 Hz. The speaker shall have power taps that are selected by rotary switch. The strobe shall comply with the NFPA 72 requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

Synchronization Module

The module shall be a System Sensor SynceCircuit model MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz. The module shall mount to a 411/16 × 411/16 × 21/8-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical Specifications							
Operating Temperature	32°F to 120°F (0°C to 49°C)						
Humidity Range	10 to 93% non-con	10 to 93% non-condensing					
Dimensions, Wall-Mount	Length	Width	Depth				
SPL Speaker	6.5 in, 165 mm	5 in, 127 mm	.97 in,23 mm				
With Surface Mount Back Box	6.6 in, 168 mm	5.1 in, 130 mm	3.2 in, 82 mm				
SPSL Speaker/Strobe (including lens and speaker)	6.5 in, 165 mm	5.0 in, 127 mm	2.3 in, 58 mm				
With Surface Mount Back Box	6.6 in, 168 mm	5.1 in, 130 mm	4.5 in, 116 mm				
Electrical/Operating Specifications							
Nominal Voltage (speakers)	25 Volts or 70.7 Volts(nominal)						
Maximum Supervisory Voltage (speakers)	50 VDC						
Strobe Flash Rate	1 flash per second						
Nominal Voltage (strobes)	Regulated 12 VDC	or regulated 24 DC/FWR	1,2				
Operating Voltage Range (includes fire alarm panels with built in sync)	8 to 17.5 V (12 V nominal) or 16 to 33V (24 V nominal)						
Operating Voltage with MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33V (24 V nominal)						
Frequency Range	400 to 4000 Hz						
Power	1/4, 1/2, 1, 2 watts						

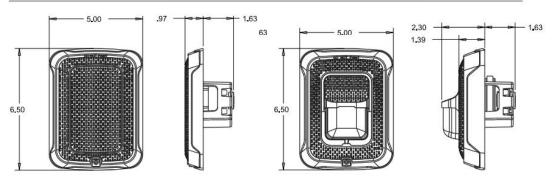
1. Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.

2. Strobe products will operate at 12 V nominal only for 15 and 30 cd

UL	Current	Draw	Data
----	---------	------	------

UL Max Strobe Current Draw	A REAL PROPERTY AND A REAL				
	8 to 17.5 Volts	16 to	33 Volts		
Candela	DC	DC		FWR	
15	88	43		60	
30	143	63		83	
75	N/A	107		136	
95	N/A	121		155	
110	N/A 148		179		
135	N/A	172		209	
185	N/A	222	222 257		
Sound Output Speaker Strob	e				
	1/4 W	1⁄2 W	1 W	2 W	
UL Reverberant (dBA @10 ft)	77	80	83	86	
UL Anechoic (dBA @10 ft)	77	80	83	86	
Sound Output Speaker					
	1⁄4 W	1⁄2 W	1 W	2 W	
UL Reverberant (dBA @10 ft)	79	82	85	88	
UL Anechoic (dBA @10 ft)	79	82	85	88	

L-Series Dimensions

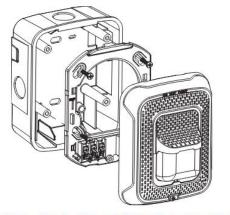


Wall-Mount Speaker

Wall-Mount Speaker Strobe

FIRE ALARM CUTSHEETS AND DSA 103

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Surface Mounting

Wall-Mount Speaker Strobe with SBBSPL Surface Mount Back Box

L-Series Ordering Information

Wall Mount			
White	Red	Description	
SPWL	SPRL	Speaker only	
SPSWL	SPSRL	Speaker Strobe	
SPSWL-P	SPSRL-P	Plain Speaker Strobe	
SPSWL-ALERT		Speaker Strobe, Amber Lens	
SPSWL-CLR-ALERT		Speaker Strobe Clear Lens	
_	SPSRL-SP	Speaker Strobe, Fuego	
Accessories			
White	Red	Description	
RFPW	RFP	7 in × 9.5 in Retrofit Plate	
SBBSPWL	SBBSPRL	Surface Mount Back Box for Speakers and Speaker Strobes	
TR-2W	TR-2	Wall Mount Trim Ring	

Notes:

All -P models have a plain housing (no "FIRE" marking on the cover)



3825 Ohio Avenue • St. Charles, IL 60174 Phone: 800-SENSOR2 • Fax: 630-377-6495 www.systemsensor.com

©2017 System Sensor. Product specifications subject to change without notice. Visit systemsensor.co for current product information, including the latest version of this data sheet. AVDS6/F01+ 03/17

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LISTING SERVICE

LISTING No.	7320-1653:0505	Page 1 of 2
CATEGORY:	7320 SPEAKERS	
LISTEE:	System Sensor, Unincorporated Div of Honeywell Int'l Inc.3825 Ohio Ave, St. Cha 60174 Contact: Lisa Brant (203) 484-6105 Fax (203) 484-7309 Email: lisa.brant@honeywell.com	arles, IL
DESIGN:	System Sensor Indoor Models: SPRL and SPWL Wall Speakers; SPCRL and SPCWL Ceiling Speakers; SPSRL, SPSWL, SPSRL-P, SPSRL-SP, SPSWL-P, SPSWL-ALERT and SPSWL-CLR-ALERT Wall Speaker Stobes; SPSCRL, SPSCWL, SPSCWL-P, SPSCWL-SP and SPSCWL-CLR-ALERT Ceilir Strobes.	ıg Speaker
	Wall Bezel Parts: BZSPR-P, BZSPR-AL, BZSPR-EV, BZSPR-AG, BZSPR-PG, BZSPR-F and BZSI BZSPW-P, BZSPW-AL, BZSPW-EV, BZSPW-AG, BZSPW-PG, BZSPW-F and BZSPW-SP,	PR-SP,
	Ceiling Bezel Parts: BZSPRC-P, BZSPRC-AL, BZSPRC-EV, BZSPRC-AG, BZSPRC-PG, BZSPRC-F BZSPRC-SP, BZSPWC-P, BZSPWC-AL, BZSPWC-EV, BZSPWC-AG, BZSPWC-PG, BZSPWC BZSPWC-SP,	
	WallTrim Rings for Speaker Strobes: TR2 and TR2W	
	CeilingTrim Rings for Speaker Strobes: TRC2 and TRC2W.	
	Wall Surface Mounted Back Boxes: SBBSPRL and SBBSPWL,	
	Ceiling Surface Mounted Back Boxes: SBBCRL and SBBCWL	
	Refer to listee's data sheet for detailed product description and operational consid	lerations.
		02-27-17 gt



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Date Issued: July 01, 2021

Listing Expires

June 30, 2022

Authorized By: DAVID CASTILLO,, M.E., F.P.E.

Fire Engineering Division

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Listing No. 7320-1653:0505 Page 2 of 2

RATING:	25 or 70.7 VAC, 1/4, 1/2, 1, 2 Watt outputs. Regulated 12 VDC and 24 VDC/FWR is for 2-wire strobe portion.
INSTALLATION:	In accordance with listee's printed installation instructions, NFPA 72, applicable codes & ordinances and in a manner acceptable to the authority having jurisdiction.
MARKING:	Listee's name, model number, electrical rating, and UL label.
APPROVAL:	Listed as speakers and speaker-strobes when used with separately listed compatible fire alarm control units. Suitable for indoor use, dry and damp environments. *Listed with software code, S05-0048-001 for low temperature compensation. Authority having jurisdiction should be consulted prior to installation. Refer to listee's Installation Instruction Manual for details.

02-27-17 gt



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Date Issued: July 01, 2

July 01, 2021

Listing Expires J

June 30, 2022

Authorized By: DAVID CASTILLO,, M.E., F.P.E.

Fire Engineering Division

FIRE ALARM CUTSHEETS AND DSA 103

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Product Guide

Fire Alarm Cables

Initiating Device , SLC Lines, and NAC Cables



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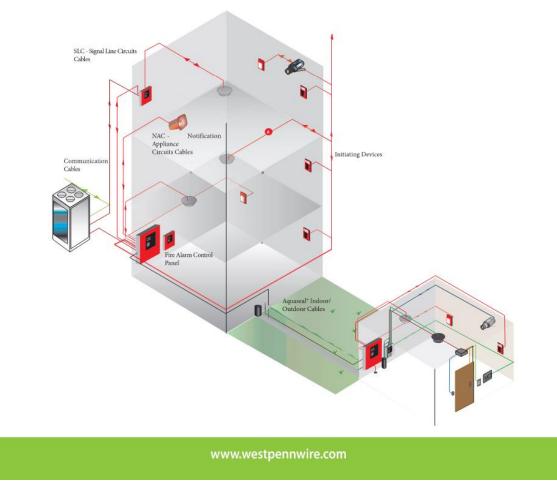
STANDARDS

Fire Alarm Systems

A fire alarm system is number of devices working together to detect and warn people through visual and audio appliances when smoke, fire, carbon monoxide or other emergencies are present. These alarms may be activated automatically from smoke detectors, and heat detectors or may also be activated via manual fire alarm activation devices such as manual call points or pull stations. Alarms can be either motorized bells or wall mountable sounders or horns.

Fire Alarm System Design

After the fire protection goals are established – usually by referencing the minimum levels of protection mandated by the appropriate model building code, insurance agencies, and other authorities – the fire alarm designer undertakes to detail specific components, arrangements and interfaces necessary to accomplish these goals. Equipment specifically manufactured for these purposes is selected and standardized installation methods are anticipated during the design. In the United States, NFPA 72, The National Fire Alarm Code is an established and widely used installation standard. In Canada, the ULC is the standard for the fire system.



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Fire Alarm System SLC - Signal Line Circuits Cables NAC Notification Appliance Circuits Cables Initiating Devices Communication Cables ire Alarm Control Aquaseal* Indoor/ Outdoor Cables 0 Fire Alarm Control Panel (FACP) EACP is the Hub of the system, monitors inputs and system integrity controls components and communicates to components and outside monitoring.

Initiating Devices and SLC Loops

Initiating devices consist of Pull Stations, Call points, automatic heat, smoke flame detectors and other devices that initiate a communication back to the FACP SLC - Signal Line Circuits are initiating devices in an Addressable Fire Alarm system.

Notification Applicance NAC Devices

Notification devices notifiy in-building occupants about a problem. This is done by audible, visible, tactile, and textual devices.



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Fire Alarm Systems

Fire Alarm systems can be put into three system designs. Conventional (Analog), Addressable (Digital) and Multiplex systems (Analog/Addressable)

Conventional Systems (Analog)

Conventional Fire Alarm Systems, in their various forms, have been around for many of years and have changed little in that time in terms of technology although design and reliability have impoved significantlyHowever, Conventional systems are a well proven technology protecting many hundreds of thousands of properties worldwide. A Conventional Fire Alarm System is often the natural choice for smaller systems or where budget constraints exist.

In a Conventional Fire Alarm System the "Intelligencood f the system resides solely within the Fire Alarm Control Panel. The panel receives a trigger signal from a Conventional Detector or Initiating DeviceCircuit (Smoke, heat, flame detectors) which in turn signals the condition to the Notification (Indicating)Device Circuit such as alarm sounders, horns, strobes and other remote signalling equipment.

Conventional detectors are normally connected to the Fire Control Panel via dedicated circuits, each circuit protecting a designated "Zon&r area of the building. The system has different modes:Normal,Alarm, Trouble, and others, depending on the Fire Alarm Manufacturer.



Conventional Fire Alarm Design

CThe designer must be sure that the last device on the circuit has sufficient voltage to operate the device within its rated voltage. When calculating the voltage available to the last device, it is necessary to ocon-sider the voltage drop due to the resistance of the wire. The larger the wire, the less the voltage drop. Generally for purposes of determining the wire size necessary for the system, it is best to consider all of the devices as "lumped on the end of the supply circuit, this simulates the worst case.

Typical wire size resistance: Loop Resistance 18 AWG solid: Approximately 6.5ohms/1000ft. 13ohms/1000ft. 16 AWG solid: Approximately 4.1ohms/1000ft. 8.2ohms/1000ft. 14 AWG solid: Approximately 2.6ohms/1000ft. 5.2ohms/1000ft. 12 AWG solid: Approximately 1.8ohms/1000ft. 3.6ohms/1000ft.

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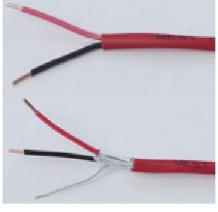
Power Limited and Non-Power Limited Systems

Conventional EA Cables are designed based upon the AWG of the Cable. Conventional systems can be broken into two categories: Power Limited and Non-Power Limited. Power Limited is the dominant designed system. **Power Limited** 1.Type FPL- FPL power-limited fire alarm cable is listed by the NEC

as being suitable for general purpose fire alarm cable is listed by the NEX as being suitable for general purpose fire alarm use. This listing excludes installation in riser, ducts, plenums and other space used for environmental air unless the cable is installed in conduit. All FPL cables are listed as being resistant to the spread of fire and must pass both UL test 1424 and the vertical flame testUL 1581.

2.Type FPLR- FPLR power-limited fire alarm riser cable is listed as being suitable for use in a vertical run in a shaft or from floor to floor.All FPLR cables are listed as having fire-resistant characteristics capable of preventing fire from traveling from floor to floor.Riser cables must pass both UL test 1424 and the Vertical riser test UL 1666.

3. Type FPLP- FPLP power-limited fire alarm cable is listed by the NEC as being suitable for usein ducts, plenums and other space used for environmental air.All FPLP cable are listed as having adequate fire resistant and low-smokeproducing characteristics and must pass bothUL test 1424 and UL Stiener tunnel test 910. (NFPA262)



- No Voltage Rating Markings on PLFA Cables
- CL3 and CM rated cables, which have a voltage rating of 300V are permitted to be used as PLFA cables.
- · Power-limited is inherently limited by the power supply
- Transformer
- Other Power Supply Devices

Non-Power Limited

1. Type NPLF- NPLF Non power-limited fire alarm cable is listed by the NEC as being suitable for general pur pose fire alarm use. This listing excludes installation in riser, ducts, plenums and other space used for environmental air unless the cable is installed in conduit. All NFPL cables are listed as being resistant to the spread of fire and must pass both UL test 1424 and the vertical flame test UL 1581.

2.Type NPLFP- NPLFP Non power-limited fire alarm cable is listed by the NEC as being suitable for use in ducts, plenums and other space used for environmental air.All NPLFP cable are listed as having adequate fire

resistant and low-smoke producing characteristics and must pass bothUL test 1424 and UL Stiener tunnel test 910. (NFPA262)

- Power source of NPLFA circuits output voltage shall not exceed 600 volts.Nominal
- Marking on NPLF cables are not addressed as 150VFor use in 150V or less on NPLF circuits(out of tray or conduit)

• Class 1 cables can be installed and used as NPLFA, but must be placed in a tray or conduit.• Overcurrent devices shall be located at the point where the device to be protected receives its supply

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Conventional FA Cables

Conductor:

- Shall not be smaller than a 26AWG
- Single Conductor no smaller than 16AWG
- · Solid or Stranded Conductor. Bare Copper for low DCR

Inuslation:

- PVC or Polypropylene Insulation FPLR
- Fire/Flame Retardant PVC for Plenum Rated FPLP -- West Penn Wire "B" Series
- · Conductors are either Cabled or Twisted pair. West Penn Wire 2 Conductor cables are twisted. Shield:
- Dependent on the system requirements and environmental conditions
 Unshielded or Shielded
- Shield is used to protect against interference created from other cables or outside electronic/ electrical or mechanical devices.
 - · Shield is normally 100% Aluminum foil wrap

Jacket:

- PVC for Non-Plenum FPLR
- Flexible Fire Retardant PVC for FPLP
- Jacket Color: Normally Red, but can be any color. West Penn Wire has the capability to Strip the cable jacket.

Electrical Characteristics:

- Nom. DCR (AWG Size) is the most important electrical property in Conventional systems.
- Capacitance: Te capacitance is not an important electrical property in Conventional systems.

Notes:

Initiating Devices and the associated cables communicate back to the FACP the information about that ZONE. The Cables AWG size is the important factor to deliver the analog signals to the FACP You will find that normally 18-16 AWG Cables.

Notification Devices and associated cables send power to the devices. You will find that normally 16-12 AWG cables are utilized.

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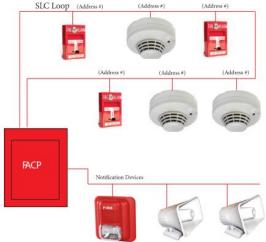
Addressable (Multiplex) FA Systems

Addressable Fire Alarm Systems differ from conventional systems in a number of ways and certainly addmore flexibility intelligence, speed of identification and scope of control. For this reason, Addressable Fire Alarm Systems are the natural choice for larger premises and buildings with more complex system requirements.

In an Addressable system, detectors are wired in a loop around the building with each detector havingits own unique address. The system may contain one or more loops depending upon the size of the sys-tem and design requirements. The Fire Control Panel communicates with each detector individually andreceives a status report e.g. Normal, Alarm, Trouble etc. As each detector has an individual address thefire alarm control panel is able to display or indicate the precise location of the device in question, whichobviously helps speed the location of an incident and for this reason zoning of the system is not neces-sary although it may be done for convenience.

Addressable detectors are, in themselves, intelligent devices which are capable of reporting far morethan just fire or fault conditions. Most analog addressable detectors are able to signal if contamination in the device reaches a pre-set level enabling maintenance to take place prior to problems being experienced.

In most earlier styles of Addressable systems, the notification appliances were not intellegent. Todaymany manufacturers are providing addressable notification technology. There are many advantages of providing such technology. Such as lower cost of wire, and overall installation time.



Addressable Cable Selection

The designer must be aware of not only the D.C Resistance of the cable, but the capacitance and the Velocity of proporgation of the cable. The designer must assure that the overall loop capacitance is not compromised, and error rates are kept to a minimum.

Nominal Capacitance for wire sizes:

18 AWG solid unshielded: 16pf/ft

18 AWG solid shielded: 25pf/ft t45pf/ft **

16 AWG solid unshielded: 17pf/ft

16 AWG solid shielded: 30pf/ft 54pf/ft **

14 AWG solid shielded: 30pf/ft. 54pf/ft **

12 AWG solid shielded: 35pf/ft. 63pf/ft **

Capacitance between one conductor and the other connected to the shield.

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Addressable FA Cables

Conductor:

- Shall not be smaller than a 26AWG
- Single Conductor no smaller than 18AWG
- Solid or Stranded Conductor. Bare Copper for low DCR

Inuslation:

- Polypropylene Insulation FPLR
- Fluropolymer Insulation Tefon FPLP
- Conductors are twisted.

Shield:

- Dependent on the system requirements and environmental conditions • Unshielded or Shielded
- Shield is used to protect against interference created from other cables or outside electronic/ electrical
 or mechanical devices.
- Shield is normally 100% Aluminum foil wrap

Jacket:

- PVC for Non-Plenum FPLR
- Flexible Fire Retardant PVC for FPLP
- Jacket Color: Normally Red, but can be any color. West Penn Wire has the capability to Strip the cable jacket.
- **Electrical Characteristics:**
 - Nom. DCR (AWG Size) is an important electrical property in Addressable systems.
 - Capacitance: Te capacitance has a bigger infuence on cable distance. Te lower the capacitance the better the digital signals can be transmitted and received.

Notes:

Initiating Devices in an Addressable systems are referred to as SLC - Signal Line Circuits. Normally 16-18 AWG Low capacitance higer Velocity of Propogation.

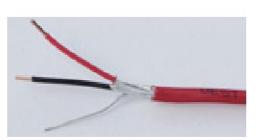
For Digital Audio Loops: a $100\Omega + -5\%$ is needed. West Penn Wire D980 and D990 are the best choice. Notification Devices and associated cables send power to the devices. You will find that normally 16-12 AWG cables are utilized.

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West Penn Wire Cables Guide

Unshielded Fire Alarm Cables

AWG Size	# of Cond.	FPL				FPLR FPI		Plenum	
		Aquaseal Direct Burial	Aquaseal In-Conduit	Low Cap	Parallel			Low Cap	
12 Solid	2		0	20 (V)	974	998	60995B		
14 Solid	2		¢		972	994	60993B		
14 Solid	4					700	60700B		
16 Solid	2			D990	971	990	60991B	D60991	
16 Solid	4					992	60164B		
18 Solid	2			D980	970	980	60980B	D60980	
18 Solid	4					982	60992B	1	
12 Strnd	2	AQ227							
14 Strnd	2	AQ226	AQC226						
14 Strnd	4	AQ246							
16 Strnd	2	AQ225	AQC225						
16 Strnd	4	AQ245	7						
18 Strnd	2	AQ224	AQC224						
18 Strnd	4	AQ244						1	

Shielded Fire Alarm Cables

AWG Size	# of Cond.		FPLR FPI	P Plenum			
		Aquaseal Direct Burial	Aquaseal In-Conduit	Low Cap L			ow Cap
12 Solid	2	· · · · · · · · · · · · · · · · · · ·			999	60994B	
14 Solid	2						
14 Solid	4				995	60992B	
16 Solid	2			D991	991	60990B	D60991
16 Solid	4				993	603164B	
18 Solid	2			D975	975	60975B D	60975
18 Solid	4		4		977	60977B	
12 Strnd	2	AQ296					
14 Strnd	2	AQ295	AQC295				
14 Strnd	4						
16 Strnd	2	AQ294	AQC294				
16 Strnd	4	AQ2345					
18 Strnd	2	AQ293	AQC293				
18 Strnd	4	AQ3244					

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AQUASEAL - Indoor/Outdoor Cables





Aquaseal Power-limited water-resistant cables are designed to be used for indoor/outdoor fire alarm system. The Aquaseal products are manufactured using a premium grade jacket compound. These cables are flame retardant, sunlight and water resistant, and employ an abrasion and crush resistant construction. This durability allows the Aquaseal power-limited water-resistant cables to be direct burial.

The internal cable construction employs a dry water blocking barrier instead of a messy gel.Unlike many other outdoor cables which can not be placed indoors due to their inability to pass flame tests. Aquaseal waterresistant cables carry both indoor and outdoor ratings.

Aquaseal cable retains consistent electrical characteristics compared to standard cable when immersed in water. The moisture blocking barrier used in this cable has proven itself in various tests where standard outdoor cable has failed. This can be verified by monitoring the capacitance levels of both cables. Aquaseal water-resistant cables will consistently have lower capacitance values and remain stable overthe long haul enabling the lowest signal loss.

Aquaseal is UL listed NEC type FPL or PLTC rated and utilizing 18 AWG to 12 AWG makes this cableexcellent for low voltage Conventional and Addressable systems.

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2833 West Chestnut Street Washington, PA 15301 Toll Free: 800-245-4964 sales@westpennwire.com

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LISTING SERVICE

LISTING No.	7161-0859:0101	Page 1 of 1
CATEGORY:	7161 CABLES-FIRE PROTECTIVE SIGNALING	
LISTEE:	West Penn Wire2833 W Chestnut St, Washington, PA 15301 Contact: Gerald Dorna (765) 983-5200 Ext: 810 Email: gerald.dorna@belden.com	
DESIGN:	Types FPL and FPLP power limited fire protective signaling cable. Refer to listee sheet for detailed product description and operational considerations.	's data
INSTALLATION:	In accordance with listee's printed installation instructions, NEC Article 760, applic codes and ordinances and in a manner acceptable to the authority having jurisdic	
MARKING:	Listee's name, type, NEC rating and UL label.	
APPROVAL:	Listed as power-limited fire protective signaling cable.	

*Rev. 05-23-2005

June 30, 2022



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Listing Expires

Date Issued:

July 01, 2021

Authorized By: VICTOR WONG, Program Coordinator

Fire Engineering Division

FIRE ALARM CUTSHEETS AND DSA 103

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LISTING SERVICE

LISTING No.	7160-0859:0102	Page 1 of 1
CATEGORY:	7160 CABLES-OTHERS	
LISTEE:	West Penn Wire2833 W Chestnut St, Washington, PA 15301 Contact: Gerald Dorna (765) 983-5200 Ext: 810 Email: gerald.dorna@belden.com	
DESIGN:	Type NPLF conductor cable. Refer to listee's data sheet for detailed product des operational considerations.	scription and
INSTALLATION:	In accordance with listee's printed installation instructions, applicable codes and and in a manner acceptable to the authority having jurisdiction.	ordinances
MARKING:	Listee's name, type, NEC rating and UL label.	
APPROVAL:	Listed as non-power limited conductor cable.	

*Rev. 05-23-2005

June 30, 2022



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Listing Expires

Date Issued:

Authorized By:

July 01, 2021

VICTOR WONG, Program Coordinator

Fire Engineering Division

FIRE ALARM CUTSHEETS AND DSA 103

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LISTING SERVICE

LISTING No.	7160-0859:0103	Page 1 of 1
CATEGORY:	7160 CABLES-OTHERS	
LISTEE:	West Penn Wire2833 W Chestnut St, Washington, PA 15301 Contact: Gerald Dorna (765) 983-5200 Ext: 810 Email: gerald.dorna@belden.com	
DESIGN:	Type NPLFP plenum cable. Refer to listee's data sheet for detailed product deso operational considerations.	cription and
INSTALLATION:	In accordance with listee's printed installation instructions, applicable codes and and in a manner acceptable to the authority having jurisdiction.	ordinances
MARKING:	Type and UL label.	
APPROVAL:	Listed as non power-limited plenum cable.	

*Rev. 05-23-2005

June 30, 2022



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Listing Expires

Date Issued:

July 01, 2021

Authorized By: VICTOR WONG, Program Coordinator

Fire Engineering Division

FIRE ALARM CUTSHEETS AND DSA 103

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2. DSA 103-19

DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2019 CBC

Application Number:	School Name:	School District:
01-119997	Diablo Valley College	Contra Costa Community College District
DSA File Number:	Increment Number:	Date Created:
07-C1		2022-04-18 08:30:50

2019 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2019 CBC).

**NOTE: Undefined section and table references found in this document are from the CBC, or California Building Code.

1. TYPE	2. PERFORMED BY
Continuous – Indicates that a continuous special inspection is required	GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.
Periodic – Indicates that a periodic special inspection is required	LOR – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.
	PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.
Test – Indicates that a test is required	SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.

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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

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Mate	rial Verification and Testing:			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
	 a. Verify identification of all materials and: Mill certificates indicate material properties that comply with requirements. Material sizes, types and grades comply with requirements. 	Periodic	*	Table 1705A.2.1 Item 3a-3c. 2202A.1; AISI 5100-16 Section A3.1 & A3.2, AISI 5240-15 Section A3 & A5, AISI 5220-15 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
V	b. Test unidentified materials	Test	LOR	2202A.1.
	c. Examine seam welds of HSS shapes	Periodic	SI	DSA IR 17-3.
nspe	ection:			
\checkmark	d. Verify and document steel fabrication per DSA-approved construction documents.	Periodic	SI	Not applicable to cold-formed steel light-frame construction, except for trusses (1705A.2.4).

18. HIGH-STRENGTH BOLTS: RCSC 2014 Material Verification and Testing of High-Strength Bolts, Nuts and Washers:				
	Test or Special Inspection	Туре	1	Code References and Notes
	a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	Periodic	SI	Table 1705A.2.1 Items 1a & 1b, 2202A.1; AISC 360-16 Section A3.3, J3.1, and N3.2; RCSC 2014 Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

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	b. Test high-strength bolts, nuts and washers.	Test	LOR	Table 1705A.2.1 Item 1c, 2213A.1; RCSC 2014 Section 7.2; DSA IR 17-8.
Inspe	l cction of High-Strength Bolt Installation:			
	C. Bearing-type ("snug tight") connections.	Periodic	SI	Table 1705A.2.1 Item 2a, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Section 9.1; DSA IR 17-9.
	d. Pretensioned and slip-critical connections.	*	SI	Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9.* "Continuous" or "Periodic" depends on the tightening method used.
	19. WELDING:	D1.2 for Alum		1 Items 4 & 5; AWS D1.1 and AWS D1.8 for structural steel; AWS .3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17- ions.)
Verif	ication of Materials, Equipment, Welders, etc.:	4		
	Test or Special Inspection	Туре	Performed By	Code References and Notes
7	a. Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	Periodic	SI	DSA IR 17-3.
V	b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	DSA IR 17-3.
V	c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.

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Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1–4; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
b. Inspect single-pass fillet welds $\leq 5/16''$, floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Items 5a.5 & 5a.6; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
C. Inspect welding of stairs and railing systems.	Periodic	SI	1705A.2.1; AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.
d . Verification of reinforcing steel weldability other than ASTM A706.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
e. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

	19.2 FIELD WELDING:			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1–4; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
\checkmark	b. Inspect single-pass fillet welds ≤ 5/16".	Periodic	SI	Table 1705A.2.1 Item 5a.5; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

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C. Inspect end-welded studs (ASTM A-108) installation (including bend test).	Periodic	SI	2213A.2; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1; DSA IR 17-3.
d. Inspect floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Item 5a.6; AISC 360-16 (AISC 341-16 as applicable); AWS D1.3; DSA IR 17-3.
e. Inspect welding of structural cold-formed steel.	Periodic	SI*	1705A.2.5; AWS D1.3; DSA IR 17-3. The quality control provisions of AISI S240-15 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA.
f. Inspect welding of stairs and railing systems.	Periodic	SI*	1705A.2.1; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3. * May be performed by the project inspector when specifically approved by DSA.
g. Verification of reinforcing steel weldability.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
h. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

20. NONDESTRUCTIVE TESTING: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16			
Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Ultrasonic	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; ANSI/ ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.

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b. Magnetic Particle	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; ANSI/ ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.
С.	Test	LOR	

Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Verify size, type and grade for all chord and web members as well as connectors and weld filler material; verify joist profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joist.	Continuous	SI	1705A.2.3, Table 1705A.2.3; AWS D1.1; DSA IR 22-3 for steel joists only. 1705A.2.4; AWS D1.3 for cold-formed steel trusses.

22. SPRAY APPLIED FIRE-PROOFING: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16			
Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA- approved documents.	Periodic	SI	1705A.14.
b. Test bond strength.	Test	LOR	1705A.14.6.

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 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

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	c. Test density.	Test	LOR	1705A.14.5.
	23. ANCHOR BOLTS AND ANCHOR RODS:			-
	Test or Special Inspection	Туре	Performed By	Code References and Notes
7	a. Anchor Bolts and Anchor Rods	Test	LOR	Sample and test anchor bolts and anchor rods not readily identifiable per procedures noted in DSA IR 17-11.
	b. Threaded rod not used for foundation anchorage.	Test	LOR	Sample and test threaded rods not readily identifiable per procedures noted in DSA IR 17-11.

	Other Steel			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
	a.			

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FIRE ALARM CUTSHEETS AND DSA 103

DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (WOOD), 2019 CBC

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Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Inspect fabrication of structural glued-laminated timber.*	Continuous	SI	* See 1705A.5.4 for exceptions	
b . Inspect fabrication of manufactured open-web trusses.	Continuous	SI	1705A.5.5; DSA IR 23-8.	
C. Inspect fabrication of manufactured metal-plate- connected trusses.	Continuous	SI	1705A.5, 1705A.5.2; DSA IR 23-4.	

	25. OTHER Wood:			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
V	 Verify installation of wood framing for general conformance with construction documents. 	Periodic	SI	
Z	b. Verify installation of light gauge steel connectors.	Periodic	SI	
V	c. Verify shear wall sheathing nailing and spacing.	Periodic	SI	

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FIRE ALARM CUTSHEETS AND DSA 103

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections				
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Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. <u>Items marked as exempt shall</u> <u>be identified on the approved construction documents</u>. The project inspector shall verify all construction complies with the approved construction documents.

SOILS:
1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.
CONCRETE/MASONRY:
1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see

1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."	
	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.

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Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections				
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3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.	
4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.	
5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.	
 Welding:	
1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.	
2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.	
3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in heig and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' ta wall for a header or king stud.	
4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).	
5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of suct components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).	

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Appendix: Work Exemp	t from DSA Requirements	for Structural Tests /	Special Inspections

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6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category).
7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) \leq 4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2019 CBC

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Name of Architect or Engineer in general responsible charg	e:				
Daniel Ahkiam, SE					
Name of Structural Engineer (When structural design has been delegated):					
Signature of Architect or Structural Engineer:	Date:				
in a	4/18/2022				

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

DSA STAMP		

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DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

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1. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

2. Shop Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form 2. DSA 292

3. Field Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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END OF SECTION

FIRE ALARM CUTSHEETS AND DSA 103

SECTION 101423.16

ROOM-IDENTIFICATION PANEL SIGNAGE

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
 - A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes room-identification signs that are directly attached to the building.

1.3 DEFINITIONS

A. Accessible: In accordance with the accessibility standard.

1.4 COORDINATION

A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For room-identification signs.
 - 1. Include fabrication and installation details and attachments to other work.
 - 2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
 - 3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.
- C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
 - 1. Include representative Samples of available typestyles and graphic symbols.

ROOM-IDENTIFICATION PANEL SIGNAGE

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- D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:
 - 1. Room-Identification Signs: Full-size Sample.
 - 2. Full-size Samples, if approved, will be returned to Contractor for use in Project.
- E. Product Schedule: For room-identification signs. Use same designations indicated on Drawings or specified.

1.6 INFORMATIONAL SUBMITTALS

A. Sample Warranty: For special warranty.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of finishes beyond normal weathering.
 - b. Deterioration of embedded graphic image.
 - c. Separation or delamination of sheet materials and components.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Comply with applicable provisions in CBC Chapter 11B-703 Signs.

2.2 ROOM-IDENTIFICATION SIGNS

- A. Room-Identification Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
 - 1. <u>Basis-of-Design Product:</u> Subject to compliance with requirements, provide <u>ASI Sign</u> <u>Systems, Inc</u> InTouch, or comparable product by one of the following:
 - a. Ace Sign Systems.
 - b. Inpro Corporation.

ROOM-IDENTIFICATION PANEL SIGNAGE

- 2. Laminated-Sheet Sign: Photopolymer face sheet with raised graphics laminated to acrylic backing sheet to produce composite sheet.
 - a. Composite-Sheet Thickness: 0.125 inch.
 - b. Color(s): As selected by Architect from manufacturer's full range or to match Existing.
- 3. Sign-Panel Perimeter: Finish edges smooth.
 - a. Edge Condition: Square cut.
 - b. Corner Condition in Elevation: As indicated on Drawings or to match Existing.
- 4. Mounting: Mount to backing plate, unless otherwise indicated on drawings or to match Existing.
- 5. Text and Typeface: Accessible raised characters and Braille typeface as selected by Architect from manufacturer's full range. Finish raised characters to contrast with background color, and finish Braille to match background color.
- 6. Raised Characters: Raised characters shall comply with Section 11B-703.2 as follows and shall be duplicated in Braille complying with Section 11B-703.3. Raised characters shall be installed at heights and locations in accordance with Section 11B-703.4.
 - a. Depth: Raised characters shall be 1/32-inch minimum above their background.
 - b. Case: Characters shall be uppercase.
 - c. Style: Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.
 - d. Character proportions: Characters shall be selected from fonts where the width of the uppercase letter "O" is 60 percent minimum and 110 percent maximum of the height of the uppercase letter "I".
 - e. Character height: Character height measured vertically from the baseline of the character shall be 5/8-inch minimum and 2-inches maximum based on the height of the uppercase letter "I".
 - f. Stroke thickness: Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the character.
 - g. Character spacing: Character spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be 1/8-inch minimum and 4-times the raised character stroke width maximum. Where characters have other cross sections, spacing between individual raised character shall be 1/16-inch minimum and 4-times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8-inch minimum.
 - h. Line spacing: Spacing between the baselines of separate lines of raised characters within a message shall be 135-percent minimum and 170-percent maximum of the raised character height.
 - i. Format: Text shall be in a horizontal format

ROOM-IDENTIFICATION PANEL SIGNAGE

- 7. Braille: Braille shall be contracted (Grade 2) and shall comply with Sections 11B-703.3 as follows and 11B-703.4 for installation height and location.
 - a. Dimensions and capitalization: Braille dots shall have a domed or rounded shape and shall comply with Table 11B-703.3.1 and as shown on drawings. The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of alphabet, initials, and acronyms.
 - b. Position: Braille shall be positioned below the corresponding text in a horizontal format, flush left or centered. If text is multi-lined, Braille shall be placed below the entire text. Braille shall be separated 3/8-inch minimum and ½-inch maximum from any other tactile characters and 3/8-inch minimum from raised borders and decorative elements.
- 8. Visual Characters: Visual characters shall comply with Section 11B-703.5 as follows.
 - a. Exception: Where visual characters comply with Section 11B-703.2 requirements for raised characters and are accompanied by Braille complying with Section 11B-703.3, they shall not be required to comply with Sections 11B-703.5.2 through 11B-703.5.6 for case, style, character proportions, character height, and mounting height; 11B-703.5.8 for character spacing; and 11B-703.5.9 for line spacing.
 - b. Finish and contrast: Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.
 - c. Case: Characters shall be uppercase or lowercase or a combination of both.
 - d. Style: Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.
 - e. Character proportions: Characters shall be selected from fonts where the width of the uppercase letter "O" is 60 percent minimum and 110 percent maximum of the height of the uppercase letter "I".
 - f. Character height: Minimum character height shall comply with Table 11B-703.5.5. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter "I".
 - g. Height from finish floor or ground: Visual characters shall be 40-inches minimum above the finish floor or ground.
 - h. Stroke thickness: Stroke thickness of the uppercase letter "I" shall be 10-percent minimum and 20-percent maximum of the height of the character.
 - i. Character spacing: Character spacing shall be measured between the two closest points of adjacent characters, excluding word spaces. Spacing between individual characters shall be 10-percent minimum and 35-percent maximum of character height.
 - j. Line spacing: Spacing between the baselines of separate lines of characters within a message shall be 135-percent minimum and 170-percent maximum of the character height.
 - k. Format: Text shall be in a horizontal format.
- 9. Pictograms: Pictograms shall comply with Section 11B-703.6 as follows.

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- a. Pictograms field: Pictograms shall have a field height of 6-inches minimum. Characters and Braille shall not be located in the pictogram field.
- b. Finish and contrast: Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their field with either a light pictogram on a dark field or a dark pictogram on a light field.
- c. Text descriptors: Pictograms shall have text descriptors located directly below the pictogram field. Text descriptors shall comply with Sections 11B-703.2 (raised characters), 11B-703.3 (Braille) and 11B-703.4 (height and location).
- 10. Symbols of Accessibility: Symbols of accessibility shall comply with Section 11B-703.7 as follows.
 - a. Finish and contrast: Symbols of accessibility and their background shall have a non-glare finish. Symbols of accessibility shall contrast with their background with either a light symbol on a dark background or a dark symbol on a light background.
 - b. International Symbol of Accessibility: The International Symbol of Accessibility shall comply with Figure 11B-703.7.2.1 and as shown on drawings. The symbol shall consist of a white figure on a blue background, or as otherwise approved by the Authority Having Jurisdiction. The blue shall be Color No. 15090 in Federal Standard 595B.

2.3 SIGN MATERIALS

A. Acrylic Sheet: ASTM D4802, category as standard with manufacturer for each sign, Type UVF (UV filtering), or to match Existing.

2.4 ACCESSORIES

A. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch thick, with adhesive on both sides.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

2.6 GENERAL FINISH REQUIREMENTS

A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

ROOM-IDENTIFICATION PANEL SIGNAGE

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
 - 1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 - 2. Install signs so they do not protrude or obstruct according to the accessibility standard.
 - 3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
- B. Accessibility: Install signs in locations on walls as indicated on Drawings and according to the accessibility standard.
- C. Mounting Methods:
 - 1. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.
 - 2. Mechanical Attachment to Substrate: Where sign size requires backing plate, provide screws into the wall substrate.

3.2 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.
- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101423.16

ROOM-IDENTIFICATION PANEL SIGNAGE

SECTION 284600 – ADDRESSABLE FIRE-ALARM SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
 - A. Section Includes:
 - 1. New addressable fire alarm and detection system with voice notification.
 - 2. Fire alarm notification appliances.
 - 3. Fire alarm remote annunciators.
 - B. Related Requirements:
 - 1. Section 260519 "Low-Voltage Electrical Power Conductors and Cables".
 - 2. Section 260533 "Raceways and Boxes for Electrical Systems".

1.3 DEFINITIONS

- A. AHJ: Authorities having jurisdiction.
- B. DACT: Digital alarm communicator transmitter.
- C. FAA: Fire alarm annunciator unit with integral firefighters' microphone.
- D. FACP / FACU: Fire alarm control panel / unit.
- E. NAC: Notification appliance circuit.
- F. NICET: National Institute for Certification in Engineering Technologies.
- G. SLC: Signaling line circuit.
- H. Voltage Class: For specified circuits and equipment, voltage classes are defined as follows:
 - 1. Control Voltage: Listed and labeled for use in remote-control, signaling, and power-limited circuits supplied by a Class 2 or Class 3 power supply having rated output not greater than 150 V and 5 A, allowing use of alternate wiring methods complying with CEC, Article 725.

2. Low Voltage: Listed and labeled for use in circuits supplied by a Class 1 or other power supply having rated output not greater than 1000 V, requiring use of wiring methods complying with CEC, Article 300, Part I.

1.4 SPECIAL CONDITIONS

- A. This section includes all labor, material, equipment, and related services necessary to install, new fully functional emergency voice alarm communication (EVAC) fire life safety system per DSA IR F-1 documentation. Work shall include requires system programming to suite application.
- B. Equipment Removal: After acceptance of new fire alarm system, remove existing disconnected fire alarm equipment and wiring. Work: Existing fire alarm system components that are removed by this contractor and not reinstalled, including control equipment, devices, and cabling, shall remain to be the property of the Owner, unless specific items are relinquished to the contractor for disposal or recycling. All items shall be handled carefully and stored in a secure place. Coordinate exact requirements directly with the Owner.

1.5 ACTION SUBMITTALS

- A. Submittals shall be combined into the fewest possible submittals, as opposed to each portion being submitted separately.
- B. Project Information:
 - 1. Documentation of Installer Qualifications:
 - a. Trained and certified by manufacturer in fire alarm system design.
 - b. Fire alarm certified by NICET, minimum Level III.
 - 2. Project Title Sheet with Contact Information:
 - a. Project name and address.
 - b. Contractor's name, address, and telephone number.
 - c. Installer's name, address, and telephone number.
 - d. Manufacturer's name, address, and telephone number.
 - e. Date submitted.
- C. Product Data: For each type of product, including furnished options and accessories.
 - 1. Specifically indicate complete model number for each system component/device. Information and options not included shall be crossed out
 - 2. Include construction details, material descriptions, dimensions, profiles, and finishes.
 - 3. Include rated capacities, operating characteristics, and electrical characteristics.

- D. Shop Drawings: For fire alarm system.
 - 1. Comply with recommendations and requirements in "Documentation" section of "Fundamentals" chapter in NFPA 72.
 - 2. Include plans, elevations, sections, and details, including details of attachments to other Work.
 - 3. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and locations. Indicate conductor sizes, indicate termination locations and requirements, and distinguish between factory and field wiring.
 - 4. Details for FAA units and graphic annunciator panels as required by authorities having jurisdiction.
 - 5. Detail assembly and support requirements.
 - 6. Include voltage drop calculations for notification-appliance circuits.
 - 7. Include battery-size calculations and identify spare capacity available.
 - a. Include power supply calculations and identify spare capacity available.
 - b. Include amplifier calculations and power loss calculations for notification appliances.
 - 8. Include input/output operations matrix (sequence of operation per NFPA 72).
 - 9. Include written statement from manufacturer that equipment and components have been tested as a system and comply with requirements in this Section and in NFPA 72.
 - 10. Include performance parameters and installation details for each detector.
 - 11. Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
 - 12. Provide control wiring diagrams for fire alarm interface to HVAC; coordinate location of duct smoke detectors and access to them.
 - a. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.
 - b. Show field wiring and equipment required for HVAC unit shutdown on alarm.
 - c. Locate detectors in accordance with manufacturer's written instructions.
 - 13. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, and single-line connection diagram.
 - 14. Floor Plans:
 - a. Submit drawings produced and plotted via electronic means (not hand drafted) for review. See Division 01 Section, "CAD Electronic Media Transfer Agreement" for obtaining AutoCAD files from the Architect and for associated request form and fees.
 - b. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits and point-to-point wiring diagrams.
 - c. Show room names that indicate actual room use and actual number designations.

- d. Show the locations of all system panels and devices, including monitor modules, control modules, and relays.
- e. Show the designated address of each addressable device.
- f. Show the cabling pathways between control panel(s), supervising station/annunciator panels, voice command, and shared communications equipment.
- g. Show the general routing of cabling to each fire alarm device/notification appliance.
- h. Show typical mounting height elevations for wall-mounted devices and appliances.
- i. Indicate the selected candela rating for each visual (strobe) device.
- E. Delegated Design Submittal: For notification appliances and smoke and heat detectors, in addition to submittals listed above, indicate compliance with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.
 - 1. Drawings showing location of each notification appliance and smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of device.
 - a. Include designation of acoustically distinguishable spaces and method for testing intelligibility and audibility levels. In each room where voice notification is required indicate the value of the minimum required sound pressures to achieve code compliance.
 - 2. Design Calculations: Calculate requirements for selecting spacing and sensitivity of detection, complying with NFPA 72. Calculate spacing and intensities for strobe signals and sound-pressure levels for audible appliances.
 - 3. Indicate audible appliances required to produce square wave signal per NFPA 72.

1.6 INFORMATIONAL SUBMITTALS

- A. Certificates:
 - 1. Seismic Performance Certificates: For FACU, accessories, and components, from manufacturer. Include the following information:
 - a. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - b. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 - c. Detailed description of equipment anchorage devices on which certification is based and their installation requirements.
- B. Field quality-control reports.

- C. Documentation of Installer Qualifications:
 - 1. Trained and certified by manufacturer in fire alarm system design.
 - 2. Fire alarm certified by NICET, minimum Level III.
- D. Sample Warranty: Submittal must include line-item pricing for replacement parts and labor.
- 1.7 CLOSEOUT SUBMITTALS
 - A. Field quality-control reports.
 - B. Record Drawings:
 - 1. Include record documents (as-built drawings) that accurately reflect the actual completed installation, actual devices, actual room names, and actual locations within each room. Revise, update, and edit all Pre-Installation Documents as defined above, including updated riser diagrams.
 - 2. Electronic files shall be shared via electronic media and recorded on two (2) flash-drives. Hardcopies shall be as indicated above for shop drawings.
 - C. Operation and Maintenance Data: For fire alarm systems and components to include in emergency, operation, and maintenance manuals.
 - 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
 - a. Comply with "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
 - b. Provide "Fire alarm and Emergency Communications System Record of Completion Documents" in accordance with "Completion Documents" Article in "Documentation" section of "Fundamentals" chapter in NFPA 72.
 - 1) Submit the "Record of Completion" form signed by the certified installer to the AHJ.
 - c. Complete wiring diagrams showing connections between devices and equipment. Each conductor must be numbered at every junction point with indication of origination and termination points.
 - d. Riser diagram.
 - e. Device addresses.
 - f. Record copy of site-specific software.
 - g. Provide "Inspection and Testing Form" in accordance with "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:
 - 1) Equipment tested.
 - 2) Frequency of testing of installed components.
 - 3) Frequency of inspection of installed components.

- 4) Requirements and recommendations related to results of maintenance.
- 5) Manufacturer's user training manuals.
- h. Manufacturer's required maintenance related to system warranty requirements.
- i. Abbreviated operating instructions for mounting at FACU and each annunciator unit.
- D. Software and Firmware Operational Documentation:
 - 1. Software operating and upgrade manuals.
 - 2. Program Software Backup: On USB media and approved online or cloud solution.
 - 3. Device address list.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Extra Stock Material: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Lamps for Strobe Units: Quantity equal to five percent (5%) of amount installed, but no fewer than one unit.
 - 2. Smoke Detectors and Heat Detectors: Quantity equal to five percent (5%) of amount of each type installed, but no fewer than one unit of each type.
 - 3. Carbon Monoxide Detectors: Quantity equal to five percent (5%) of amount of each type installed, but no fewer than one unit of each type.
 - 4. Detector Bases: Quantity equal to two percent (2%) of amount of each type installed, but no fewer than one unit of each type.
 - 5. Keys and Tools: One extra set for access to locked or tamper-proofed components.
 - 6. Audible and Visual Notification Appliances: One of each type installed.
 - 7. Fuses: Two (2) of each type installed in system. Provide in box or cabinet with compartments marked with fuse types and sizes.
- B. Include a list of extra materials—confirmed and signed by Owner's representative—in the Operation and Maintenance Manuals.

1.9 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Personnel must be trained and certified by manufacturer for installation of units required for this Project.
 - 2. Installation must be by personnel certified by NICET as fire alarm Level IV technician.
 - 3. Obtain certification by NRTL in accordance with NFPA 72.

- 4. Licensed or certified by authorities having jurisdiction.
- 5. Supplier/Service Provider: Must confirm and maintain an authorized service representative within 90 miles travel distance from the location of the installation.
- B. Compliance with Local Codes and Ordinances: Comply with all applicable building codes, local ordinances, regulations, and the all the requirements of the AHJ.
- C. Compliance with Codes and Standards:
 - 1. International Building Code (IBC), 2018 Edition.
 - 2. International Existing Building Code (IEBC) 2018 Edition.
 - 3. International Fire Code (IFC) 2018 Edition.
 - 4. International Mechanical Code (IMC) 2018 Edition.
 - 5. California Electrical Code (CEC) (current edition).
 - 6. NFPA 72, National Fire Alarm and Signal Code (current edition).
 - 7. NFPA 101, Life Safety Code (LSC) with Local Amendments (current edition).
 - 8. ADA Accessibility Guidelines Standards for Accessible Design.
- D. Electrical wiring and equipment, including circuits controlled and powered by the fire alarm system: Compliance with the CEC. (Also, compliance with Articles 725 and 760 as applicable.)
- E. Optical Fiber Cables: Compliance with CEC, Article 770, if applicable.
- F. This contract shall include all hardware, firmware, software, programming, electric power, cabling pathways/raceways, electrical boxes, cabling, outside plant (if applicable), and all system components to be supplied and installed for a complete and functional turnkey system—without exception. To achieve this, this contractor and subcontractors shall be responsible under this contract for determining—prior to submitting bids—any existing equipment or field conditions as applicable, complete requirements for new work and the delineation of all work amongst qualified installers and technicians necessary for a fully functional and professional installation.
 - 1. FIELD CONDITIONS
- G. Seismic Conditions: Unless otherwise indicated on Contract Documents, specified Work in this Section must withstand the seismic hazard design loads determined in accordance with ASCE/SEI 7 for installed elevation above or below grade.
 - 1. The term "withstand" means "unit must remain in place without separation of parts from unit when subjected to specified seismic design loads and unit must be fully operational after seismic event."

1.10 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace fire alarm system equipment and components that fail because of defects in materials or workmanship within specified warranty period.

- 1. Special Extended Warranty Period: Shall <u>exceed</u> four (4) years starting from the date of Substantial Completion.
 - a. If the manufacturer's warranty commences upon the date that materials are delivered, then the manufacturer's warranty period shall be at least five (5) years to meet the requirement stated above.
- 2. Warranty requirements shall include furnishing and installing all software upgrades issued by the manufacturer during the warranty period.
- 3. Warranty shall cover repair or replacement of such parts determined defective upon inspection, including the full cost of related materials and labor. Additionally, there shall be no expense to the owner due to "other-than-normal" working hours.
 - a. Warranty shall not cover any labor expended or materials used to repair any equipment without manufacturer's prior written authorization.
 - b. Warranty does not cover any product or part of a product subject to accident, negligence, alteration, abuse or misuse. Warranty does not cover any accessories or parts not supplied under this contract.
- 4. A service contract shall be offered to the Owner proposing regular or ongoing factory- authorized service of the installed system.

PART 2 - PRODUCTS

2.1 SYSTEM MANUFACTURER

- A. Subject to compliance with all requirements, provide system components, equipment, and products by one of the following:
 - 1. Notifier; Honeywell International.
 - 2. Potter Electric Signal Company, LLC
 - 3. Siemens Industry, Inc.; Fire Safety Division.
 - 4. Gamewell-FCI, Inc. (Honeywell, Inc.)
- B. Wire and Cable:
 - 1. West Penn Wire/CDT (Cable Design Technologies).
 - 2. Comtran Corp.
 - 3. Helix/HiTemp Cables, Inc. (Draka USA Co.).
 - 4. Rockbestos-Suprenant Cable Corp. (Marmon Group Co.).

2.2 FIRE ALARM CONTROL PANEL (FACP) OR UNIT (FACU)

A. Description: Field-programmable, microprocessor-based, modular, power-limited design with electronic modules.

- B. Performance Criteria:
 - 1. Regulatory Requirements: Comply with NFPA 72 and UL 864.
 - 2. General Characteristics:
 - a. System software and programs must be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining information through failure of primary and secondary power supplies.
 - b. Include real-time clock for time annotation of events on event recorder and printer.
 - c. Provide communication between FACU and remote circuit interface panels, annunciators, and displays.
 - d. FACU must be listed for connection to the central station signaling system service.
 - e. Provide nonvolatile memory for system database, logic, and operating system and event history. System must require no manual input to initialize in the event of complete power down condition. FACU must provide minimum 500-event history log.
 - f. Addressable Initiation Device Circuits: FACU must indicate which communication zones have been silenced and must provide selective silencing of alarm notification appliance by building communication zone.
 - 1) Addressable Control Circuits for Operation of Notification Appliances and Mechanical Equipment: FACU must be listed for releasing service.
 - g. FAA Unit (Fire Alarm Annunciator): Arranged for interface between human operator at FACU and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and programming and control menu.
 - 1) Annunciator and Display: LCD, 80 characters, minimum.
 - 2) Keypad: Arranged to permit entry and execution of programming, display, and control commands.
 - h. Alphanumeric Display and System Controls: Arranged for interface between human operator at FACU and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and programming and control menu.
 - 1) Annunciator and Display: LCD, three lines of 80 characters, minimum.
 - 2) Keypad: Arranged to permit entry and execution of programming, display, and to indicate control commands to be entered into system for control of smoke-detector sensitivity and other parameters.
 - i. Initiating-Device, Notification-Appliance, and Signaling-Line Circuits:
 - 1) Pathway Class Designations: NFPA 72, Class B.
 - 2) Pathway Survivability: Level 0 or Level 1.

- 3) Install no more than 125 addressable devices on each signaling-line circuit.
- 4) Install fault circuit isolators to comply with circuit performance requirements of NFPA 72 or with manufacturer's written instructions, whichever is more conservative.
- j. Serial Interfaces:
 - 1) One dedicated RS 485 port for central-station and remote-station operation using point ID DACT.
 - 2) One RS 485 port for remote annunciators, Ethernet module, or multiinterface module.
 - 3) One USB port for PC configuration.
 - 4) One RS 232 port for PC configuration.
 - 5) One RS 232 port for air-aspirating smoke detector connection.
 - 6) One RS 232 port for voice evacuation interface.
- k. Smoke alarm Verification:
 - 1) Initiate audible and visible indication of "alarm-verification" signal at FACU.
 - 2) Activate approved "alarm-verification" sequence at FACU and detector.
 - 3) Record events by system printer.
 - 4) Sound general alarm if alarm is verified.
 - 5) Cancel FACU indication and system reset if alarm is not verified.
- I. Notification-Appliance Circuit:
 - 1) Audible appliances must sound in three-pulse temporal pattern, as defined in NFPA 72.
 - 2) Where notification appliances provide signals to sleeping areas, alarm signal must be 520 Hz square wave with intensity 15 dB above average ambient sound level or 5 dB above maximum sound level, or at least 75 dB(A-weighted), whichever is greater, measured at pillow.
 - 3) Visual alarm appliances must flash in synchronization where multiple appliances are in same field of view, as defined in NFPA 72.
- m. Remote Smoke-Detector Sensitivity Adjustment: Controls must select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system nonvolatile memory. Print out final adjusted values on system printer.
- n. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to remote alarm station.
- o. Voice/Alarm Signaling Service: Central emergency communication system with redundant microphones, preamplifiers, amplifiers, and tone generators provided in separate cabinet or special module that is part of FACU.

- p. Indicate number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of central-control microphone. Amplifiers must comply with UL 1711.
 - 1) Allow application of, and evacuation signal to, indicated number of zones and simultaneously allow voice paging to other zones selectively or in combination.
 - 2) Programmable tone and message sequence selection.
 - 3) Standard digitally recorded messages for "Evacuation" and "All Clear."
 - 4) Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification-appliance circuits of FACU.
- q. Status Annunciator:
 - 1) Indicate status of various voice/alarm speaker zones.
 - 2) Indicate status of firefighter's microphone.
- r. Preamplifiers, amplifiers, and tone generators must automatically transfer to backup units, on primary equipment failure.
- s. Primary Power: 24 V(dc) obtained from 120 V(ac) service and powersupply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory signals, supervisory and DACT transmitters, must be powered by 24 V(dc) source.
 - Equipment power supplies shall be served from a dedicated 20A/1P circuit breaker. Each circuit breaker shall be furnished with a red handle and lock-on clip, and shall be identified with engraved label that reads, "FIRE ALARM SYSTEM POWER."
 - Convenience Receptacle: For maintenance purposes (whether shown on the power plans or not) this contractor shall install a NEMA 5-20R duplex receptacle within 3 feet of the FACU, connected to a 120V 20A branch circuit.
- t. Alarm current draw of entire fire alarm system must not exceed 80 percent of power-supply module rating.
- u. Secondary Power: 24 V(dc) supply system with batteries, automatic battery charger, and automatic transfer switch.
- v. Batteries: Sealed, maintenance free. Sealed, lead calcium.
- C. System Circuits
 - 1. Signaling Line Circuits: NFPA 72, Class B, Style 4.
 - 2. Initiating Device Circuits (non-addressable circuits): NFPA 72, Class B, Style B.
 - 3. Notification-Appliance Circuits: NFPA 72, Class B, Style Y.
 - 4. Actuation of alarm notification appliances, emergency voice alarm communications, annunciation, and other system operations shall occur within 10 seconds after the activation of an initiating device.

- 5. Electrical monitoring for the integrity of wiring external to the FACU for mechanical equipment shutdown and magnetic door-holding circuits is not required, provided a break in the circuit will automatically cause doors to close and mechanical equipment to shut down (fail-safe configuration).
- D. System Capacities and Constraints
 - 1. <u>Minimum</u> Quantity of Addressable Points per SLC (Signaling Line Circuit): 198.
 - 2. <u>Minimum</u> Quantity of Addressable Analog Sensor Inputs per SLC: 99.
 - 3. <u>Minimum</u> Quantity of SLCs without expanding or adding *any* hardware other than SLC cards/modules that can be inserted into available slots: 8
 - 4. Provide a minimum quantity of three (3) SLC cards/modules in FACU. Any unused cards/modules shall remain as spares (uninstalled per manufacturer).
 - a. Install separate SLCs to serve areas separated by 2-hour firewalls ("2-A", "2-FW", etc.).
 - b. Install separate SLCs to each distinct area/zone of the building
 - c. Install no more than 125 addressable devices on each SLC.
 - d. Each SLC per area and per floor level shall be connected to a separate and dedicated SLC card/module or a line isolation module to deliberately limit the extent and quantity of devices served by a single SLC module and/or isolated SLC branch circuit.
 - 1) No more than three (3) line isolation modules shall be allowed per SLC loop/card.
 - 5. Minimum Quantity of NACs (Notification-Appliance Circuits): As needed to accommodate devices plus one (1) spare circuit.
 - a. Install separate NACs to serve areas separated by 2-hour firewalls ("2-A", "2-FW", etc.).
 - b. Install separate NACs to each distinct area/zone of the building
 - c. Allow for 15 percent spare capacity on each NAC.
 - d. Allow for spare capacity on each NAC by calculating the circuit load based upon an average of 1/2 Watt for each speaker installed.
 - 6. Voice Notification Audio Amplifiers:
 - a. Total amplifier power rating shall be determined based upon actual Watt rating for each speaker.
 - b. Provide fully redundant back-up audio amplifiers.
 - 7. Contractor may elect to supply and install remote NAC extender panel(s) in technology closets or electrical rooms. Coordinate exact location prior to installation. This contractor shall include all necessary electrical provisions, such as 120-volt power connections to panel(s). NAC extender panel shall comply with NFPA 72 requirements and these specifications.
- E. Accessories:

1. Instructions: Computer printout or typewritten instruction card mounted behind plastic or glass cover in stainless steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe functional operation of system under normal, alarm, and trouble conditions.

2.3 FIRE ALARM NOTIFICATION APPLIANCES

- A. Fire Alarm Emergency Voice Alarm Communication Speaker Notification Appliances:
 - 1. Description: Notification appliances capable of outputting voice evacuation messages.
 - 2. Performance Criteria:
 - a. Regulatory Requirements:
 - 1) NFPA 72.
 - 2) UL 1480.
 - b. General Characteristics:
 - Speakers for Voice Notification: Locate speakers for voice notification to provide intelligibility requirements of "Notification Appliances" and "Emergency Communications Systems" chapters in NFPA 72.
 - 2) High-Range Units: Rated 2 to 15 W.
 - 3) Low-Range Units: Rated 1 to 2 W.
 - 4) Matching Transformers: Tap range matched to acoustical environment of speaker location.
 - 5) Mounting: Factory finished faceplate, wall-mount or ceiling-mount as indicated on the drawings; semi-recessed, except where identified as surface mounted on the drawings; bidirectional, where indicated on the drawings.
 - 6) Colors:
 - a) Wall-mounted notification devices shall be red with white lettering.
 - b) Ceiling-mounted notification devices shall be red with white lettering.
 - c) All notification devices (whether wall-mounted or ceiling mounted) shall be red with white lettering.
 - c. Combination Devices: Factory-integrated audible and visible devices in single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.
 - d. Wet or Damp Location Devices: Provide devices designed for wet and damp location applications or exterior applications wherever devices might be subjected to moisture, such as locker rooms, dishwashing rooms, outdoors, etc.

- B. Fire Alarm Visible Notification Appliances:
 - 1. Description: Strobe device with polycarbonate lens mounted on aluminum faceplate:
 - a. Fire Alarm Notification: Clear or nominal white polycarbonate lens.
 - 2. Performance Criteria:
 - a. Regulatory Requirements:
 - 1) NFPA 72.
 - 2) UL 1971.
 - b. Synchronization: All strobes within a common area must be synchronized.
 - c. General Characteristics:
 - 1) Rated Light Output:
 - a) 15 30 75 110 cd.
 - b) Initial setting shall be assumed to be 110 cd.
 - c) 15/30/75/110 cd, selectable in field by contractor based upon actual area of required coverage.
 - 2) For units with guards to prevent physical damage, light output ratings must be determined with guards in place.
 - 3) Flashing must be in temporal pattern, synchronized with other units.
 - 4) Strobe Leads: Factory connected to screw terminals.
 - 5) Mounting: Factory finished faceplate, wall-mount or ceiling-mount as indicated on the drawings; semi-recessed, except where identified as surface mounted on the drawings.
 - 6) Colors: Match same requirements specified for speaker notification appliances above.
 - d. Combination Devices: Factory-integrated audible and visible devices in single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.
 - e. Protective Guards: Provide manufacturer's wire-guard or impact resistant acrylic guard over devices exposed to a higher-than-normal risk of damage, such as in gymnasiums, locker rooms, and other areas as indicated on the drawings.
 - f. Wet or Damp Location Devices: Provide devices designed for wet and damp location applications or exterior applications wherever devices might be subjected to moisture, such as locker rooms, dishwashing rooms, outdoors, etc.

2.4 WIRE AND CABLE

- A. Wire and cable for fire alarm systems shall be UL listed and labeled as complying with CEC, Article 760.
- B. All cabling and wiring associated with the fire alarm system shall be plenum-rated.
- C. All cabling and wiring associated with the fire alarm system shall be installed in conduit, unless it is supported open above accessible ceilings entirely concealed from all viewing angles below.
- D. Fire Alarm Cabling Above Accessible Ceilings: Use plenum-rated cable (FPLP) run open above accessible ceilings. Support this cabling at 4-feet intervals (or closer) using means specified in Division 26 Section "Hangers and Supports for Electrical Systems". Maintain a minimum of 5-inches clearance from all lighting ballasts.
 - 1. Do not place any fire alarm cabling in the same cable-hooks supporting other low-voltage cabling or in the cable tray that is shown on the plans (which is reserved for other low-voltage cabling). However, fire alarm cabling many be supported from the underside or along the outer edge of the cable tray via dedicated J-hooks.
 - 2. Do not run any cabling exposed. All cabling must be entirely concealed above accessible ceilings or else installed in conduit. No cabling may be visible from any viewing angle below
 - 3. Junction boxes located above accessible ceilings shall be painted red with SLC and NAC circuits identified on cover. Conduit shall be all red or identified by other means specified in Division 26 Section "Identification for Electrical Systems".
- E. Speaker Cabling: 2-hour fire-rated circuit integrity cable for EVAC system per NFPA 72 -6.9.10.4.2 and CEC 760.81.
- F. Signaling Line Circuits: Twisted, shielded pair, size as recommended by system manufacturer.
 - 1. Circuit Integrity Cable: Twisted shielded pair, the CEC Article 760, Classification CI, for power-limited fire alarm signal service. UL listed as Type FPL and complying with requirements in UL 1424 and in UL 2196 for a 2hour rating.
- G. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.
 - 1. Low-Voltage Circuits: No. 16 AWG, minimum.
 - 2. Line-Voltage Circuits: No. 12 AWG, minimum.
 - 3. Multiconductor Armored Cable: the CEC Type MC, copper conductors, TFN/THHN conductor insulation, copper drain wire, copper armor with outer jacket with red identifier stripe, UL listed for fire alarm and cable tray installation, plenum rated, and complying with requirements in UL 2196 for a 2-hour rating.

- H. Circuit Survivability: This facility's operational procedures require partial evacuation and/or relocation of occupants under a general fire alarm condition. Therefore, all NACs (notification appliance circuits), including circuits serving NAC extender panels (NEP) and other network communications circuits, must be installed and protected in accordance with the "circuit survivability" requirements described in NFPA 72. The contractor shall provide the following:
 - 1. NACs serving separate *evacuation signaling zones* shall be routed separately such that they are no less than 4 feet apart when run horizontally and 1 foot apart when run vertically. They may come together only within 10 feet of the control panel. *Evacuation signaling zones* are identified on the drawings.
 - 2. NACs passing through other *evacuation signaling zones* shall be installed in conduit and routed through the 2-hour fire-rated chase(s) or enclosure(s) identified on the drawings.
 - 3. NAC's passing through other *evacuation signaling zones* outside of these 2-hour fire-rated chases or enclosures shall be the CEC classified CI cable installed in conduit.
 - a. Circuit Integrity Cable: Twisted shielded pair, the CEC Article 760, Classification CI, for power-limited fire alarm signal service. UL listed as Type FPL, and complying with requirements in UL 1424 and in UL 2196 for a 2-hour rating. Provide products manufactured by Pyrotenax (CIC) or Rockbestos (VITALink).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance of the Work.
 - 1. Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment and wiring are installed, before installation begins.
- B. Examine roughing-in for electrical connections to verify actual locations of connections before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

Retain "Interruption of Existing Fire alarm Service" Paragraph below if interruption of existing fire alarm system is required.

3.2 INSTALLATION OF EQUIPMENT

A. Comply with NECA 305, NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire alarm equipment. Install electrical wiring to

comply with requirements in CEC including, but not limited to, Article 760, "Fire Alarm Systems."

- 1. Devices placed in service before other trades have completed cleanup must be replaced.
- 2. Devices installed, but not yet placed, in service must be protected from construction dust, debris, dirt, moisture, and damage in accordance with manufacturer's written storage instructions.
- 3. Install seismic bracing. Comply with requirements in Section 270548.16 "Seismic Controls for Communications Systems."
- 4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around full perimeter of concrete base.
- 5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
- 6. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
- 7. Install anchor bolts to elevations required for proper attachment to supported equipment.
- B. Equipment Floor and Wall Mounting: Install FACU on finished floor.
 - 1. Comply with requirements for seismic-restraint devices specified in Section 270548.16 "Seismic Controls for Communications Systems."
- C. Install wall-mounted equipment, with tops of cabinets not more than 78-inches above finished floor, except FAA units, which shall be mounted 56-inches above the finished floor to the bottom of its enclosure.
 - 1. Comply with requirements for seismic-restraint devices specified in Section 270548.16 "Seismic Controls for Communications Systems."
- D. Manual Fire Alarm Pull Stations:
 - 1. Install manual fire alarm pull stations in normal path of egress within 5'-0" of exit doorway.
 - 2. Mount manual fire alarm pull station on background of contrasting color.
 - 3. Operable part of manual fire alarm pull station must be between 42- and 48inches above floor level. Devices must be mounted at same height unless otherwise indicated.
- E. Smoke- and Heat-Detector Spacing:
 - 1. Comply with "Smoke-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for smoke-detector spacing.
 - 2. Comply with "Heat-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for heat-detector spacing.
 - 3. Smooth ceiling spacing must not exceed the rating of the detector.

- 4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas must be determined in accordance with Annex A or Annex B in NFPA 72.
- 5. HVAC: Locate detectors not closer than 36-inches from air-supply diffuser or return-air opening.
- 6. Lighting Fixtures: Locate detectors not closer than 12-inches from lighting fixture and not directly above pendant mounted or indirect lighting.
- F. Install cover on each smoke detector that is not placed in service during construction. Cover must remain in place except during system testing. Remove cover prior to system turnover.
- G. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend full width of duct. Tubes more than 36-inches long must be supported at both ends.
 - 1. Do not install smoke detector in duct smoke-detector housing during construction. Install detector only during system testing and prior to system turnover.
 - 2. Verify that each unit is listed for the complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
 - 3. Install supply-air smoke detectors at a suitable location in the duct on the downstream side of filters (when present).
 - 4. Install return-air smoke detectors at a suitable location in the duct prior to exhausting from the building or being diluted by outside air.
 - 5. Where possible locate detectors after bends or inlets, which will create turbulence, at, approximately six duct widths downstream from the source of the turbulence. Carefully review the detector manufacturer's installation instructions and consult with the factory representative for additional direction.
 - 6. Install sampling tubes so they extend the full width of the duct.
- H. Remote Status and Alarm Indicators: Install in visible location near each smoke detector, sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.
- I. Audible Alarm-Indicating Devices: Install wall-mounted devices not less than 6-inches below ceiling. Install devices on flush-mounted back boxes with device-operating mechanism concealed behind grille. Install devices at same height unless otherwise indicated.
- J. Visible Alarm-Indicating Devices: Install wall-mounted devices adjacent to audible notification device and at least 6-inches below ceiling. Install devices at same height unless otherwise indicated.
- K. Ceiling-Mounted Voice/Tone Notification Speakers: Devices installed in a ceiling grid shall be recessed and positioned at the center of the ceiling tile. Corridor devices shall be mounted in a straight row, unless otherwise indicated.
- L. Device Location-Indicating Lights: Locate in public space near device they monitor.

- M. Smoke Dampers: Provide 120 VAC, 24 VAC, or 24 VDC power, whichever is required, and associated initiating devices and control devices. Provide fire alarm system control as indicated on the Fire Alarm Operations Matrix shown on the drawings.
- N. Additionally, this contractor shall coordinate the connection of the smoke damper circuit through a BAS control relay (provided by temperature control contractor), which shall close the damper (open its circuit) whenever its associated air-handling unit is shut-down by the BAS.
- O. Door Hold-Opens and Sliding/Coiling Fire Doors/Shutters. Provide 120 VAC, 24 VAC, or 24 VDC power, whichever is required, and associated initiating devices and control devices. Prior to bidding, this contractor shall coordinate exact requirements with fire alarm contractor, electrical subcontractors, general contractor, and the contractors furnishing the door hold-opens and fire doors. Provide complete interface with the fire alarm system as required and as indicated on the Fire Alarm Sequence of Operations (Operations Matrix included on the drawings).

3.3 ELECTRICAL CONNECTIONS

- A. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."
- C. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with the CEC and NECA 1.
- D. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.
 - 1. Nameplate must be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."
 - 2. Nameplate must be laminated acrylic or melamine plastic signs with black background and engraved white letters at least 1/2-inch high.

3.4 CONTROL CONNECTIONS

- A. Install control and electrical power wiring to field-mounted control devices.
- B. Install nameplate for each control connection, indicating field control panel designation and I/O control designation feeding connection.

3.5 INSTALLATION OF WIRE AND CABLE

- A. Install wiring according to the following:
 - 1. NECA 1.
 - 2. TIA/EIA 568-A.
- B. General Requirements:
 - 1. Install cables within raceways per Division 26, except above accessible ceilings where open-cable installation is allowed, provided all installation methods are strictly followed.
 - 2. Install plenum cable in environmental air spaces, including plenum ceilings.
 - 3. Install all cabling within raceways in areas with exposed structure.
 - 4. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at outlets and terminals.
 - 5. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and junction boxes; and terminal cabinets. Cables may not be spliced.
 - 6. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii.
 - 7. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
 - 8. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used.
- C. System devices and wiring shall be installed in accordance with CEC 110.3(B), 300.11(A), 300.15, and 300.16, including conductors that are terminated, spliced, or interrupted—in which case a junction box or conduit body is required. Wherever a device is mounted in or onto an accessible ceiling, provide a recessed junction box supported by the ceiling grid—not the ceiling tile. The box shall be securely fastened to steel bracing that is designed/listed/labeled to bridge the ceiling grid. Boxes must be provided with cable protection bushings at all open knockouts (CEC 300.16). Cables and raceways shall be supported neither by ceiling grids nor their support wires. Listed and labeled equipment, including all system devices, shall be installed in accordance with instructions included in the listing or labeling (CEC 110.3(B)).
- D. Devices containing end-of-line resistors shall be appropriately labeled. Devices should be labeled such that removal of the device is not required to identify the EOL device.
- E. Wiring Method: Install wiring in metal raceway according to Division 26 Section "Raceway and Boxes for Electrical Systems."
 - 1. Fire alarm circuits and equipment control wiring associated with the fire alarm system shall be installed in a dedicated raceway system. This system shall not be used for any other wire or cable
 - 2. Cables and raceways used for fire alarm circuits, and equipment control wiring associated with the fire alarm system, may not contain any other wire or cable.

- 3. Fire-Rated Cables: Use of 2-hour fire-rated fire alarm cables, CEC Types MI and CI, is permitted.
- 4. Signaling Line Circuits (SLC): Power-limited fire alarm cables may be installed in the same cable or raceway as signaling line circuits.
- 5. All systems and system components listed to UL864 Control Units for Fire Protective Signaling Systems may be installed within a common conduit raceway system, in accordance with the manufacturer's recommendations. System components not listed to the UL864 standard shall utilize a separate conduit raceway system for each of the sub-systems.
- 6. Any low-voltage copper wiring that leaves the protection of a building shall be provided with a compatible UL 497B listed transient protection devices where the circuit leaves the building and where it enters the next building.
- 7. Fiber Optic Cable: Only glass filament cable permitted. Plastic filament fiber optic cables are not acceptable. LC connectors shall be used at all equipment terminations.
- F. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimpon terminal spade lugs, pressure-type terminal blocks, or plug connectors.
- G. Cables and raceways shall be supported neither by ceiling grids nor their support wires.
- H. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.
- Color-Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and a different color-code for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarminitiating circuits. Use different colors for visible alarm-indicating devices. Paint fire alarm system junction boxes and covers red.
- J. Wiring to Remote Alarm Transmitting Device: 1-inch conduit between the FACU and the transmitter. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

3.6 CONNECTIONS

- A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Section 087100 "Door Hardware." Connect hardware and devices to fire alarm system.
 - 1. Verify that hardware and devices are listed for use with installed fire alarm system before making connections.

B. Make addressable connections with supervised interface device to the following devices and systems. Install interface device less than 36-inch from device controlled. Make addressable confirmation connection when such feedback is available at device or system being controlled.

Coordinate list below with "Addressable Fire alarm System" Article.

- 1. Magnetically held-open doors.
- 2. Supervisory connections at elevator shunt-trip breaker (for monitoring).

3.7 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
- B. Install framed instructions in location visible from FACU.

3.8 GROUNDING

- A. Ground FACU and associated circuits in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Ground shielded cables at control panel location only. Insulate shield at device location. Ground cable shields and equipment according to system manufacturer's written instructions to eliminate shock hazard and to minimize, to the greatest extent possible, ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- C. For audio circuits, minimize, to the greatest extent possible, ground loops, commonmode returns, noise pickup, cross talk, and other impairments. Provide 5Ω ground at main equipment location. Measure, record, and report ground resistance in the Maintenance Manuals.

3.9 FIELD QUALITY CONTROL

- A. Contractor shall confirm whether field tests must be witnessed by the AHJ prior to performing tests.
 - 1. Start-up and certification testing shall be performed by a NICET certified fire alarm technician. State name of technician and certification number on all test reports.
- B. Administrant for Tests and Inspections:

Retain one of first four subparagraphs below to specify who administers and performs tests and inspections.

1. Engage qualified testing agency to administer and perform tests and inspections.

- 2. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
- 3. Administer and perform tests and inspections with assistance of factoryauthorized service representative.
- C. Tests and Inspections:
 - 1. Testing shall be provided in accordance with NFPA Chapter 7. Provide reports and documentation per section 7-5.
 - 2. Visual Inspection: Conduct visual inspection prior to testing.
 - a. Inspection must be based on completed record Drawings and system documentation that is required by "Completion Documents, Preparation" table in "Documentation" section of "Fundamentals" chapter in NFPA 72.
 - b. Comply with "Visual Inspection Frequencies" table in "Inspection" section of "Inspection, Testing and Maintenance" chapter in NFPA 72; retain "Initial/Reacceptance" column and list only installed components.
 - 3. System Testing: Comply with "Test Methods" table in "Testing" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
 - 4. Test audible appliances for public operating mode in accordance with manufacturer's written instructions. Perform test using portable sound-level meter complying with Type 2 requirements in ASA S1.4 Part 1/IEC 61672-1.
 - 5. Test audible appliances for private operating mode in accordance with manufacturer's written instructions.
 - 6. Test and record voice intelligibility and audibility levels throughout each room or space. Wherever sound levels and intelligibility levels fail to meet or exceed code requirements, make all corrections, and describe measures taken to achieve code compliance.
 - 7. Test visible appliances for public operating mode in accordance with manufacturer's written instructions.
 - 8. Factory-authorized service representative must prepare "Fire Alarm System Record of Completion" in "Documentation" section of "Fundamentals" chapter in NFPA 72 and "Inspection and Testing Form" in "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
- D. Reacceptance Testing: Perform reacceptance testing to verify proper operation of added or replaced devices and appliances.
- E. Fire alarm system will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.
- G. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

H. Annual Test and Inspection: One year after date of Substantial Completion, test fire alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

3.10 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system.
 - 1. Train Owner's maintenance personnel on programming equipment for starting up and shutting down, troubleshooting, servicing, and maintaining the system and equipment.
 - 2. Train a minimum of ten (10) employees of Owner.
 - 3. Under this contract, conduct a total of twelve (12) hours (minimum) of on-site training as specified in instructions to Owner's employees in Division 01 Section "Demonstration and Training." Training shall be divided into two (2) separate sessions on two (2) separate days if requested by Owner. The first session shall provide two (2) hours of basic training. The second session shall provide eight (8) hours of in-depth training. Coordinate training agenda, dates, and times directly with Owner.
 - 4. Conduct training on installed equipment after acceptance testing.
 - 5. Train on system operation, including manual control of output functions from FACU.
 - 6. Train on testing of system, including logging of system tests, field test of devices, and response to common troubles.
 - 7. Refer to Division 01 Section "Demonstration and Training", including excluding requirements related to video recording.
 - 8. Allow Owner to record training.

3.11 ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to three (3) visits to Project outside normal occupancy hours for this purpose for each building. Include a minimum of 12 hours of on-site labor designated for this purpose plus all necessary travel time and expenses.
- B. Annual Test and Inspection: Through the first year after date of Substantial Completion, test the fire alarm system complying with the testing and visual inspection requirements in NFPA 72. Perform tests and inspections listed for monthly, quarterly, semiannual, and annual periods. Use forms developed for initial tests and inspections.

3.12 MAINTENANCE

A. Maintenance Service: Beginning at Substantial Completion, maintenance service must include 12 months of full maintenance by skilled employees of manufacturer's designated service organization. Include preventive maintenance, repair, or

replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper operation. Parts and supplies must be manufacturer's authorized replacement parts and supplies.

- 1. Include visual inspections in accordance with "Visual Inspection Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
- 2. Perform tests in "Test Methods" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
- 3. Perform tests per "Testing Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.

3.13 SOFTWARE SERVICE AGREEMENT

- A. Comply with UL 864.
- B. Technical Support: Beginning at Substantial Completion, service agreement must include software support for five (5) years.
- C. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within five (5) years from date of Substantial Completion. Upgrading software must include operating system and new or revised licenses for using software.
 - 1. Upgrade Notice: At least 30 days to allow Owner to schedule access to system and to upgrade computer equipment if necessary.

END OF SECTION 284600