Addendum No. 06

April 11, 2024

BAKERSFIELD COLLEGE STUDENT HOUSING

(for DSA Project Name - New Residence Hall)

OWNER: KERN COMMUNITY COLLEGE DISTRICT
2100 Chester Avenue
Bakersfield, CA 93301

PREPARED BY: PBK Architects, Inc.
4900 California Avenue, Suite 130-A
Bakersfield, CA 93309

PBK PROJECT NO.: S2103400AR
DSA FILE NO.: 15-C1
DSA APPLICATION NO.: 02-122124

NOTICE TO BIDDERS

A. Receipt of this Addendum shall be acknowledged on the Proposal Form.
B. This Addendum forms part of the Contract Documents for the above referenced project and shall be incorporated integrally therewith.
C. Each proposer shall make necessary adjustments and submit their proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

DRAWINGS:

ARCHITECTURAL:

AD6-01 **G0.02 – GENERAL NOTES:** Replace the sheet in its entirety**.** Revised legend and accessibility notes. See attached revised drawing G0.02 with all changes clouded.

AD6-02 **G0.02A – GENERAL NOTES Add Alternate:** Replace the sheet in its entirety**.** Added LEVEL 04 overall plan. See attached revised drawing G0.02A with all changes clouded.

AD6-03 **A1.31 – Overall Floor Plan – Level 03:** Replace the sheet in its entirety**.** DSA Approved Sheet.

AD6-04 **A1.32 – Enlarged Floor Plan – Level 03 Area A:** Replace the sheet in its entirety**.** DSA Approved Sheet.

AD6-05 **A1.33 – Enlarged Floor Plan – Level 03 Area B:** Replace the sheet in its entirety**.** DSA Approved Sheet.

AD6-06 **AU.1, AU.2, AU.3, AU.4, AU.5, AU.6, and AU.7 – Units Plans:** Delete Note 42

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AD6-07 **AU.1.1, AU.1.2, AU.2.1, AU.3.1, AU.4.1, AU.5.1, AU.5.2, AU.6.1, AU.6.2, AU.7.1, AU.7.2 – Units Interior Elevation:** In Unit Bath Interior Elevations, Keynote 09.20 RUBBER TOPSET BASE, TYP., 4" U.O.N. shall read 09.B03 - COVED TILE BASE.

AD6-08 **A2.1 – Door Schedule:** Replace the sheet in its entirety. Revised door schedule. See attached revised drawing A2.1 with all changes clouded.

AD6-09 **A2.2 – Window Schedule:** Replace the sheet in its entirety. Revised window schedule. See attached revised drawing A2.2 with all changes clouded.

AD6-10 **A2.31 – Finish Schedule Level 01:** Replace the sheet in its entirety. Revised finish schedule. See attached revised drawing A2.31 with all changes clouded.

AD6-11 **A2.32 – Finish Schedule Level 02:** Replace the sheet in its entirety. Revised finish schedule. See attached revised drawing A2.32 with all changes clouded.

AD6-12 **A2.33 – Finish Schedule Level 03:** Replace the sheet in its entirety. Revised finish schedule. See attached revised drawing A2.33 with all changes clouded.

AD6-13 **A2.34 – Finish Schedule Level 04:** Replace the sheet in its entirety. Revised finish schedule. See attached revised drawing A2.34 with all changes clouded.

AD6-14 **A3.20 – OVERALL RCP Level 02:** Replace the sheet in its entirety. Revised finish schedule. See attached revised drawing A3.20with all changes clouded.

AD6-15 **A4.2 – ENLARGED STAIR #2 AND TRASH CHUTE PLANS:** Replace the sheet in its entirety. Updated DRAWING 5 – Enlarged Partial Roof Plan. See attached revised drawing A4.2 with all changes clouded.

AD6-16 **A5.1 – Exterior Elevations:** Replace the sheet in its entirety. Revised detail references and exterior elevation legend. See attached revised drawing A5.1 with all changes clouded.

AD6-17 **A5.3 – Enlarged Elevations and Sections:** Replace the sheet in its entirety. Revised wall sections and detail references. See attached revised drawing A5.3 with all changes clouded.

AD6-18 **A5.4 – Enlarged Elevations and Sections:** Replace the sheet in its entirety. Revised wall sections and detail references. See attached revised drawing A5.4 with all changes clouded.

AD6-19 **A6.1 – Building Sections:** Replace the sheet in its entirety. Deleted detail references and added reference note on drawing 1. See attached revised drawing A6.1 with all changes clouded.

AD6-20 **A6.2 – Building Sections:** Replace the sheet in its entirety. Added reference note on drawings 1, 2, and 3. See attached revised drawing A6.2 with all changes clouded.

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AD6-21 **A6.3 – Wall Sections:** Replace the sheet in its entirety**.** Revised references on drawings 2, 3, and 4. See attached revised drawing A6.3 with all changes clouded.

AD6-22 **A6.4 – Wall Sections:** Replace the sheet in its entirety**.** Revised references on drawings 1 and 2. See attached revised drawing A6.4 with all changes clouded.

AD6-23 **A6.5 – Wall Sections:** Replace the sheet in its entirety**.** Revised references on drawings 1, 2, and 3. See attached revised drawing A6.5 with all changes clouded.

AD6-24 **A6.6 – Wall Sections:** Replace the sheet in its entirety**.** Revised references on drawings 1, 2, 3 and 4. See attached revised drawing A6.6 with all changes clouded.

AD6-25 **A6.7 – Wall Sections:** Replace the sheet in its entirety**.** Revised references on drawings 1, 2, 4 and 5. See attached revised drawing A6.7 with all changes clouded.

AD6-26 **A6.8 – Wall Sections:** Replace the sheet in its entirety**.** Revised references on drawings 1, through 5. See attached revised drawing A6.8 with all changes clouded.

AD6-27 **A6.9 – Wall Sections:** Replace the sheet in its entirety**.** Revised references on drawings 1, through 5. See attached revised drawing A6.9 with all changes clouded.

AD6-28 **A7.1 – Mail and Restroom Enlarged Plans:** Replace the sheet in its entirety**.** Revised general notes, bathroom notes, and restrooms 119 and 136 interior elevations. See attached revised drawing A7.1 with all changes clouded.

AD6-29 **AX3.1 – Door and Frame Details:** Replace the sheet in its entirety**.** Added detail 24. See attached revised drawing AX3.1 with all changes clouded.

AD6-30 **AX6.1 – Interior Details:** Replace the sheet in its entirety**.** Added detail 9 and revised detail 4. See attached revised drawing AX6.1 with all changes clouded.

LANDSCAPE:

AD6-31 **L1.1 – SITE PLAN:** Replace the sheet in its entirety**.** Revised legend and added gates. See attached revised drawing L1.1 with all changes clouded.

AD6-32 **L1.2 – SITE PLAN - ENLARGEMENTS:** Replace the sheet in its entirety**.** Revised patio control joints. See attached revised drawing L1.2 with all changes clouded.

AD6-33 **L1.3 – SITE PLAN – PAVING FINISHES:** Replace the sheet in its entirety. See attached revised drawing L1.3 with all changes clouded.

AD6-34 **L2.1– IRRIGATION PLAN TREES AND SHRUBS:** Replace the sheet in its entirety**.**

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AD6-35 **L4.2 – IRRIGATION DETAILS:** Replace the sheet in its entirety. Added Detail D – In Line Check valve section at lateral line. See attached revised drawing L4.2 with all changes clouded.

AD6-36 **L6.4 – FENCE AND GUARDRAIL DETAILS:** Replace the sheet in its entirety. Added Detail H – Fence on wall/curb - Elevation. See attached revised drawing L6.4 with all changes clouded.

AD6-37 **L6.41 – FENCE DETAILS:** Replace the sheet in its entirety. See attached revised drawing L6.41 with all changes clouded.

AD6-38 **L6.5 – BENCH, COUNTER & FURNITURE DETAILS:** Replace the sheet in its entirety. See attached revised drawing L6.5 with all changes clouded.

MECHANICAL:

AD6-39 **M1.22 – MECHANICAL ENLARGED FLOOR PLAN – LEVEL 02 - NORTH: ADD** Fire/ Smoke Dampers and fire stopping at hydronic piping into chase. See attached revised drawing M1.22 with all changes clouded.

AD6-40 **M1.23 – MECHANICAL ENLARGED FLOOR PLAN – LEVEL 02 - SOUTH: ADD** Fire/ Smoke Dampers, Volume Control Dampers and keynote 4. See attached revised drawing M1.23 with all changes clouded.

AD6-41 **M1.32 – MECHANICAL ENLARGED FLOOR PLAN – LEVEL 03 - NORTH: ADD** fire stopping at hydronic piping mains into chase down to level 02.

AD6-42 **M1.42 – MECHANICAL ENLARGED FLOOR PLAN – LEVEL 04 - NORTH: ADD** fire stopping at hydronic piping mains into chase down to level 02.

AD6-43 **MX.02 – MECHANICAL DETAILS: REVISE** keynote 4 in detail 06 to reference Structural General Notes on sheet S101. Detail 06 and 08 shall also have all steel in this detail primed and painted. Detail 10 shall use UL System No. W-L-5039 for insulated pipes. Detail 02 keynote 9 shall be 1-1/4” x 1-1/4” x 1/8” x length as required.

PLUMBING:

AD6-44 **P0.02 – PLUMBING SCHEDULES: UPDATE** TSH-1 to Sterling 71150116 Accord 60"x32"x75-1/2" high modular tub/shower, 18" tub depth, molded-in shelves on each back corner. Zurn Z7201-SS-LH pressure balancing mixing shower valve, adjustable head, pull-up diverter tub spout, set temperature balancing mixing valve to deliver a max. Tempered water setting of 110°f. 1.5 GPM. TSH-1 to be in all units except the units noted as having mobility features, See Sheet G0.02A.

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AD6-45 **P0.02 – PLUMBING SCHEDULES: ADD** TSH-2, Sterling 71150125 Accord 60"X32"X75-1/2" high modular tub/shower, 18" tub depth, molded-in shelves on each back corner and stainless-steel grab bars and bath seat. Zurn Z7302-SS-MT-DV2P-HW-H9-S9 pressure balancing shower valve, adjustable head, pull-up diverter tub spout, two-way diverter valve, 60" flex hose deluxe hand-held shower head with 24" stainless steel slide bar, set temperature balancing mixing valve to deliver a max. tempered water setting of 110°f. CBC Access Compliant. 1.5 GPM. TSH-2 to be in units noted as having mobility features without roll-in shower, See Sheet G0.02A.

AD6-46 **P0.02 – PLUMBING SCHEDULES: ADD** SH-1, Sterling 62070115 OC-S-63 63-1/4"X39-3/8"X73-1/4" modular shower with roll in base, fold down seat and stainless-steel grab bars. Zurn Z7121-SS-LH-DV2P-HW pressure balancing shower valve, adjustable head, two-way diverter valve, 60" flex hose deluxe hand held shower head with 24" stainless steel slide bar, set temperature balancing mixing valve to deliver a max. tempered water setting of 110°f. CBC Access Compliant. 1.5 GPM. SH-1 to be in units noted as having mobility features with roll-in shower, See Sheet G0.02A.

AD6-47 **P1.12 – PLUMBING ENLARGED FLOOR PLAN – LEVEL 01 - NORTH: OFFSET** the sink drain drop to miss the wood post in wall at Gridlines B, C1, D & E1.

AD6-48 **P1.12 – PLUMBING ENLARGED FLOOR PLAN – LEVEL 01 - NORTH: OFFSET** the sink drain drop to miss the wood post in wall at Gridlines B, C1, D & E1.

AD6-49 **P1.12 – PLUMBING ENLARGED FLOOR PLAN – LEVEL 01 - NORTH: MECH 117** all pipe on west wall shall be surface mounted. MV-1 & TP-2 to be surface mounted All pipes rising to floor above shall offset just below ceiling to Trash 112 up to Trash 246 then elbow into framed wall. Provide 12-gauge sheet metal shroud to cover pipes at floor of Trash 246, paint to match walls.

AD6-50 **P1.22 – PLUMBING ENLARGED FLOOR PLAN – LEVEL 02 - NORTH: OFFSET** the sink drain drop to miss the wood post in wall at Gridlines B, C1, D & E1.

AD6-51 **P1.22 – PLUMBING ENLARGED FLOOR PLAN – LEVEL 02 - NORTH: OFFSET** the HW & HWR pipes along Gridline G to between Gridline 1.8 & Gridline 2 to miss the shear wall.

ELECTRICAL:

AD6-52 **E1.11 – ELECTRICAL OVERALL POWER PLAN - LEVEL 01:** See attached revised drawing E1.11 with all changes clouded.

AD6-53 **E1.11A – ADD ALTERNATE No. 1 - ELECTRICAL OVERALL POWER PLAN - LEVEL 01:** See attached revised drawing E1.11A with all changes clouded.

AD6-54 **E6.02 – ELECTRICAL PANEL SCHEDULES:** See attached revised drawing E6.02 with all changes clouded.

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AD6-55 **E6.02A – ADD ALTERNATE No. 1 - ELECTRICAL PANEL SCHEDULES:** See attached revised drawing E6.02A with all changes clouded.

FIRE ALARM:

AD6-56 **FA0.01 – FIRE ALARM SJEET INDEX, SYMBOLS, LEGEND & NOTES** the device schedule has been updated to change the fire alarm manufacture from Simplex to Notifier. See attached revised drawing FA0.01 with all changes clouded.

LOW VOLTAGE:

AD6-57 **T1.11, T1.11A, T1.21, T1.22, T1.31, T1.32, T1.41, T1.42 – TECHNOLOGY SHEETS** the technology sheets have been updated to remove D2 data drops in each room and to remove alarm motion sensors from the entry and corridor areas.

SPECIFICATIONS:

AD6-58 **SECTION 07 14 00 - FLUID-APPLIED WATERPROOFING: ADD** the attached spec. section 07 14 00 in its entirety.

AD6-59 **SECTION 23 90 00 - DIRECT DIGITAL CONTROL AND ENERGY MANAGEMENT SYSTEM: ADD** the attached spec. section 23 90 00. All EMS controls shall be Johnson Controls Facility Explorer to match District standard, no substitution.

AD6-60 **SECTION 28 46 00 – FIRE DETECTION AND ALARM: Replace** references to Simplex shall be revised to Notifier. Refer to updated sheet FA0.01 for device models District standard, no substitution.

AD6-61 **SECTION 32 13 13 - PORTLAND CEMENT CONCRETE PAVEMENT: ADD** the attached spec. section 32 13 13 in its entirety.

AD6-62 **SECTION 32 14 13 - PRECAST CONCRETE UNIT PAVING: ADD** the attached spec. section 32 13 13 in its entirety.

AD6-63 **SECTION 32 31 18 - SECURITY LOUVERED FENCE & GATES: ADD** the attached spec. section 32 13 13 in its entirety.

AD6-64 **SECTION 32 31 19 - METAL PICKET FENCE & GATES: ADD** the attached spec. section 32 13 13 in its entirety.

PRE BID RFIS:

AD6-65 **Refer to attached RFI Log for Pre-BID RFI Responses**.

END OF ADDENDUM NO. 6

G0.02 - GENERAL NOTES

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	SYMBOL OF ACCESSIBILITY
SECTION NUMBER / SECTION NUMBER	SECTION CUT
ELEVATION NUMBER / SHEET NUMBER	EXTERIOR ELEVATION SYMBOL
DETAIL NUMBER / SHEET LOCATION	DETAIL CUT
	ROOM NUMBER SYMBOL
	DOOR NUMBER
	WINDOW NUMBER
	KEYNOTE REFERENCES
X	INTERIOR ELEVATION SYMBOL
HEIGHT / MODIFIED / DEPTH / CASEWORK MODEL / LOCK / WIDTH	CASEWORK SYMBOL
	FINISH KEYNOTE SYMBOL
DETAIL NUMBER / SHEET LOCATION	ENLARGED PLAN TAG
60" x 48" CLEAR	60"x48" REQUIRED ACCESSIBLE MANEUVERING SPACE,TYP.
30" x 48" CLEAR	30"x48" REQUIRED ACCESSIBLE MANEUVERING SPACE,TYP.
5'-0" CLEAR	5'-0" DIA. CLEAR REQUIRED ACCESSIBLE MANEUVERING SPACE,TYP.

GENERAL ABBREVIATIONS

AB	ANCHOR BOLT
AC	ASPHALT CONCRETE
ACT	ACOUSTICAL CEILING TILE
ACW	ALUMINUM CURTAIN WALL
AF	ALUMINUM SNAP FRAME
AFF	ABOVE FINISH FLOOR
AGG	AGGRIGATE
AL	ALUMINUM
ANOD	ANODIZED
AT	@
BD	BOARD
BLDG	BUILDING
BLK'G	BLOCKING
BO	BOTTOM OF
BUR	BUILT-UP ROOFING
CC	CUBICAL CURTAIN
CEM	CEMENT
CJ (OR)	CONTROL JOINT
CL	CHAIN-LINK FENCE
CLN	CLEAN
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
CP	CEMENT PLASTER
CPT	CARPET
CV	INTEGRAL COVE
DBL	DOUBLE
DIA	DIAMETER
DL	DUAL GLAZED
DP	DEEP
DS	DENSIFIED SEALED CONCRETE
DSS	DENSIFIED SEALED & STAINED
DTL	DETAIL
DWGS	DRAWINGS
DYED	DYED CONCRETE
(E)	EXISTING
EA	EACH
EG	ELECTROCHROMIC GLASS
EJ (OR)	EXPANSION JOINT
ELEV	ELEVATION
EP	EPOXY PAINT
EPF	EPOXY FLOOR
ESP	EGG SHELL PAINT
EXP	EXPOSED STRUCTURE
EXT	EXTERIOR
F	FIXED
FB	FLAT BAR
FF	FACTORY FINISH
FG	FIBERGLASS
FIN	FINISH
FLASH'G	FLASHING
FLR	FLOOR
FP	FACTORY PAINT
FOF	FACE OF FINISH
FR	FIRE RATED
FRAM'G	FRAMING
FRP	FIBER REINFORCED PANEL
FT	FACTORY
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GB	GYPSUM BOARD
GBLK	GLASS BLOCK
GP	GLOSS PAINT
GSM	GALVANIZED SHEET METAL
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
IOR	INSPECTOR OF RECORD
ISA	INTERNATIONAL SYMBOL OF ACCESSIBILITY
L	LAMINATE
MANUF	MANUFACTURER
MAX	MAXIMUM
MDF	MEDIUM-DENSITY FIBREBOARD
MED	MEDIUM
MIN	MINIMUM
MP	METAL PANEL
MTL	METAL
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
HM	HOLLOW METAL
o/	OVER
OBSC	OBSCURE
OC	SUSPENDED OPEN CELL SYSTEM
OD	OUTSIDE DIAMETER
OH	OPPOSITE HAND
OP	OPAQUE GLASS
OPP	OPPOSITE
P	PAINT
PERIM	PERIMETER
PG	PIPE GRID
PL	PLASTIC LAMINATE
PLT	PLATE
PLY	PLYWOOD
PO	POLISHED
POT	PATH OF TRAVEL
PRT	TOILET PARTITION
PT	PRESSURE TREATED
PW	PICTURE WINDOW
RB	RUBBERIZED BASE
RCP	REFLECTED CEILING PLAN
RECOMM	RECOMMENDATION
REQ'D	REQUIRED
REQMTS	REQUIREMENTS
RF	RUBBER FLOORING
RT	RUBBERIZED NON-SLIP TREAD
RTB	RUBBER TOPSET BASE
S	SINGLE GLAZED
SC	SOLID CORE
SCF	STATIC CONTROL FLOORING
SDS	SELF DRILLING SCREW
SGP	SEMI-GLOSS PAINT
SH	SINGLE-HUNG
SHT	SHEET
SIM	SIMILAR
SL	SEAL
SMP	SCUFFMASTER PAINT
SMS	SHEET METAL SCREW
SPEC	SPECIFICATION
SQ	SQUARE
SO	SOLID SURFACE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STN	STAIN
STRUCT	STRUCTURAL
SV	SHEET VINYL
T	TEMPERED
TL	TILE
TNT	TINTED
TO	TOP OF
TP	TRANSLUCENT PANEL
TRP	TRANSLUCENT RESIN PANEL
TS	TUBE STEEL
TT	TAPE & TEXTURED
TW	TRANSLUCENT WALL SYSTEM
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VAR	VARIES
VCB	VENTED COVED BASE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
VTB	VINYL TACKBOARD
VWC	VINYL WALL COVERING
w/	WITH
WC	WALL COVERING
WD	WOOD
WGB	WATER RESISTANT GYP. BOARD
WP	WATER PROOF
WR	WATER RESISTANT
WS	WOOD SCREW
WT	WALL TALKER o/ GYPSUM BOARD
WWM	WELDED WIRE MESH

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GENERAL NOTES

1. SOLELY AS A CONVENIENCE TO THE OWNER, THE ARCHITECT MAY INCLUDE DOCUMENTS PREPARED BY CERTAIN CONSULTANTS (OR INCORPORATE THE RECOMMENDATION OF SAID CONSULTANTS IN DOCUMENTS PREPARED BY THE ARCHITECT) WITHIN THE SET OF DOCUMENTS ISSUED BY THE ARCHITECT IT BEING EXPRESSLY UNDERSTOOD THAT, BY SAID ISSUANCE, THE ARCHITECT ASSUMES NO LIABILITY FOR THE SERVICES OF SAID CONSULTANTS.
2. ALL MATERIALS AND WORK SHALL CONFORM TO THE LATEST GOVERNING BUILDING CODES & REGULATIONS. A PROJECT INSPECTOR WITH A CLASSIFICATION 1, EMPLOYED BY THE OWNER SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, C.C.R.
3. THE BOOK OF SPECIFICATIONS ARE A PART OF THIS CONTRACT.
4. A SOILS REPORT ON THIS PROJECT SHALL BE PART OF THE PLANS. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ ENGINEER OF ANY DISCREPANCY BETWEEN THIS REPORT AND THE PLANS PRIOR TO BEGINNING WORK.
5. PRIORITY OF DOCUMENTS: FIGURED DIMENSIONS ON DRAWINGS SHALL GOVERN, BUT WORK NOT DIMENSIONED SHALL BE AS DIRECTED. WORK NOT PARTICULARLY SHOWN OR SPECIFIED SHALL BE THE SAME AS SIMILAR PARTS THAT ARE SHOWN OR SPECIFIED. LARGE SCALE DETAILS SHALL TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS AS TO SHAPE & DETAILS OF CONSTRUCTION. SPECIFICATIONS SHALL GOVERN TO MATERIALS, WORKMANSHIP AND INSTALLATION PROCEDURES. THE SPECIFICATIONS CALLING FOR FOR THE HIGHER QUALITY MATERIAL OR WORKMANSHIP SHALL PREVAIL. CONTRACTOR SHALL PROMPTLY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF DRAWINGS & SPECIFICATIONS WHICH MAY BE IN CONFLICT. IN THE EVENT THAT DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT, THE MORE RESTRICTIVE, HIGHER QUALITY MATERIAL OR WORKMANSHIP SHALL PREVAIL.
6. THE TYPICAL DETAILS AND NOTES SHOWN ON THESE SHEETS SHALL APPLY IN ALL CASES UNLESS SHOWN OTHERWISE. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL BE AS SHOWN FOR OTHER SIMILAR WORK. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. ALL WORK AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE BUILDING CODES, REGULATIONS, AND SAFETY REQUIREMENTS.
7. DETAILS NOT SPECIFICALLY REFERENCED ARE STILL PART OF THE DOCUMENTS. CONTRACTOR RESPONSIBLE FOR ALL DETAILS WITHIN THIS SET.
8. CONTRACTOR SHALL PROVIDE PROTECTION AS NECESSARY PER CITY & LOCAL CODE REQUIREMENTS, AND ALL APPLICABLE CODES AND REQUIREMENTS AS INDICATED AT SHEET A0.1.
9. CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS PRIOR TO ANY WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCY. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS REQUIRED DUE TO HIS FAILURE TO DO SO.
10. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN ANY DISCREPANCIES.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REQUESTING ALL INSPECTIONS AND TESTS INDICATED ON THE PLANS AND SPECIFICATIONS, RECOMMENDED BY THE SOILS REPORTAND/OR REQUIRED BY ANY GOVERNMENT AGENCY. OWNER SHALL BEAR THE COSTS.
12. CONTRACTOR SHALL PROVIDE THE OWNER WITH A LIST OF THE HEATING, COOLING, WATER HEATING, LIGHTING SYSTEM, AND INSTRUCTION ON HOW TO USE THEM EFFICIENTLY.
13. PRIOR TO BUILDING FINAL INSPECTION, APPLIANCE CERTIFICATE, WHICH IS PROVIDED BY APPLIANCE MANUFACTURER, MUST BE COMPLETED BY THE INSTALLER OR GENERAL CONTRACTOR AND POSTED IN A CONSPICUOUS LOCATION. (INCLUDING HVAC UNITS AND WATER HEATERS.)
14. EQUIPMENT WHICH REQUIRES PREVENTATIVE MAINTENANCE FOR EFFICIENT OPERATION MUST BE FURNISHED WITH MAINTENANCE INFORMATION.
15. CONTRACTOR SHALL PROVIDE ACCESS PANELS AS REQUIRED BY PLUMBING, AIR CONDITIONING AND OTHER TRADES, AND AS REQUIRED BY CODES.
16. NO ADDITIONAL ROOF OPENINGS OR ROOF MOUNTED EQUIPMENT IS ALLOWED BEYOND THAT WHICH IS SHOWN ON THESE PLANS WITHOUT WRITTEN CONSENT OF THE ARCHITECT.
17. CONTRACTOR(S) IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING THAT ALL TRADES HAVE REVIEWED ENTIRE WORKING DOCUMENTATION AND NOT LIMITED TO SAID SPECIFIC TRADE.
18. ALL REVISIONS TO THE DRAWINGS MUST PROCEED THROUGH NORMAL CHANNELS. ANY TENANT OR CONTRACTOR REVISIONS MAY BE CONSIDERED NULL AND VOID. TENANT SHALL NOT BE ALLOWED TO DO THEIR OWN WORK PRIOR TO THE GENERAL CONTRACTOR'S COMPLETION WITHOUT WRITTEN NOTICE BY THE OWNER, TO THE CONTRACTOR.
19. ALL FRAMING MEMBERS TO BE DOUGLAS FIR #2 OR BETTER, U.N.O.
20. CONTRACTOR SHALL PROVIDE FIRE EXTINGUISHER'S AND ANY REQUIRED SIGNAGE AS DIRECTED BY LOCAL FIRE AUTHORITY.
21. CONTRACTOR SHALL COMPLY WITH THE CALIFORNIA FIRE CODE CHAPTER 14: FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION
22. EXISTING ADJACENT BUILDING TO BE KEPT OPERATIONAL AND WATER TIGHT DURING CONSTRUCTION.

ACCESSIBILITY NOTES

- PER 2019 CBC, UNITS ARE TO COMPLY PER SECTION 11B-224.1 THRU 11B-224.7 AND 11B-806.
  1. EXCEPTION, UNIT B2 WILL BE EXCLUSIVELY FOR FACULTY/ STAFF. TO COMPLY PER SECTION 11B-233, (11B-233.3.1.1 AND SECTIONS 11B-809.2 THRU 11B-809.5.
- **GUEST ROOMS WITH MOBILITY FEATURES PER TABLE 11B-224.2:**
  REQUIRED ROOMS WITHOUT ROLL-IN SHOWERS = 6 PROVIDED = 7
  REQUIRED ROOMS WITH ROLL-IN SHOWERS = 3 PROVIDED = 3**
  TOTAL NUMBER OF REQUIRED ROOMS = 9 PROVIDED = 10
- **GUEST ROOMS WITH COMMUNICATION FEATURES PER TABLE 11B-224.4:**
  TOTAL OF NUMBER OF GUEST ROOMS = 155
  REQUIRED GUEST ROOMS WITH COMMUNICATION FEATURES = 14
  TOTAL PROVIDED = 15

NOTE:
REFEREENCE ELECTRICAL FOR ADDITIONAL INFORMATION

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NOTE:
REFERENCE SHEET G0.02A FOR BUILDING PLAN LOCATIONS.
** UNITS A1.2, B1.2, AND C1.2

CALGREEN SECTION 10-103

THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.

LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMEND BY A CERTIFIED LIGHTING CONTROL ACCEPTANCE TEST TECHNICIAN (ATT).

MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.

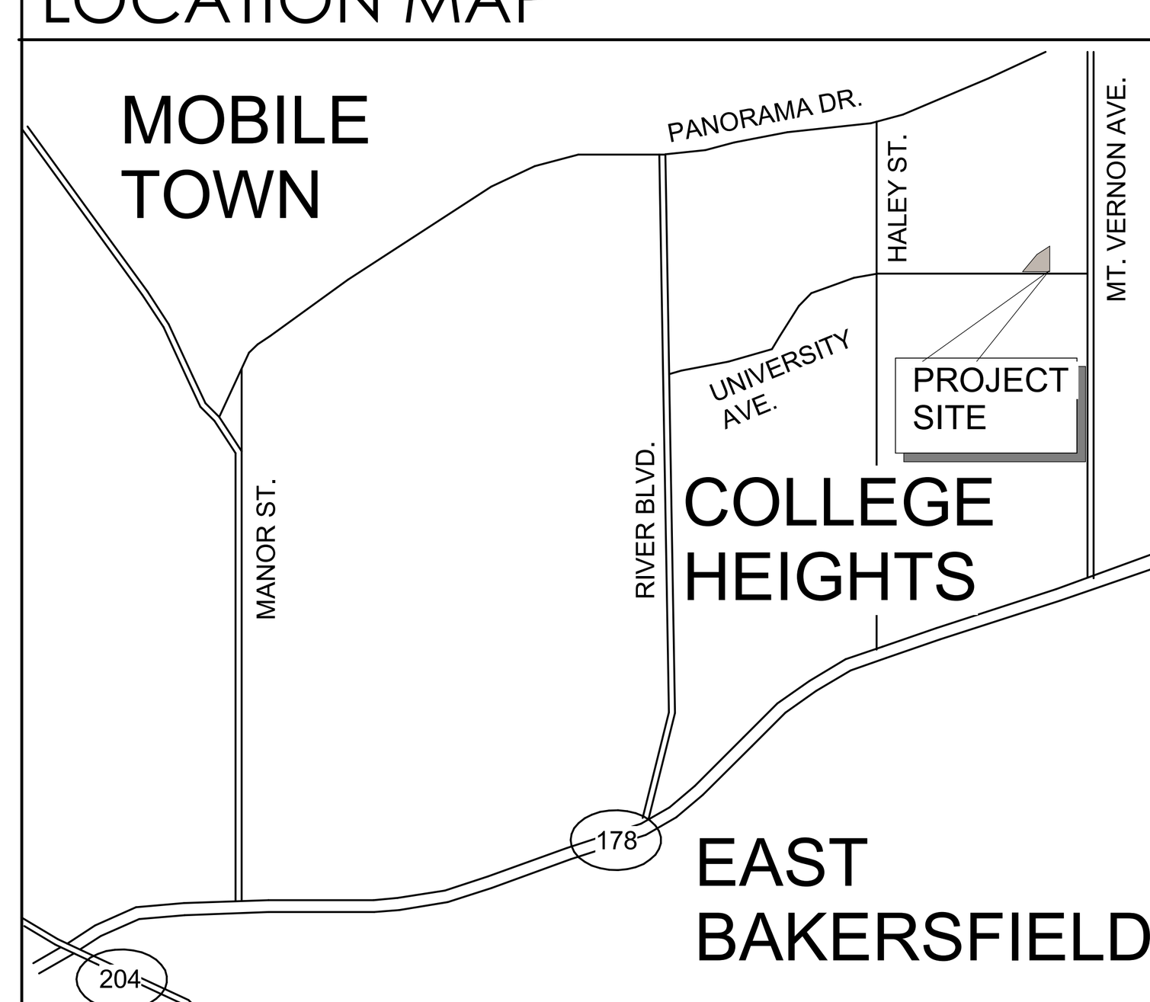
ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY INSTALLING CONTRACTOR, ENGINEER/ ARCHITECT OF RECORD OR THE OWNER'S AGENT.

A LISTING OF CERTIFIED ATT CAN BE FOUND AT:
https://www.energy.ca.gov/programs-and-topics/programs/acceptance-test-technician-certification-provider-program/acceptance

THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/ INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTACE CRITERIA.

PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

LOCATION MAP



SITE NOTES

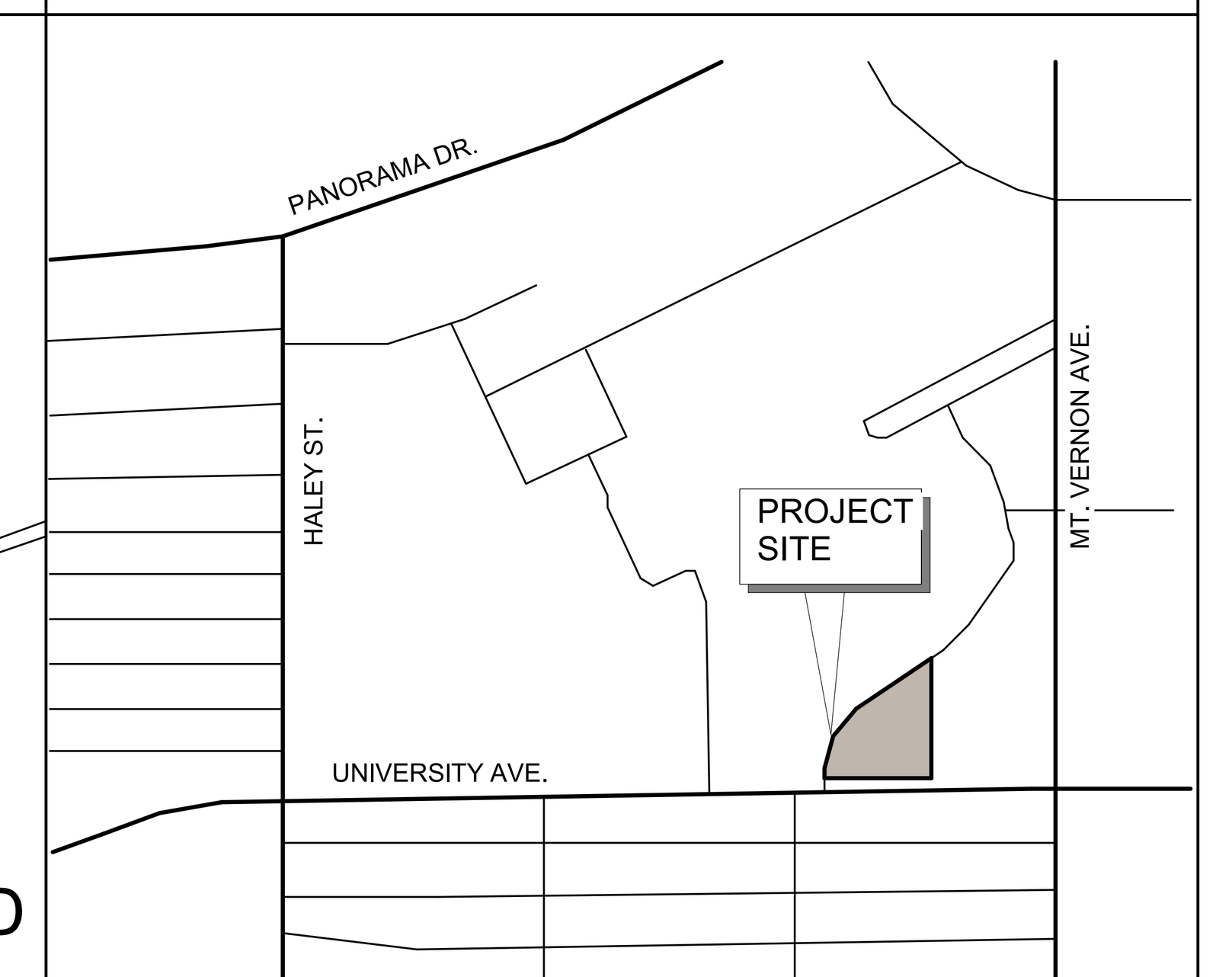
1. REPAIR ALL DAMAGED AND/OR OFF-GRADE CONCRETE STREET IMPROVEMENTS AS DETERMINED BY THE INSPECTOR PRIOR TO SIGN OFF
2. ALL EXISTING APPROACHES WHICH NO LONGER PROVIDED ACCESS TO APPROVED VEHICLE PARKING AREAS SHALL BE REMOVED, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, SUCH AREAS SHALL BE RECONSTRUCTED WITH CURB, GUTTER, AND SIDEWALK TO MATCH EXISTING ADJACENT STREET IMPROVEMENTS. THIS WORK SHALL BE COMPLETED AND ACCEPTED BEFORE A PERMIT OF OCCUPANCY IS ISSUED OR THE BUILDING IS OCCUPIED. AUTHORITY: FMC 11-209
3. ANY SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR RESET BY A REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR.
4. NO OPEN TRENCH IN STREETS ALLOWED, ALL UTILITY CONNECTIONS MUST BE BORED.
5. ANY UTILITIES REQUIRING RELOCATION SHALL BE THE RESPONSIBILITY AND AT THE EXPENSE OF THE OWNER, CONTACT TRAFFIC ENGINEER FOR INFORMATION REGARDING REIMBURSEMENTS RELATIVE TO RELOCATING TRAFFIC SIGNAL FACILITIES, FIRE HYDRANTS WILL BE RELOCATED BY CITY FORCES. DEVELOPER IS RESPONSIBLE TO NOTIFY CITY WATER DIVISION TO ARRANGE AND COORDINATE WORK.
6. A BACKFLOW PREVENTION DEVICE IS REQUIRED. CONTACT THE CITY WATER DIVISION FOR REQUIREMENTS, DEVICES MUST BE INSTALLED ON-SITE IN A LOCATION APPROVED BY THE CROSS CONNECTION CONTROL OFFICER, A PLUMBING PERMIT IS REQUIRED AND SHALL BE INSTALLED AT THE CONTRACTOR'S EXPENSE BY A QUALIFIED JOURNEYMAN PLUMBER CERTIFIED AS COMPETENT FOR SUCH PURPOSES BY THE WATER SYSTEMS MANAGER, BACKFLOW DEVICES MUST BE TESTED AND ACCEPTED BY THE WATER DIVISION PRIOR TO GRANTING BUILDING FINAL.
7. SURFACE DRAINAGE OVER DRIVEWAY APPROACHES AND SIDEWALKS IS NOT PERMITTED WHEN THE AREA TO BE DRAINED EXCEEDS 1/4 ACRE. SHOW METHOD OF CONVEYING ON SITE STORM WATER TO STREET, DETAIL CATCH BASINS AND PIPE OR CHANNEL SIZES TO BE USED PER CITY STANDARDS.
8. ALL CONSTRUCTION WORK ON THIS PROJECT IS SUBJECT TO INTERRUPTION IF THE ROAD SYSTEM BECOMES IMPASSABLE FOR FIRE APPARATUS DUE TO RAIN OR OTHER OBSTACLES.
9. WORKING DAYS BEFORE COMMENCING EXCAVATION OPERATIONS WITHIN THE STREET RIGHT-OF-WAY AND/OR UTILITY EASEMENTS, ALL EXISTING UNDERGROUND FACILITIES SHALL HAVE BEEN LOCATED BY UNDERGROUND SERVICES ALERT (USA). CALL 1-800-642-2444
10. NOTIFY CITY ELECTRONICS AND COMMUNICATIONS DIVISION, 10 DAYS PRIOR TO ANY OFFSITE CONCRETE CONSTRUCTION.
11. DEED(S) OF EASEMENTS FOR THE REQUIRED DEDICATION(S) SHALL BE PREPARED BY THE OWNER'S ENGINEER AND SUBMITTED TO THE CITY WITH VERIFICATION OF OWNERSHIP PRIOR TO ISSUANCE OF BUILDING PERMITS.
12. NO USES OF LAND, BUILDINGS OR STRUCTURES OTHER THAN THOSE SPECIFICALLY APPROVED PURSUANT TO THIS SITE PLAN SHALL BE PERMITTED.
13. INSTALL 12" HIGH ALUMINUM ADDRESS NUMBERS IN A CONSPICUOUS LOCATION ON THE BUILDING SO THAT IT CAN BE EASILY VISIBLE FROM THE STREET PER LOCAL MUNICIPAL CODE, COORDINATE WITH ARCHITECT.
14. IF ARCHAEOLOGICAL AND/OR ANIMAL FOSSIL MATERIAL IS ENCOUNTERED DURING PROJECT SURVEYING, GRADING, EXCAVATING, OR CONSTRUCTION, WORK SHALL STOP IMMEDIATELY.

DSA NOTES

1. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART I, TITLE 24, CCR
2. A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR; CLASS 1.
3. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
4. ALL WORK SHALL CONFORM TO 2019 EDITION TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
5. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT.
6. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERNATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR,. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(c), PART 1, TITLE 24, CCR).
7. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
8. DSA DOES NOT REVEW FOR COMPLIANCE WITH C.C.R. TITLE 8, DIVISION 1, CHAPTER 4, SUB-CHAPTER 6, ELEVATOR SAFETY ORDERS (ESO). IT IS THE RESPONSIBILITY OF THE PROJECT ARCHITECT AND ELEVATOR MANUFACTURER TO ENSURE THAT DESIGNS AND ELEVATOR INSTALLATIONS ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE ELEVATOR SAFETY ORDERS AS ADOPTED.
9. NEW BUILDINGS SHALL BE PROVIDED WITH EMERGENCY RESPONDER RADIO COVERAGE IN ACCORDANCE WITH CALIFORNIA FIRE CODE, SECTION 510. DSA WILL NOT BE REVIEWING OR APPROVING PLANS FOR THE REQUIRED EMERGENCY COMMUNICATION SYSTEM.

   ARCHITECT OF RECORD (AOR) SHALL CONTACT THE LOCAL FIRE DEPARTMENT AND/OR EMERGENCY COMMUNICATIONS AUTHORITY TO OBTAIN DESIGN AND EQUIPMENT SPECIFICATIONS, AND TESTING AND ACCEPTANCE CRITERIA. IT IS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL / AOR TO SUBMIT PLANS AND REQUESTED DOCUMENTATION, AND APPLICABLE FEES, TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL. UPON COMPLETION, COPIES OF THE APPROVED PLANS, EQUIPMENT DATA SHEETS, AND PROOF OF TESTING AND ACCEPTANCE DOCUMENTATION SHALL BE PROVIDED TO THE SCHOOL DISTRICT. THE PROJECT INSPECTORS SHALL VERIFY THAT DOCUMENTATION IS PROVIDED TO THE SCHOOL DISTRICTS.
10. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE CONSIDERED AS A CONSTRUCTION CHANGE DOCUMENT OR ADDENDUM, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION PER DSA IR A-6 AND SECTION 338 (C) PART 1, TITLE 24 CCR.

VICINITY MAP



CODE TABULATION

PARTIAL LIST OF APPLICABLE CODES

2022 California Administrative Code (CAC),.................................... **(Part 1, Title 24, C.C.R.)**
2019 California Building Code (CBC).. **(Part 2, Title 24, CCR)**
(2018 International Building Code with 2019 California Ammendments)
2019 California Electrical Code (CEC).. **(Part 3, Title 24, CCR)**
(2017 National Electrical Code and 2019 California Amendments)
2019 California Mechanical Code (CMC).. **(Part 4, Title 24, CCR)**
(2019 IAMPO Uniform Mechanical Code and 2019 California Amendments)
2019 California Plumbing Code (CPC).. **(Part 5, Title 24, CCR)**
(2018 IAMPO Uniform Plumbing Code and 2019 California Amendments)
2019 California Energy Code (CEC).. **(Part 6, Title 24, CCR)**
2019 California Fire Code (CFC)... **(Part 9, Title 24, CCR)**
(2018 International Fire Code and 2019 California Amendments)
2019 California Existing Building Code (CEBC).................................. **(Part 10, Title 24, CCR)**
(2018 International Existing Building Code and 2019 California Amendments)
2019 California Green Building Standards Code................................. **(Part 11, Title 24, CCR)**
2019 California Referenced Standards Code....................................... **(Part 12, Title 24, CCR)**
Regulations of the State Fire Marshall .... **(Title 19, CCR)**
2016 ASME A17.1/CSA B44-16 Safety Code for Elevators and Escalators... **(per 2019 CBC Part 2 Ch 35)**
2010 Americans With Disabilities Act (ADA)
Standards For Accessible Design

PARTIAL LIST OF FIRE LIFE SAFETY APPLICABLE STANDARDS

NFPA 13 Automatic Fire Sprinkler Systems....................................	**(2016 Edition, CA**
NFPA 14 Standpipe and Hose Systems..	**Amended)**
NFPA 17 Dry Chemical Extinguishing Systems...............................	**(2016 Edition, CA**
NFPA 17A Wet Chemical Extinguishing Systems............................	**Amended)**
NFPA 20 Stationary Pumps for Fire Protection................................	**(2017 Edition)**
NFPA 22 Standard for the Installation of Private Fire Service	**(2017 Edition)**
Mains and Their Appurtenances..	**(2016 Edition)**
NFPA 24 Private Fire Mains & their Appurtenances........................	
NFPA 72 National Fire Alarm & Signaling Code..............................	**(2013 Edition)**
NFPA 80 Fire Doors and Other Opening Protectives........................	**(2016 Edition, CA**
NFPA 2001 Clean Agent Fire Extinguishing Systems.......................	**Amended)**
UL 300 Standard Fire Extinguishing Systems For	**(2016 Edition, CA**
Protection of Commercial Cooking Equipment..................................	**Amended)**
UL 464 Audible Signal Appliances...	**(2016 Edition)**
UL 521 Standard for Heat Detectors for Fire Protective Signaling	**(2015 Edition)**
Systems..	
UL 1971 Standard for Signaling Devices for the Hearing Impared...	**(2005, R2010)**
	(2003 Edition)
	(1999 Edition)
	(2002, R2012)

FOR A COMPLETE LIST OF ALL APPLICABLE NFPA STANDARDS REFER TO 2019 CBC (SFM) CHAPTER 35 AND CALIFORNIA FIRE CODE (CFC) CHAPTER 80.

SEE CALIFORNIA BUILDING CODE, CHAPTER 35, FOR STATE OF CALIFORNIA AMMENDMENTS TO THE NFPA STANDARDS

THE APPROVAL OF THESE PLANS AND SPECIFICATIONS DOES NOT PERMIT THE VIOLATION OF ANY SECTION OF THE BUILDING CODE, MUNICIPAL ORDINANCES, OR STATE LAWS.

CONTRACTOR NOTES

1. THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.

   LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.

   A LISTING OF CERTIFIED ATT'S CAN BE FOUND AT HTTP://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ ACCEPTANCE-TEST-TECHNICAL-CERTIFICATION-PROVIDER-PROGRAM/ ACCEPTANCE

   THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFRORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.

   PROJECT INSPECTORS WILL BE COLLECTING FORMS TO CONFIRM THAT ALL REQUIRED ACCEPTENCE TESTS HAVE BEEN COMPLETED.

INSPECTOR NOTES

1. ALL WORK SHALL CONFORM TO TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR A CHANGE ORDER APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24 CCR.
3. A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, ART 1, TITLE 24, CCR.
4. THIS PROJECT REQUIRES INSPECTOR CLASS = 1

DESIGN COMPLIANCE

STATEMENT OF DESIGN COMPLIANCE:
THE STATE ENERGY CONSERVATION STANDARDS APPLICABLE TO THIS PROJECT HAVE BEEN REVIEWED AND THE BUILDING DESIGNED DESCRIBED HEREIN IS IN SUBSTANTIAL CONFORMANCE.

THE APPLICABLE STATE CODE TITLE 24 HAS BEEN REVIEWED FOR THIS PROJECT AND THE BUILDING DESIGN HEREIN IS IN SUBSTANTIAL CONFORMANCE.

STATEMENT OF GENERAL CONFORMANCE

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO, SHOP DRAWINGS PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO, SHOP DRAWINGS PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS.

(APPLICATION NO. 03-122124 FILE NO. ________)

X THE DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET
X THIS DRAWING, PAGE OF SPECIFICATIONS/CALCULATIONS

HAVE/HAS BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

1) X DESIGN INTENT, AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS, AND THE PROJECT SPECIFICATIONS PREPARE BY ME AND
2) X COORDINATION WITH MY PLANS AND SPECIFICATIONS, AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

THE STATEMENT OF GENERAL CONFORMANCE "SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTION 17302 AND 81138 OF THE EDUCATION CODE, AND SECTIONS 4-336, 4-341 AND 4-344 OF TITLE 24, PART 1 (TITLE 24 PART 1, SECTION 4-317 (B)).

I FIND THAT: X ALL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET THIS DRAWING OR PAGE
X IS/ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN, AND
X HAS/HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS

SIGNATURE ____________ DATE ____________

ARCHITECTS OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE,
PRINT NAME: ____________ LICENSE NUMBER: ________ EXPIRATION DATE: ________

ARCHITECT PBK Architects, Inc.
PBK.com
FRESNO
7790 North Palm Avenue
Fresno, CA 93711
559-448-8400 P
559-448-8467 F

NEW RESIDENCE HALL
1801 PANORAMA DR, BAKERSFIELD, CA 93305
BID
DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

GENERAL NOTES

1

G0.02

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DRAWN BY: Claudio D'Addato
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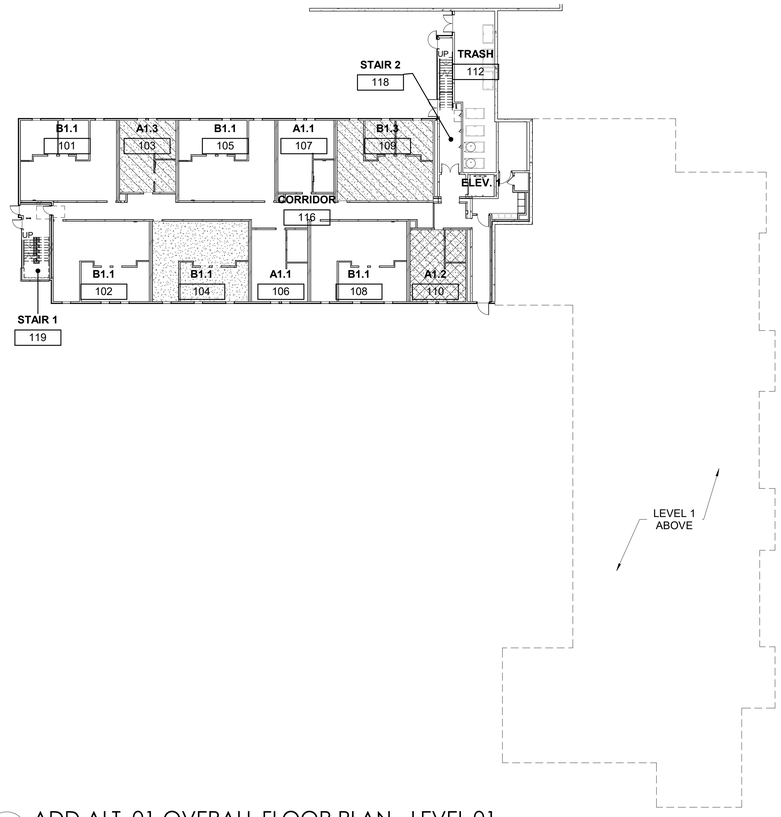
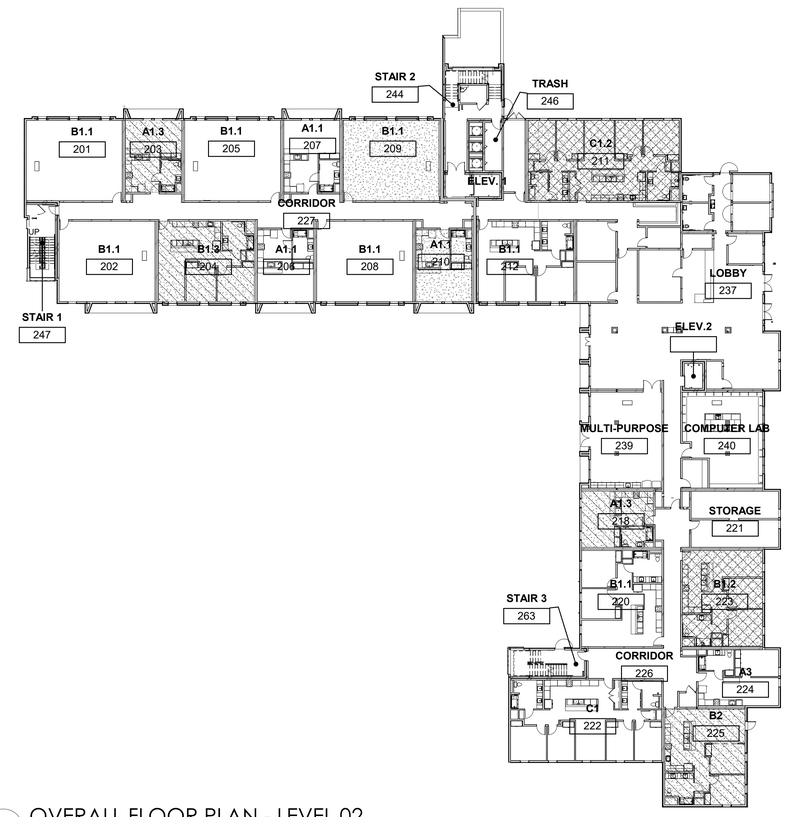


1 ADD ALT. 01-OVERALL FLOOR PLAN - LEVEL 01

SCALE 3/64" = 1'-0"



2 OVERALL FLOOR PLAN - LEVEL 02

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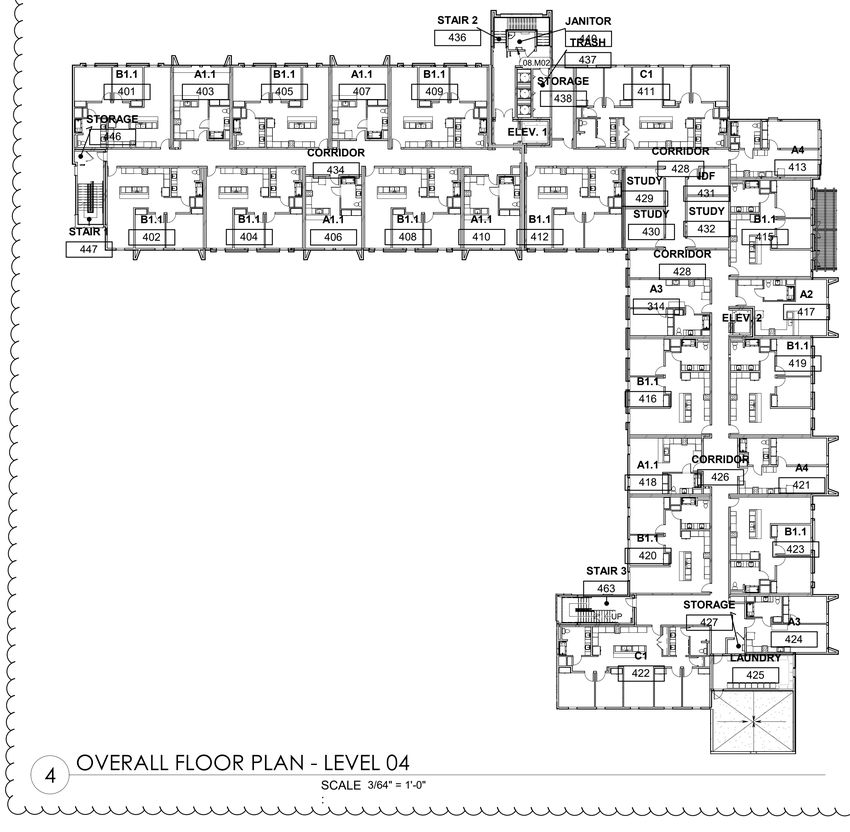
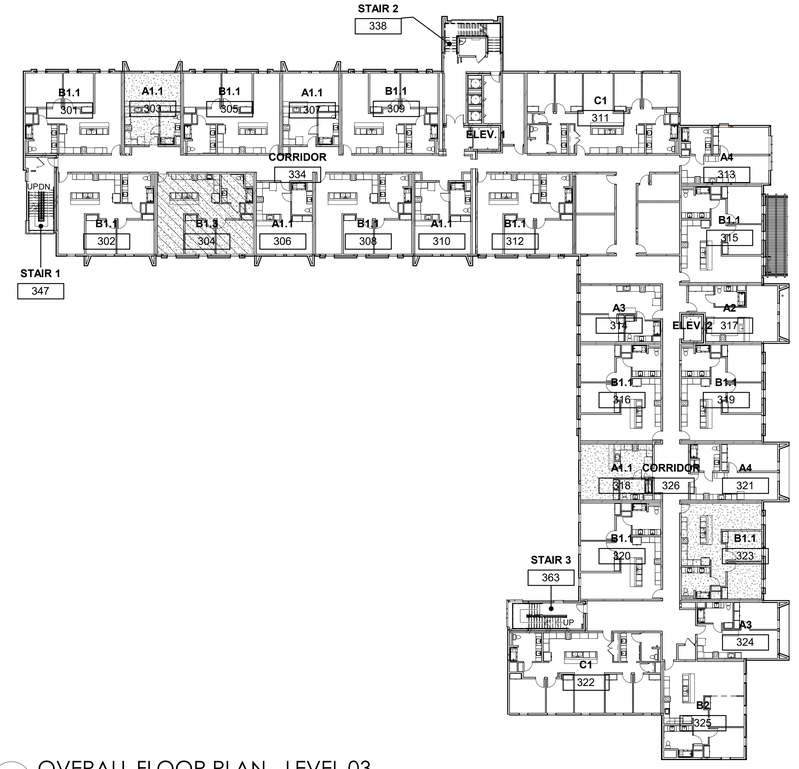


4 OVERALL FLOOR PLAN - LEVEL 04

SCALE 3/64" = 1'-0"



3 OVERALL FLOOR PLAN - LEVEL 03

SCALE 3/64" = 1'-0"

GENERAL NOTES_FLOOR PLAN

1. SEE SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
2. REFERENCE SHEET AU.1 THROUGH AU.7 FOR ENLARGED UNIT PLANS.

TYPES OF UNITS

UNIT WITH COMMUNICATION FEATURES, ROOM ANNUNCIATION SYSTEM AT THESE UNITS PER ELECTRICAL PLANS AND DETAIL 03/EX.03. ALARMS IN CEILINGS AS SCHEDULED IN FIRE ALARM SHEETS.

UNIT WITH MOBILITY FEATURES, WITHOUT ROLL-IN SHOWERS

UNIT WITH MOBILITY FEATURES, WITH ROLL-IN SHOWERS

08.M02 ROOF ACCESS LADDER REF TO DETAIL 17/AX2.1

PBK

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NEW RESIDENCE HALL

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BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 03/22/2024

REVISIONS

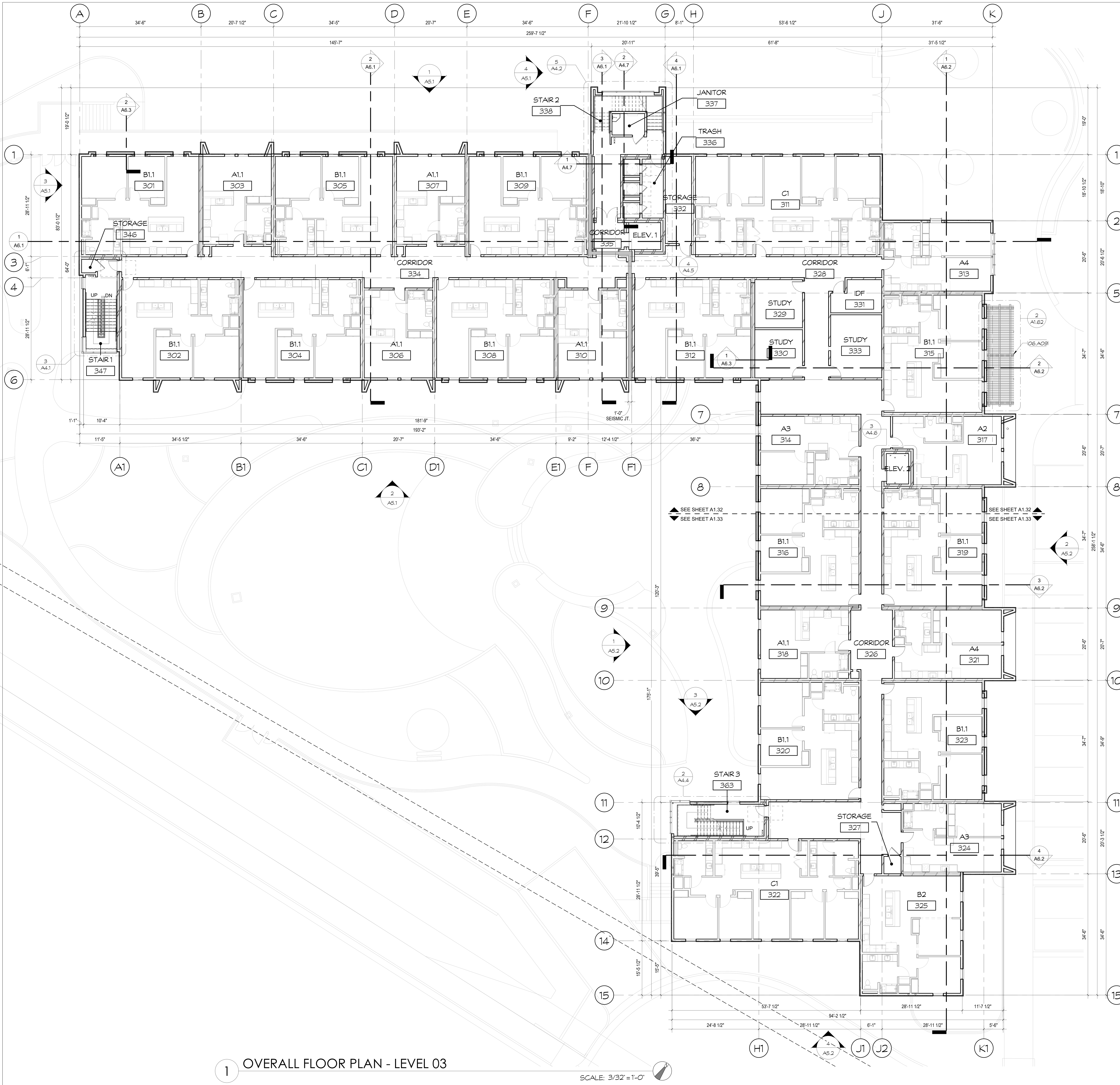
#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

ACCESSIBLE UNITS

G0.02A

A1.31 - OVERALL FLOOR PLAN - LEVEL 03



1 OVERALL FLOOR PLAN - LEVEL 03

SCALE: 3/32" = 1'-0"

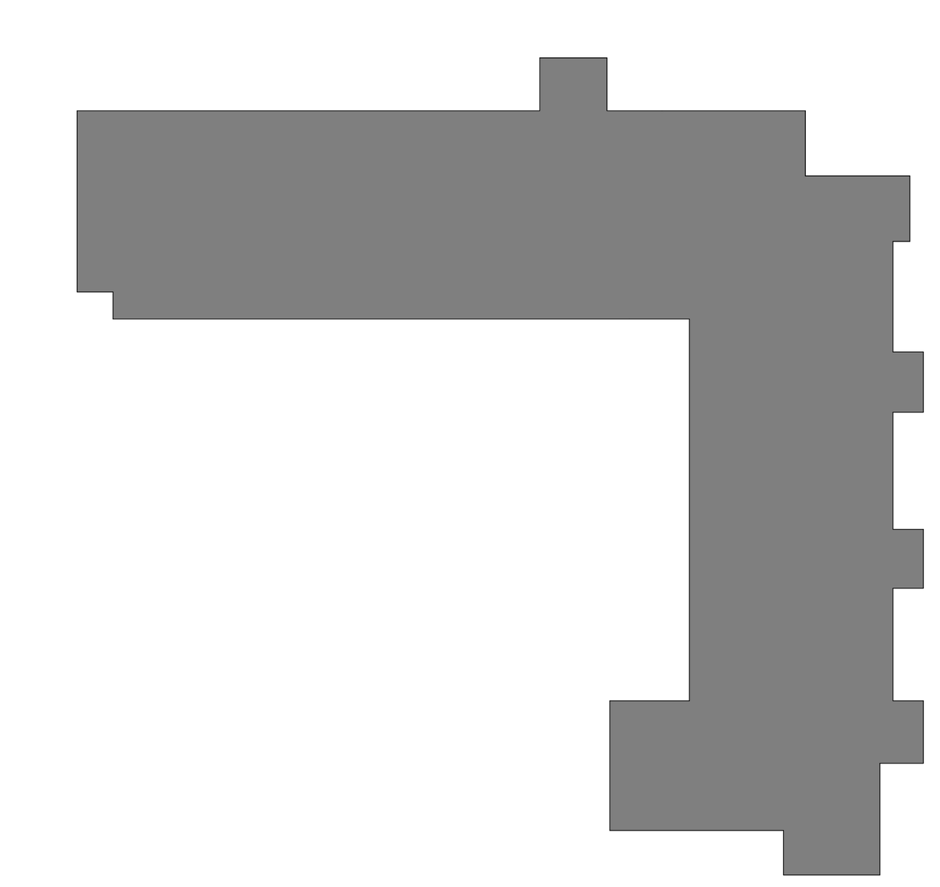
KEYNOTES (XX-XX)

06.A09 WOOD TRELLIS, SEE STRUCTURAL PLANS

GENERAL NOTES_FLOOR PLAN

1. SEE SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
2. REFERENCE SHEET AU.1 THROUGH AU.7 FOR ENLARGED UNIT PLANS.

KEY PLAN



IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-122124 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/10/2024

PBK

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NEW RESIDENCE HALL
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DSA PLAN REVIEW
DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT
LICENSED ARCHITECT
C 15895
9-30-23
STATE OF CALIFORNIA

CLIENT
KCCD - BAKERSFIELD
PROJECT NUMBER
S2103400AR
DATE 08/26/2022

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

DSA PLAN REVIEW

OVERALL FLOOR PLAN - LEVEL 03

A1.31

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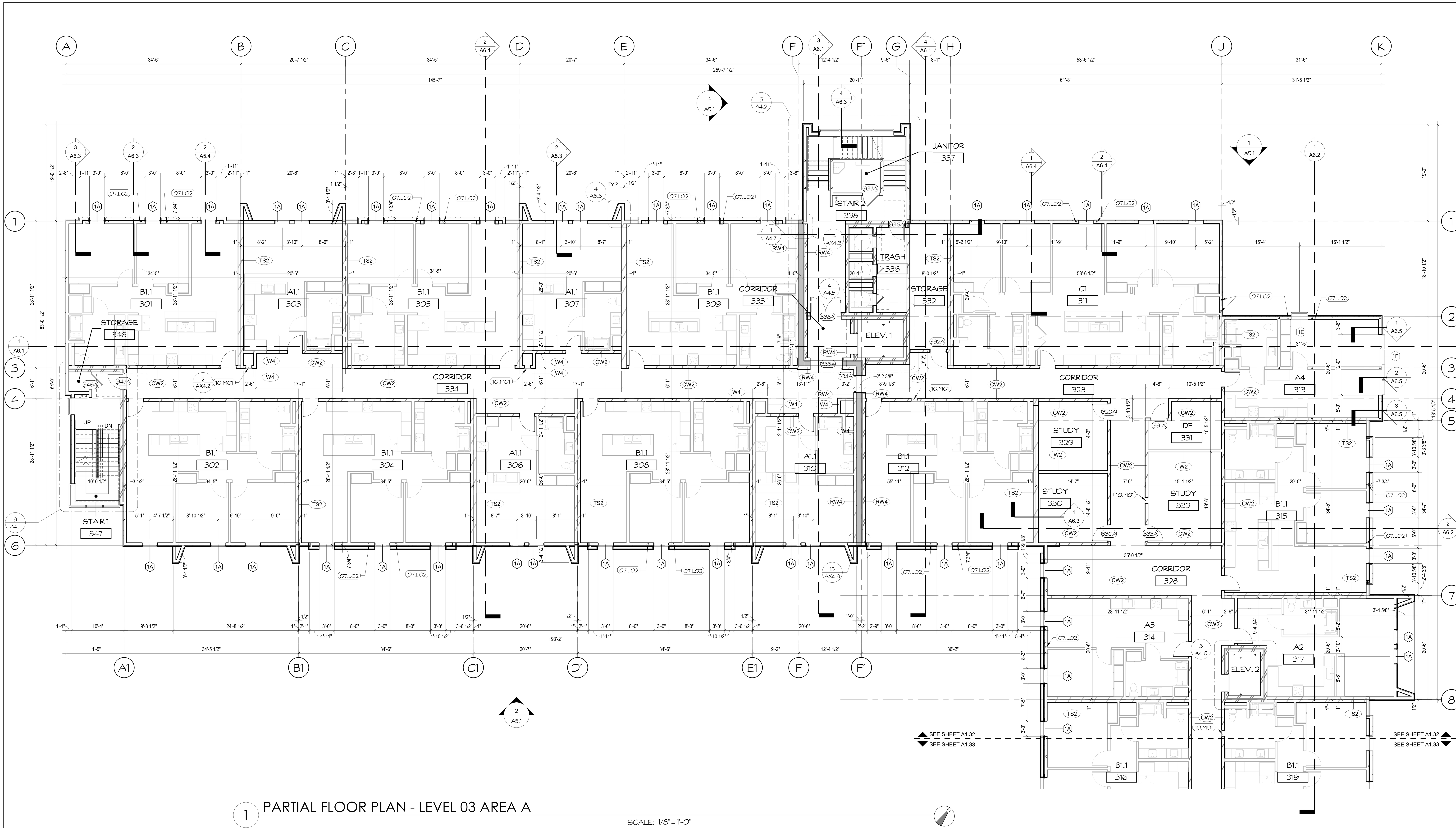


1 PARTIAL FLOOR PLAN - LEVEL 03 AREA A

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

KEYNOTES (XX-XX)

07.L02	ROOF DRAIN & OVERFLOW
10.M01	2A:10BC MIN. RATED FIRE EXTINGUISHER, REF. 2/AX4.2

FLOOR PLAN LEGEND

INTERIOR WALLS

- W1 — NEW WOOD STUD WALL: 5/8" GYP. / 2X4 / 5/8" GYP.
- W2 — NEW WOOD STUD WALL: 5/8" GYP. / 2X6 / 5/8" GYP.
- CW1/ CW2 — NEW WOOD STUD WALL: 1-HR 5/8" GYP. / 2X6 / 5/8" GYP.
- TS2 — NEW WOOD STUD WALL: 1-HR 5/8" GYP. / (2) 2X6 STUD. / 5/8" GYP.
- SW1a — NEW WOOD STUD WALL: 2-HR 5/8" GYP. / (2) 2X4 STUD/ (2) SHAFTLINER
- SW2 — NEW WOOD STUD WALL: 2-HR 5/8" GYP. / 2X6 / (2) SHAFTLINER

EXTERIOR WALLS

- NEW STUCCO WALL:
- NEW BRICK WALL:
- NEW CONCRETE WALL: CONCRETE, REF. STRUCTURAL FOR THICKNESS AND REINF.

NOTE:
REFERENCE FLOOR PLANS AND SHEET AX4.1 FOR WALL PARTITION TYPES.

S6C — **WALL TYPES:** SEE SHEET AX4.1 AND STRUCTURAL FOR WALL TYPES.

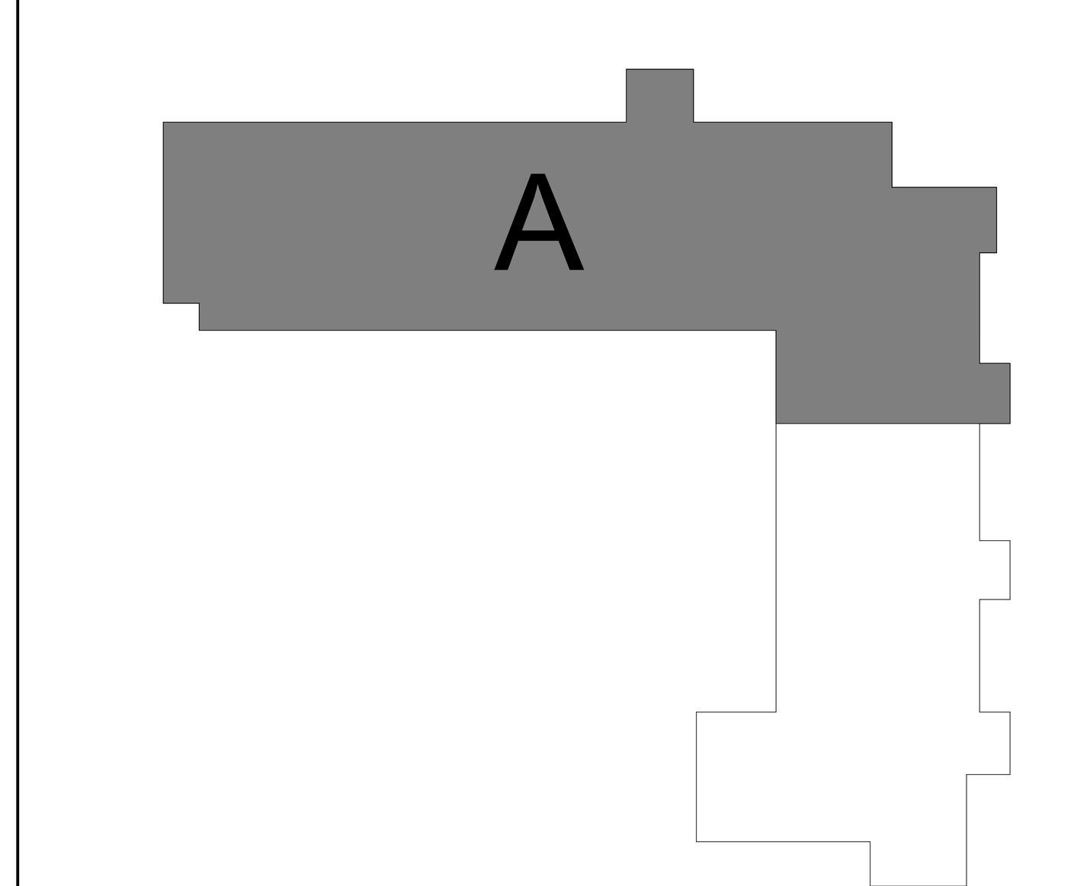
1A — **WINDOW TYPES:** SEE WINDOW SCHEDULES ON SHEET AX3.2

FIRE EXTINGUISHER SEE DETAIL 2 / AX4.2 AND ALL FIRE EXTINGUISHERS TYPE ABC U.N.O.

GENERAL NOTES - FLOOR PLAN

1. REFER TO SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
2. ALL DIMENSIONS ARE AS FOLLOWS UNLESS OTHERWISE NOTED: (a.) OUTSIDE FACE OF STUD (OR WHERE APPLICABLE) TO OUTSIDE FACE OF STUD (OR WHERE APPLICABLE) ; (b.) COLUMN LINE TO OUTSIDE FACE OF STUD (OR WHERE APPLICABLE) UNLESS OTHERWISE NOTED.
3. DOORS ARE 4" CLR. FROM FROM FACE OF FINISH TO ROUGH OPENING OF JAMB UNLESS OTHERWISE NOTED.
4. ALL UNIT PARTY WALLS/ TENANT SEPARATION WALLS ARE PARTITION TYPE TS2 UNLESS NOTED OTHERWISE. SEE 08/AX4.1
5. ALL UNIT CORRIDOR WALLS ARE PARTITION TYPE CW2 UNLESS NOTED OTHERWISE.
6. REFERENCE UNIT PLAN ON "AU" SHEETS FOR ADDITIONAL INFORMATION.
7. REFER TO SHEETS AX4.1 AND AX4.2 FOR ADDITIONAL PARTITION AND RATED ASSEMBLIES.
8. REFERENCE STRUCTURAL FOR SHEARWALL LOCATIONS, WOOD STUD SIZES AND ANCHORAGE REQUIREMENTS.
9. FOR PENETRATION DETAILS AT RATED WALLS SEE AX4.3.
10. EXTEND RATED WALLS TO UNDERSIDE OF DECK.
11. FOR DOOR SIGNAGE REFERENCE SHEET AX8.31

KEY PLAN



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DRAWN BY: Author

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

DSA PLAN REVIEW

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

LICENSED ARCHITECT — JOHN HAMILTON SMITH — C 15885 — 9-30-23 RENEWAL DATE — STATE OF CALIFORNIA

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 08/26/2022

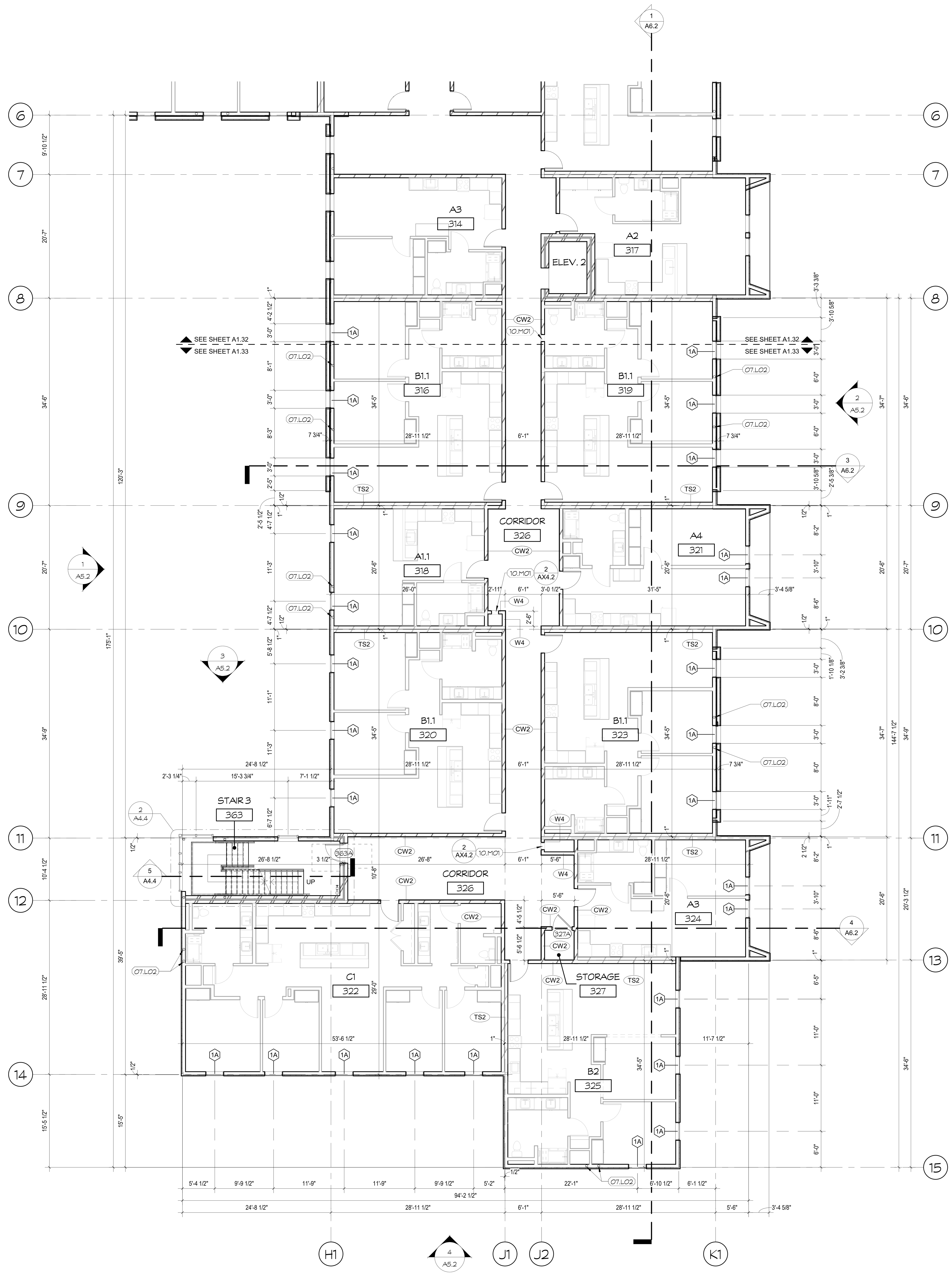
REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

DSA PLAN REVIEW

ENLARGED FLOOR PLAN - LEVEL 03 - AREA A

A1.32



1 PARTIAL FLOOR PLAN - LEVEL 03 AREA B

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

KEYNOTES

07.L02	ROOF DRAIN & OVERFLOW
10.M01	2A:10BC MIN. RATED FIRE EXTINGUISHER, REF. 2/AX4.2

GENERAL NOTES

1. REFER TO SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
2. ALL DIMENSIONS ARE AS FOLLOWS UNLESS OTHERWISE NOTED: (a.) OUTSIDE FACE OF STUD (OR WHERE APPLICABLE) TO OUTSIDE FACE OF STUD (OR WHERE APPLICABLE) ; (b.) COLUMN LINE TO OUTSIDE FACE OF STUD (OR WHERE APPLICABLE) UNLESS OTHERWISE NOTED.
3. DOORS ARE 4" CLR. FROM FROM FACE OF FINISH TO ROUGH OPENING OF JAMB UNLESS OTHERWISE NOTED.
4. ALL UNIT PARTY WALLS/ TENANT SEPARATION WALLS ARE PARTITION TYPE TS2 UNLESS NOTED OTHERWISE. SEE 08/AX4.1
5. ALL UNIT CORRIDOR WALLS ARE PARTITION TYPE CW2 UNLESS NOTED OTHERWISE.
6. REFERENCE UNIT PLAN ON "AU" SHEETS FOR ADDITIONAL INFORMATION.
7. REFER TO SHEETS AX4.1 AND AX4.2 FOR ADDITIONAL PARTITION AND RATED ASSEMBLIES.
8. REFERENCE STRUCTURAL FOR SHEARWALL LOCATIONS, WOOD STUD SIZES AND ANCHORAGE REQUIREMENTS.
9. FOR PENETRATION DETAILS AT RATED WALLS SEE AX4.3.
10. EXTEND RATED WALLS TO UNDERSIDE OF DECK.
11. FOR DOOR SIGNAGE REFERENCE SHEET AX8.31

FLOOR PLAN LEGEND

INTERIOR WALLS

- W1 — NEW WOOD STUD WALL: 5/8" GYP. / 2X4 / 5/8" GYP.
- W2 — NEW WOOD STUD WALL: 5/8" GYP. / 2X6 / 5/8" GYP.
- CW1/ CW2 — NEW WOOD STUD WALL: 1-HR 5/8" GYP. / 2X6 / 5/8" GYP.
- TS2 — NEW WOOD STUD WALL: 1-HR 5/8" GYP. / (2) 2X6 STUD. / 5/8" GYP.
- SW1a — NEW WOOD STUD WALL: 2-HR 5/8" GYP. / (2) 2X4 STUD/ (2) SHAFTLINER
- SW2 — NEW WOOD STUD WALL: 2-HR 5/8" GYP. / 2X6 / (2) SHAFTLINER

EXTERIOR WALLS

- NEW STUCCO WALL:
- NEW BRICK WALL:
- NEW CONCRETE WALL: CONCRETE, REF. STRUCTURAL FOR THICKNESS AND REINF.

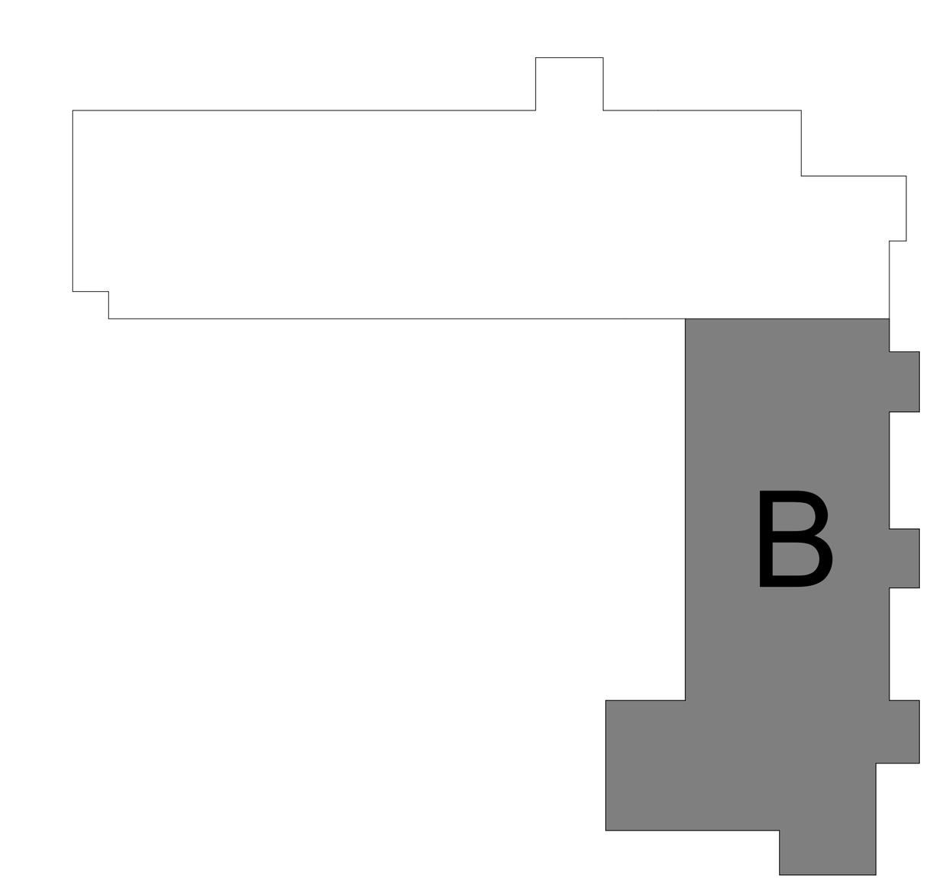
NOTE:
REFERENCE FLOOR PLANS AND SHEET AX4.1 FOR WALL PARTITION TYPES.

S6C — WALL TYPES: SEE SHEET AX4.1 AND STRUCTURAL FOR WALL TYPES.

1A — WINDOW TYPES: SEE WINDOW SCHEDULES ON SHEET AX3.2

FIRE EXTINGUISHER SEE DETAIL 2 / AX4.2 AND ALL FIRE EXTINGUISHERS TYPE ABC U.N.O.

KEY PLAN



IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-122124 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/10/2024

PBK

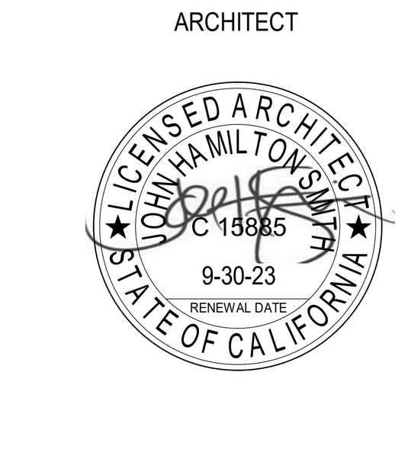
ARCHITECT PBK Architects, Inc.
PBK.com
FRESNO
7790 North Palm Avenue
Fresno, CA 93711
559-448-8400 P
559-448-8467 F

NEW RESIDENCE HALL
1801 PANORAMA DR, BAKERSFIELD, CA 93305
DSA PLAN REVIEW
DSA APPL. NO. 03-122124
FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT



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#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

DSA PLAN REVIEW

ENLARGED FLOOR PLAN - LEVEL 03 - AREA B

A1.33

CHECKED BY: Checker
DRAWN BY: Author

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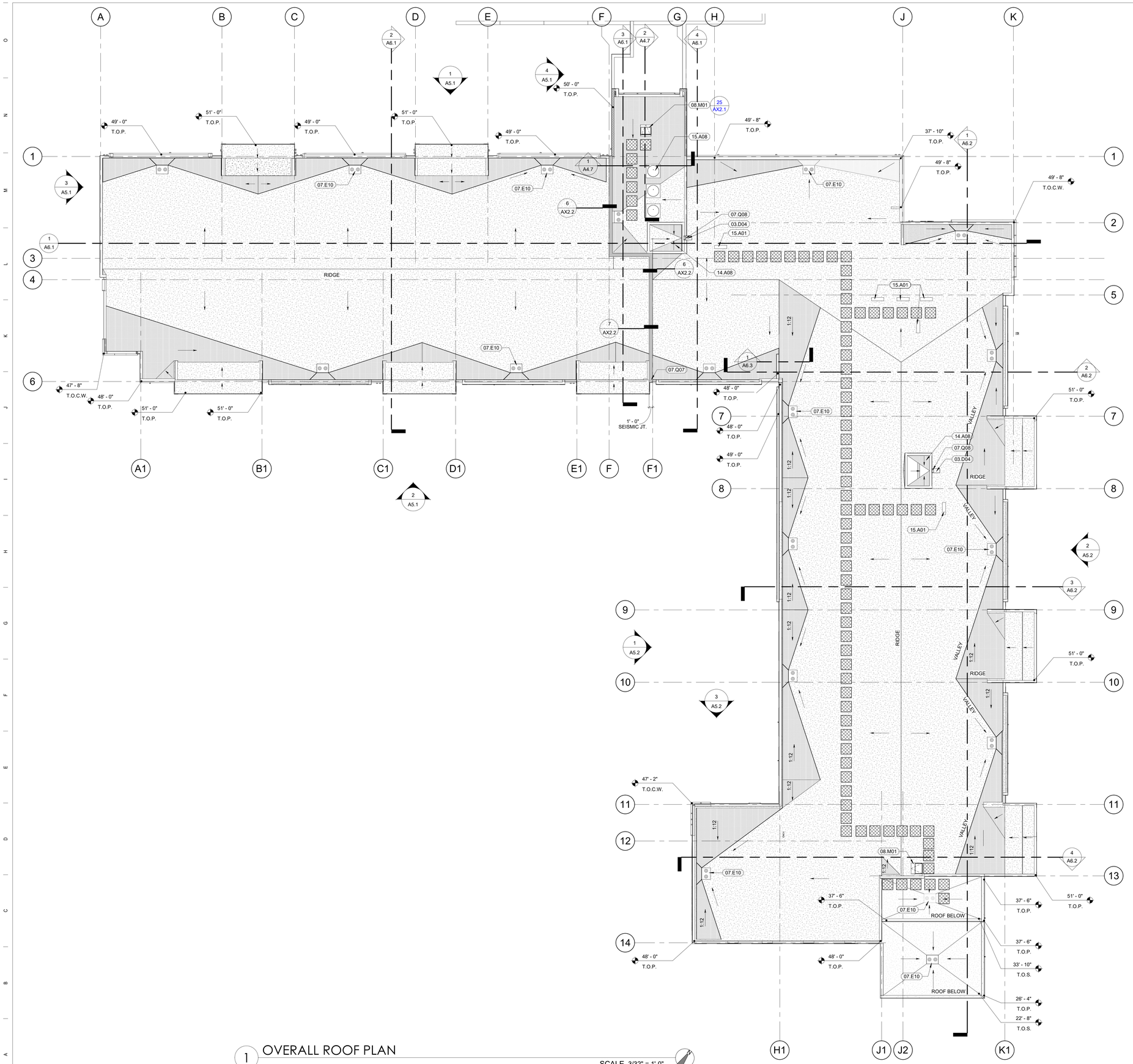


1 OVERALL ROOF PLAN

SCALE 3/32" = 1'-0"

KEYNOTES (XX-XX)

03.D04	PRECAST CONCRETE SPLASHBLOCK
07.E10	ROOF DRAIN & OVERFLOW SUMP
07.Q07	12" EXPANSION JOINT
07.Q08	24 GA. GALVANIZED SCUPPER AND DOWNSPOUT
08.M01	ROOF ACCESS HATCH REF TO DETAIL 25/AX2.1
14.A08	ELEVATOR PENTHOUSE
15.A01	MECHANICAL UNIT, SEE MECHANICAL PLANS
15.A08	EXHAUST HOOD, REFERENCE SPECS AND MECHANICAL PLANS

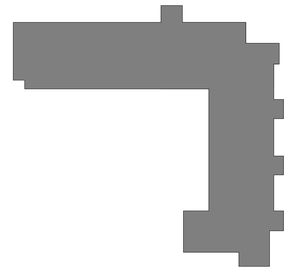
GENERAL NOTES

1. ALL ROOF SLOPES TO BE 1/2" PER 1'-0" UNLESS NOTED OTHERWISE.
2. TJI MANUFACTURE TO CONFIRM ALL DIMENSIONS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES
3. AT ROOF PENETRATIONS SEE SHEET AX2.2
4. AT HEAT STACK ROOF PENETRATIONS, SEE DETAIL AX2.2
5. ROOF DRAIN LINES PER DETAIL AX2.1 U.O.N. BY PLUMBING PLANS
6. AT MECHANICAL EQUIPMENT, SEE SHEET AX2.2
7. PROVIDE CRICKETS AT ALL ROOFTOP MECHANICAL UNITS
8. AT VENT PIPE LOCATION, SEE SHEET AX2.2
9. ALL KENOTES SHALL BE CONSIDERED TYPICAL UNLESS NOTED OTHERWISE

ROOF LEGEND

- BUILT-UP ROOFING PER ESR- 3460, REFER TO DETAILS 6, 7, 8/ AX4.2 AND WALL SECTIONS FOR ADDITIONAL INFORMATION.
- RIGID INSULATION CRICKET - ***1/4" - 12 CROSS SLOPE MIN.*** REFER DETAILS 10 & 12/ AX2.2 AND WALL SECTION FOR ADDITIONAL INFORMATION
- ROOF TRELLIS ALTERNATE 1
- ROOF DRAIN AND OVERFLOW, REFER TO 6 / AX2.1 AND 11 / AX2.1
- DIRECTION OF ROOF SLOPE. 1/2" PER FOOT UNLESS NOTED OTHERWISE.
- WALK PADS, REFER TO 18 / AX2.1

KEY PLAN



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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

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S2103400AR

DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

OVERALL ROOF PLAN

A1.61

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4/8/2024 12:10:43 PM
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A2.1 - DOOR SCHEDULE

DOOR SCHEDULE_BUILDING

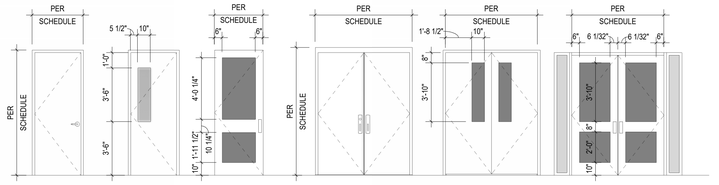
DOOR NO.	ROOM NAME	DOOR TYPE	DOOR SIZE		DOOR			FRAME		GLASS		LOUVER	FIRE RATING	DETAILS (SEE SHEET AX3.1)			HARDWARE SET	REMARKS
			WIDTH	HEIGHT	THICKNESS	CONSTRUCTION	FINISH	CONSTRUCTION	FINISH	TYPE	FINISH			HEAD	JAMB	THRESHOLD		
109	TRASH CHUTE	G	1' - 3"	1' - 6"	0' - 1 3/4"	HM		HM					90 MIN					REF. SPECS.
111A	CORRIDOR	H	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-		CASED OPENING
111B	CORRIDOR	A	4' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					-	18	19	9	15	ACCESS CONTROL
112A	TRASH ROOM	D	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	18	19	9	25	
113A	ELECTRICAL/ ELEC. EQUIP / MECH.	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	22	
115A	ELECTRICAL/ ELEC. EQUIP / MECH./LAUNDRY	A	4' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	16	ACCESS CONTROL
117A	ELECTRICAL/ ELEC. EQUIP / MECH.	A	4' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	26	
118A	STAIR EXIT/ENTRY	E	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	6	6	14	11	MAGNETIC DOOR HOLDER
118B	STAIR EXIT/ ENTRY	D	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					-	18	19	9	08	ACCESS CONTROL
118C	STAIR EXIT/ ENTRY	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					-	18	19	9	06	ACCESS CONTROL, 180 DEGREES
119A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	12	
119B	STAIR EXIT/ ENTRY	C	3' - 0"	8' - 0"	0' - 1 3/4"	AL		AL		DL	CLR		-	-	-	4	01	ACCESS CONTROL, 180 DEGREES
120A	FIRE RISER	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					-	18	19	9	17	
121A	CORRIDOR	H	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-		CASED OPENING
209	TRASH CHUTE	G	1' - 3"	1' - 3"	0' - 1 3/4"	HM		HM					90 MIN					REF. SPECS.
211D	IDF	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM							20 MIN	8	8	14	04	
213A	OFFICE/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
215A	IDF	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	18	ACCESS CONTROL
216A	OFFICE/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
217A	CORRIDOR	C	3' - 0"	8' - 0"	0' - 1 3/4"	AL		AL		DL	CLR		-	11	11	13	19	ACCESS CONTROL
219A	RESTROOM	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM							20 MIN	8	8	14	07	
221A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
221B	CORRIDOR	H	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					-	20		-		STORAGE, CASED OPENING
227A	CORRIDOR	H	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-		CASED OPENING
228A	CORRIDOR	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	13	ACCESS CONTROL
232A	ELECTRICAL/ ELEC. EQUIP / MECH.	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	32	
232B	ELECTRICAL	D	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					-	16	17	9	20	ACCESS CONTROL
233A	CORRIDOR	H	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-		CASED OPENING
233B	CORRIDOR	C	3' - 0"	8' - 0"	0' - 1 3/4"	AL		AL		DL	CLR		-	-	-	4	01	ACCESS CONTROL, 180 DEGREES
234A	LEASE MANAGER/ STUDY	C	3' - 0"	7' - 10"	0' - 1 3/4"	AL		AL		DL	CLR		-	11	11	13	21	ACCESS CONTROL
235A	LEASE MANAGER/ STUDY	C	3' - 0"	7' - 10"	0' - 1 3/4"	AL		AL		DL	CLR		-	11	11	13	21	ACCESS CONTROL
236A	RESTROOM	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	07	
237A	LOBBY	F	6' - 0"	8' - 0"	0' - 1 3/4"	AL		AL		DL	CLR		-	7		9	02	ACCESS CONTROL
237B	MULTI-PURPOSE/ LOBBY	F	2' - 11"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		-	16	17	9	33	ACCESS CONTROL
237b	LOBBY	F	5' - 8"	7' - 9"	0' - 1 3/4"	AL							-					
237C	CORRIDOR	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	13	ACCESS CONTROL
238A	ELECTRICAL/ ELEC. EQUIP / MECH.	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	09	
239A	MULTI-PURPOSE/ LOBBY	E	6' - 0"	8' - 0"	0' - 1 3/4"	AL		AL		DL	CLR		20 MIN	8	8	14	10	ACCESS CONTROL
239B	MULTI-PURPOSE/ LOBBY	F	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		-	7		9	33	ACCESS CONTROL
240A	COMPUTER LAB	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	13	ACCESS CONTROL
241A	LACTATION ROOM	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
243A	CORRIDOR	H	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-		CASED OPENING
244A	STAIR EXIT/ENTRY	E	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	6	6	14	11	MAGNETIC DOOR HOLDER
244B	STAIR EXIT/ ENTRY	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					-	18	19	9	06	ACCESS CONTROL
245A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	22	
246A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	05	
247A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	12	
248A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	WD		WD					--	1	1	5	04	
249A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	WD		WD					--	1	1	5	04	
250A	IDF	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM							20 MIN					
263A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	12	
263B	STAIR EXIT/ ENTRY	C	3' - 0"	8' - 0"	0' - 1 3/4"	AL		AL		DL	CLR		-	-	-	4	01	ACCESS CONTROL, 180 DEGREES
315a	STUDY/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	18	ACCESS CONTROL
327A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	WD		WD					--	1	1	5	04	
329A	STUDY/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
330A	STUDY/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
331A	IDF	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	18	ACCESS CONTROL
332A	ELECTRICAL/ ELEC. EQUIP / MECH.	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	09	
333A	STUDY/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	18	ACCESS CONTROL
334A	CORRIDOR	H	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-	14	
335A	CORRIDOR	H	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-		CASED OPENING
336A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	05	
337A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	22	
338A	STAIR EXIT/ENTRY	E	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	6	6	14	11	MAGNETIC DOOR HOLDER
346A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	WD		WD					--	1	1	5	04	
347A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	12	
363A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	12	
425A	LAUNDRY	A	3' - 0"	7' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
425B	ROOF ACCESS	A	3' - 0"	7' - 0"	0' - 1 3/4"	-		HM					20 MIN	18	19	9	23	
427A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	WD		WD					--	1	1	5	04	
429A	STUDY/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
430A	STUDY/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
431A	IDF	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	18	ACCESS CONTROL
432A	STUDY/ CONFERENCE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	03	ACCESS CONTROL
434A	CORRIDOR	H	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-	14	
436A	STAIR EXIT/ENTRY	E	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	6	6	14	11	MAGNETIC DOOR HOLDER
437A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	05	
438A	ELECTRICAL/ ELEC. EQUIP / MECH.	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	09	
440A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8	14	22	
441A	CORRIDOR	H	6' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					--	20		-		CASED OPENING
446A	STORAGE	A	3' - 0"	8' - 0"	0' - 1 3/4"	WD		WD					--	1	1	5	04	
447A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	12	
463A	STAIR EXIT/ENTRY, TRASH ROOM	B	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM		DL	CLR		90 MIN	24	22 & 23	14	12	

DOOR SCHEDULE_UNITS

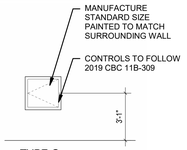
DOOR NO.	ROOM NAME	DOOR TYPE	DOOR SIZE		DOOR			FRAME		GLASS		LOUVER	FIRE RATING	DETAILS (SEE SHEET AX3.1)			HARDWARE SET	REMARKS
			WIDTH	HEIGHT	THICKNESS	CONSTRUCTION	FINISH	CONSTRUCTION	FINISH	TYPE	FINISH			HEAD	JAMB	THRESHOLD		
U1		A	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM					20 MIN	8	8			ACCESS CONTROL
U2	BED/BATH/CLOSET	A	3' - 0"	8' - 0"	0' - 1 3/4"	WD		HM	P				-	1	1	2	27	
U3	CLOSET	A	2' - 10"	8' - 0"	0' - 1 3/4"	HM			P	-	-		-	1	1	2	29	
U4	PATIO DOOR	C	3' - 0"	8' - 0"	0' - 1 3/4"	HM		HM	P	-	-		-	18	19	4	31	
U5	CLOSET	D	5' - 0"	8' - 0"	0' - 1 3/4"	WD			P	-	-		-	1	1	2	30	

NOTE:
REF. TO SHEET AX3.1 FOR ADDITIONAL DOOR DETAILS

DOOR TYPES

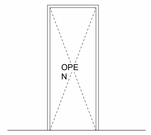


TYPE A TYPE B TYPE C TYPE D TYPE E TYPE F



TYPE G

DOOR FRAME



TYPE H

ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	PC	POLISHED CONCRETE
AL	ALUMINUM	PL	PLASTIC LAMINATE
ANOD	ANODIZED	PLT	PLATE
CLN	CLEAN	PLY	PLYWOOD
CLR	CLEAR	PRT	TOILET PARTITION
CMU	CONCRETE MASONRY UNIT	RCP	REFLECTED CEILING PLAN
		RTB	RUBBER TOPSET BASE
CONC	CONCRETE	S	SINGLE GLAZED
CPT	CARPET	SC	SEALED CONCRETE
CV	INTEGRAL COVE	SCF	STATIC CONTROL FLOORING
DL	DUAL GLAZED	SGP	SEMI-GLOSS PAINT
(E)	EXISTING	SHGC	SOLAR HEAT GAIN COEFFICIENT
EPF	EPOXY FLOORING	SL	SEALED
ESP	EGGSHELL PAINT	SO	SOLID SURFACE
EXP	EXPOSED STRUCTURE	STN	STAINED
F	FIXED	T	TEMPERED
FF	FACTORY FINISH	TL	TILE
FRP PANEL	FIBER REINFORCED	TNT	TINTED
		U	U VALUE
GB	GYPSUM BOARD	VLT	VISUAL LIGHT TRANSMITTANCE
GP	GLOSS PAINT	VT	VINYL TILE
HM	HOLLOW METAL	VTB	VINYL TACK BOARD
LP	PLASTIC LAMINATE	VWC	VINYL WALL COVERING
OP	OPAQUE GLAZING (FILM)	WGB	WATER-RESISTANT GYPSUM BOARD
P	PAINTED		

GENERAL NOTES

1. IN ANY POSITION, DOOR MUST NOT REDUCE THE REQUIRED EXIT WIDTH BY MORE THAN HALF.
2. REGARDLESS OF THE OCCUPANT LOAD, THERE SHALL BE A FLOOR OR LANDING ON EACH SIDE OF A DOOR. PER (CBC 2019, 1010.1.5)
3. CONTRACTOR TO COORDINATE WITH OWNER'S SECURITY & FIRE & ALARM VENDOR RE. ALL ACCESS CONTROL DEVICES, ACTUATION METHOD, REQUIRED HARDWARE, ROUGH-IN, EMPTY CONDUITS, POWER, ETC. PROVIDE APPROPRIATE POWER WHETHER INDICATED ON ELECT. DWGS OR NOT.
4. ACCESS CONTROL DEVICES MAY NOT INTERFERE WITH EGRESS. REFERENCE DETAIL 02/AX9.2 FOR TYPICAL MOUNTING HEIGHTS. TO COMPLY PER (CBC 2019, 11B-308.)
5. CONFIRM ALL HARDWARE SPECIFICATIONS, FINISHES, STYLES, FUNCTIONS AND FINAL KEYING WITH OWNER. INCLUDING MASTER KEYING, REMOVABLE CORES, ETC. PROVIDE HARDWARE FOR A COMPLETE INSTALLATION WHETHER SCHEDULED OR NOT.
6. MOUNT DOOR CLOSERS SO AS NOT TO BE VISIBLE FROM CORRIDORS, LOBBIES, ETC.
7. ALL HARDWARE AND HARDWARE INSTALLATION SHALL COMPLY WITH THE GUIDELINES OF ALL FEDERAL, , STATE AND LOCAL JURISDICTIONS.
8. EXIT DOORS TO BE OPERABLE FROM INSIDE WITHOUT USE OF KEY.
9. DOORS IN RESIDENTIAL CORRIDORS ARE TO BE SOLID CORE, 1 3/4" THICK, TYP. U.N.O.
10. HINGES - DOORS UP TO 90" IN HGT ARE TO HAVE 1 1/2 PAIRS PER LEAF; DOORS UP TO 120" IN HGT ARE TO HAVE 2 PAIRS PER LEAF; DOORS 48" IN WIDTH ARE TO USE 4 1/2" X 5" HINGES.
11. MFR/STYLE - BHP HDW OR EQUAL FOR LEVERS, KNOBS, DEADBOLTS, ETC. - LEVER STYLE: "SOMA".
12. FINISH - ALL HDW TO BE SATIN NICKEL FINISH, UNO.
13. CLOSERS - INCLUDE STOP/HOLD-OPEN ON ALL DOORS EXCEPT FIRE-RATED DOORS.
14. DOOR CLOSERS, AND GATE CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM. CBC 2019, 11B-404.2.8
15. STOPS - EXCEPT WITHIN UNITS, ALL DOORS NOT EQUIPPED W/ CLOSER-MTD STOPS ARE TO HAVE FLOOR STOPS. WHERE FLOOR STOPS ARE NOT FEASIBLE, UTILIZE WALL STOPS.
16. THRESHOLDS - COMPLY WITH ADA REQM'TS. SET IN FULL BED OF SEALANT, TYP. THRESHOLDS SHALL COMPLY WITH CBC 2019, 1010.1.7 AND 11B-404.2.5.
17. PROVIDE 5'-0" MIN. SIZE LEVEL LANDINGS FOR EXTERIOR MAIN DOORS w/ NO MORE THAN 1/4" DROP AT THE THRESHOLD.
18. ALL EXTERIOR DOOR LANDINGS GRADE HAVE A SMOOTH TRANSITION TO ADJACENT PAVED SURFACE.
19. PANIC HARDWARE - PROVIDE PANIC HARDWARE WHERE REQUIRED BY CODE, OR AS DIRECTED BY OWNER. CONFIRM SPECIFICATION, FUNCTION, FINISH, ETC. W/ OWNER AND COORDINATE W/ OWNER'S SECURITY VENDOR WHERE APPLICABLE. UTILIZE CONCEALED VERTICAL RODS.
20. HARDWARE (INCLUDING PANIC HARDWARE) SHALL NOT BE PROVIDED WITH "NIGHT LATCH" (NL) FUNCTION FOR ANY ACCESSIBLE DOORS OR GATES UNLESS THE FOLLOWING CONDITIONS ARE MET PER DSA INTERPRETATION 10-08 DSA LAC (EXTERNAL), REVISED 4/28/09. SUCH CONDITIONS MUST BE CLEARLY DEMONSTRATED AND INDICATED IN THE SPECIFICATIONS:
    A. SUCH HARDWARE HAS A 'DOGGING' FEATURE. IT IS DOGGED DURING THE TIME THE FACILITY IS OPEN. SUCH 'DOGGING ' OPERATION IS PERFORMED ONLY BY EMPLOYEES AS THEIR JOB FUNCTION (NON-PUBLIC USE)
21. HAND-ACTIVATED DOOR OPENING HARDWARE, HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST PER CBC 2016, 11B-404.2.7. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS. CBC 2019, 11B-309.4. HARDWARE SHALL BE CENTERED BETWEEN 34" AND 44" ABOVE THE FLOOR. CBC 2019, 11B-404.2.7 AND 1010.1.9.2
22. STOREFRONT DOORS - MFR'S STD HARDWARE, PUSH/PULL TO MATCH STOREFRONT/CURTAINWALL. COORDINATE WITH REQUIRED PANIC DEVICES, OWNER'S SECURITY VENDOR, OWNER'S LOCK/KEYING SCHEME, ETC.
23. EXTERIOR DOORS - ALL EXTERIOR DOORS TO RECEIVE CONTINUOUS WEATHERSTRIPPING, ALUMINUM THRESHOLD, SWEEP, RAINHOOD, AND LOCKING AS REQUIRED BY OWNER.
24. PROVIDE RATED DOORS, FRAMES, HARDWARE, ETC FOR ALL DOOR OPENINGS IN RATED WALLS.
25. DOORS IN RATED WALLS PROVIDE APPROPRIATE FIRE/SMOKE SEAL BASED ON WALL RATING.
26. CLOSERS ON ALL DOORS IN RATED WALLS AND EXTERIOR.
27. KNOX BOX - PROVIDE AS REQ'D BY FIRE DEPT.
28. PROVIDE MOP PLATE ON RESTROOM SIDE OF PUBLIC TOILET ROOMS.
29. PROVIDE SOUND SEALS PER ACOUSTICAL RECOMMENDATIONS.
30. PROVIDE 4" HEAD ON DOOR FRAME FOR MASONRY CONSTRUCTION.
31. DOORS, FRAMES & HARDWARE TO FORM FIRE-RATED ASSY'S AS REQUIRED FOR RATED ENCLOSURES FOR THIS PROJECT'S TYPE OF CONSTRUCTION.
32. COORDINATE ALL ELECTRICAL HARDWARE INSTALLATION WITH OWNER'S SECURITY AND FIRE ALARM CONSULTANTS.
33. REFER TO SPECIFICATIONS FOR HARDWARE SCHEDULE.
34. BEDROOM DOORS TO BE UNDERCUT 1/2" FOR RETURN AIR.
35. PROVIDE TEMPERED GLAZING FOR ALL EXTERIOR DOORS AND WINDOWS AS REQUIRED BY CODE.
36. MAXIMUM OPERATING FORCE REQUIRED TO PUSH OR PULL OPEN AN INTERIOR SWINGING EGRESS DOOR SHALL NOT EXCEED 5 LBS. OTHER SWINGING DOORS, AS WELL AS SLIDING AND FOLDING DOORS, THE DOOR LATCH SHALL RELEASE WHEN SUBJECTED TO A 15-POUND FORCE. THE DOOR SHALL BE SET IN MOTION WHEN SUBJECTED TO A 30-POUND FORCE. THE DOOR SHALL SWING TO A FULL-OPEN POSITION WHEN SUBJECT TO A 15-POUND FORCE. FORCES SHALL BE APPLIED TO THE LATCH SIDE OF THE DOOR. (CBC 2019, 1010.1.3)
37. THE BOTTOM 10" OF ALL DOORS (EXCEPT AUTOMATIC AND SLIDING) SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.
38. ALL REQUIRED EXITS INDICATED ON PLANS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED. ALL EXIT DOORS IN A-3 OCCUPANCY REQUIRE PANIC HARDWARE.
39. EXITS AND EXIT ACCESS DOORS SHALL BE MARKED BY AN APPROVED EXIT SIGN READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL.
40. NO THUMB LATCHES OR KEYED CYLINDER DEAD BOLTS ARE ALLOWED UNLESS OPERATED BY A SINGLE ACTION WITH A LEVER.
41. FLOOR STOPS SHALL NOT BE LOCATED IN THE PATH OF TRAVEL AND 4" MAXIMUM FROM WALLS. DSA POLICY 99-08.
42. ACCESS CONTROL AT DOORS TO MEET 2019 CBC SECTION 11B-404.2.7.

BARRIER FREE REQUIREMENT GENERAL

1. ALL HARDWARE AND HARDWARE INSTALLATION SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL JURISDICTION REGULATIONS, AMERICANS WITH DISABILITIES ACT AND 2019 CBc.

2. ALL REQUIRED DOORS SHALL HAVE 32" MIN. CLEARANCE AT 90 DEGREES.

3. THRESHOLDS SHALL BE NO HIGHER THAN 1/2" ABOVE THE FLOOR. EDGE TO BE BEVELED WITH A SLOPE NO GREATER THAN 1 IN 2, IF MORE THAN 1/4" ABOVE THE FLOOR.

4. DOOR HARDWARE SHALL BE OF THE LEVER OR PUSH-PULL TYPE, HEIGHT ABOVE THE FLOOR TO COMPLY WITH 2019 CBC SECTION 11B-404.2.7.

5. EXIT DOORS TO BE OPENABLE FROM INSIDE WITHOUT USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. NO DEADBOLTS, SLIDING BOLTS, ETC.

6. ACCESS CONTROL SYSTEM MUST NOT INTERFERE WITH EGRESS.

7. REFER TO BUILDING SUBMITTALS FOR ADDITIONAL INFORMATION.

FINISHES GENERAL NOTE

1. ADVISE ARCHITECT OF ANY CONFLICT WITH FINISHES PRIOR TO INSTALLATION.

2. COORDINATE AND CONFIRM COMPATIBILITY OF ALL FINISHES, MATERIALS, SEALANTS, SEALERS, PAINTS, ADHESIVES, ETC. WITH SUBSTRATES, EXISTING MATERIALS, ADJACENT MATERIALS, ETC.

3. ALL FINISH MATERIALS MUST COMPLY WITH CODE REQUIREMENTS FOR FLAME SPREAD, SMOKE DEVELOPED, ETC.

4. ALL HOLLOW METAL DOORS & FRAMES (INCLUDING DOOR EDGING) ON EXTERIOR SIDE SHALL BE PAINTED PER KCCD STANDARDS AND PER FINISH SCHEDULE.

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NEW RESIDENCE HALL

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DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

DOOR SCHEDULE

A2.1

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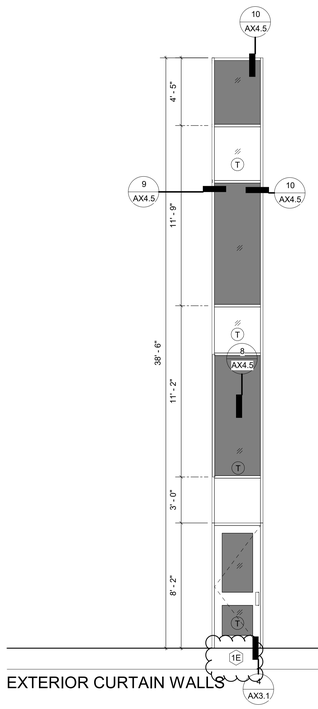
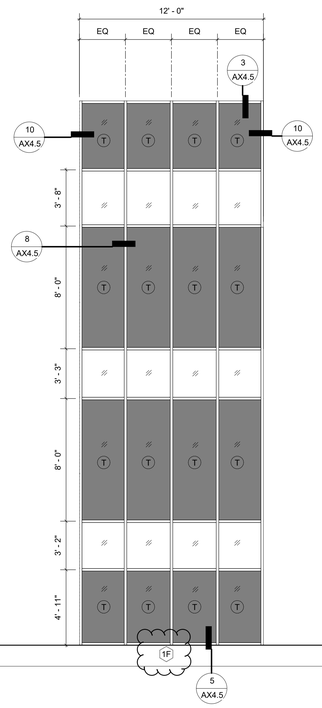
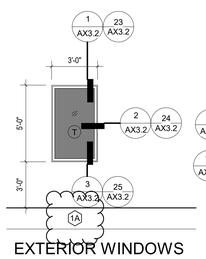
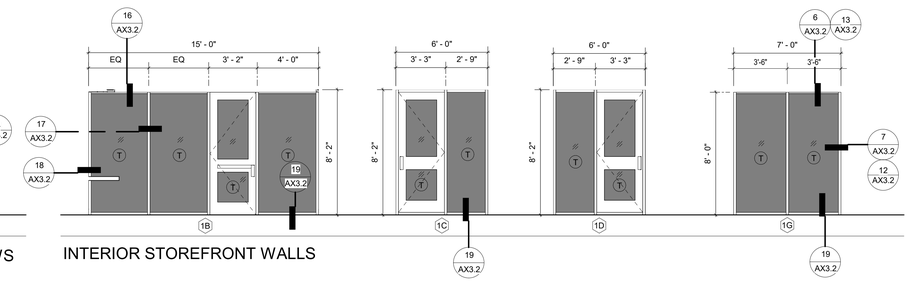




EXTERIOR CURTAIN WALLS



EXTERIOR WINDOWS



INTERIOR STOREFRONT WALLS

INTERIOR STOREFRONT WALLS U.N.O.

HEAD	@ THIN BRICK:	11 / AX3.2
JAMB	@ THIN BRICK:	12 / AX3.2
SILL	@ THIN BRICK:	13 / AX3.2
HEAD	@ PLASTER:	6 / AX3.2
JAMB	@ PLASTER:	7 / AX3.2
SILL	@ PLASTER:	8 / AX3.2
HEAD	@ GYP:	16 / AX3.2
JAMB	@ GYP:	18 / AX3.2
SILL	@ GYP:	19 / AX3.2
STOREFRONT @ SLAB EDGE:		20 / AX3.2

ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	PC	POLISHED CONCRETE
AL	ALUMINUM	PL	PLASTIC LAMINATE
ANOD	ANODIZED	PLT	PLATE
CLN	CLEAN	PLY	PLYWOOD
CLR	CLEAR	PRT	TOILET PARTITION
CMU	CONCRETE MASONRY UNIT	RCP	REFLECTED CEILING PLAN
		RTB	RUBBER TOPSET BASE
CONC	CONCRETE	S	SINGLE GLAZED
CPT	CARPET	SC	SEALED CONCRETE
CV	INTEGRAL COVE	SCF	STATIC CONTROL FLOORING
DL	DUAL GLAZED	SGP	SEMI-GLOSS PAINT
(E)	EXISTING	SHGC	SOLAR HEAT GAIN COEFFICIENT
EPF	EPOXY FLOORING	SL	SEALED
ESP	EGGSHELL PAINT	SO	SOLID SURFACE
EXP	EXPOSED STRUCTURE	STN	STAINED
F	FIXED	T	TEMPERED
FF	FACTORY FINISH	TL	TILE
FRP	FIBER REINFORCED PANEL	TNT	TINTED
		U	U VALUE
GB	GYPSUM BOARD	VLT	VISUAL LIGHT TRANSMITTANCE
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LP	PLASTIC LAMINATE	VWC	VINYL WALL COVERING
OP	OPAQUE GLAZING (FILM)	WGB	WATER-RESISTANT GYPSUM BOARD
P	PAINTED		

GENERAL NOTES

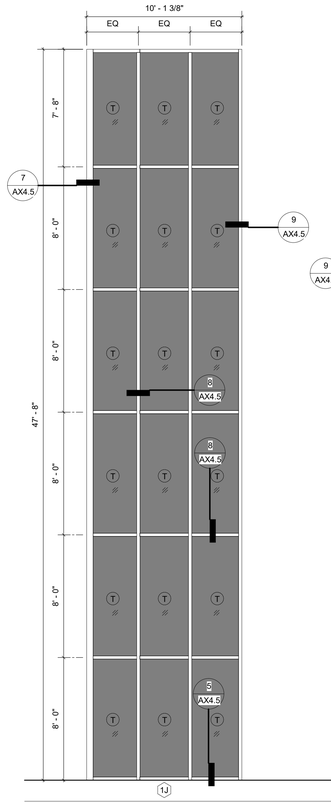
GENERAL WINDOW REQUIREMENTS

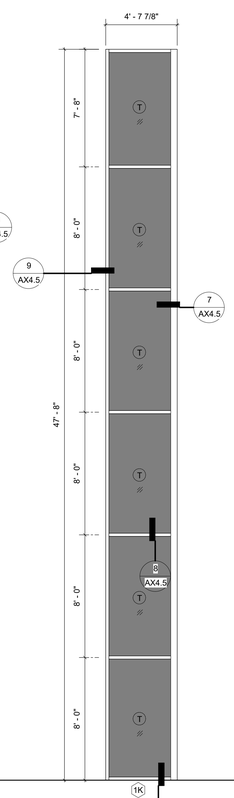
WINDOW NOTES

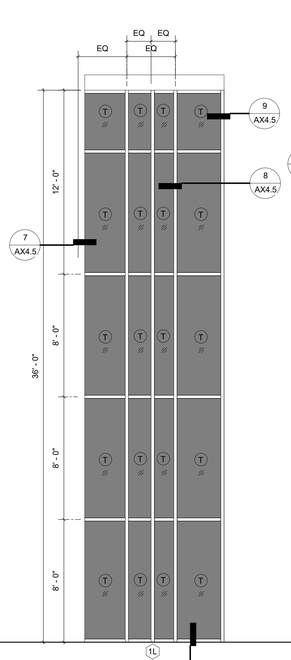
1. GLASS DOORS & WINDOWS WITHIN 24" OF DOORS OR OPERABLE WINDOWS, AND GLASS PANELS WITHIN 18" OF FLOOR SHALL BE TEMPERED OR BE SAFETY GLASS AND MUST MEETIN THE LABELING AND TESTING REQUIRMENTS OF 2406 FOR SAFETY GLAZING.
2. GLAZING TO BE THOROUGHLY CLEANED.
3. WINDOW FLASHING SEQUENCE PER DETAILS ON
4. FIELD VERIFY ALL ROUGH OPENING DIM'S. PRIOR TO FABRICATION of WINDOWS.
5. ALL INTERIOR GLAZING SHALL BE A SINGLE LAYER OF CLEAR, FULLY TEMPERED FLOAT GLASS.
6. DUAL GLAZING TO ACHIEVE THE FOLLOWING CRITERIA (REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION):

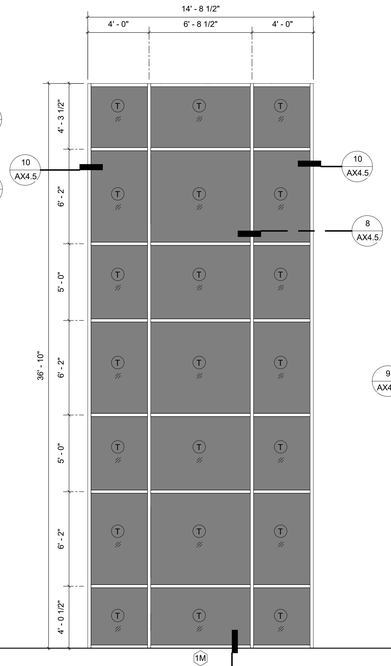
   VLT: 54%
   U: .33
   SHGC: .28
7. PRIOR TO GLASS AND GLASS STOP INSTALLATION, VERIFY WITH ARCHITECT ON WHICH SIDE THE GLASS WILL BE PLACED ON THE HOLLOW METAL FRAME

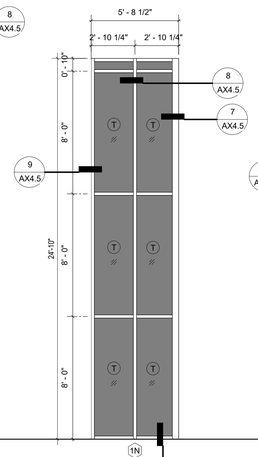
(T) TEMPERED GLASS: GLASS MUST MEET THE REQUIRMENTS FOR SAFETY GLAZING DETAILED IN THE SPECIFICATIONS

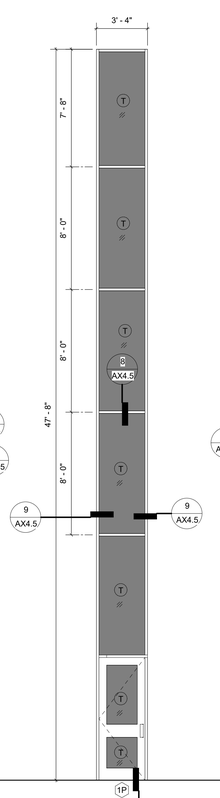


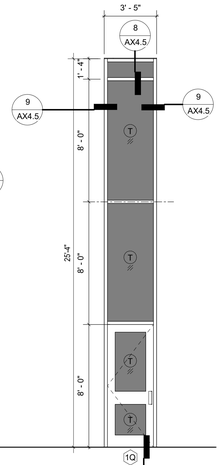












EXTERIOR CURTAIN WALLS (CONT.)

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ENGINEER LOGO

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KCCD - BAKERSFIELD

PROJECT NUMBER
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DATE 03/22/2024

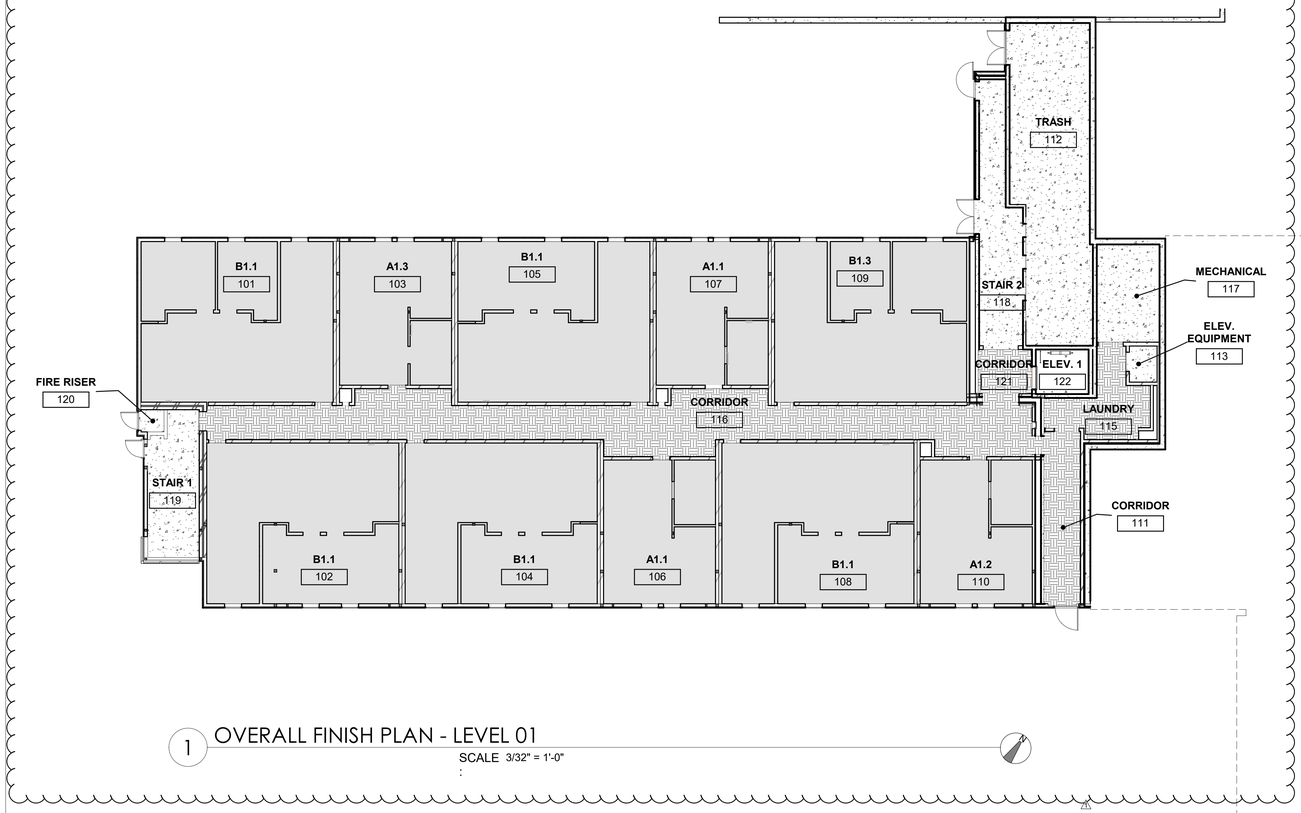
REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

WINDOW SCHEDULE

A2.2



1 OVERALL FINISH PLAN - LEVEL 01

SCALE 3/32" = 1'-0"

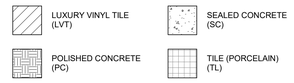
LEVEL 1 ABOVE

NUMBER	DESCRIPTION	FLOOR MATERIAL	BASE MATERIAL	BASE HEIGHT	WALLS NORTH MATERIAL	WALLS NORTH FINISH	WALLS EAST MATERIAL	WALLS EAST FINISH	WALLS SOUTH MATERIAL	WALLS SOUTH FINISH	WALLS WEST MATERIAL	WALLS WEST FINISH	REMARKS
111	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
112	TRASH	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
113	ELEV. EQUIPMENT	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
115	LAUNDRY	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
116	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
117	MECHANICAL	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
118	STAIR 2	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
119	STAIR 1	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
120	FIRE RISER	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
121	CORRIDOR	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
122	ELEV. 1		RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	

GENERAL NOTES

1. REFERENCE UNIT SHEETS (AU.X.X) FOR FINISHES AND ADDITIONAL INFORMATION.
2. FINISH SCHEDULES ARE TO BE COORDINATED WITH THE FINISH LEGEND.
3. REFER TO INTERIOR ELEVATIONS FOR LOCATIONS OF PAINTS, AND PLASTIC LAMINATES.
4. SEE REFLECTED CEILING PLANS FOR CEILING FINISHES
5. ALL PAINT COLOR CHANGES SHOULD ALWAYS OCCUR AT INTERIOR CORNERS.
6. ALL HARD LID CEILINGS TO BE PAINTED WITH  , UNLESS OTHERWISE NOTED
7. ALL EXPOSED STRUCTURE TO BE PAINTED WITH  , UNLESS OTHERWISE NOTED
8. ALL GYPSUM BOARD WALLS TO BE PAINTED WITH  , UNLESS OTHERWISE NOTED
9. SEE INTERIOR ELEVATION SHEETS FOR ALL "ACCENT" PAINT LOCATIONS AND PAINT TRANSITIONS NOT CLARIFIED ON FINISH SCHEDULE.
10. ALL FLOORS IN PUBLIC AREA SHALL HAVE NON-SLIP SURFACE IN COMPLIANCE WITH DIVISION 18 OF HEALTH AND SAFETY CODES OF THE STATE OF CALIFORNIA.
11. PAINT ALL REGISTERS, GRILLES, LOUVERS, VENTS, ETC. VERIFY COLOR w/ ARCHITECT.
12. INSTALL PROPER SCHLUTER STRIP AT FLOOR MATERIAL TRANSITIONS PER MANUFACTURER RECOMMENDATION.
13. ALL FINISHES SHALL COMPLY WITH FLAME SPREAD AND SMOKE DEVELOPED REQUIREMENTS PER CBC 2019, 803.1.1 & 803.11
14. ALL EXPOSED/ SEALED/ POLISHED CONCRETE FLOORING SHALL BE PROTECTED FROM EQUIPMENT/ DAMAGE DURING CONSTRUCTION.
15. WALL FINISHES ARE TYPICAL AS INDICATED, INCLUDING BUT NOT LIMITED TO WING WALLS, ALCOVES, ETC. U.O.N.

FINISH FLOOR LEGEND



NOTE:
REF. DETAIL 10 / AX3.1 FOR FLOOR TRANSITIONS

FINISH SCHEDULE ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	PC	POLISHED CONCRETE
AL	ALUMINUM	PL	PLASTIC LAMINATE
ANOD	ANODIZED	PLT	PLATE
CLN	CLEAN	PLY	PLYWOOD
CLR	CLEAR	PRT	TOILET PARTITION
CMU	CONCRETE MASONRY UNIT	RCP	REFLECTED CEILING PLAN
		RTB	RUBBER TOPSET BASE
CONC	CONCRETE	S	SINGLE GLAZED
CPT	CARPET	SC	SEALED CONCRETE
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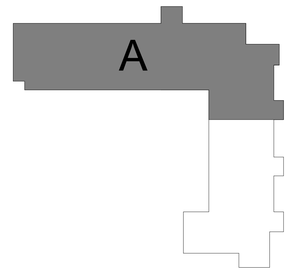
DL	DUAL GLAZED	SGP	SEMI-GLOSS PAINT
(E)	EXISTING	SHGC	SOLAR HEAT GAIN COEFFICIENT
EPF	EPOXY FLOORING	SL	SEALED
ESP	EGGSHELL PAINT	SO	SOLID SURFACE
EXP	EXPOSED STRUCTURE	STN	STAINED
F	FIXED	T	TEMPERED
FF	FACTORY FINISH	TL	TILE
FRP	FIBER REINFORCED PANEL	TNT	TINTED
		U	U VALUE
GB	GYPSUM BOARD	VLT	VISUAL LIGHT TRANSMITTANCE
GP	GLOSS PAINT	VT	VINYL TILE
HM	HOLLOW METAL	VTB	VINYL TACK BOARD
LP	PLASTIC LAMINATE	VWC	VINYL WALL COVERING
OP	OPAQUE GLAZING (FILM)	WGB	WATER-RESISTANT GYPSUM BOARD
P	PAINTED		

KEY PLAN



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7790 North Palm Avenue
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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

FINISH SCHEDULE - LEVEL 01

A2.31

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1 OVERALL FINISH PLAN - LEVEL 02

SCALE 3/32" = 1'-0"

NUMBER	DESCRIPTION	FLOOR	BASE		WALLS								REMARKS
					NORTH		EAST		SOUTH		WEST		
		MATERIAL	MATERIAL	HEIGHT	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
213	OFFICE	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
214	MAIL	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
215	IDF	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
216	CONFERENCE	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
217	LEASE/ MANAGER	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
219	RESTROOM	TL	TL	4"	TL	FF	TL	FF	TL	FF	TL	FF	
221	STORAGE	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
226	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
227	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
228	CORRIDOR	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
232	ELECT	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
233	CORRIDOR	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
234	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
235	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
236	RESTROOM	TL	TL	4"	TL	FF	TL	FF	TL	FF	TL	FF	
237	LOBBY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
238	ELEV. EQUIP.	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
239	MULTI-PURPOSE	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
240	COMPUTER LAB	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
241	LACTATION	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
242	STORAGE	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
243	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
244	STAIR 2	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
245	JANITOR	SC	RB	4"	GB	SEP/FRP	GB	SEP/FRP	GB	ESP	GB	ESP	
246	TRASH	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
247	STAIR 1	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
248	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
249	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
250	OFFICE	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
263	STAIR 3	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	

GENERAL NOTES

1. REFERENCE UNIT SHEETS (AU.X.X) FOR FINISHES AND ADDITIONAL INFORMATION.
2. FINISH SCHEDULES ARE TO BE COORDINATED WITH THE FINISH LEGEND.
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6. ALL HARD LID CEILINGS TO BE PAINTED WITH  , UNLESS OTHERWISE NOTED
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FINISH FLOOR LEGEND

- LUXURY VINYL TILE (LVT)
- SEALED CONCRETE (SC)
- POLISHED CONCRETE (PC)
- TILE (PORCELAIN) (TL)

NOTE:
REF. DETAIL 10 / AX3.1 FOR FLOOR TRANSITIONS

FINISH SCHEDULE ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	PC	POLISHED CONCRETE
AL	ALUMINUM	PL	PLASTIC LAMINATE
ANOD	ANODIZED	PLT	PLATE
CLN	CLEAN	PLY	PLYWOOD
CLR	CLEAR	PRT	TOILET PARTITION
CMU	CONCRETE MASONRY UNIT	RCP	REFLECTED CEILING PLAN
		RTB	RUBBER TOPSET BASE
CONC	CONCRETE	S	SINGLE GLAZED
CPT	CARPET	SC	SEALED CONCRETE
CV	INTEGRAL COVE	SCF	STATIC CONTROL FLOORING
DL	DUAL GLAZED	SGP	SEMI-GLOSS PAINT
(E)	EXISTING	SHGC	SOLAR HEAT GAIN COEFFICIENT
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FF	FACTORY FINISH	TL	TILE
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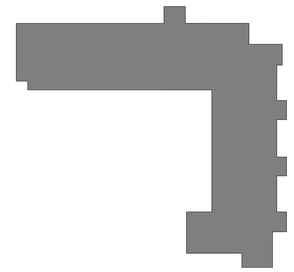
P	PAINTED		

KEY PLAN



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NEW RESIDENCE HALL

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BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

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KCCD - BAKERSFIELD

PROJECT NUMBER
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DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

FINISH SCHEDULE - LEVEL 02

A2.32

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CHECKED BY: Checker

1 OVERALL FINISH PLAN - LEVEL 03

SCALE 3/32" = 1'-0"

NUMBER	DESCRIPTION	FLOOR MATERIAL	BASE MATERIAL	BASE HEIGHT	WALLS NORTH MATERIAL	WALLS NORTH FINISH	WALLS EAST MATERIAL	WALLS EAST FINISH	WALLS SOUTH MATERIAL	WALLS SOUTH FINISH	WALLS WEST MATERIAL	WALLS WEST FINISH	REMARKS
326	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
327	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
328	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
329	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
330	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
331	IDF	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
332	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
333	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
334	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
335	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
336	TRASH	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
337	JANITOR	SC	RB	4"	GB	SEP/FRP	GB	SEP/FRP	GB	ESP	GB	ESP	
338	STAIR 2	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
346	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
347	STAIR 1	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
363	STAIR 3	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	

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CLN	CLEAN	PLY	PLYWOOD
CLR	CLEAR	PRT	TOILET PARTITION
CMU	CONCRETE MASONRY UNIT	RCP	REFLECTED CEILING PLAN
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FRP	FIBER REINFORCED PANEL	TNT	TINTED
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GB	GYPSUM BOARD	VLT	VISUAL LIGHT TRANSMITTANCE
GP	GLOSS PAINT	VT	VINYL TILE
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LP	PLASTIC LAMINATE	VWC	VINYL WALL COVERING
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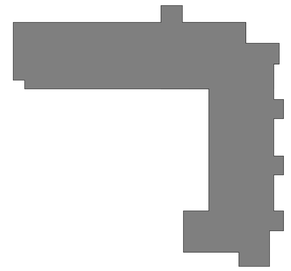
P	PAINTED		

KEY PLAN



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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
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REVISIONS

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1	ADDENDUM No. 6	04/11/2024

BID

FINISH SCHEDULE - LEVEL 03

A2.33

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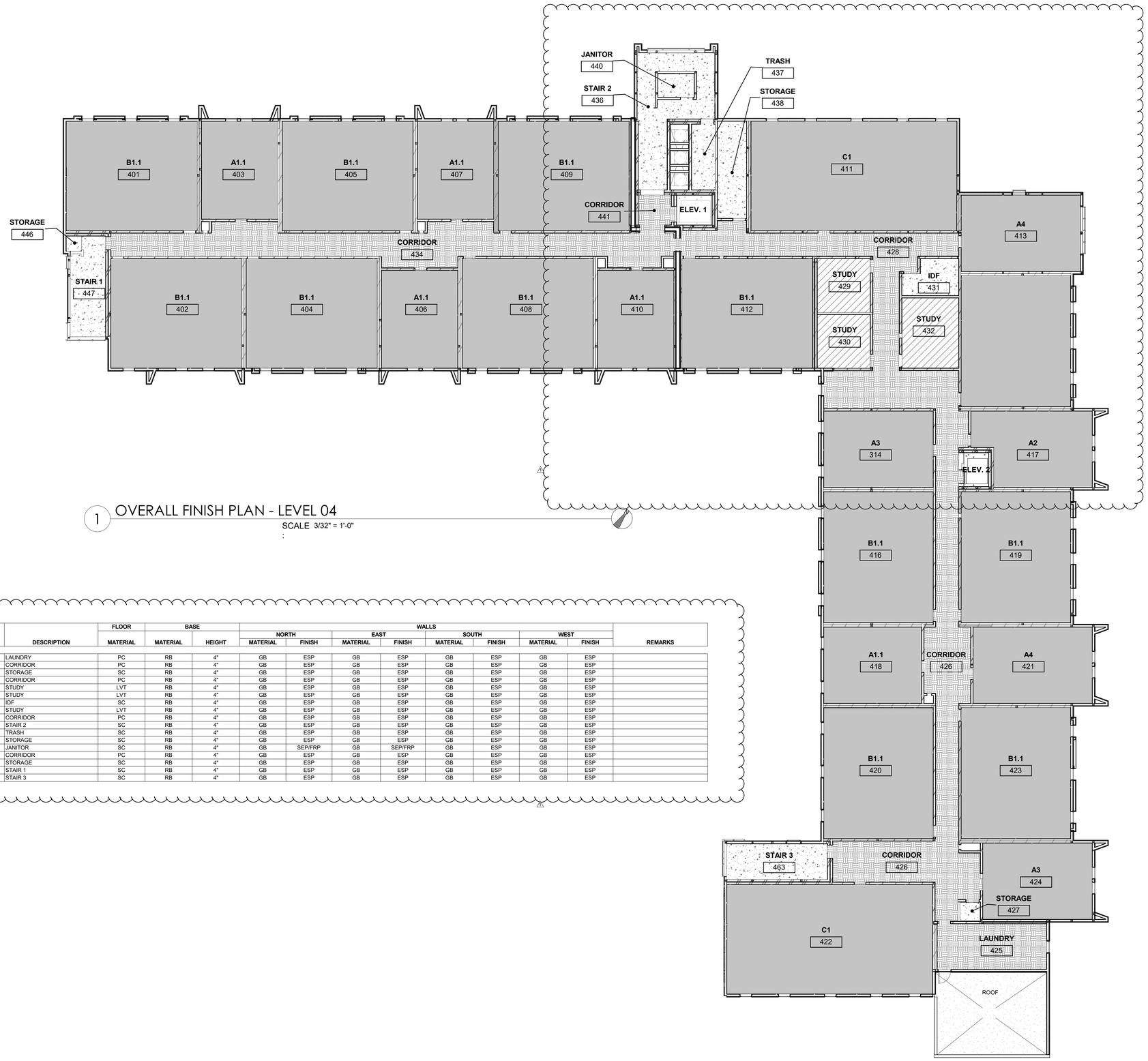

1 OVERALL FINISH PLAN - LEVEL 04

SCALE 3/32" = 1'-0"

NUMBER	DESCRIPTION	FLOOR	BASE		WALLS								REMARKS
					NORTH		EAST		SOUTH		WEST		
		MATERIAL	MATERIAL	HEIGHT	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
425	LAUNDRY	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
426	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
427	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
428	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
429	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
430	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
431	IDF	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
432	STUDY	LVT	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
434	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
436	STAIR 2	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
437	TRASH	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
438	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
440	JANITOR	SC	RB	4"	GB	SEP/FRP	GB	SEP/FRP	GB	ESP	GB	ESP	
441	CORRIDOR	PC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
446	STORAGE	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
447	STAIR 1	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	
463	STAIR 3	SC	RB	4"	GB	ESP	GB	ESP	GB	ESP	GB	ESP	

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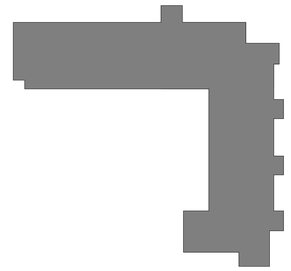

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

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DSA APPL. NO. 03-122124 FILE: 15 - C1

FINISH SCHEDULE - LEVEL 04

A2.34

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1 OVERALL REFLECTED CEILING PLAN - LEVEL 02
SCALE 3/32" = 1'-0"

KEYNOTES XX-XX

16.B03 WALL MOUNTED LIGHT FIXTURE, SEE ELECTRICAL PLANS

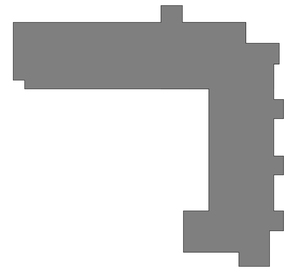
GENERAL NOTES

1. REFER TO SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
2. ALL SOFFIT DIMENSIONS ARE OUTSIDE FACE OF FINISH TO OUTSIDE FACE OF FINISH UNLESS OTHERWISE NOTED.
3. NOT ALL ELECTRICAL, MECHANICAL AND TECHNOLOGY EQUIPMENT IS SHOWN ON REFLECTED CEILING PLAN. REFER TO ELECTRICAL, MECHANICAL AND TECHNOLOGY DRAWINGS FOR ELECTRICAL, MECHANICAL AND TECHNOLOGY CEILING EQUIPMENT.
4. REFER TO SHEETS AU.1, AU.2, AU.3, AU.4, AU.5, AU.6, & AU.7 FOR UNIT REFELECTED CEILING PLANS
5. REFER TO SHEET AX7.1 FOR ADDITIONAL DETAILS.

CEILING LEGEND

- OPEN TO STRUCTURE ABOVE
- ACT 1: HATCH INDICATES 2'x4' SUSPENDED ACOUSTICAL CEILING TILES, REFER TO AX7.1
- ACT 2: HATCH INDICATES 2'x2' SUSPENDED ACOUSTICAL CEILING TILES, REFER TO AX7.1
- HATCH INDICATES 5/8" THK. GYPSUM BOARD CEILING
- HATCH INDICATES METAL CEILING
- HATCH INDICATES WOOD PANELS
- REFERENCE AU.X SHEETS FOR UNIT PLANS
- CEILING MOUNTED OCCUPANCY SENSOR
- LIGHT FIXTURE(S), REFER TO ELECTRICAL DRAWINGS
- 9' - 0" CEILING HEIGHT ABOVE FINISH FLOOR
- MECHANICAL GRILLES, REFER TO MECHANICAL DRAWINGS
- RATED ACCESSIBLE CEILING HATCH, SEE DETAIL 8 / AX7.1
- ILLUMINATED EXIT SIGNS, REFER TO ELECTRICAL FOR FIXTURE TYPE.
- CJ CONTROL JOINT
- CIRCULAR PENDANT LIGHT FIXTURE
- CIRCULAR PENDANT LIGHT FIXTURE W/ ACOUSTIC PANEL

KEY PLAN



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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

OVERALL RCP - LEVEL 02

A3.20

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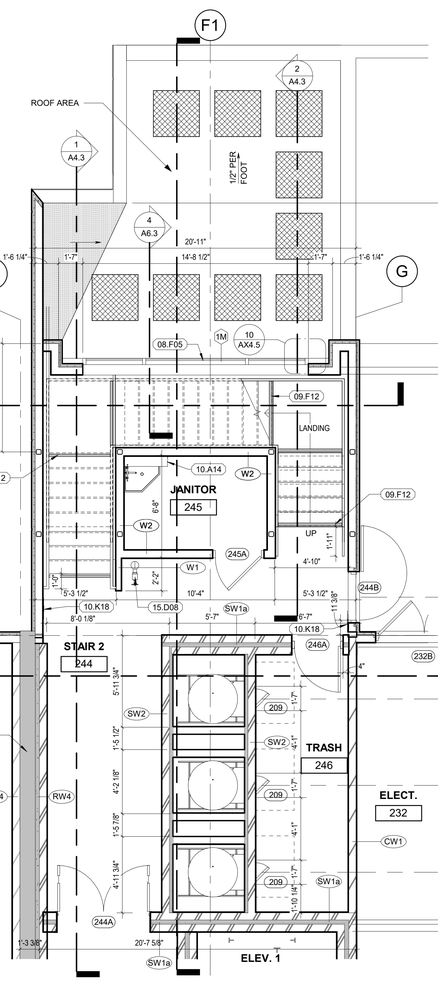
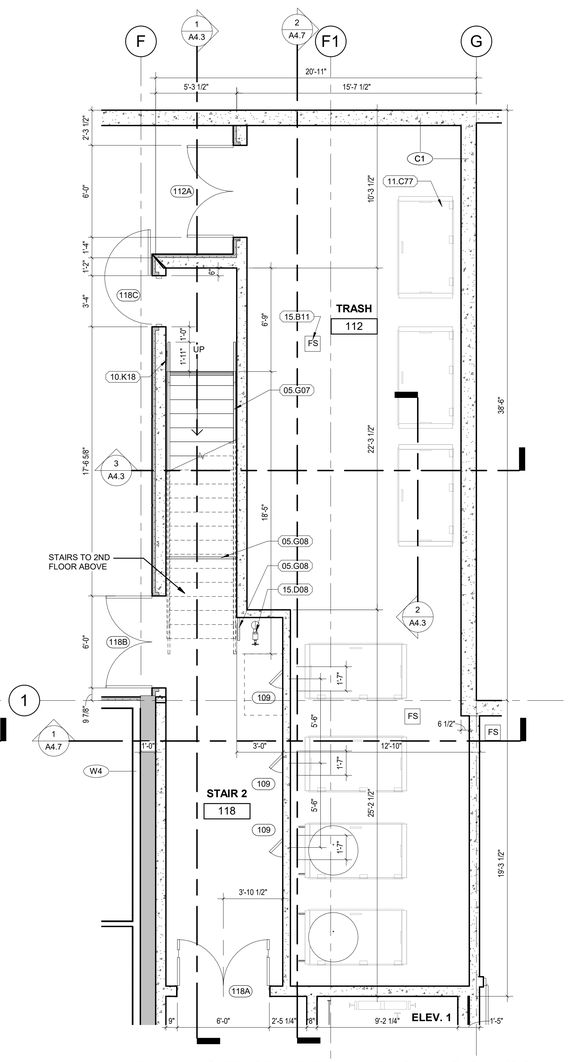
5 ENLARGED PARTIAL ROOF PLAN

SCALE 1/4" = 1'-0"



2 ENLARGED STAIR PLAN SECOND FLOOR (S2)

SCALE 1/4" = 1'-0"



1 ENLARGED STAIR PLAN FIRST FLOOR (S2)

SCALE 1/4" = 1'-0"

KEYNOTES (XX-XX)

05.G07	METAL HANDRAILS
05.G08	METAL GUARDRAILS
07.E10	ROOF DRAIN & OVERFLOW SUMP
07.Q07	12" EXPANSION JOINT
08.F05	CURTAIN WALL SYSTEM, SEE WINDOW SCHEDULE
08.M01	ROOF ACCESS HATCH REF TO DETAIL 25/AX2.1
08.M02	ROOF ACCESS LADDER REF TO DETAL 17/AX2.1
09.F12	2" WARNING STRIP OF CONTRASTING COLOR AT TOP & BOTTOM TREAD NOSE WITHIN 1" OF NOSE EDGE
10.A14	MOP / BROOM RACK
10.K18	STAIR IDENTIFICATION SIGN
11.C77	CONTAINER
14.91	TRASH CHUTE
15.B11	FLOOR DRAIN W/ SLOPED FLOOR (2% MAX), SEE PLUMBING AND STRUCTURAL PLANS
15.D08	STANDPIPE

GENERAL STAIR NOTES

1. SEE SHEET AX5.1 FOR ADDITIONAL STAIR AND RAILING DETAILS.
2. REFERENCE BUILDING PLANS FOR ADDITIONAL WALL TYPES.
3. PROVIDE SHOP DRAWINGS OF STAIRS FOR REVIEW PRIOR TO FABRICATION.

WALL TYPE LEGEND

INTERIOR WALLS

- W1 — NEW WOOD STUD WALL: 5/8" GYP. / 2X4 / 5/8" GYP.
- W2 — NEW WOOD STUD WALL: 5/8" GYP. / 2X6 / 5/8" GYP.
- CW1/ CW2 — NEW WOOD STUD WALL: 1-HR 5/8" GYP. / 2X6 / 5/8" GYP.
- TS2 — NEW WOOD STUD WALL: 1-HR 5/8" GYP. / (2) 2X6 STUD. / 5/8" GYP.
- SW1 — NEW WOOD STUD WALL: 2-HR 5/8" GYP. / (2) 2X4 STUD/ (2) SHAFTLINER
- SW2 — NEW WOOD STUD WALL: 2-HR 5/8" GYP. / 2X6 / (2) SHAFTLINER

EXTERIOR WALLS

- NEW STUCCO WALL:
- NEW BRICK WALL:
- NEW CONCRETE WALL: CONCRETE, REF. STRUCTURAL FOR THICKNESS AND REINF.

NOTE:
REFERENCE FLOOR PLANS AND SHEET AX4.1 FOR WALL PARTITION TYPES.

S6C — WALL TYPES: SEE SHEET AX4.1 AND STRUCTURAL FOR WALL TYPES.

1A — WINDOW TYPES: SEE WINDOW SCHEDULES ON SHEET AX3.2

FIRE EXTINGUISHER SEE DETAIL 2 / AX4.2 AND ALL FIRE EXTINGUISHERS TYPE ABC U.N.O.

ROOF LEGEND

- BUILT-UP ROOFING PER ESR- 3460, REFER TO DETAILS 6, 7, 8/ AX4.2 AND WALL SECTIONS FOR ADDITIONAL INFORMATION.
- RIGID INSULATION CRICKET - ***1/4" : 12 CROSS SLOPE MIN.*** REFER DETAILS 10 & 12/ AX2.2 AND WALL SECTION FOR ADDITIONAL INFORMATION
- ROOF TRELLIS ALTERNATE 1
- ROOF DRAIN AND OVERFLOW, REFER TO 6 / AX2.1 AND 11 / AX2.1
- DIRECTION OF ROOF SLOPE. 1/2" PER FOOT UNLESS NOTED OTHERWISE.
- WALK PADS, REFER TO 18 / AX2.1

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ENLARGED STAIR #2 AND TRASH CHUTE PLANS

A4.2

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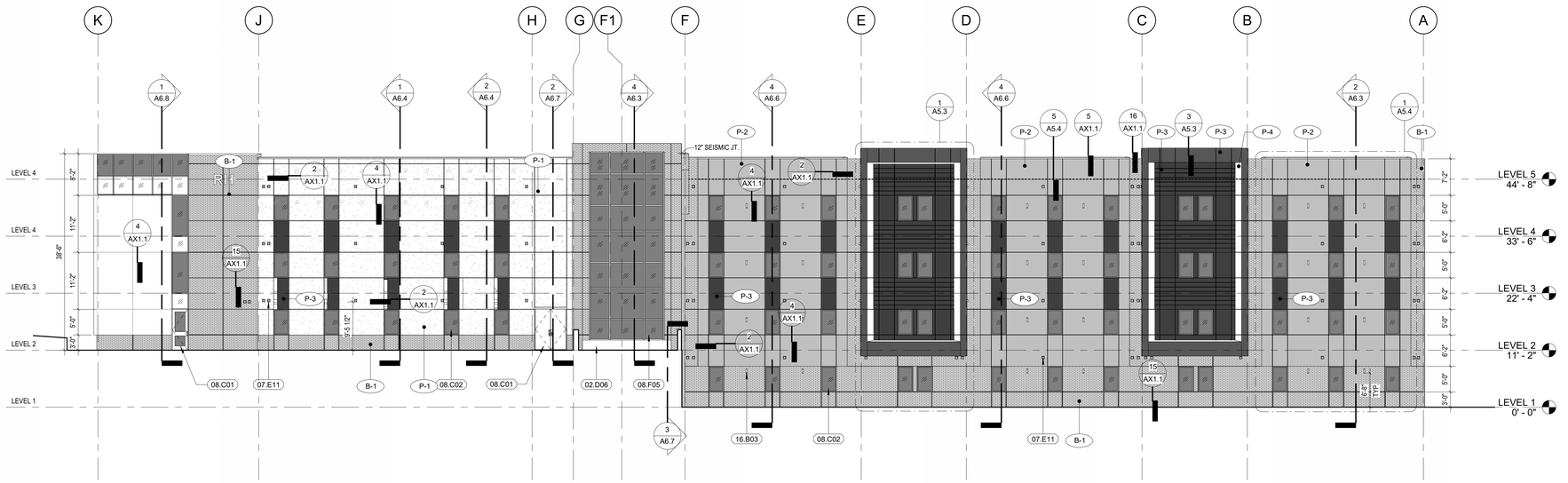
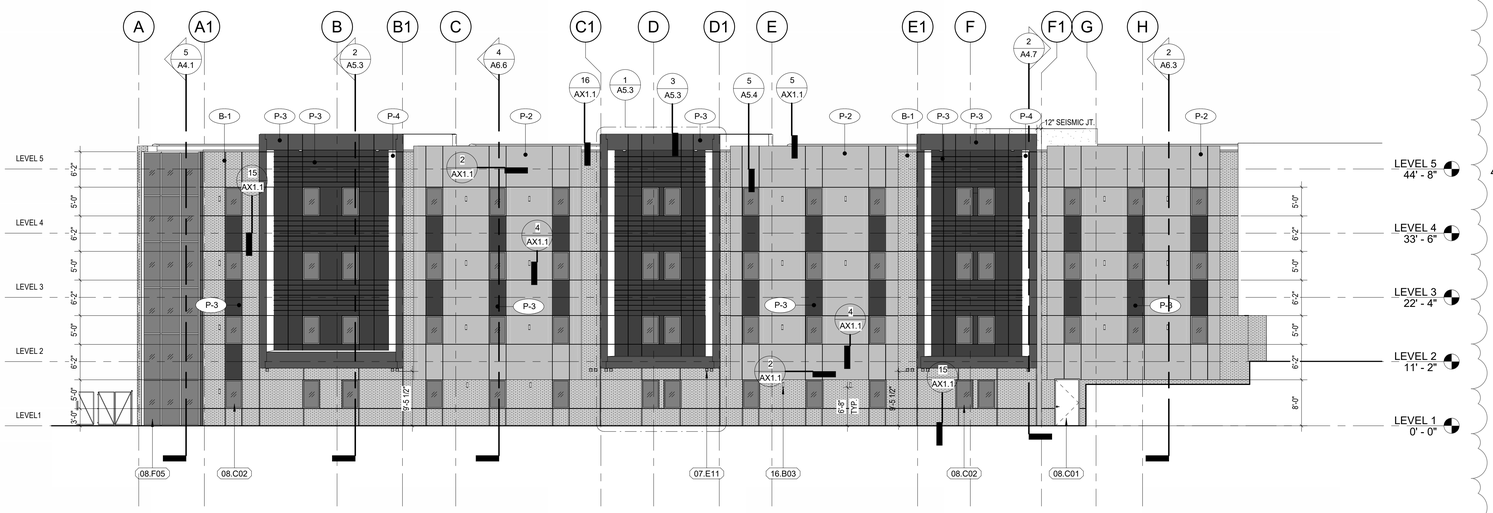


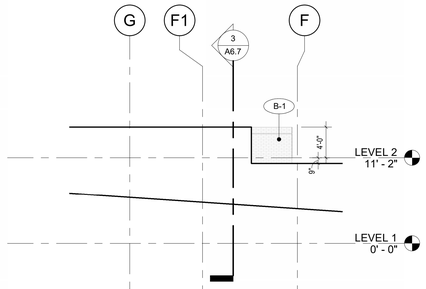
1 NORTH ELEVATION

SCALE 3/32" = 1'-0"



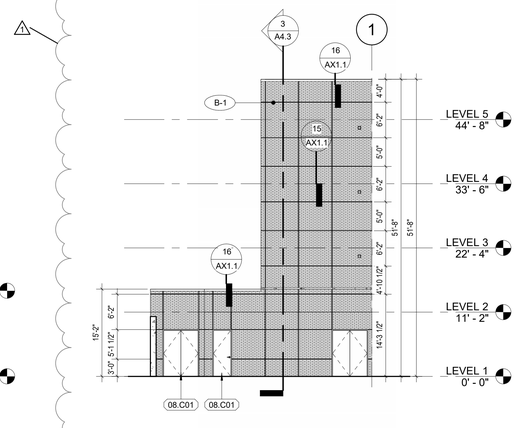
2 PARTIAL SOUTH ELEVATION

SCALE 3/32" = 1'-0"



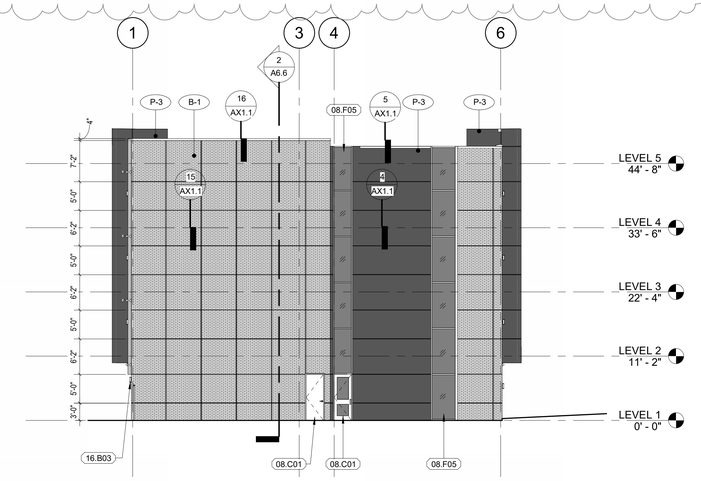
5 NORTH ELEVATION

SCALE 1/8" = 1'-0"



4 WEST ELEVATION

SCALE 3/32" = 1'-0"



3 WEST ELEVATION

SCALE 3/32" = 1'-0"

KEYNOTES XX-XX

02.D06	LANDSCAPE AREA, REFER TO LANDSCAPE PLANS
07.E11	DAYLIGHT OVERFLOW LINE HIGH THROUGH WALL
08.C01	DOOR, SEE DOOR SCHEDULE
08.C02	WINDOW, SEE WINDOW SCHEDULE
08.F05	CURTAIN WALL SYSTEM, SEE WINDOW SCHEDULE
16.B03	WALL MOUNTED LIGHT FIXTURE, SEE ELECTRICAL PLANS

GENERAL NOTES

1. CONTRACTOR TO PROVIDE ALL ACCESSORIES REQ'D TO PROVIDE WEATHER TIGHT CONSTRUCTION. COORDINATE w/ MANUFACTURER.
2. COLORS OF EXTERIOR DOORS AND FRAMES TO MATCH COLOR OF ADJACENT EXISTING BUILDING DOORS AND FRAMES.
3. COLOR OF EXTERIOR WINDOW FRAMES TO MATCH COLOR OF EXISTING ADJACENT BUILDING WINDOW FRAMES.
4. PAINT EXTERIOR STRUCTURAL STEEL TO MATCH ADJACENT EXISTING BUILDING EXTERIOR STRUCTURAL STEEL COLOR.
5. ALL EXTERIOR MATERIAL FINISHES AND COLORS TO MATCH FINISHES AND COLORS OF ADJACENT EXISTING BUILDING EXTERIOR MATERIALS, U.N.O.

EXTERIOR ELEVATION LEGEND

P-1	CEMENT PLASTER SYSTEM, COLOR 1, REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-2	CEMENT PLASTER SYSTEM, COLOR 2 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-3	CEMENT PLASTER SYSTEM, COLOR 3 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-4	CEMENT PLASTER SYSTEM, COLOR 4 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-5	CEMENT PLASTER SYSTEM, COLOR 5 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
GL-1	GLAZING, REFER DETAILS ON SHEET AX3.2 AND AX3.3
GL-2	SPANDREL GLAZING REFER DETAILS ON SHEET AX4.5
B-1	**THIN BRICK SYSTEM** MODULAR, 2 -1/4" X 7 -5/8" X 1/2" THICK, 15 PSF BRICK VENEER ASSEMBLY WEIGHT PER SQ. FT. REFER TO 15 & 16 / AX1.1 AND 1 / AX1.2 FOR DETAILS

NOTE:
1. CONTROL JOINTS AND EXPANSION JOINTS ARE SHOWN FOR GRAPHIC CLARITY. ALL VERTICAL JOINTS AND JOINTS AT PLATE LINE ARE TO BE CONTROL. REFER TO DETAIL 2 / AX1.1
2. ALL JOINTS AT FLOOR LINE TO BE EXPANSION. REFER TO DETAILS 12 & 14/ AX1.1

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NEW RESIDENCE HALL

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EXTERIOR ELEVATIONS

A5.1

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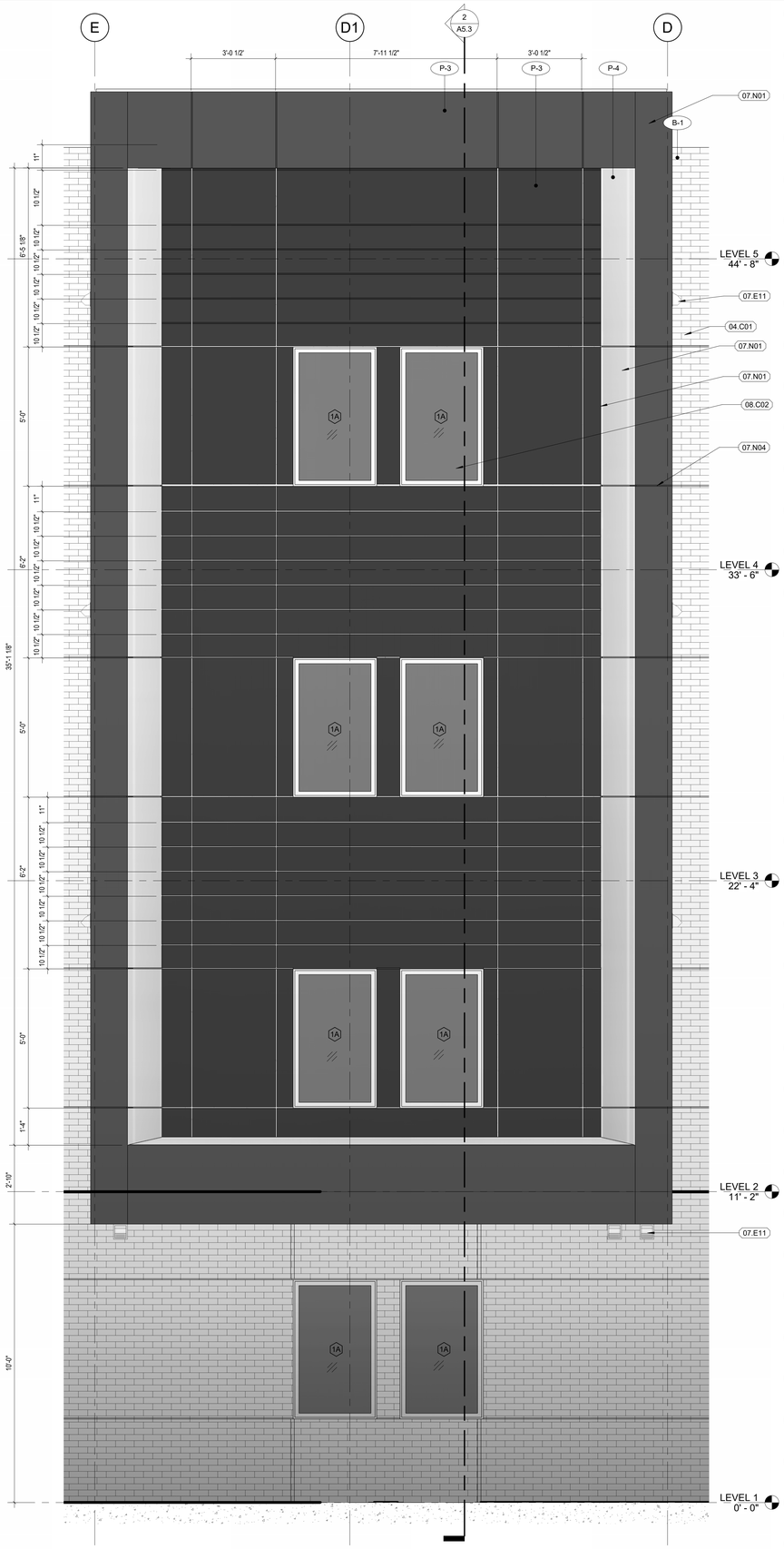
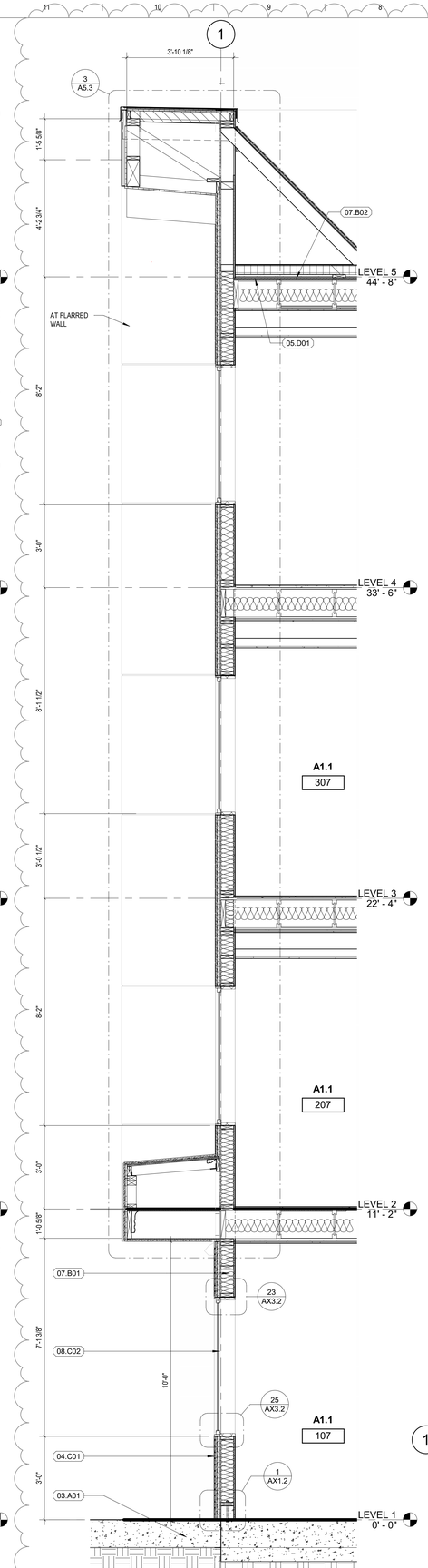


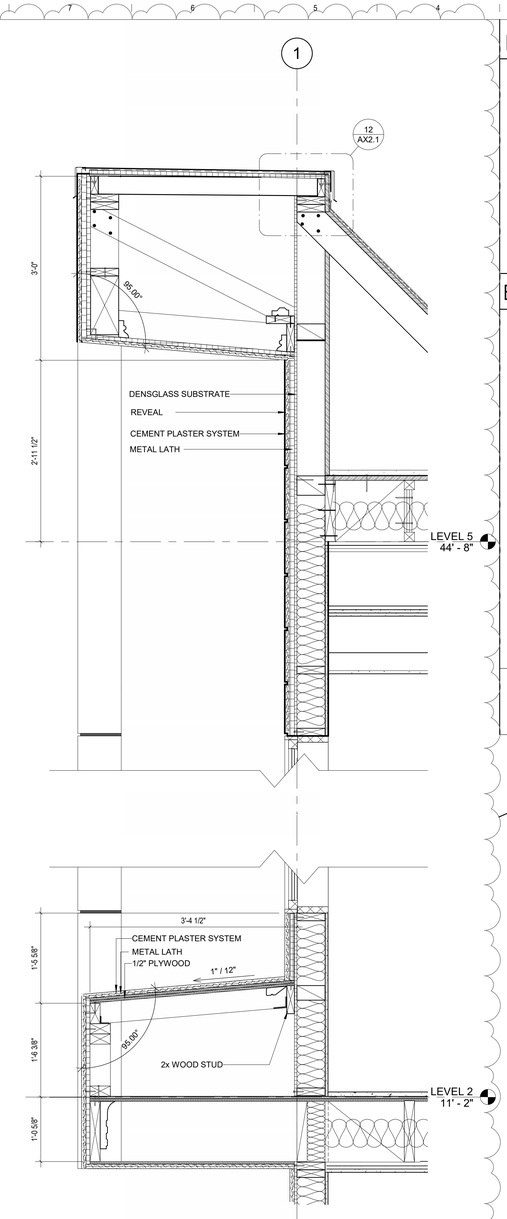
1 1/A5.3_ENLARGED ELEVATION

SCALE 1/2" = 1'-0"



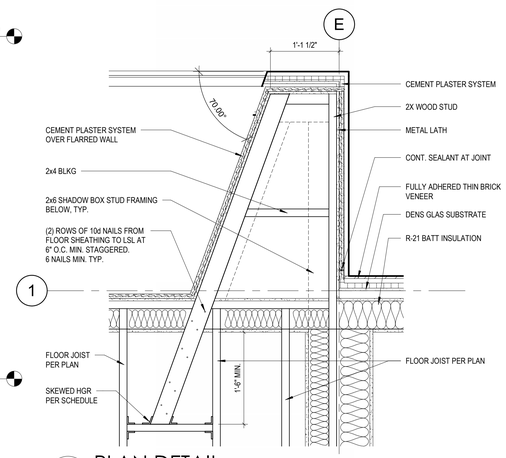
2 WALL SECTION

SCALE 1/2" = 1'-0"



3 ENLARGED PARAPET DETAIL

SCALE 1" = 1'-0"



4 PLAN DETAIL

SCALE 1" = 1'-0"

KEYNOTES (XX-XX)

03.A01	CONCRETE SLAB, SEE STRUCTURAL PLANS
04.C01	FULLY ADHERED THIN BRICK VENEER
05.D01	METAL DECKING, SEE STRUCTURAL PLANS
06.B09	1/2" PLYWOOD
06.B34	2x WOOD STUD
07.B01	WALL INSULATION, SEE INSULATION SCHEDULE
07.B02	ROOF INSULATION, SEE INSULATION SCHEDULE
07.E11	DAYLIGHT OVERFLOW LINE HIGH THROUGH WALL
07.N01	CEMENT PLASTER SYSTEM
07.N04	REVEAL
07.N05	METAL LATH
07.Q03	DENSGLASS SUBSTRATE
08.C02	WINDOW, SEE WINDOW SCHEDULE

EXTERIOR ELEVATION LEGEND

P-1	CEMENT PLASTER SYSTEM, COLOR 1, REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-2	CEMENT PLASTER SYSTEM, COLOR 2 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-3	CEMENT PLASTER SYSTEM, COLOR 3 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-4	CEMENT PLASTER SYSTEM, COLOR 4 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-5	CEMENT PLASTER SYSTEM, COLOR 5 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
GL-1	GLAZING, REFER DETAILS ON SHEET AX3.2 AND AX3.3
GL-2	SPANDREL GLAZING REFER DETAILS ON SHEET AX4.5
B-1	**THIN BRICK SYSTEM** MODULAR, 2 -1/4" X 7 -5/8" X 1/2" THICK, 15 PSF BRICK VENEER ASSEMBLY WEIGHT PER SQ. FT. REFER TO 15 & 16 / AX1.1 AND 1 / AX1.2 FOR DETAILS

NOTE:

1. CONTROL JOINTS AND EXPANSION JOINTS ARE SHOWN FOR GRAPHIC CLARITY. ALL VERTICAL JOINTS AND JOINTS AT PLATE LINE ARE TO BE CONTROL, REFER TO DETAIL 2 / AX1.1
2. ALL JOINTS AT FLOOR LINE TO BE EXPANSION. REFER TO DETAILS 12 & 14/ AX1.1

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NEW RESIDENCE HALL

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ENLARGED ELEVATIONS AND SECTIONS

A5.3

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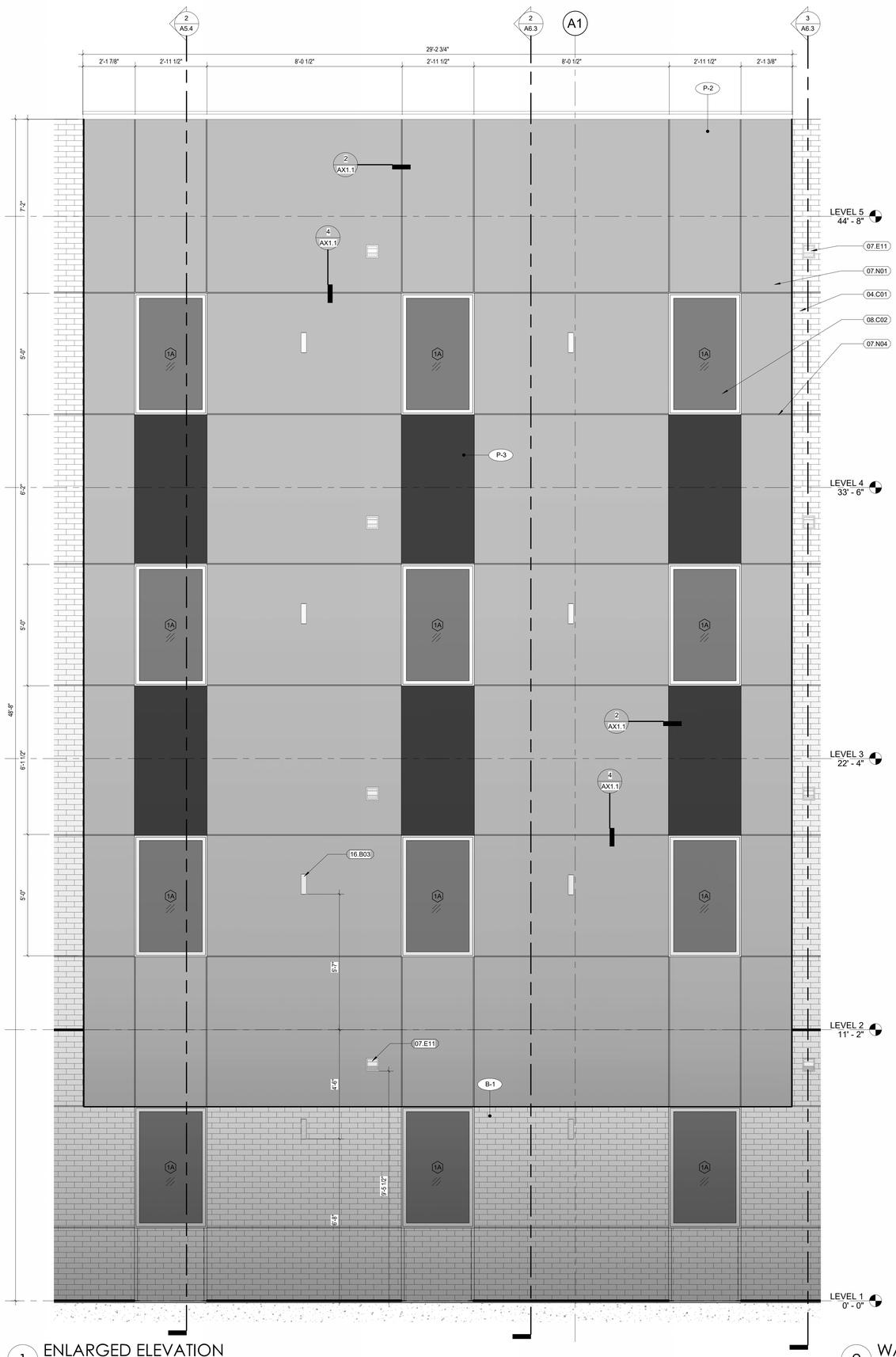
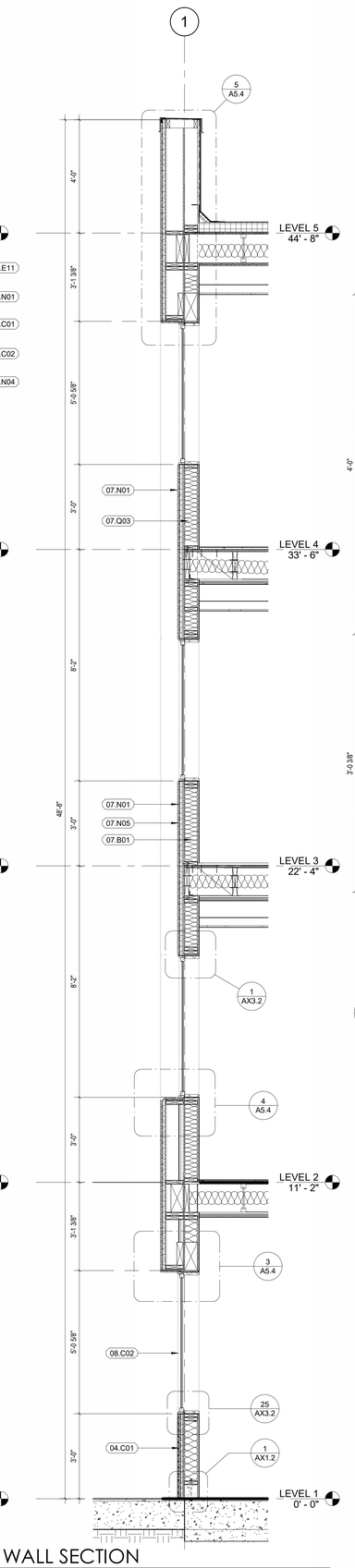


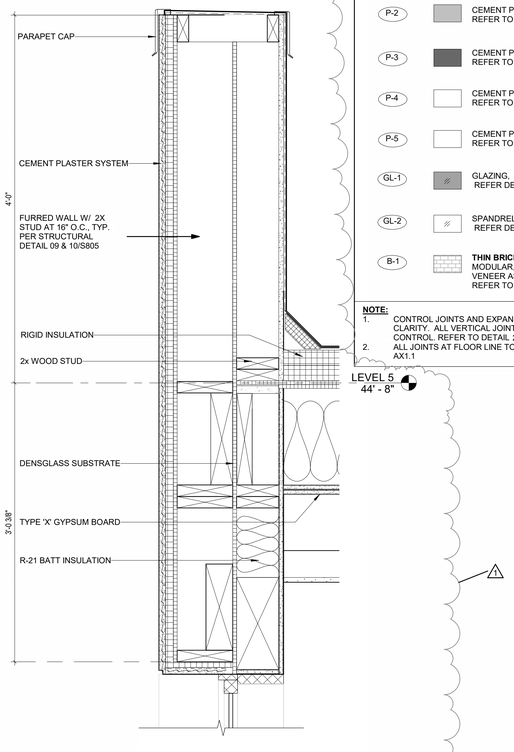
1 ENLARGED ELEVATION

SCALE 1/2" = 1'-0"



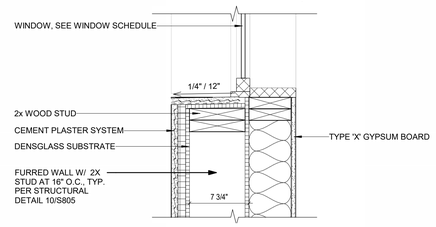
2 WALL SECTION

SCALE 1/2" = 1'-0"



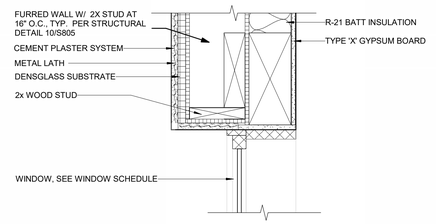
5 PARAPET BOX DETAIL

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



4 WINDOW SILL DETAIL

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



3 WINDOW HEAD DETAIL

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

KEYNOTES (XX-XX)

04.C01	FULLY ADHERED THIN BRICK VENEER
06.B34	2x WOOD STUD
07.B01	WALL INSULATION, SEE INSULATION SCHEDULE
07.B06	R-21 BATT INSULATION
07.B10	RIGID INSULATION
07.E11	DAYLIGHT OVERFLOW LINE HIGH THROUGH WALL
07.M01	PARAPET CAP
07.N01	CEMENT PLASTER SYSTEM
07.N04	REVEAL
07.N05	METAL LATH
07.Q03	DENSGLASS SUBSTRATE
08.C02	WINDOW, SEE WINDOW SCHEDULE
09.A13	TYPE 'X' GYPSUM BOARD
16.B03	WALL MOUNTED LIGHT FIXTURE, SEE ELECTRICAL PLANS

EXTERIOR ELEVATION LEGEND

P-1	CEMENT PLASTER SYSTEM, COLOR 1, REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-2	CEMENT PLASTER SYSTEM, COLOR 2 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-3	CEMENT PLASTER SYSTEM, COLOR 3 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-4	CEMENT PLASTER SYSTEM, COLOR 4 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
P-5	CEMENT PLASTER SYSTEM, COLOR 5 REFER TO SHEET AX1.1 FOR TYPICAL DETAILS
GL-1	GLAZING, REFER DETAILS ON SHEET AX3.2 AND AX3.3
GL-2	SPANDREL GLAZING REFER DETAILS ON SHEET AX4.5
B-1	**THIN BRICK SYSTEM** MODULAR, 2 -1/4" X 7 -5/8" X 1/2" THICK, 15 PSF BRICK VENEER ASSEMBLY WEIGHT PER SQ. FT. REFER TO 15 & 16 / AX1.1 AND 1 / AX1.2 FOR DETAILS

NOTE:
1. CONTROL JOINTS AND EXPANSION JOINTS ARE SHOWN FOR GRAPHIC CLARITY. ALL VERTICAL JOINTS AND JOINTS AT PLATE LINE ARE TO BE CONTROL. REFER TO DETAIL 2 / AX1.1
2. ALL JOINTS AT FLOOR LINE TO BE EXPANSION. REFER TO DETAILS 12 & 14/ AX1.1

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ENLARGED ELEVATIONS AND SECTIONS

A5.4

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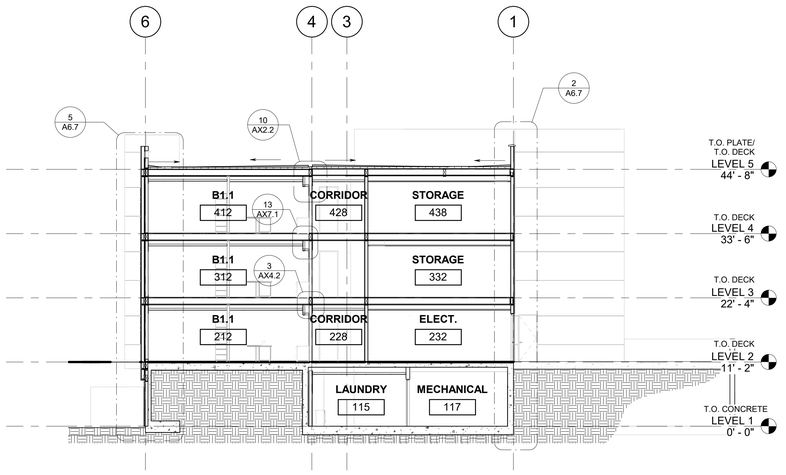
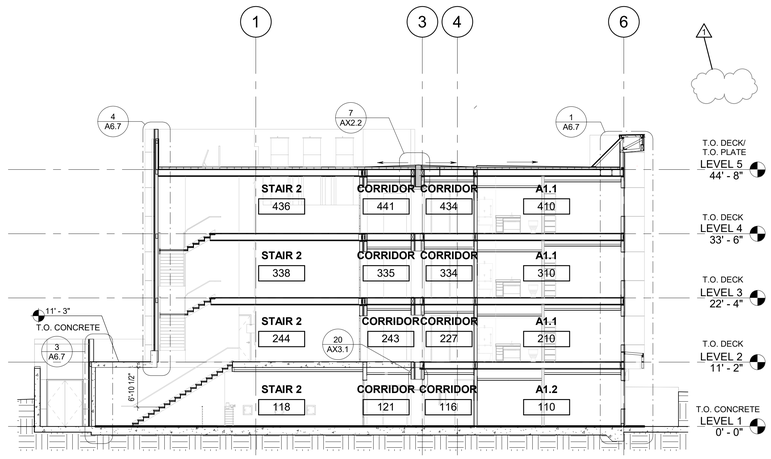
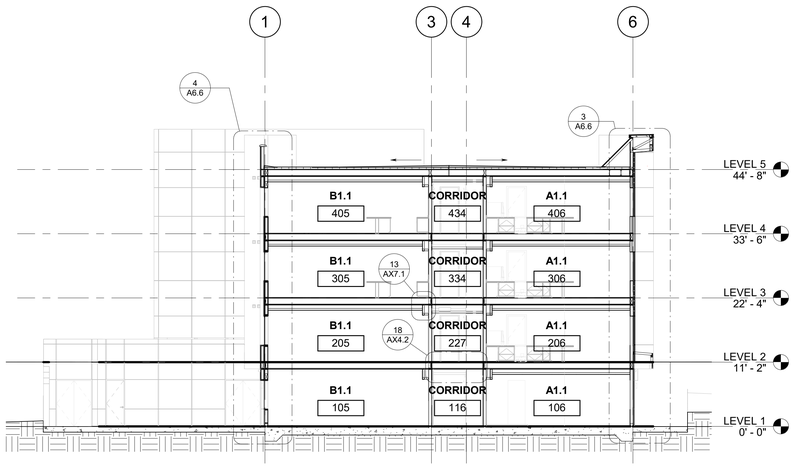


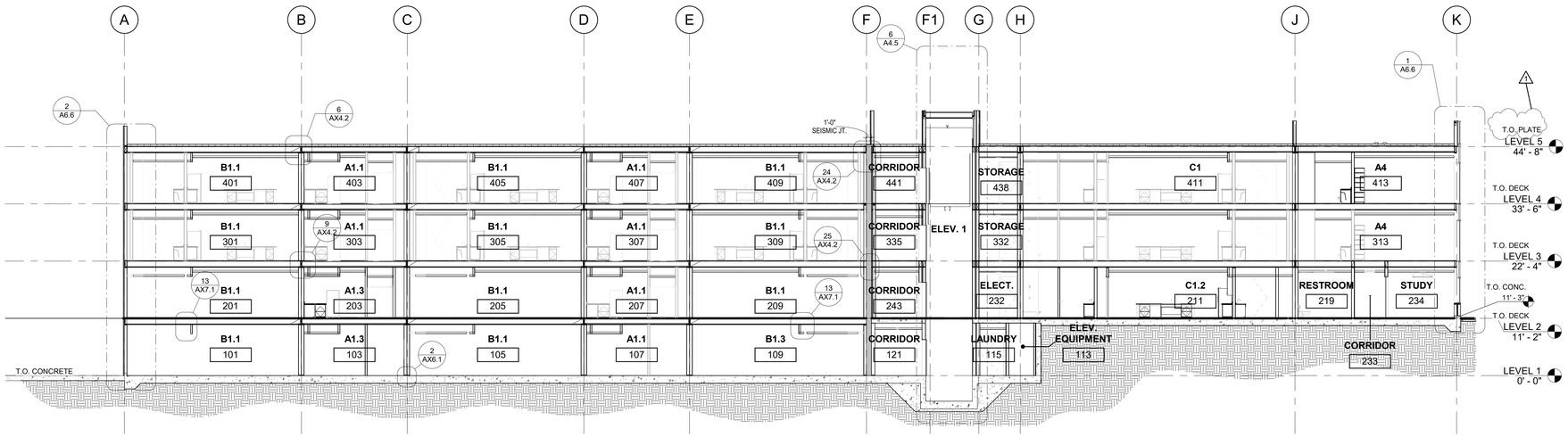
4 BUILDING SECTION WEST - AREA A
SCALE 3/32" = 1'-0"



3 BUILDING SECTION EAST - AREA A
SCALE 3/32" = 1'-0"



2 BUILDING SECTION EAST - AREA A
SCALE 3/32" = 1'-0"



1 BUILDING SECTION NORTH - AREA A / B
SCALE 3/32" = 1'-0"

KEYNOTES

XX-XX

GENERAL NOTES

1. SEE SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
2. ELEVATIONS ARE TO TOP OF PLATE UNLESS OTHERWISE NOTED.

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BUILDING SECTIONS

A6.1

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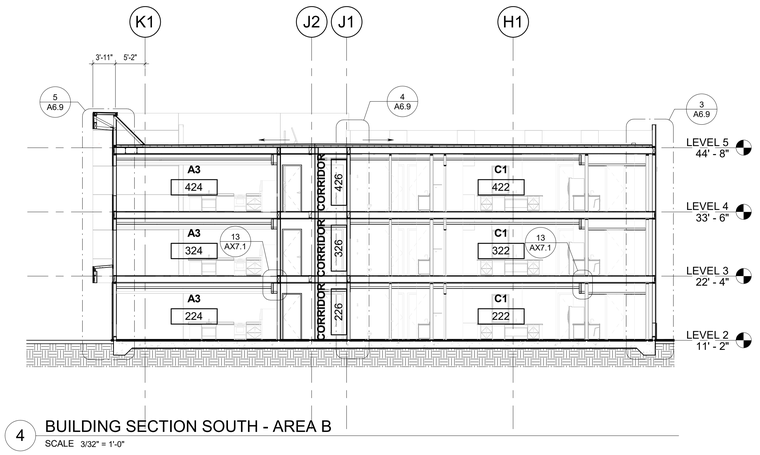
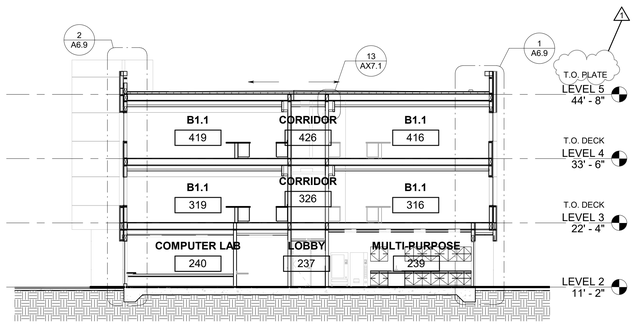
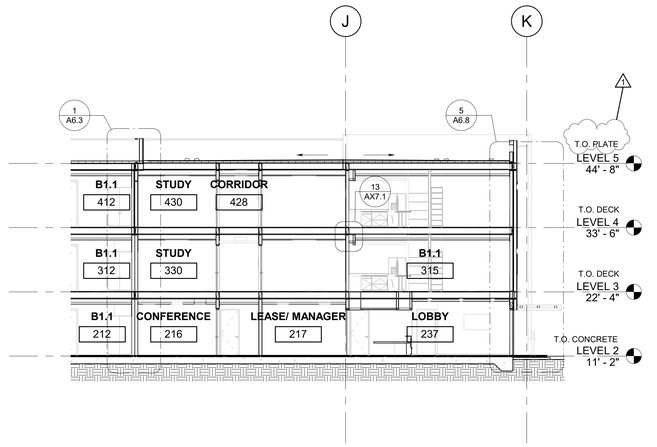


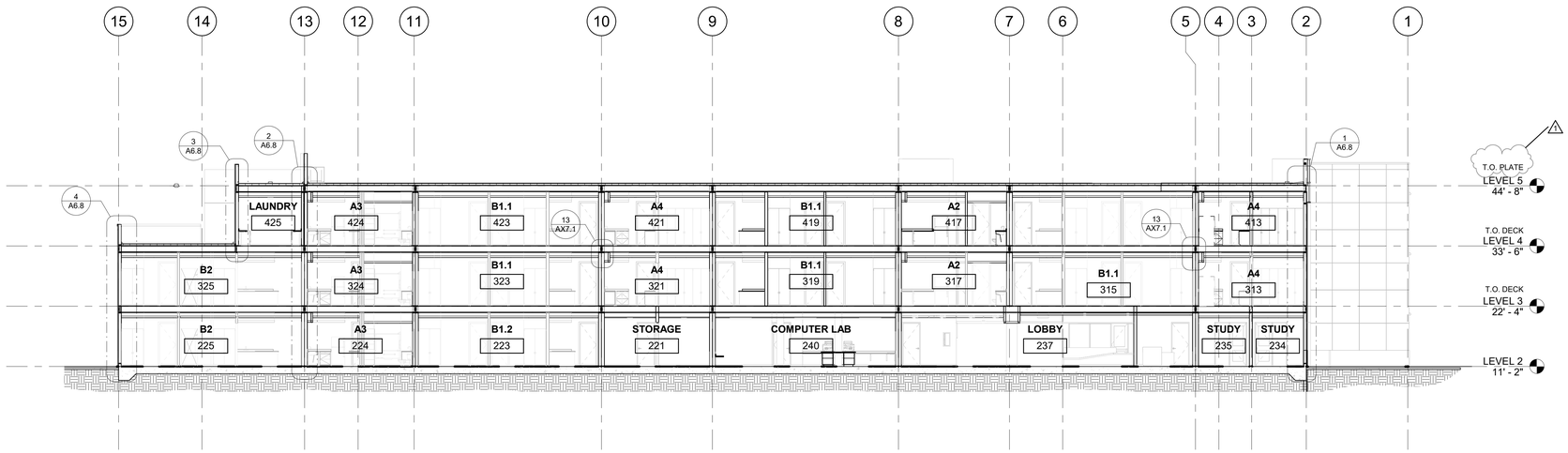
4 BUILDING SECTION SOUTH - AREA B
SCALE 3/32" = 1'-0"



3 BUILDING SECTION SOUTH - AREA B
SCALE 3/32" = 1'-0"



2 BUILDING SECTION NORTH - AREA B
SCALE 3/32" = 1'-0"



1 BUILDING SECTION WEST - AREA A / B
SCALE 3/32" = 1'-0"

KEYNOTES (XX-XX)

GENERAL NOTES

1. SEE SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
2. ELEVATIONS ARE TO TOP OF PLATE UNLESS OTHERWISE NOTED.

SECTION LEGEND

PBK

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

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BUILDING SECTIONS

A6.2

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DRAWN BY: Author
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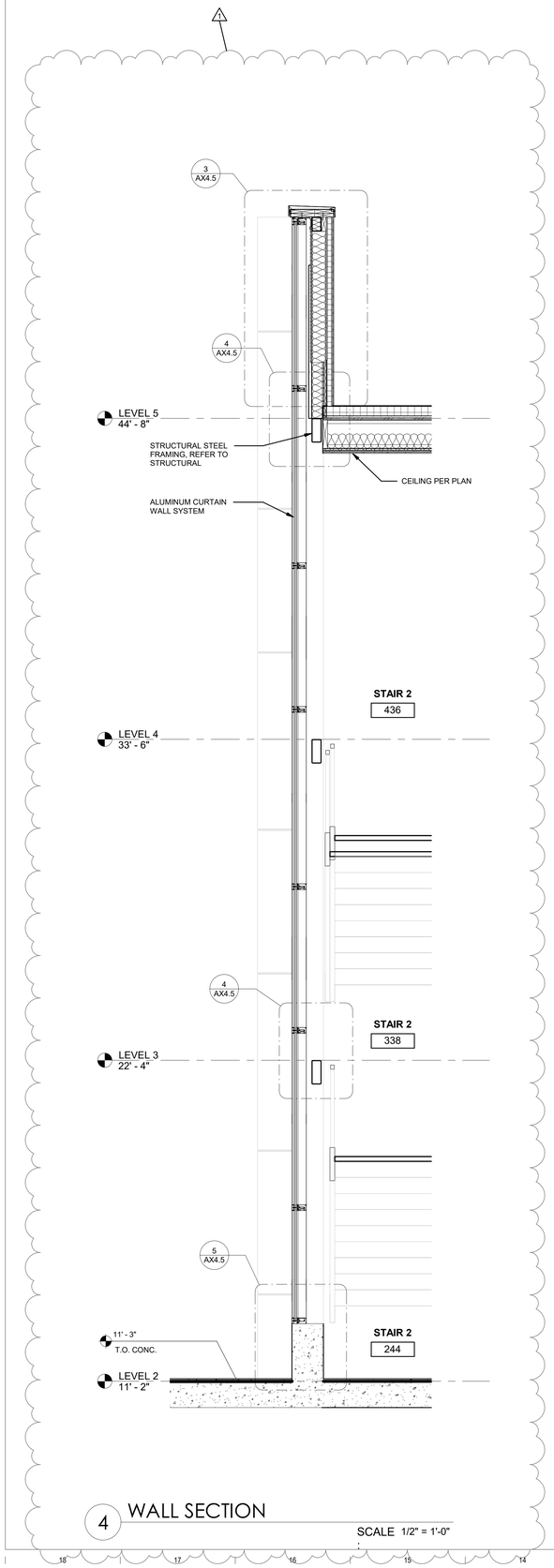

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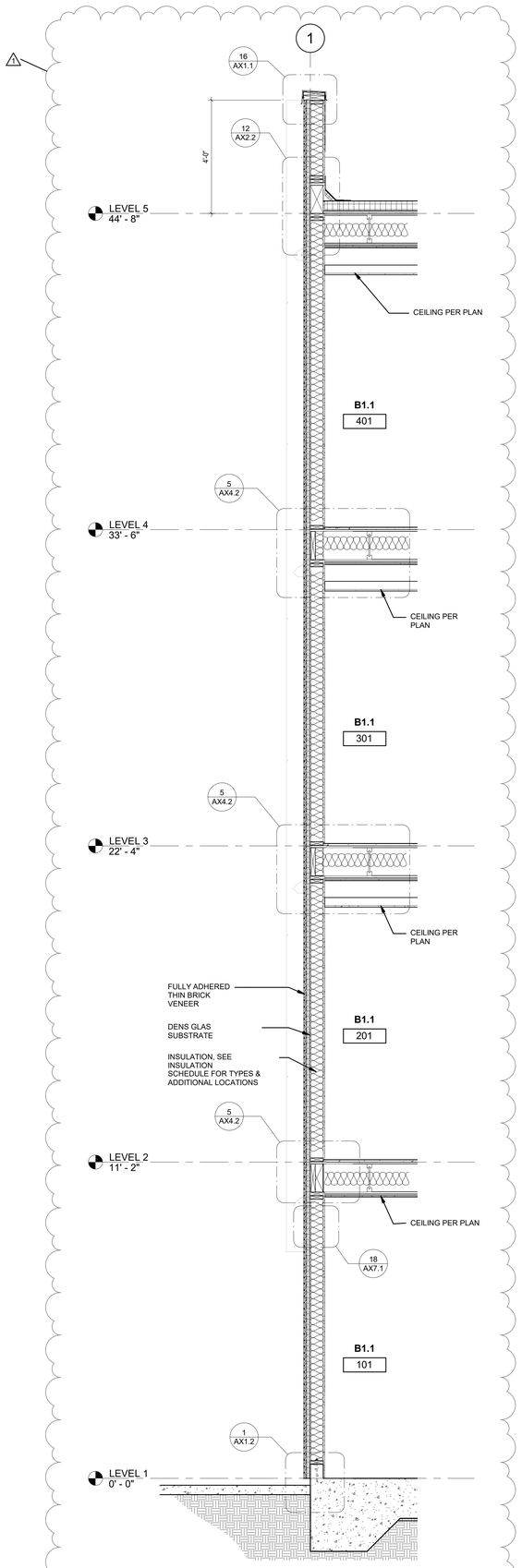
SCALE 1/2" = 1'-0"



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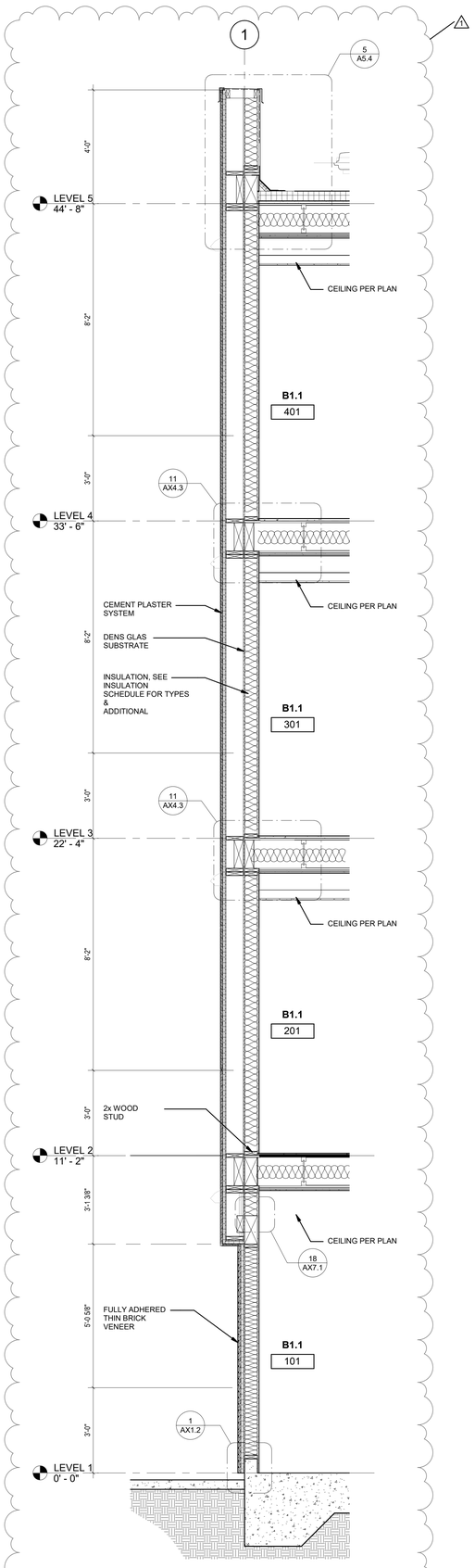

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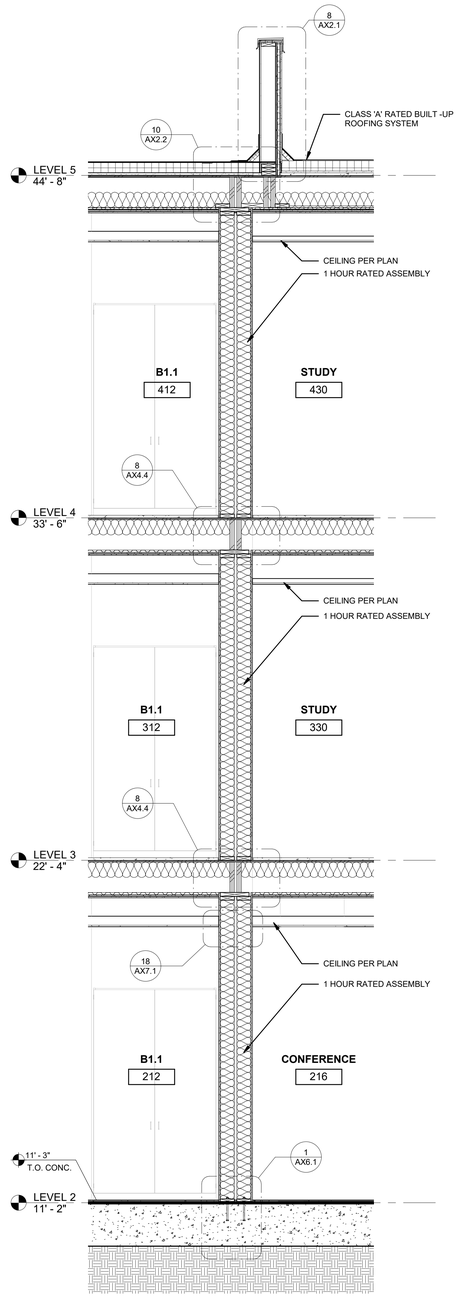

1 WALL SECTION

SCALE 1/2" = 1'-0"

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NEW RESIDENCE HALL

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ENGINEER LOGO

ENGINEER

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BID

WALL SECTIONS

A6.3

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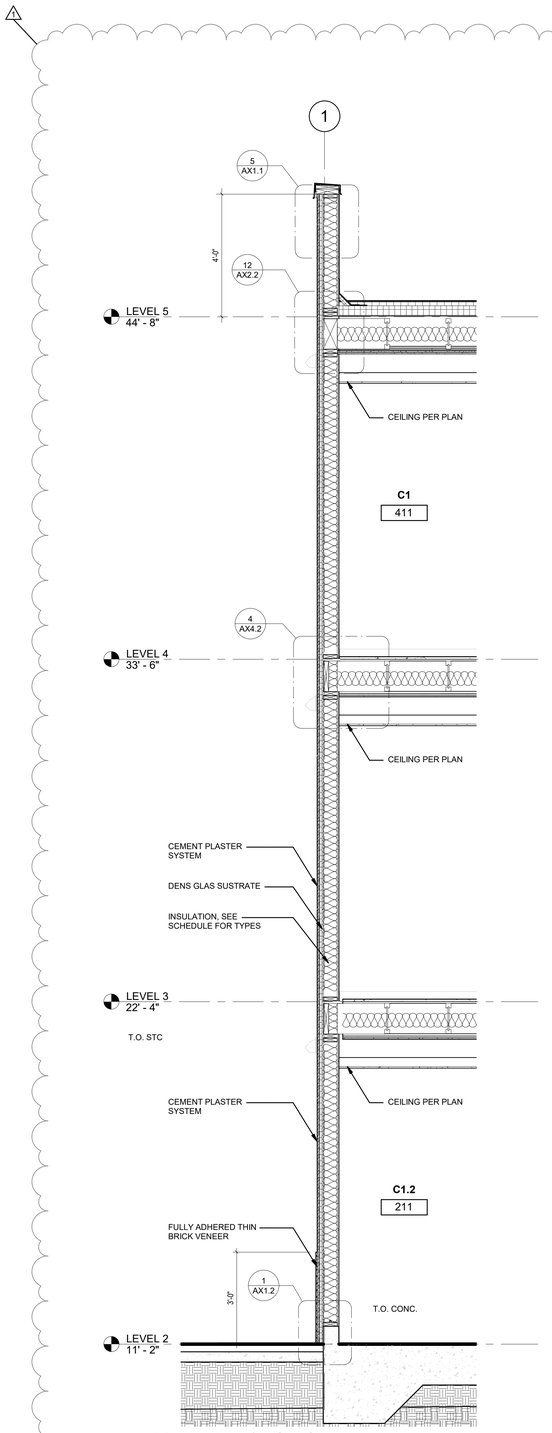

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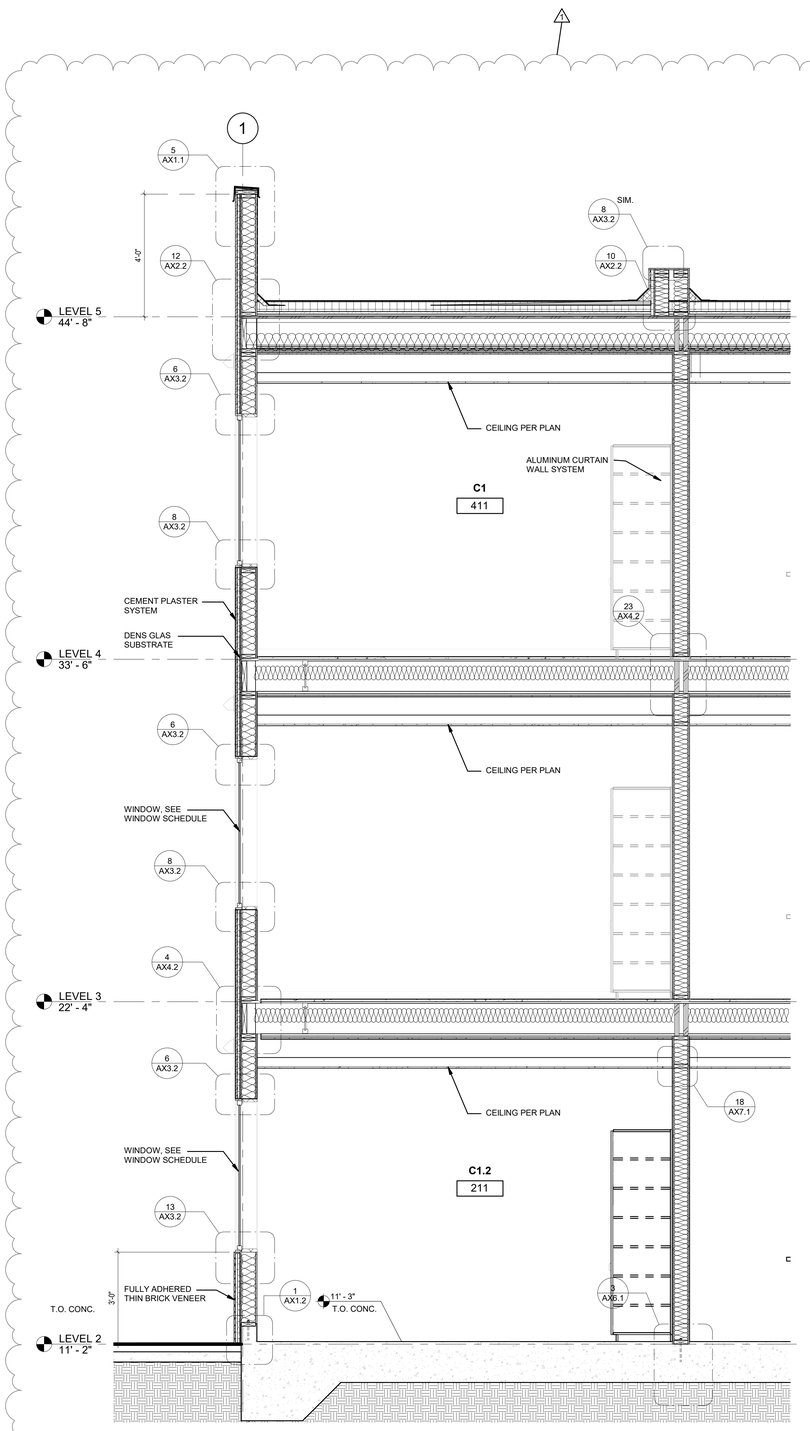

1 WALL SECTION

SCALE 1/2" = 1'-0"

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

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ENGINEER LOGO

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WALL SECTIONS

A6.4

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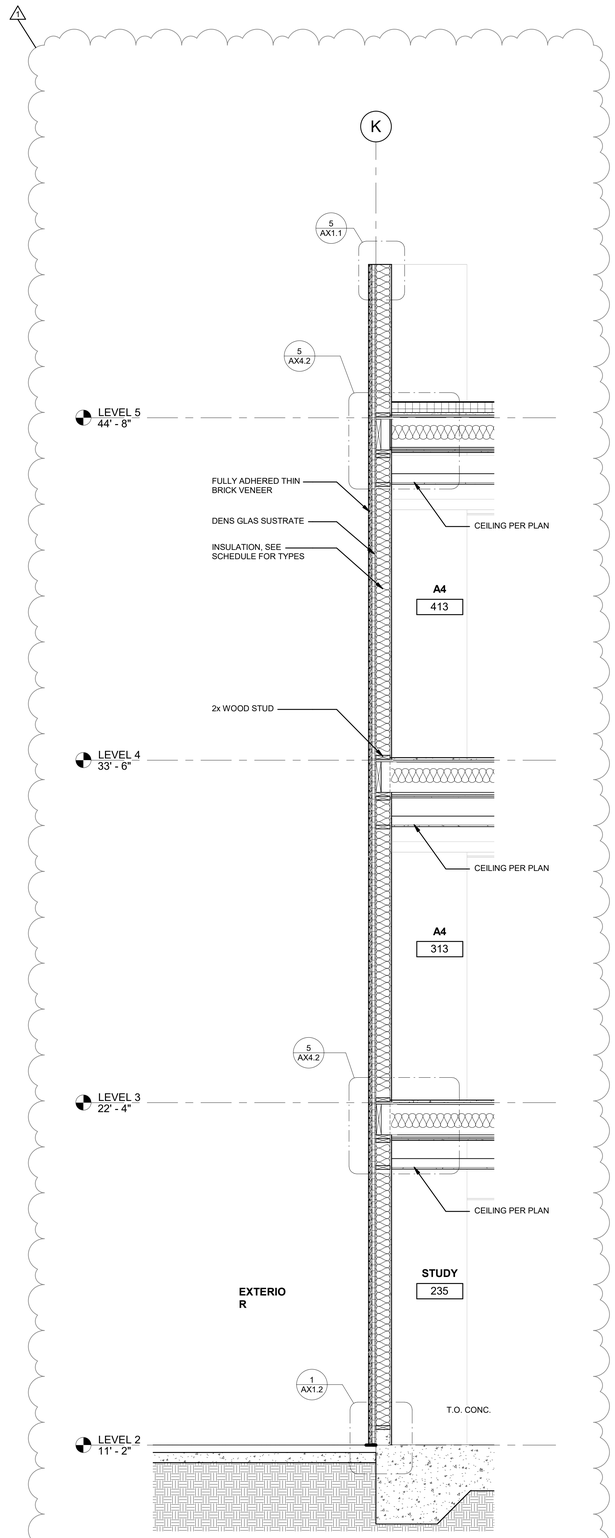
CHECKED BY: Checker



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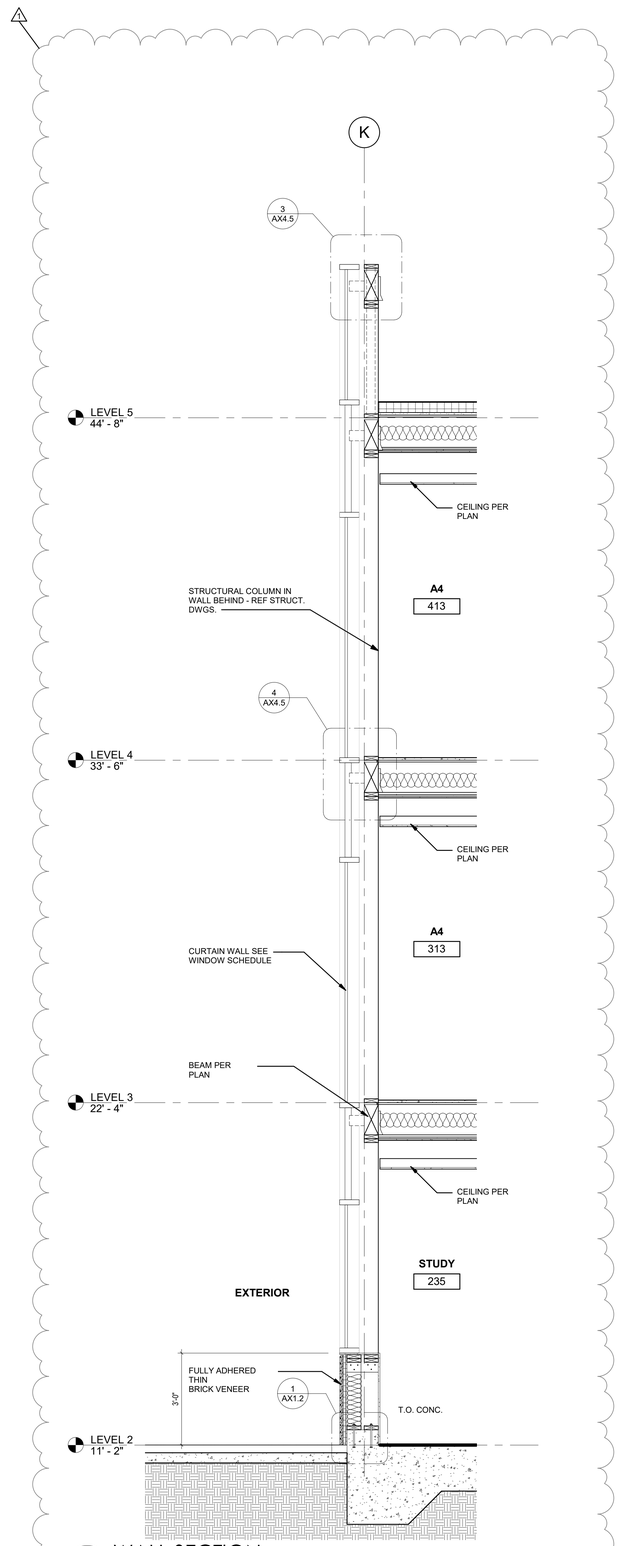
SCALE 1/2" = 1'-0"



2 WALL SECTION

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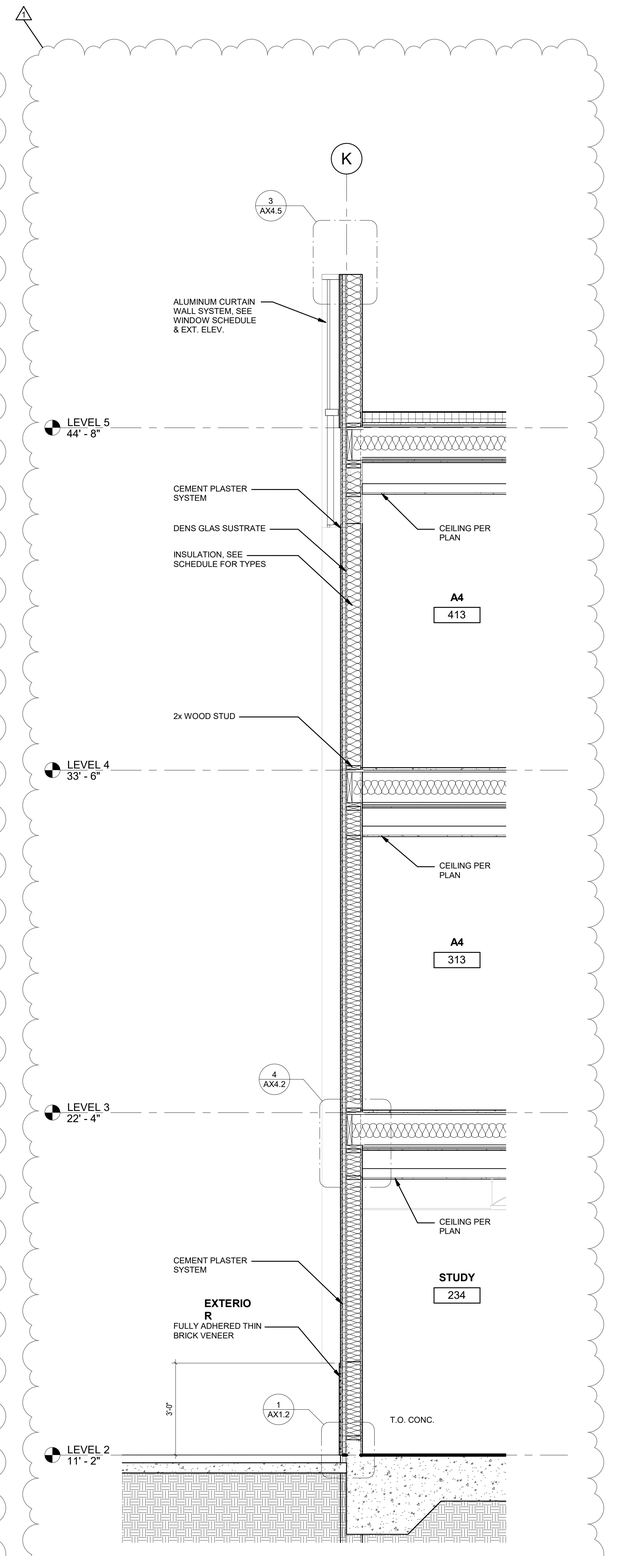

1 WALL SECTION

SCALE 1/2" = 1'-0"

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NEW RESIDENCE HALL

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PROJECT NUMBER
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BID

WALL SECTIONS

A6.5

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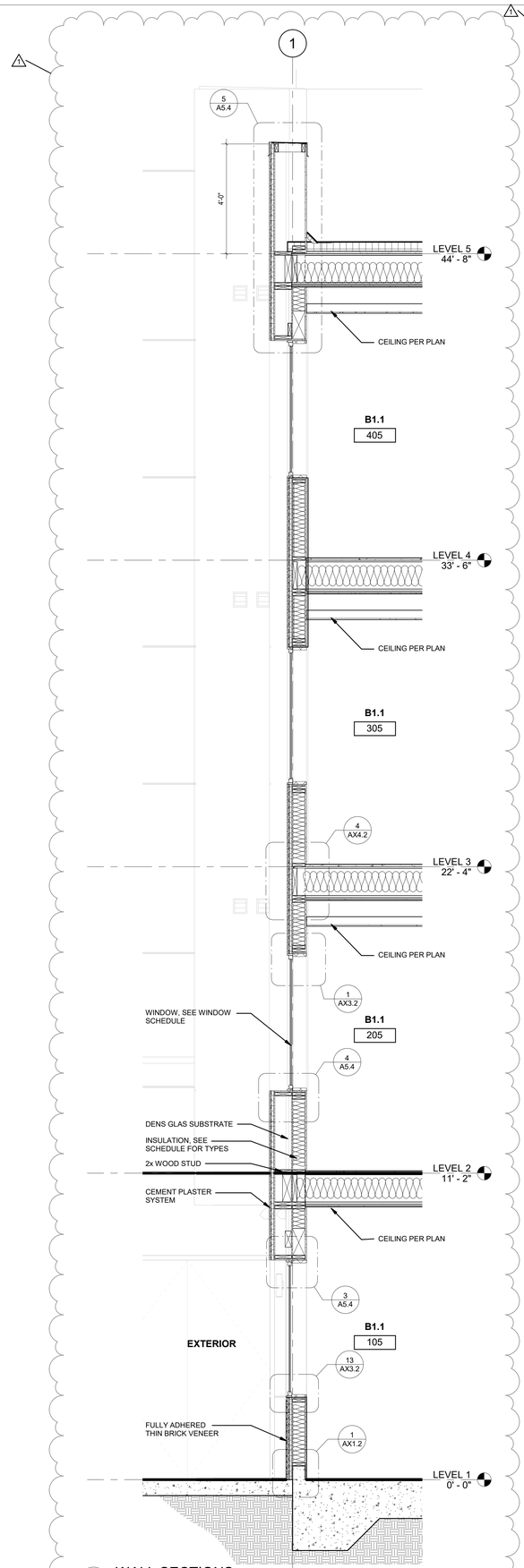
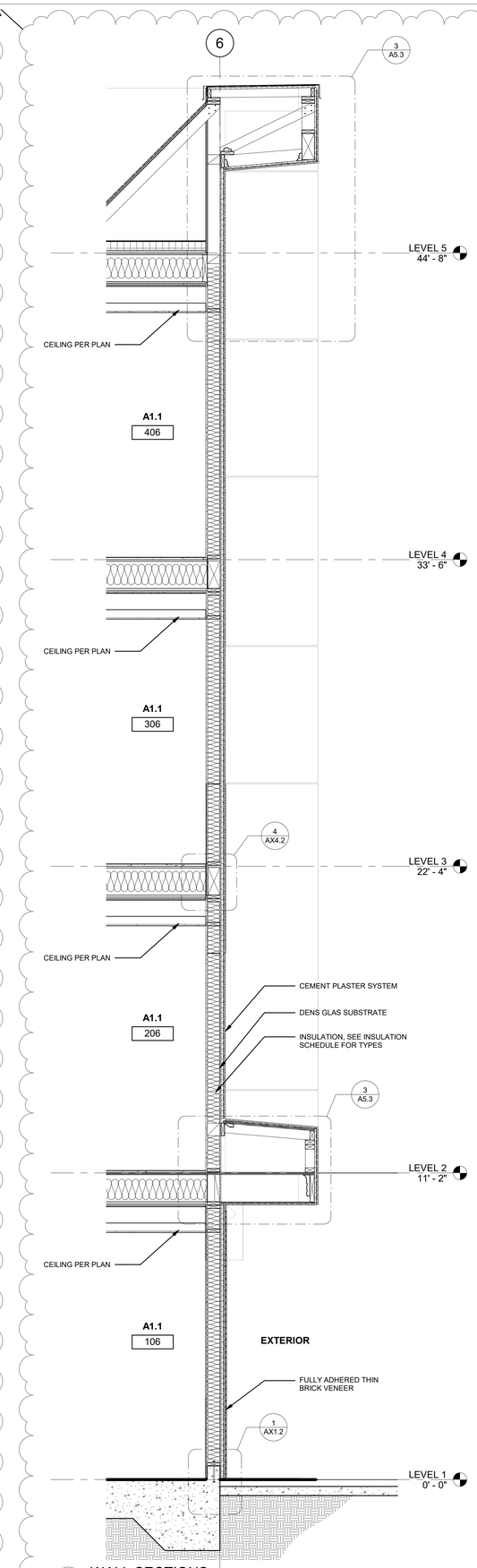
A6.6 - WALL SECTIONS



4 WALL SECTIONS
SCALE 1/2" = 1'-0"



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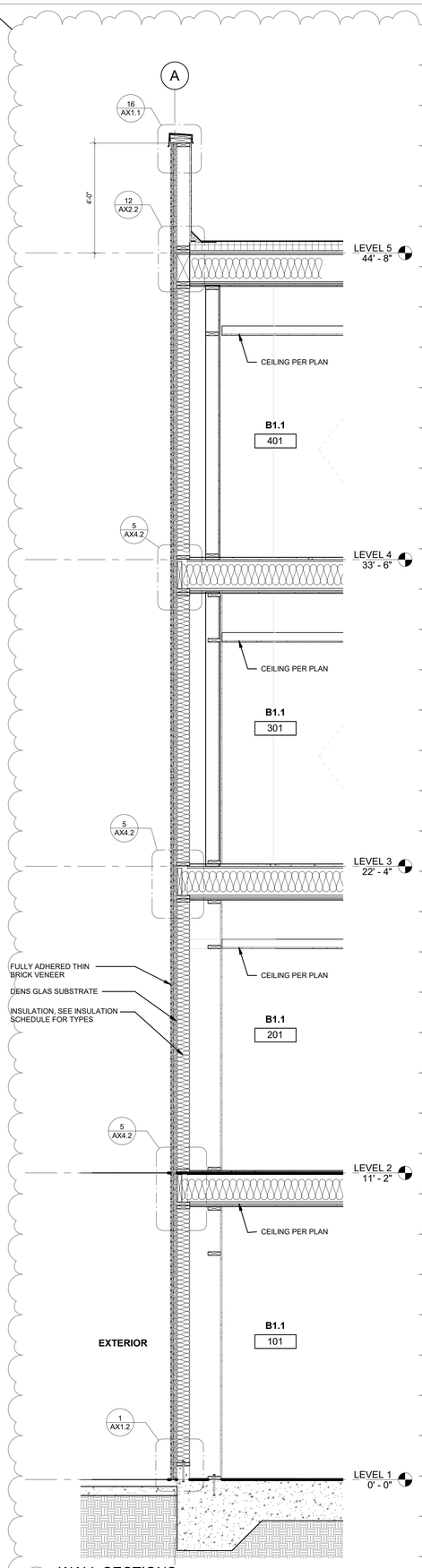

2 WALL SECTIONS
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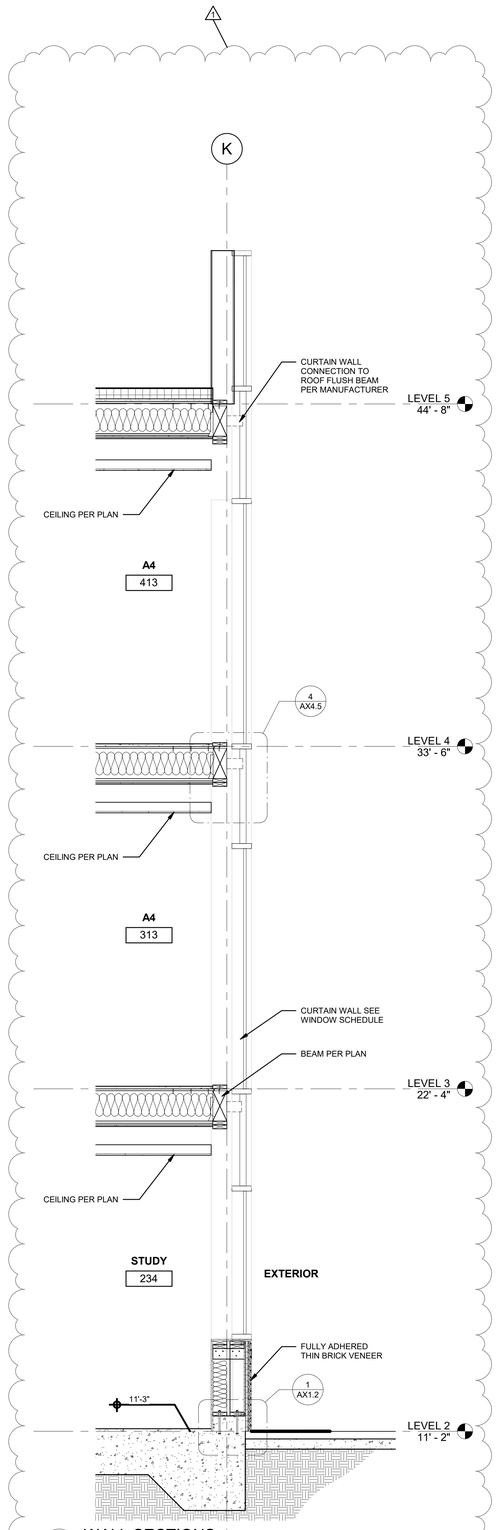

1 WALL SECTIONS
SCALE 1/2" = 1'-0"

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

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ENGINEER LOGO

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REVISIONS

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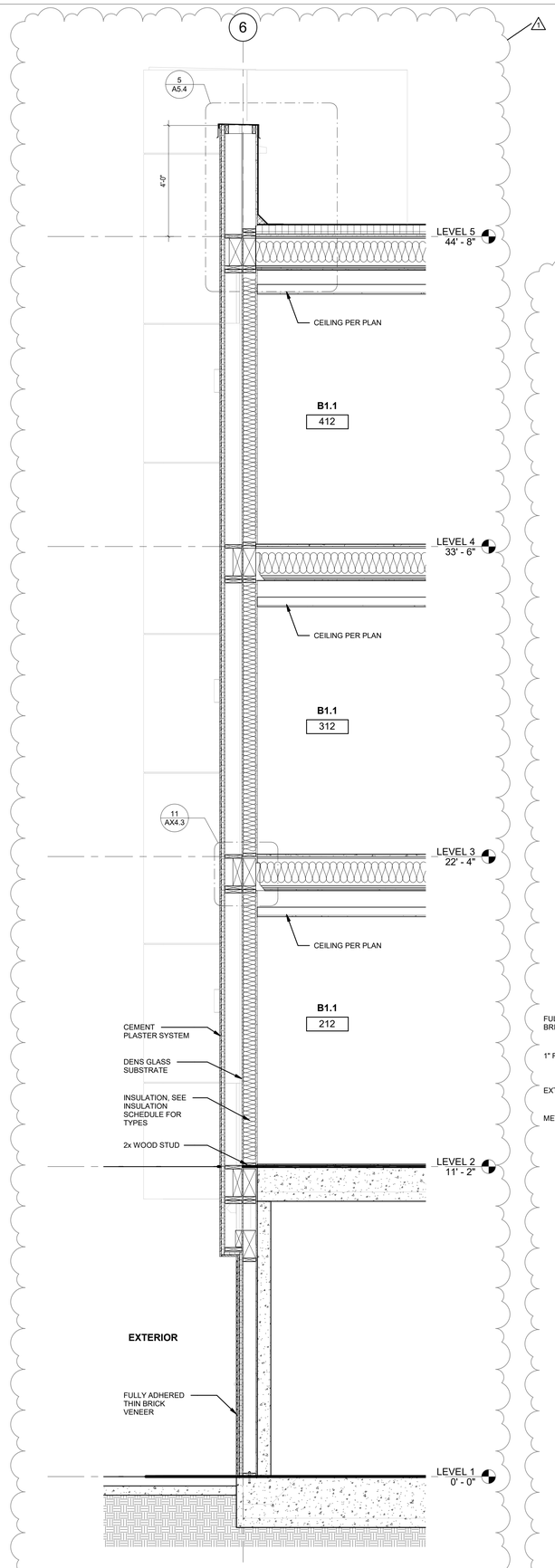
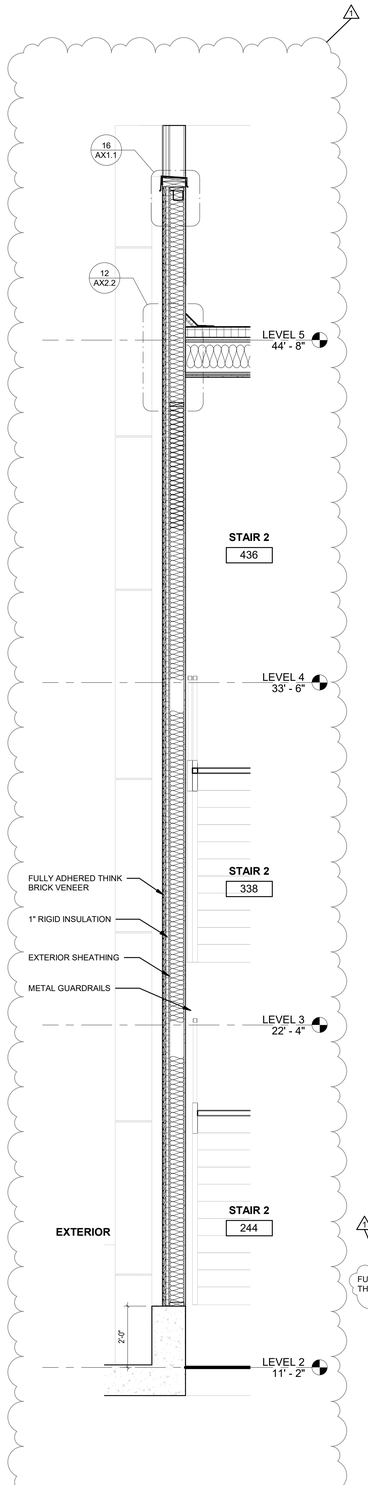
WALL SECTIONS

A6.6

A6.7 - WALL SECTIONS



5 WALL SECTIONS
SCALE 1/2" = 1'-0"



4 WALL SECTIONS
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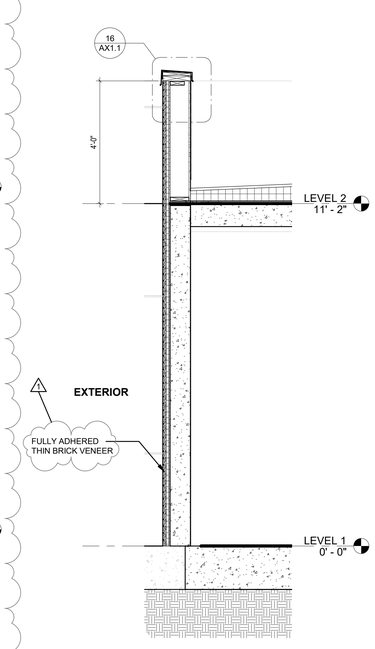
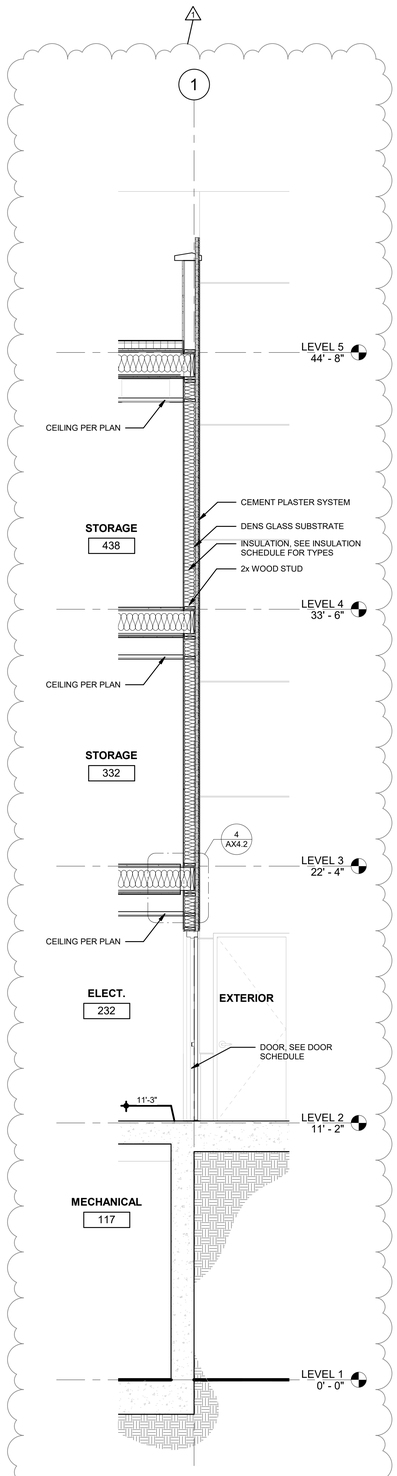
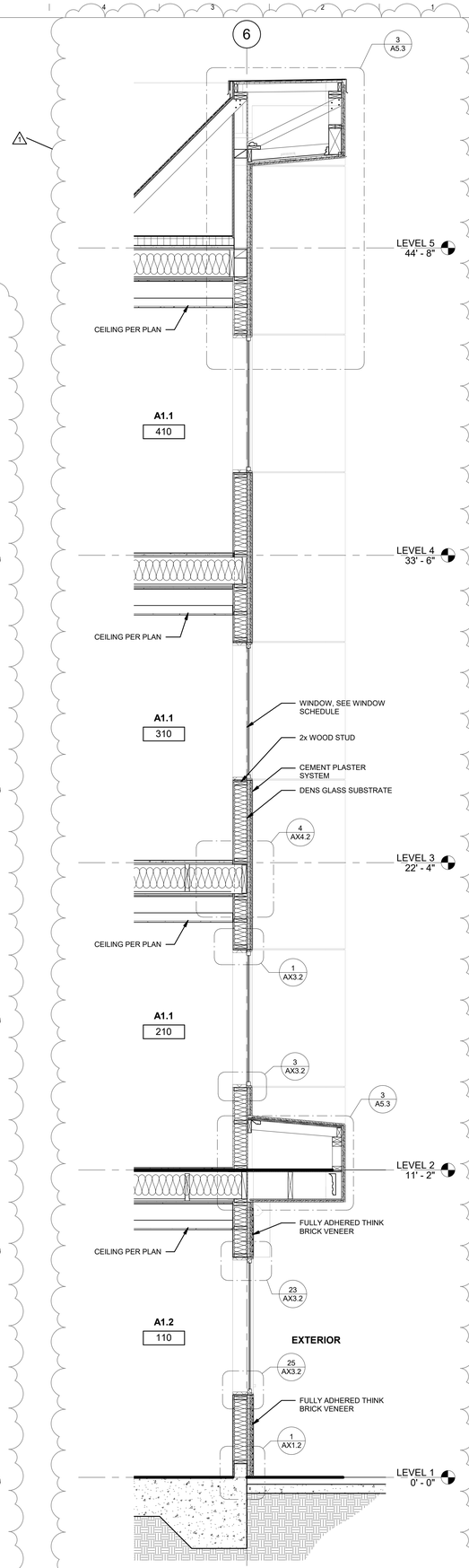


3 WALL SECTIONS
SCALE 1/2" = 1'-0"



2 WALL SECTIONS
SCALE 3/8" = 1'-0"



1 WALL SECTIONS
SCALE 1/2" = 1'-0"

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

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KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

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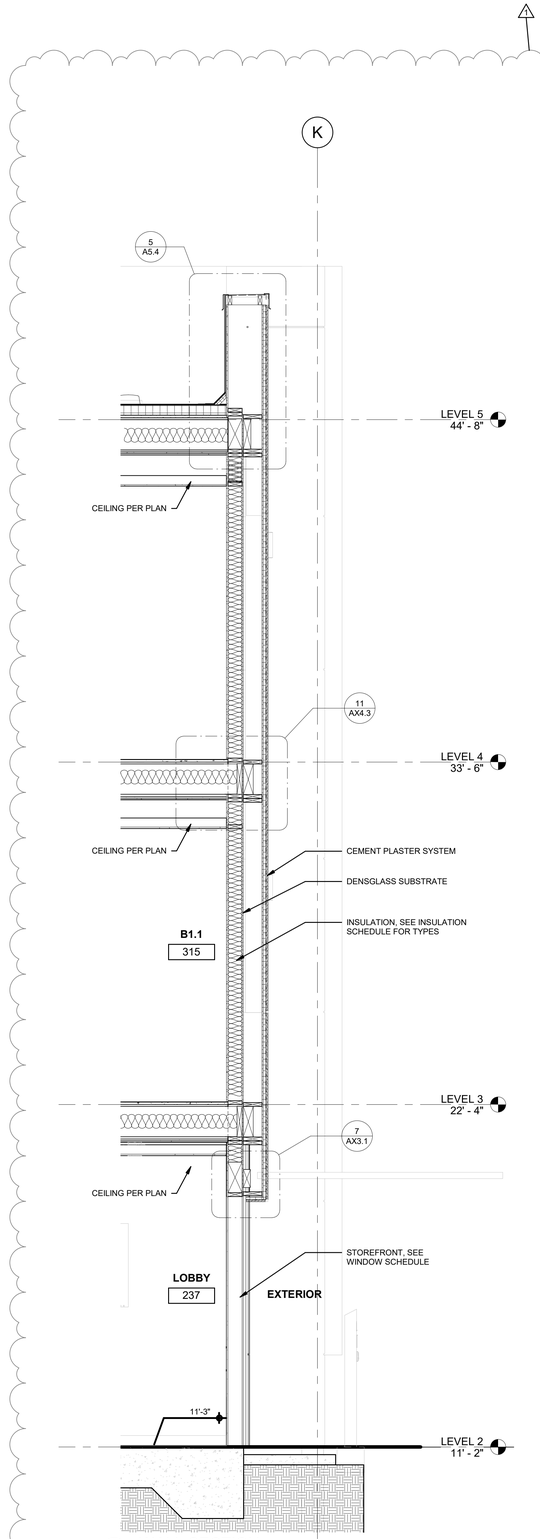
WALL SECTIONS

A6.7



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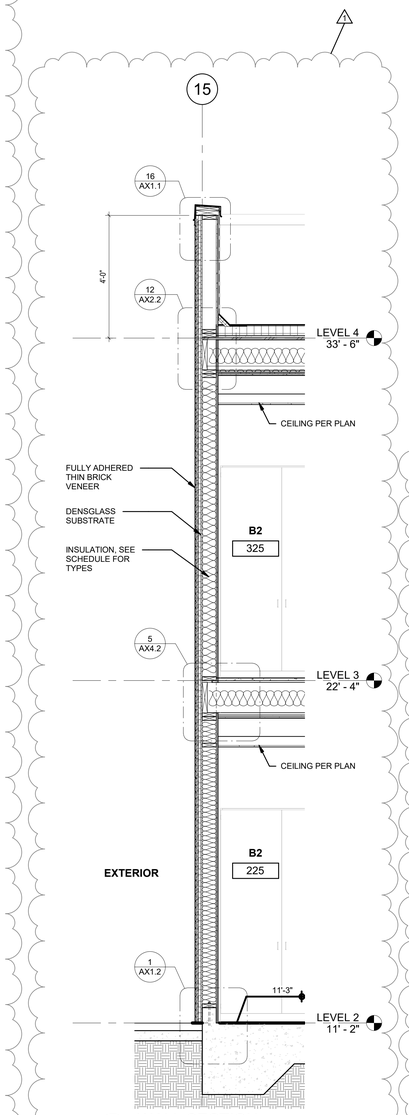
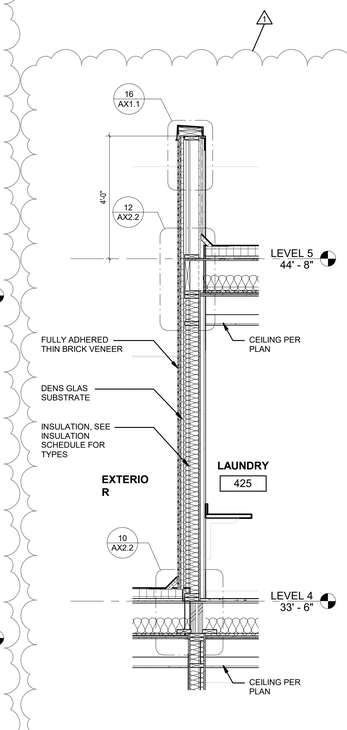
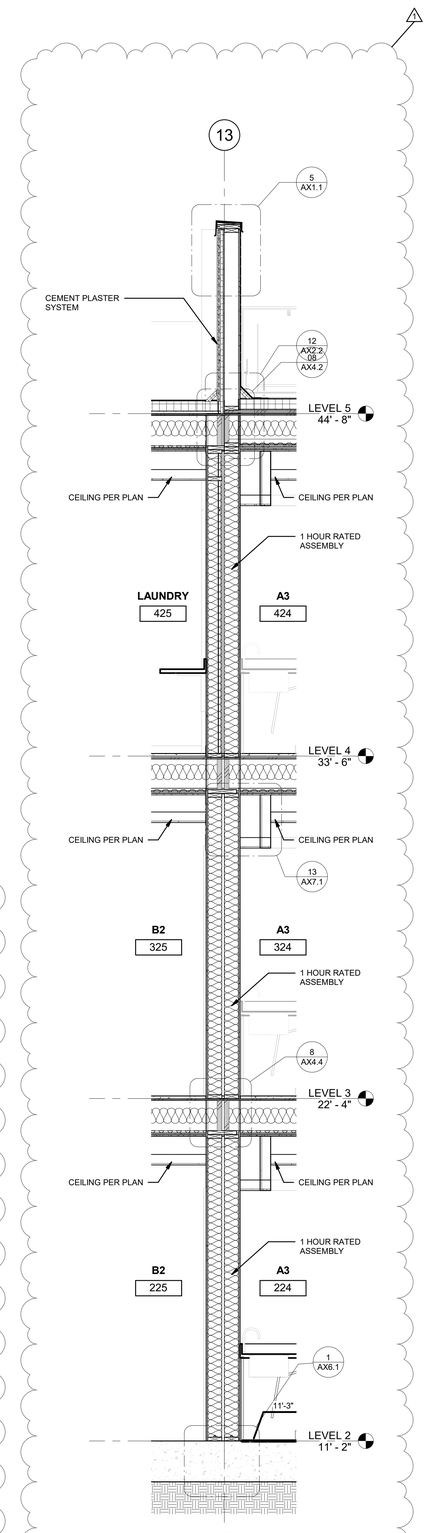
SCALE 1/2" = 1'-0"



4 WALL SECTION
SCALE 1/2" = 1'-0"



3 WALL SECTION
SCALE 1/2" = 1'-0"



2 WALL SECTION
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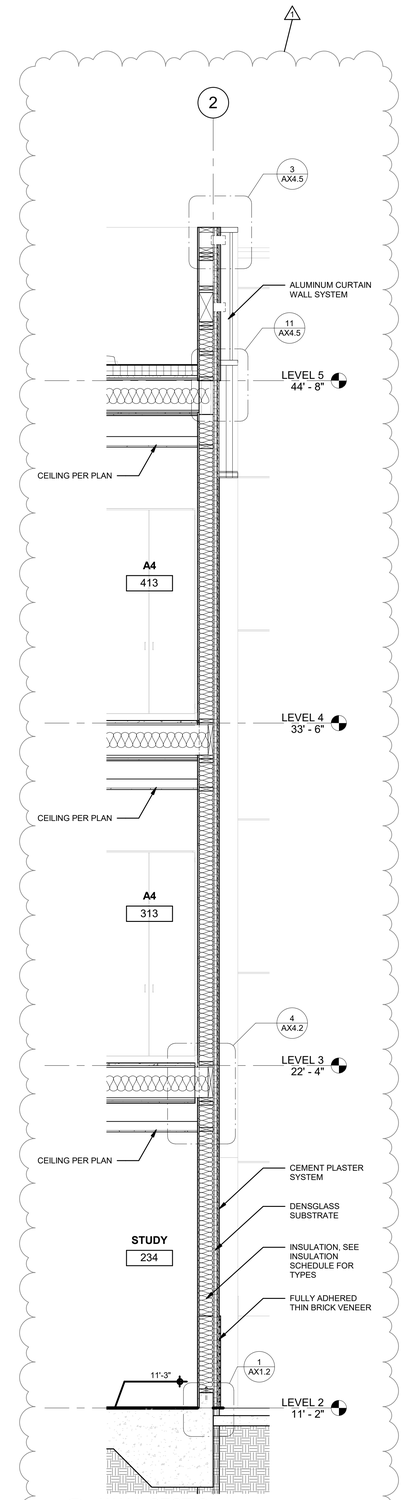

1 WALL SECTION
SCALE 1/2" = 1'-0"

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NEW RESIDENCE HALL

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DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

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WALL SECTIONS

A6.8

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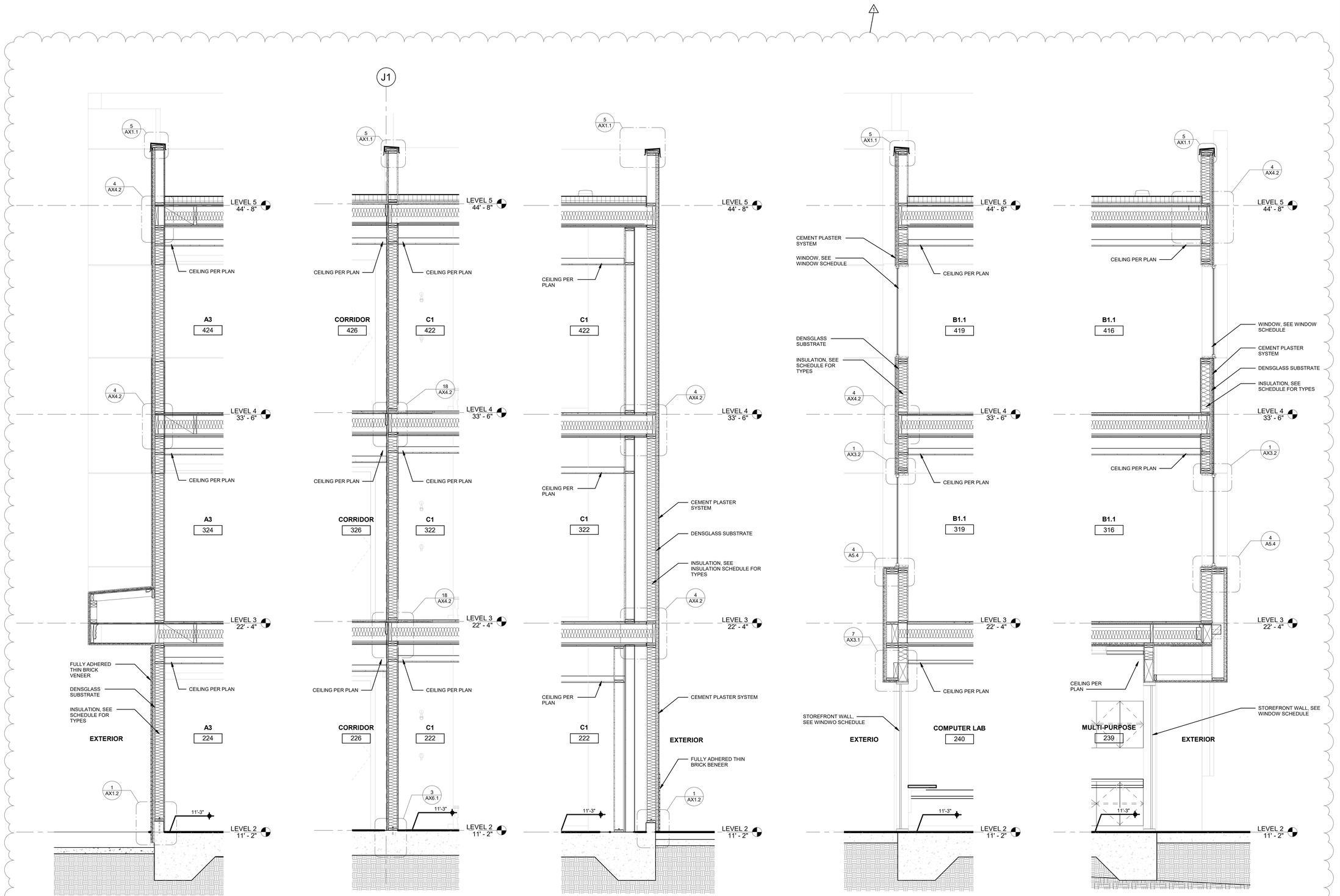

5 WALL SECTION
SCALE 1/2" = 1'-0"

4 WALL SECTION
SCALE 1/2" = 1'-0"

3 WALL SECTION
SCALE 1/2" = 1'-0"

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

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

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WALL SECTIONS

A6.9

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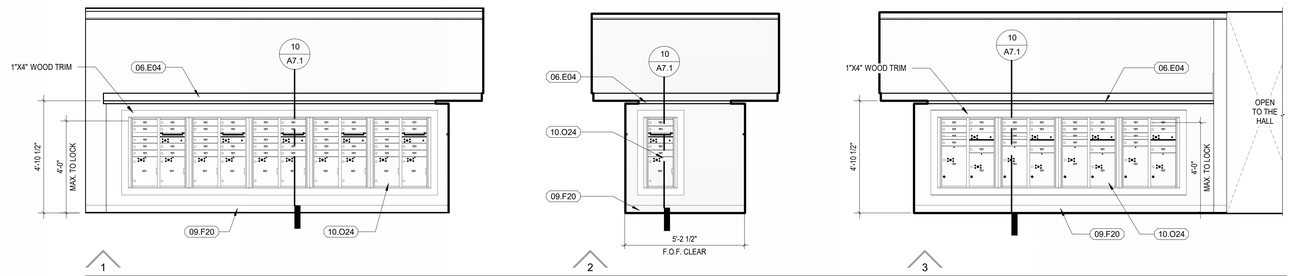
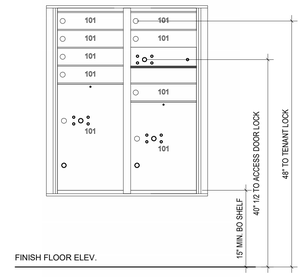


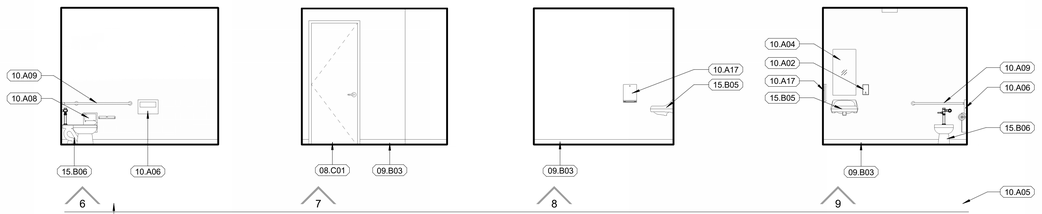
214 MAIL NORTH

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



TYP. MAILBOX MOUNTING HEIGHT

SCALE 1" = 1'-0"

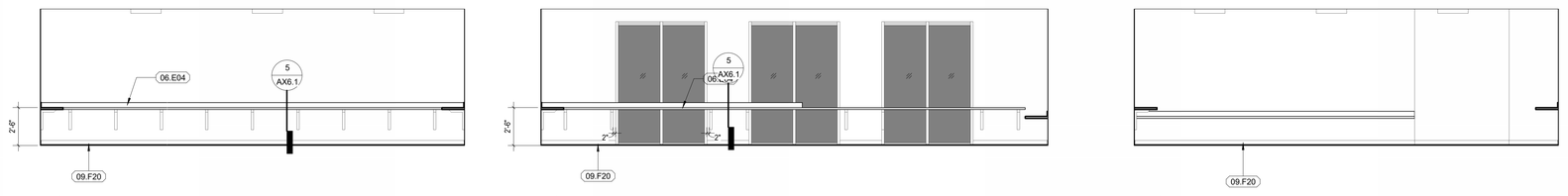


119 & 136 RESTROOM

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

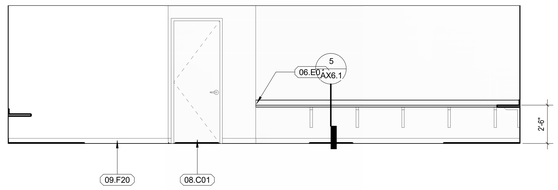
115 LAUNDRY EAST

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



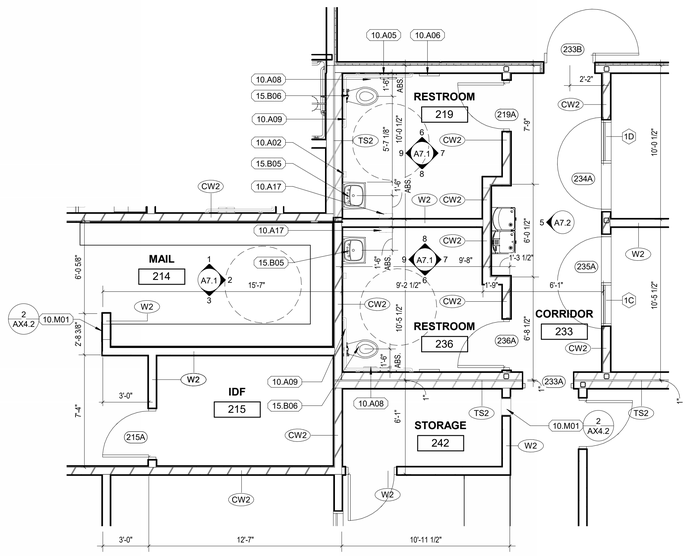
240 COMPUTER LAB NORTH

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



240 COMPUTER LAB WEST

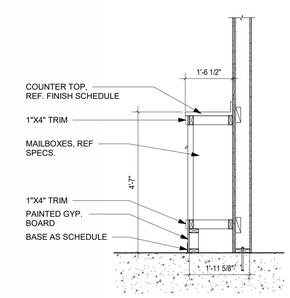
SCALE: 1/4" = 1'-0"



ENLARGED PLAN - 1ST FLOOR

5

SCALE 1/4" = 1'-0"



DETAIL

10

1/2" = 1'-0"

KEYNOTES

XX-XX

06.E04	COUNTERTOP, REF. FINISH SCHEDULE
08.C01	DOOR, SEE DOOR SCHEDULE
08.F01	STOREFRONT WINDOW, SEE WINDOW SCHEDULE
09.F20	RUBBER TOPSET BASE,TYP., 4" U.O.N.
10.A02	SOAP DISPENSER
10.A04	MIRROR, 44"x44"
10.A05	TOILET TISSUE DISPENSER
10.A06	TOILET SEAT COVER DISPENSER
10.A08	SANITARY NAPKIN DISPOSAL
10.A09	GRAB BAR.
10.A17	PAPER TOWEL DISPENSER
10.M01	2A:10BC MIN. RATED FIRE EXTINGUISHER, REF. 2/AX4.2
10.O24	MAILBOXES, USPS
15.B05	LAVATORY, SEE PLUMBING PLANS
15.B06	ACCESSIBLE LAVATORY, SEE PLUMBING PLANS
09.B03	COVED TILE BASE

GENERAL NOTES

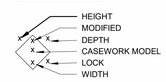
1. REFER TO REFLECTED CEILING PLAN FOR CEILING AND SOFFIT HEIGHTS.
2. REFER TO SHEET AX9.1 FOR CASEWORK ANCHORAGE DETAILS.
3. FOR ELEVATIONS THAT ARE NOT ILLUSTRATED MATCH FINISHES OF TYPICAL ROOM ELEVATION AND REFER TO INTERIOR FINISH SCHEDULE.
4. SEE SHEET G0.02 FOR ADDITIONAL SYMBOLS NOT SHOWN.
5. REFER TO INTERIOR FINISH SCHEDULE TYPICAL PAINT COLORS.
6. ALL EXPOSED STRUCTURAL STEEL IS TO COMPLY WITH "ARCHITECTURALLY EXPOSED STRUCTURAL STEEL FRAMING", REFER TO SPECIFICATION.
7. ALL ABSOLUTE DIMENSIONS ARE FROM FACE OF WALL FINISH
8. REFERENCE FINISH CARPENTRY AND MILLWORK SPECIFICATION SECTION 06 20 00 FOR CASEWORK FINISHES

MAILROOM NOTES

1. REFER TO INTERIOR FINISH DRAWINGS FOR MORE INFORMATION.
2. THESE DRAWINGS ILLUSTRATE 7 MAILBOX UNITS. PROVIDE A MINIMUM OF ONE TENANT MAILBOX PER UNIT (MINIMUM QUANTITY: 89).
3. PROVIDE A MINIMUM OF ONE PARCEL LOCKER PER 10 MAILBOXES AS REQUIRED BY USPS (MINIMUM QUANTITY: 10).
4. COORDINATE MAIL BOX NUMBERING WITH OWNER. NUMBER IN SEQUENCE FROM TOP TO BOTTOM AND LEFT TO RIGHT AS REQUIRED BY USPS.
5. CONFIRM LOCAL REQUIREMENTS WITH POSTMASTER BEFORE BEGINNING WORK.
6. TOP ROW OF MAILBOXES SHALL HAVE LOCKS CENTERED 67" A.F.F. MAX.
7. OUTGOING MAIL DROP SLOT SHALL NOT EXCEED 48" A.F.F. MAX.

SYMBOL LEGEND - ELEVATION

CASEWORK SYMBOL



NOTE: DIMENSIONS ARE TO THE NEAREST WHOLE NUMBER, CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION

FINISH KEYNOTE SYMBOL

XX-XX = INDICATES FINISH, SEE FINISH SCHEDULE SHEETS

GENERAL NOTES - BATHROOM

1. FOR MINIMUM REQUIRED CLEARANCES, GRAB BAR SIZES AND STANDARDS SEE SHEET AX8.32 TYPICAL ACCESSIBILITY STANDARDS.
2. FOR MAXIMUM RESTROOM ACCESSORY HEIGHTS AND PROJECTIONS SEE AX8.32 SHEET TYPICAL ACCESSIBILITY STANDARDS (TOILET ROOM ACCESSORIES).
3. FOR ELEVATIONS THAT ARE NOT ILLUSTRATED MATCH FINISHES OF TYPICAL ROOM ELEVATION AND REFER TO INTERIOR FINISH SCHEDULE.
4. FOR ROOM AND DOOR SIGNAGE, REFERENCE SHEET AX8.31
5. PROVIDE BACKING FOR ALL RESTROOM ACCESSORIES

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

MAIL AND RESTROOM ENLARGED PLANS

A7.1

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BIM 360://New Residence Hall_Kccd Bakersfield/S2103400AR KCCD New Residence Hall_DSA_BID..rvt
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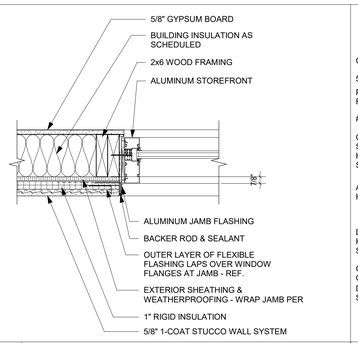
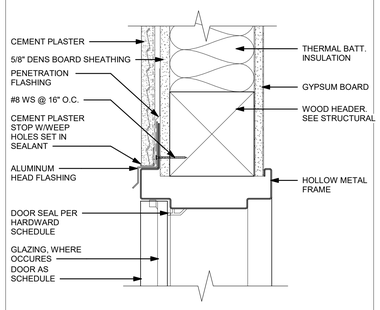
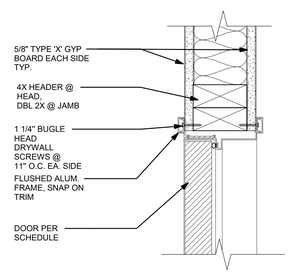


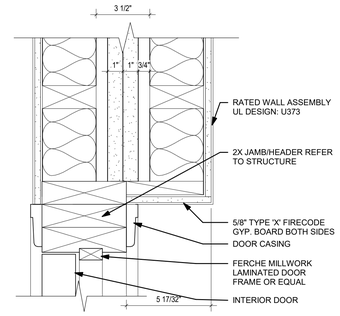
21 ALUMINUM STOREFRONT JAMB DETAIL
1 1/2" = 1'-0"



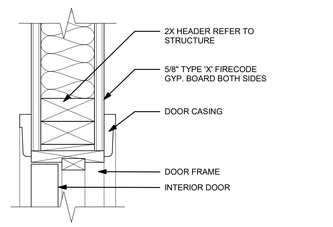
16 EXTERIOR HOLLOW METAL DOOR HEAD
3" = 1'-0"



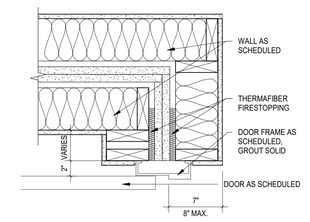
11 ALUM. INT. DOOR HD/JM @ WOOD
3" = 1'-0"



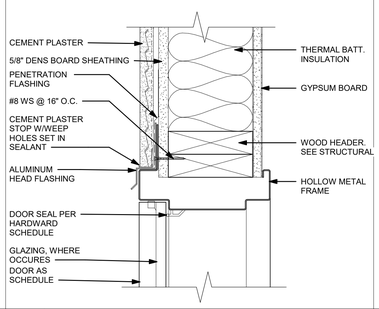
6 INTERIOR DOOR HD/JM (90 MIN)
3" = 1'-0"



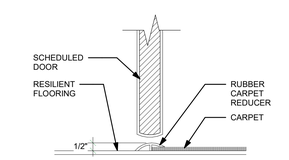
1 INTERIOR DOOR HD/JM
3" = 1'-0"



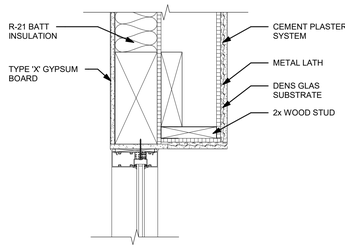
22 FIRE DOOR JAMB DETAIL A
1 1/2" = 1'-0"



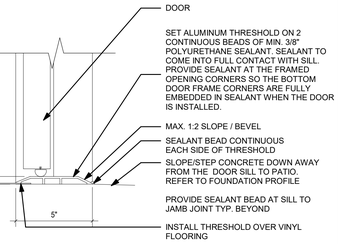
17 EXTERIOR HOLLOW METAL DOOR JAMB
3" = 1'-0"



12 RUBBER CARPET REDUCER
3" = 1'-0"



7 ALUMINUM STOREFRONT HEAD DETAIL
1 1/2" = 1'-0"



2 DOOR SILL AT ENTRY UNIT
3" = 1'-0"

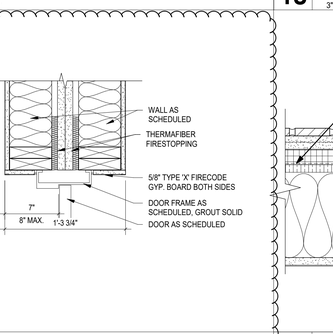
23 FIRE DOOR JAMB DETAIL B
1 1/2" = 1'-0"

18 EXT DOOR HEAD AT THIN BRICK
3" = 1'-0"

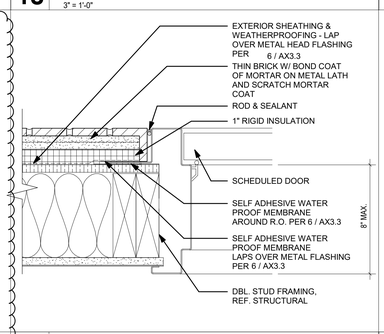
13 ALUM. REDUCER TRANSITION
3" = 1'-0"

8 INT. H.M. FRAME-HD/JM @ WOOD
3" = 1'-0"

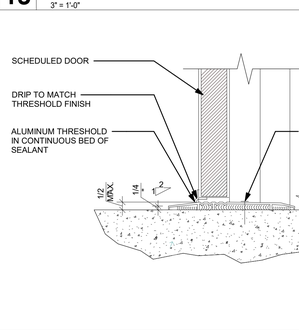
3 DOOR SILL AT PATIO
3" = 1'-0"



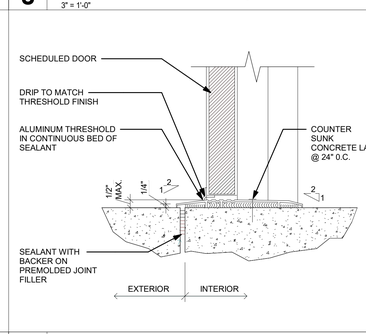
24 FIRE DOOR HEAD DETAIL C
1 1/2" = 1'-0"



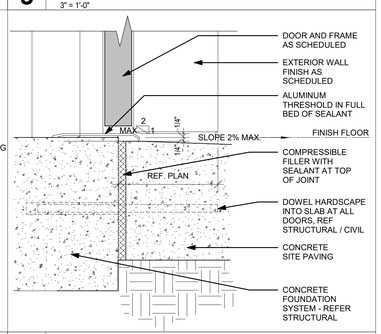
19 EXT DOOR JAMB AT THIN BRICK
3" = 1'-0"



14 METAL TRESHOLD INTERIOR
3" = 1'-0"



9 METAL TRESHOLD EXTERIOR
3" = 1'-0"



4 DOOR SILL AT SLAB
3" = 1'-0"

20 INTERIOR DOOR CASING
3" = 1'-0"

15 HOLLOW METAL FRAME ANCHOR
3" = 1'-0"

10 FLOORING TRANSITIONS1
3" = 1'-0"

5 INTERIOR THRESHOLD
6" = 1'-0"

NOT USED

CHECKED BY: Checker
DRAWN BY: Author

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124

FILE: 15 - C1

ENGINEER LOGO

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CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 03/22/2024

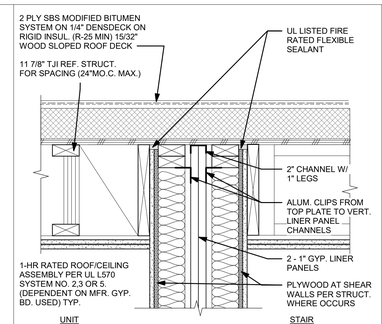
REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

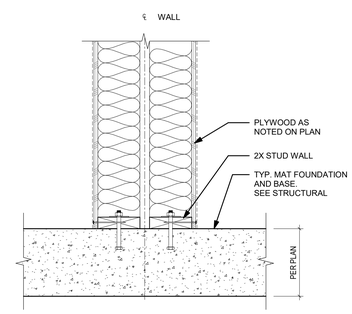
BID

DOOR & FRAME DETAILS

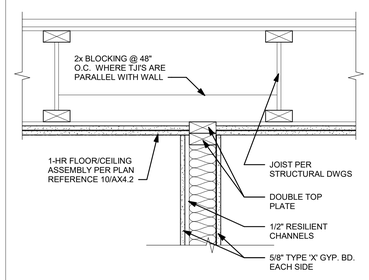
AX3.1



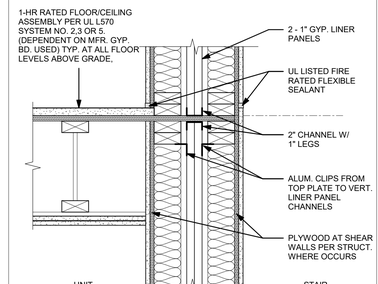
6 2 HR WALL AT ROOF / CEILING
1 1/2" = 1'-0"



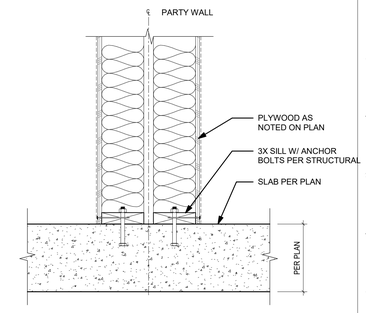
1 TYP. MAT SLAB AT PARTY WALL
1 1/2" = 1'-0"



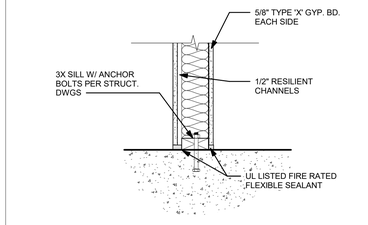
12 1 HR WALL AT TOP
1 1/2" = 1'-0"
U337 PER 13/AX4.1



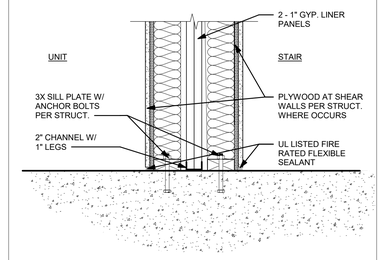
7 2 HR WALL AT INTERMEDIATE FLR.
1 1/2" = 1'-0"
U336 PER 13/AX4.1



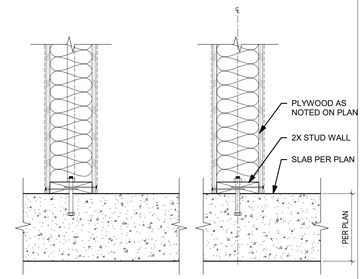
2 TYP. SHEAR WALL AT PODIUM SLAB
1 1/2" = 1'-0"



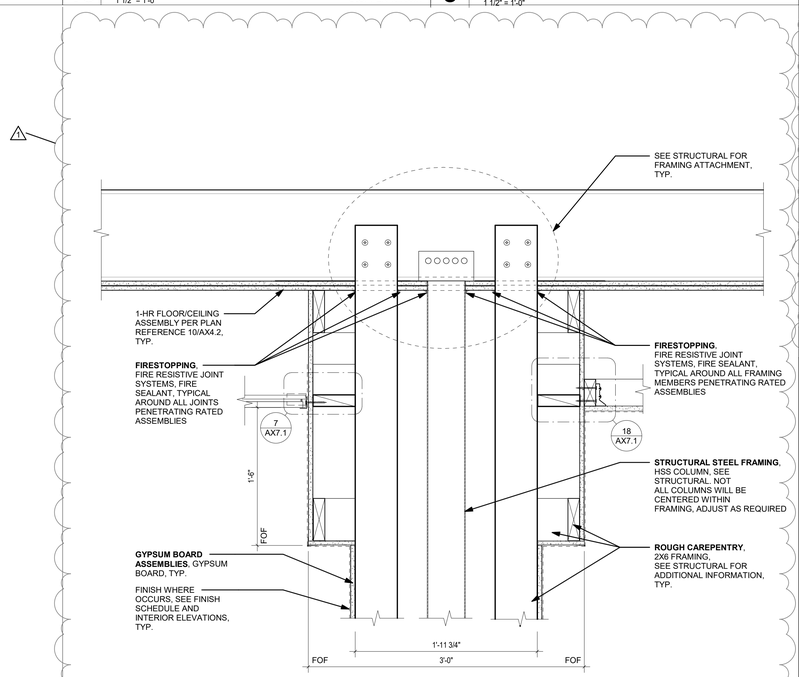
13 1 HR WALL AT BASE
1 1/2" = 1'-0"
U337 PER 13/AX4.1



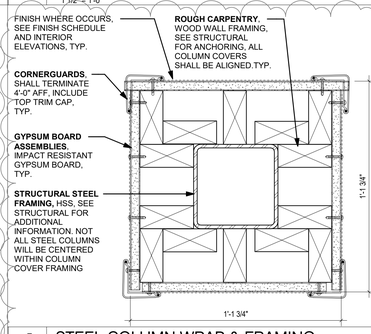
8 2 HR WALL AT BASE
1 1/2" = 1'-0"



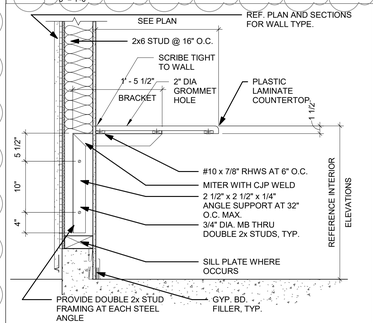
3 TYP. INTERIOR SHEAR WALL
1 1/2" = 1'-0"



9 BOXED SOFFIT
1 1/2" = 1'-0"



4 STEEL COLUMN WRAP & FRAMING
3" = 1'-0"



5 COUNTER
1" = 1'-0"

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15 - C1

ENGINEER LOGO

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

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S2103400AR

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BID

INTERIOR DETAILS

AX6.1

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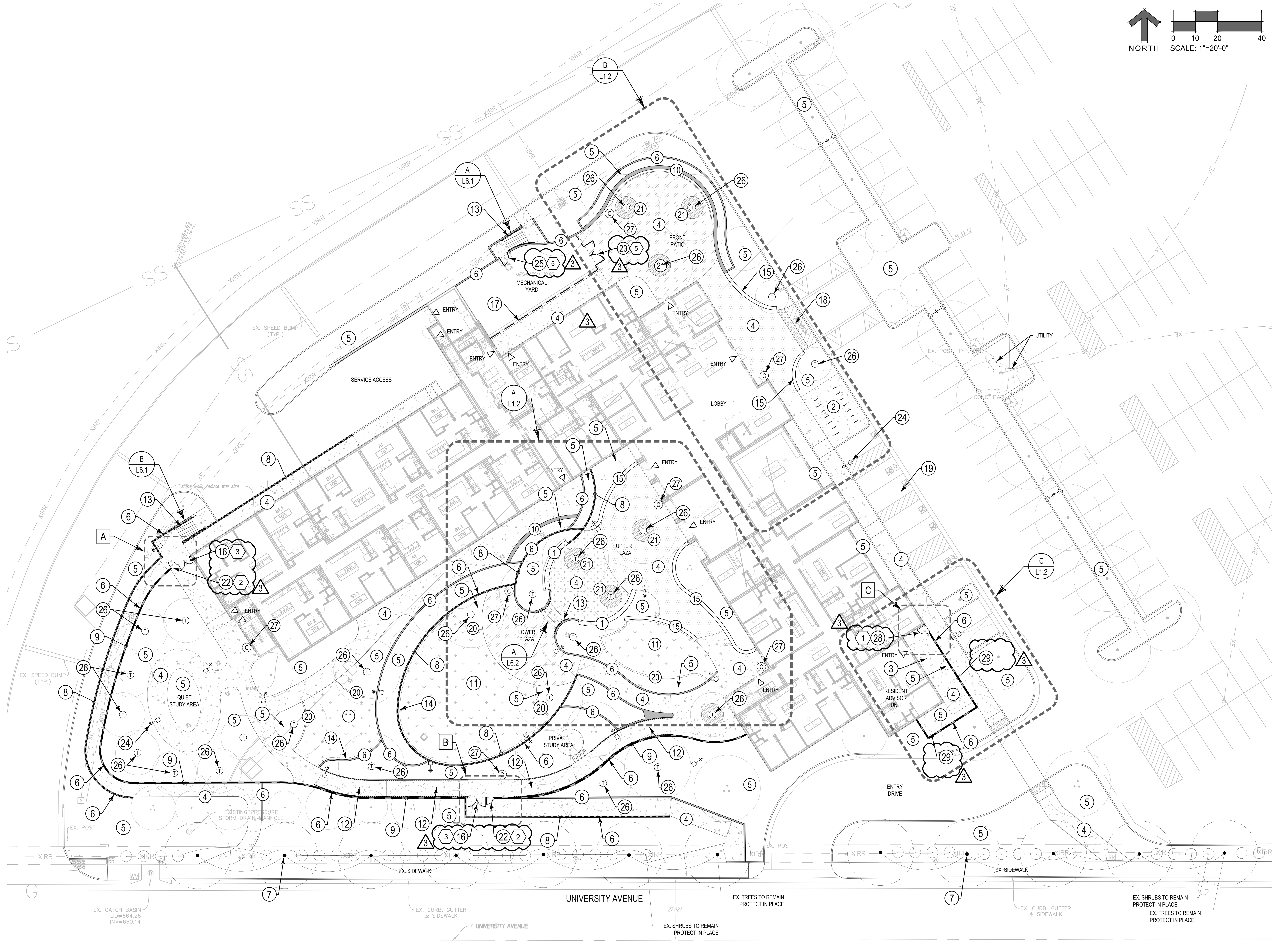


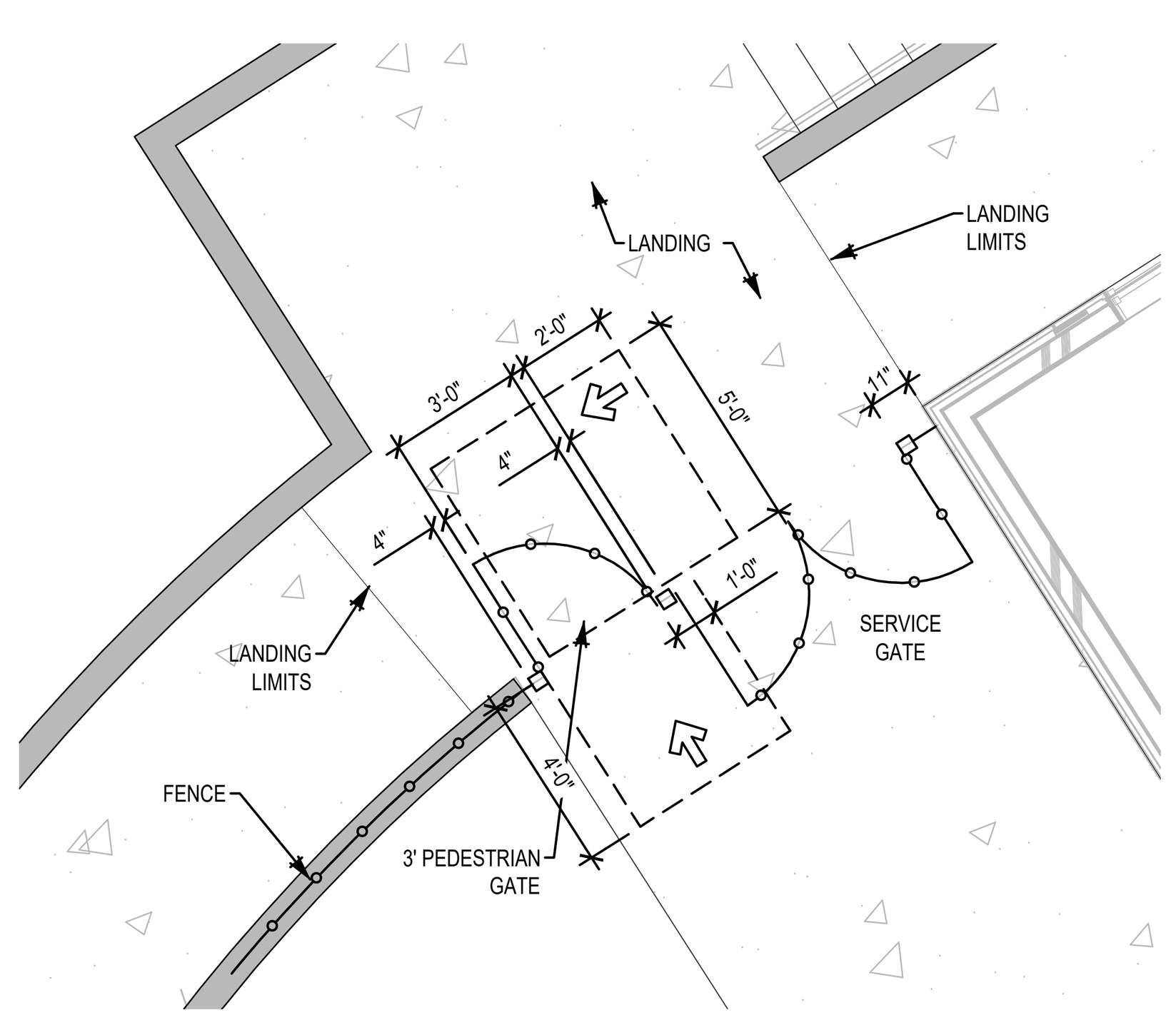
SITE LEGEND

	ITEM	DETAIL	GATE #	SYMBOL
1	LANDSCAPE COUNTER -	E/L6.5		
2	(28) BIKE PARKING SPACES -	B/L1.2		
3	RESIDENT ADVISOR PATIO -	C/L1.2		
4	CONCRETE PAVING -	-/L1.3, D/L6.2		
5	PLANTING AREA -			
6	RETAINING WALL (SEE CIVIL/ STRUCTURAL PLANS			
7	EXISTING TREE (TYP.) PROTECT IN PLACE			
8	GUARD RAIL ON TOP OF RETAINING WALL	E/L6.4		- - - - - - -
9	FENCE ON TOP OF RETAINING WALL -	A/L6.4		— — —
10	SEAT WALL, RETAINING (SEE CIVIL/ STRUCTURAL PLANS			
11	TURF LAWN -			
12	ADA RAMP & HANDRAIL -	A/L6.3		———
13	STAIR & HANDRAIL -	A/L6.1, B/L6.1, A/L6.2		------------
14	MOW CURB AT WALL -	K/L6.2		
15	CONCRETE BENCH -	A/L6.5		
16	FENCE SERVICE GATE (MANUAL LOCK & LATCH)	C/L6.4	3	
17	MECHANICAL YARD FENCE -	B/L6.41		
18	AT GRADE DROP OFF (SEE CIVIL PLANS)			
19	PARKING STRIPING (SEE CIVIL PLANS)			
20	MOW CURB -	L/L6.2		
21	TREE WELL -	D/L6.3		
22	FENCE PEDESTRIAN GATE - (GATES SHALL COMPLY WITH 11B-404) - (ACCESSIBLE GATE W/ CARD READER & DOOR CONTACT, REFER TO EE PLANS) - (INSTALL PANIC BAR)	D/L6.4	2	
23	MECHANICAL YARD FENCE & GATE - (MANUAL LOCK & LATCH)	A/L6.41	5	
24	OVERHEAD POLE LIGHTING (SEE ELECTRICAL ENG. PLANS)			
25	MECHANICAL YARD MAN GATE (MANUAL LOCK & LATCH)	C/L6.41	4	
26	TREE UPLIGHT (IN GRADE WELL UPLIGHT) (SEE EE PLANS FOR CONDUIT)			(T)
27	(7) TRASH CAN -	M/L6.5		(C)
28	FENCE PEDESTRIAN GATE - (GATES SHALL COMPLY WITH 11B-404)	D/L6.4	1	
29	FENCE ON TOP OF RETAINING WALL AT RA UNIT	G/L6.4		

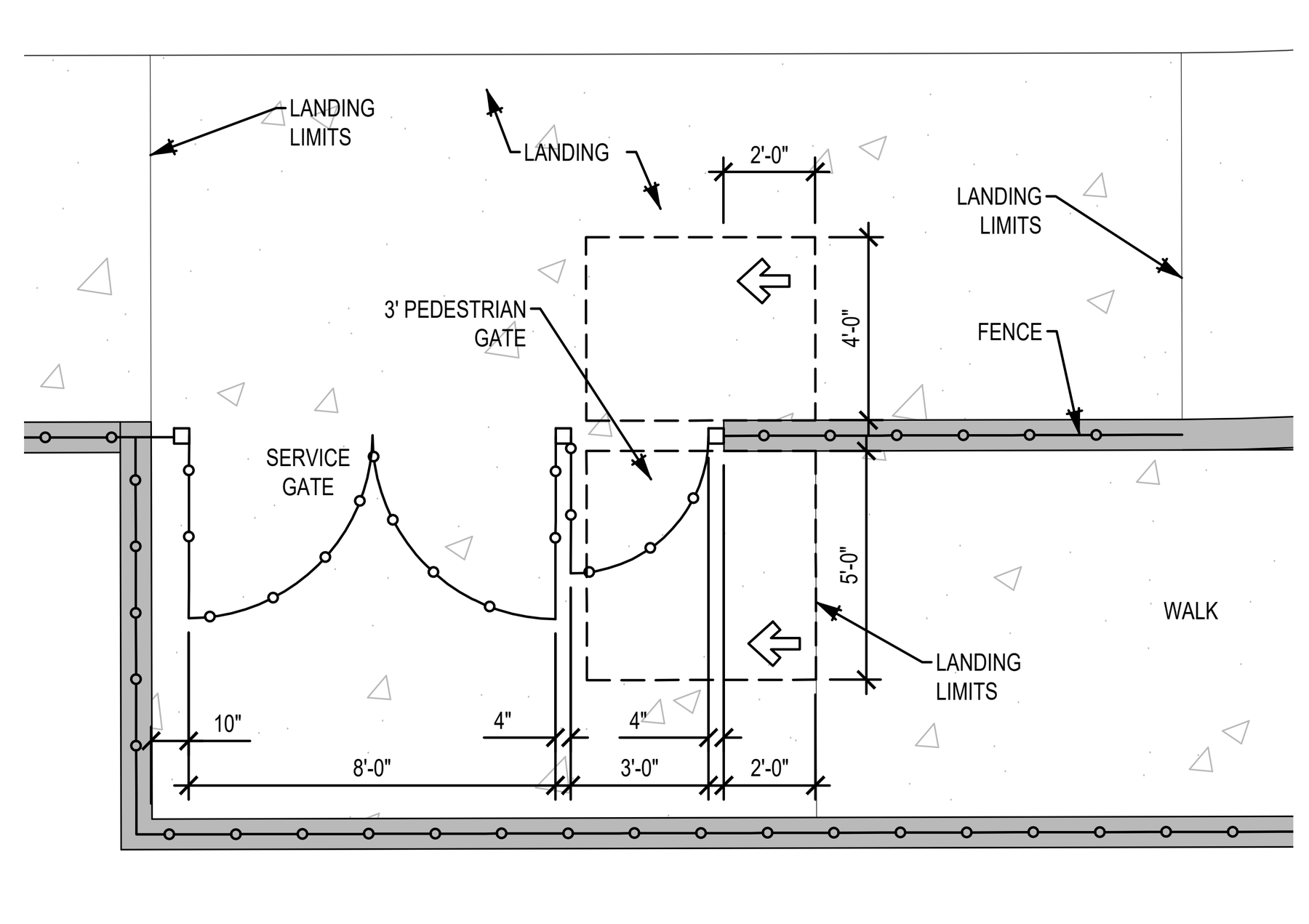
3

LANDSCAPE FENCE GATE SCHEDULE

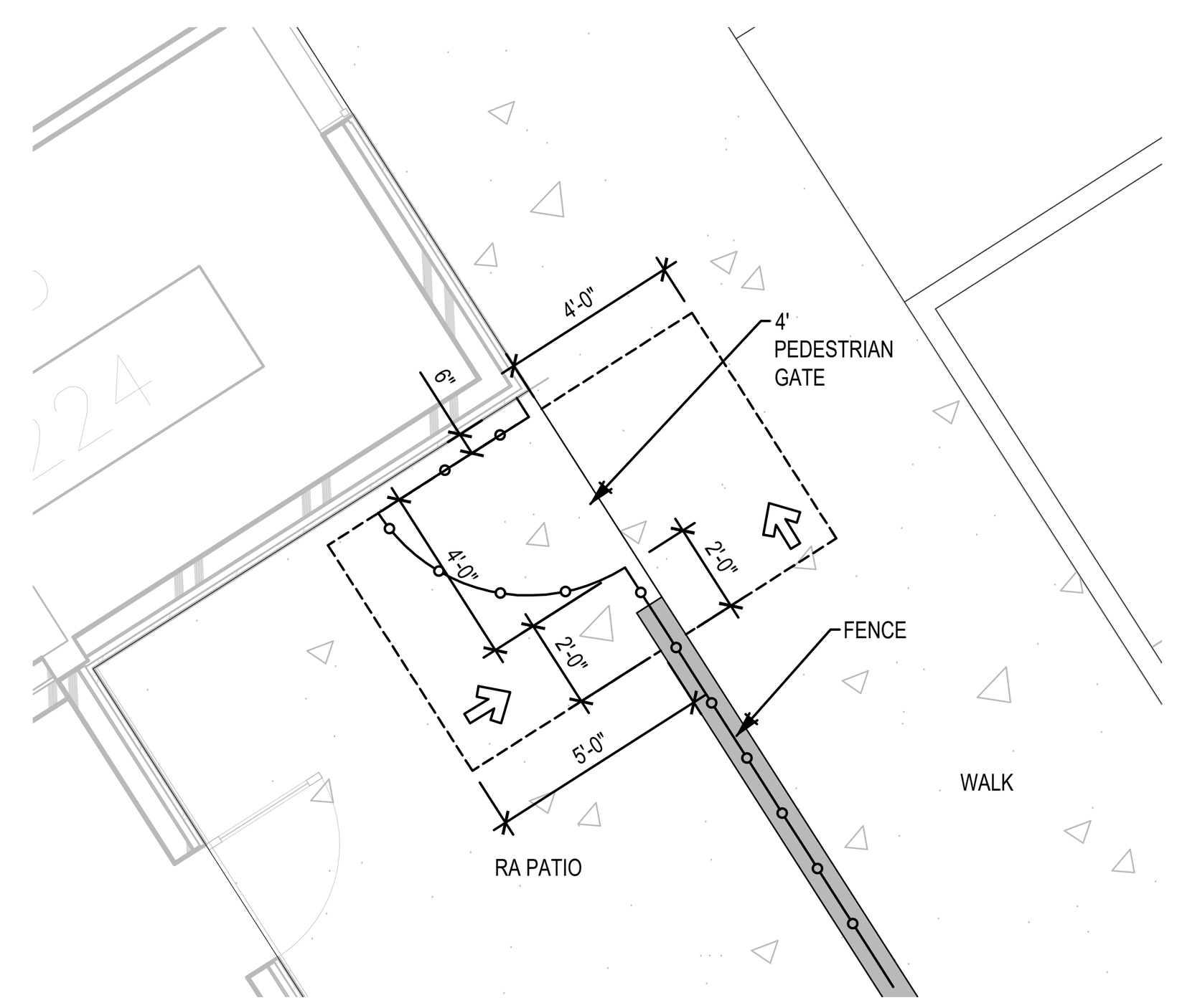
GATE #	WIDTH	HARDWARE SET	NOTES
1	4'-0"	L1	MAN GATE, MANUAL LOCK & HANDLE
2	3'-0"	L2	MAN GATE, PANIC BAR, ACCESSIBLE GATE W/ CARD READER
3	(2) 3'-0"	L3	UTILITY GATE, MANUAL LOCK & HANDLE
4	4'-3"	L4	MAN GATE, MANUAL LOCK & HANDLE
5	(2) 5-0"	L3	UTILITY GATE, MANUAL LOCK & HANDLE



A ADA GATE APPROACH - PLAN AT NORTH WEST FENCE NTS



B ADA GATE APPROACH - PLAN AT SOUTH FENCE NTS



C ADA GATE APPROACH - PLAN AT RA PATIO NTS

CHECKED BY:

DRAWN BY:

PBK

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

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DSA APPL. NO. 03-122124 FILE: 15-C1

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dan@sierradesignsla.com

LANDSCAPE ARCHITECT

LICENSED LANDSCAPE ARCHITECT DANIEL M. VEYNA LIC. 2409 EXP: 1-2026 STATE OF CALIFORNIA

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

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S2103400AR

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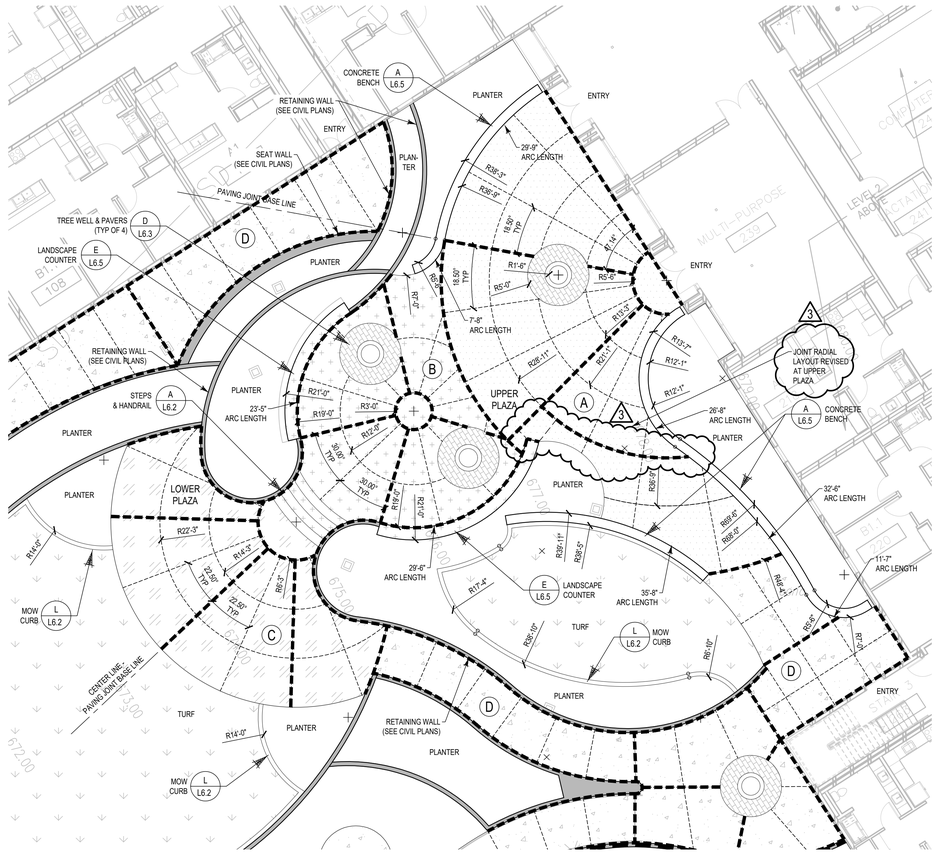
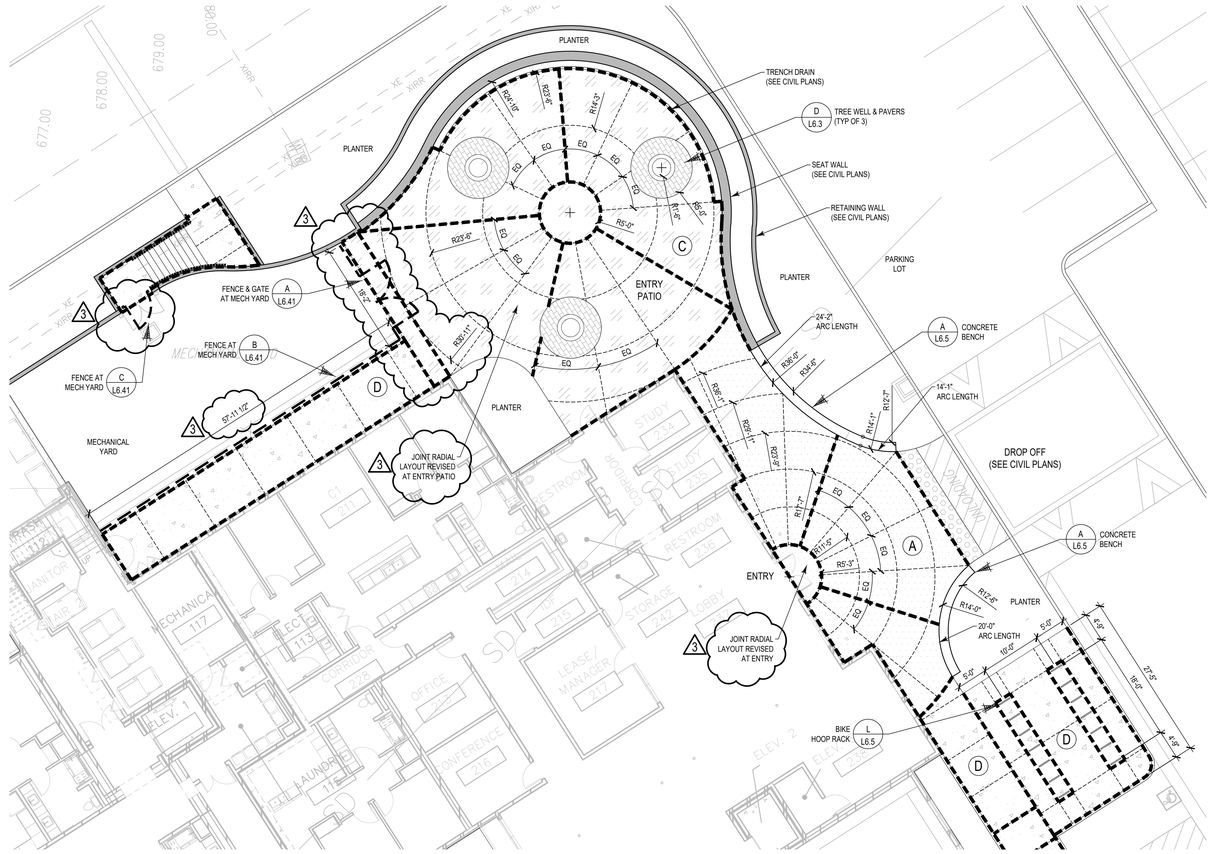
SITE PLAN

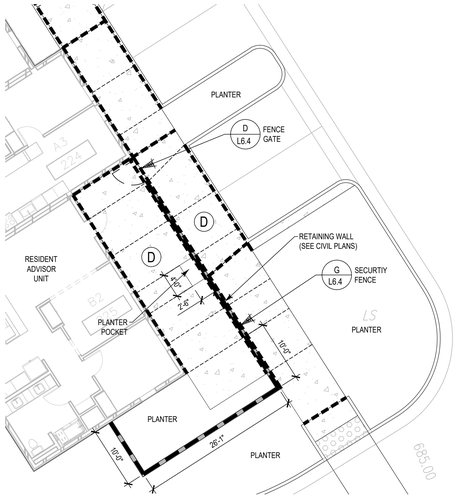
L1.1 3



A UPPER PLAZA & LOWER PLAZA - ENLARGED PLAN NTS



B ENTRY & ENTRY PATIO - ENLARGED PLAN NTS



C RESIDENT ADVISOR PATIO - ENLARGED PLAN NTS

PAVING LEGEND

- A — CONCRETE PAVING (COLOR 'A')
- B — CONCRETE PAVING (COLOR 'B')
- C — CONCRETE PAVING (COLOR 'C')
- D — CONCRETE PAVING (COLOR 'D')
- E — UNIT PAVERS AT TREE WELL
- F — CONTRACTION JOINT
- G — ISOLATION JOINT

PAVING FINISH SCHEDULE:

(PAVING 'A')
MATERIAL: CONCRETE PAVING
MFR: BOMANITE
MODEL: INTEGRAL COLOR
COLOR: CAFE AU LAIT

(PAVING 'B')
MATERIAL: CONCRETE PAVING
MFR: BOMANITE
MODEL: INTEGRAL COLOR
COLOR: BEECH

(PAVING 'C')
MATERIAL: CONCRETE PAVING
MFR: BOMANITE
MODEL: INTEGRAL COLOR
COLOR: APRICOT

(PAVING 'D')
MATERIAL: CONCRETE PAVING
NO INTEGRAL COLOR
(STD. CONCRETE COLOR)

(PAVING 'E')
MATERIAL: UNIT PAVERS
MFR: BELGARD
MODEL: CAMBRIDGE COBBLE
PATTERN: CAMBRIDGE COBBLE, PATTERN B
COLOR: TOSCANA

CHECKED BY:

DRAWN BY:

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
FRESNO
7790 North Palm Avenue
Fresno, CA 93711
559-448-8400 P
559-448-8467 F

NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15-C1

LANDSCAPE ARCHITECT LOGO
Sierra Designs, Inc.
Landscape Architecture • Planning
113 N. Church Street, Suite 310
Visalia, CA 93291
ph: 559.733.3650
cell: 559.730.1917
dan@sierradesignsla.com

LANDSCAPE ARCHITECT

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

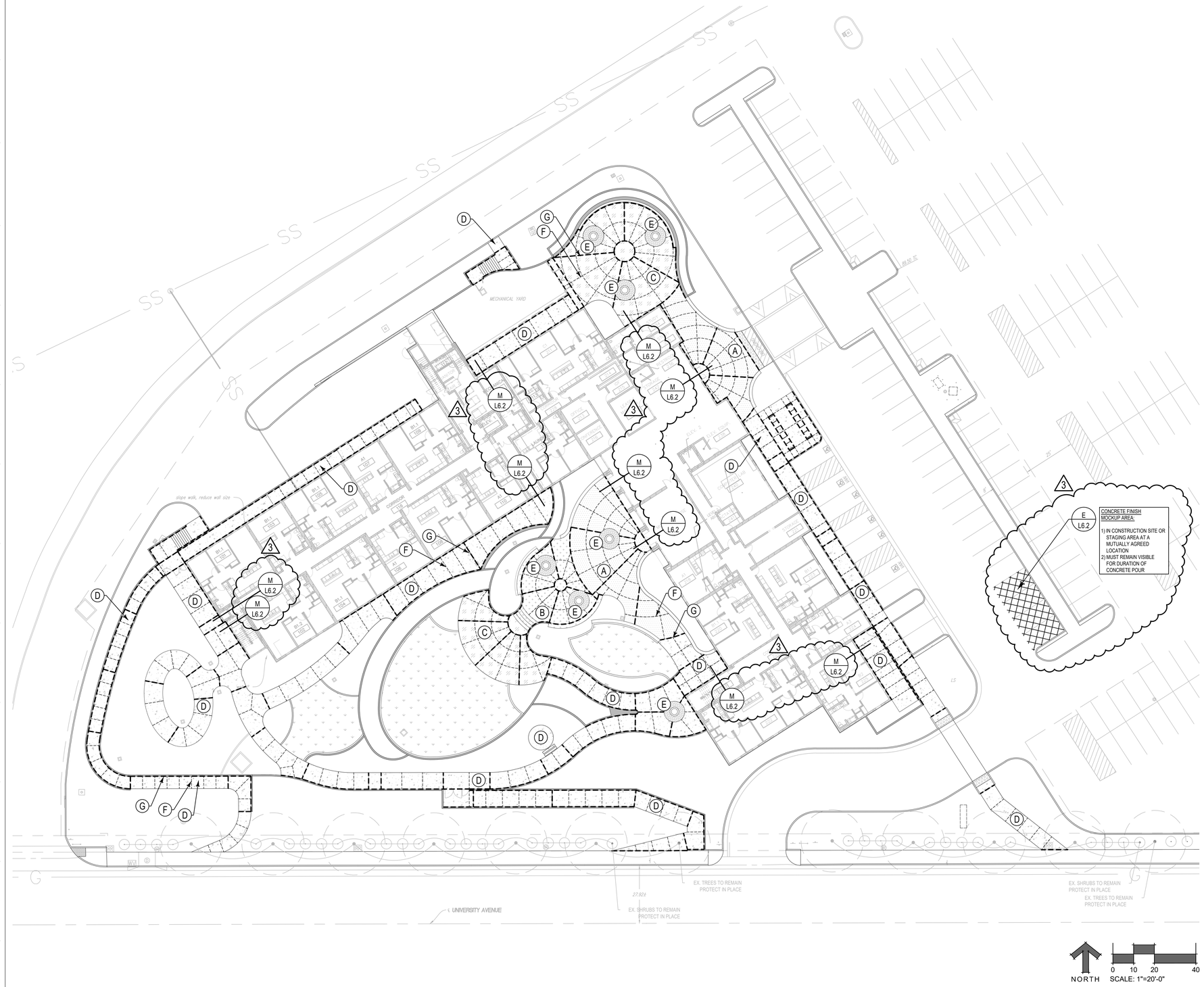
REVISIONS

#	DESCRIPTION	DATE
3	ADDENDUM No. 6	04/11/2024

BID

SITE PLAN - ENLARGEMENTS

L1.2 3



PAVING LEGEND

- (A) CONCRETE PAVING (COLOR 'A')
- (B) CONCRETE PAVING (COLOR 'B')
- (C) CONCRETE PAVING (COLOR 'C')
- (D) CONCRETE PAVING (COLOR 'D')
- (E) UNIT PAVERS AT TREE WELL
- (F) CONTRACTION JOINT
- (G) ISOLATION JOINT

PAVING FINISH SCHEDULE:

(PAVING 'A')
MATERIAL: CONCRETE PAVING
MFR: BOMANITE
MODEL: INTEGRAL COLOR
COLOR: CAFE AU LAIT

(PAVING 'B')
MATERIAL: CONCRETE PAVING
MFR: BOMANITE
MODEL: INTEGRAL COLOR
COLOR: BEECH

(PAVING 'C')
MATERIAL: CONCRETE PAVING
MFR: BOMANITE
MODEL: INTEGRAL COLOR
COLOR: APRICOT

(PAVING 'D')
MATERIAL: CONCRETE PAVING
NO INTEGRAL COLOR
(STD. CONCRETE COLOR)

(PAVING 'E')
MATERIAL: UNIT PAVERS
MFR: BELGARD
MODEL: CAMBRIDGE COBBLE
PATTERN: CAMBRIDGE COBBLE, PATTERN B
COLOR: TOSCANA

CHECKED BY:

DRAWN BY:

PBK

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PBK.com
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LANDSCAPE ARCHITECT

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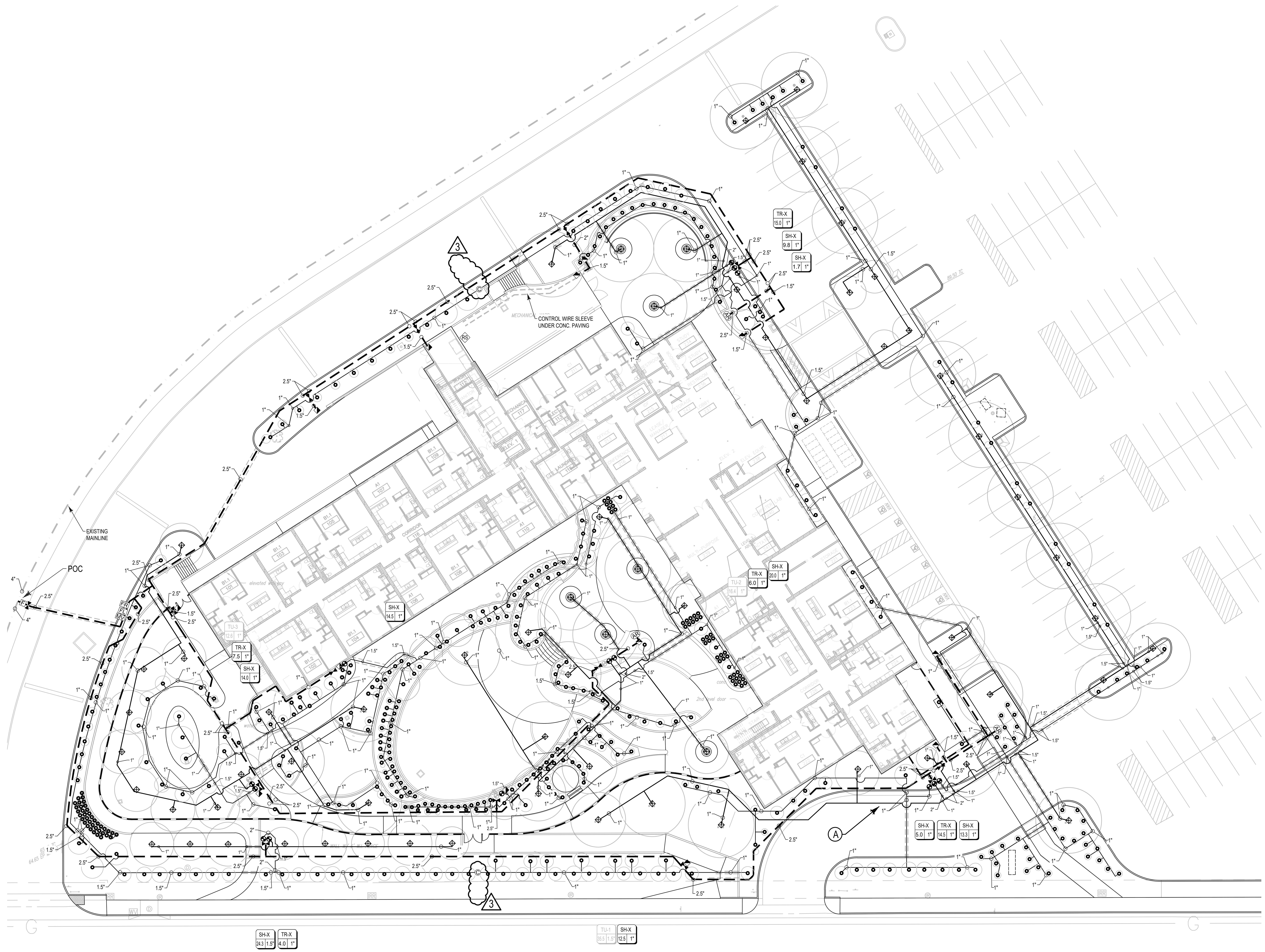
BID

SITE PLAN - PAVING FINISHES

L1.3 (3)



IRRIGATION LEGEND

SYM.	MFR.	DESCRIPTION	PRODUCT INFORMATION	DETAIL
C	RAINBIRD STRONGBOX	CONTROLLER ENCLOSURE	ESPLXIVM, IQ4G-USA CARTRIDGE SB-22SS, S.S. TOP ENTRY,	K/L4.1, G/L4.1
RS	RAINBIRD	WEATHER SENSOR	WR2-RFC	L/L4.1
MV	RAINBIRD	MASTER VALVE	200-PESBIVM-PRS-D	I/L4.1, C/L4.1
FL	RAINBIRD	FLOW SENSOR	2", UFS200 DECODER LXIVMSEN	C/L4.1
FR	EZ FLO	FERTIGATION SYSTEM	EZKIT-5, 5 GAL. TANK	D/L4.1
	NIBCO	GATE VALVE VALVE BOX HANDLES	1"-3", T-113-BHW, NON-RISING STEM 10" ROUND BOX (2) 'U' HANDLE (3'-0" MIN.)	B/L4.1, E/L4.1
	LEEMCO	GATE VALVE VALVE BOX HANDLES	LMV-BB FOR 4" & GREATER 10" ROUND BOX (2) SQ. NUT HANDLE (4'-0" MIN.)	
	RAINBIRD	QUICK COUPLER Q.C. KEY HOSE SWIVEL SWING JOINT	44-NP, PURPLE LOCKING COVER (3) QUICK COUPLER KEYS (#44-K) (3) HOSE SWIVELS (#SH-1) TSJ12	M/L4.1
AR	CRISPIN	AIR & VACUUM RELEASE VALVE	1" IC-10 COMBINATION VALVE AT HIGH POINTS & DEAD ENDS ON MAINLINE	J/L4.1
F	AMIAD	FILTER	2", M102-C, 750	R/L4.1
	RAINBIRD	CONTROL VALVE	100-PESBIVM-PRS-D, (1", 0-20 GPM) 150-PESBIVM-PRS-D, (1 1/2", 20-50 GPM) 200-PESBIVM-PRS-D, (2", 50-75 GPM)	I/L4.1, H/L4.1, F/L4.1
	RAINBIRD	SURGE PROTECTION	LXIVMSD, (ONE EVERY 500FT OR 15 DEVICES)	
	RAINBIRD	POP-UP BODY NOZZLE SWING JOINT	RD06-S-P45, R-VAN14 (8'R) (0.63 GPM, 8'-14'R, 180°, 45 PSI) TSJ12	C/L4.2
	RAINBIRD	POP-UP BODY NOZZLE SWING JOINT	RD06-S-P45, R-VAN14 (10'R) (0.63 GPM, 8'-14'R, 180°, 45 PSI) TSJ12	C/L4.2
	RAINBIRD	POP-UP BODY NOZZLE SWING JOINT	RD06-S-P45, R-VAN18 (14'R) (1.1 GPM, 13'-18'R, 180°, 45 PSI) TSJ12	C/L4.2
	RAINBIRD	POP-UP BODY NOZZLE SWING JOINT	RD06-S-P45, R-VAN24 (18'R) (1.7 GPM, 17'-24'R, 180°, 45 PSI) TSJ12	C/L4.2
	RAINBIRD	ROOT WATERING SYSTEM SHRUB	RWS-S-B-C-1401, 10", 0.25 GPM, 1 PER TREE, BUBBLER & CHECK VALVE, RWS- SAND SOCK	B/L4.2
	RAINBIRD	ROOT WATERING SYSTEM TREE	RWS-S-B-C-1401, 10", 0.25 GPM, 2 PER TREE, BUBBLER, CHECK VALVE, SWING ARM, RWS-SOCK SAND SOCK	A/L4.2
			RWS-B-C-1401, 36", 0.25 GPM, 2 PER TREE, BUBBLER, CHECK VALVE, SWING ARM, RWS-SOCK SAND SOCK	

NEW MAINLINE	1"-3" MAINLINE, SCH 40 PVC, SOLVENT WELD 4" CL 200 PVC, SELF RESTRAINED FITTINGS	F/L4.2, O/L4.1
EXISTING MAINLINE	4", CONTRACTOR TO VERIFY PIPE MATERIAL & SIZE.	
LATERAL LINES	SCH 40 PVC, SIZE AS SHOWN (1" MIN), MAX VELOCITY 3.75 FPS.	O/L4.1
2-WIRE NOT SHOWN	2-WIRE CONTROLLER WIRE IN 1 1/2" CONDUIT ALL SPLICES TO USE DBY-6 SPLICE KITS & COIL 72" MIN. ADDITIONAL WIRE IN BOX PROVIDE PULL BOXES AT: 1) 200' O.C. MAX 2) ALL SPLICE LOCATIONS	O/L4.1, P/L4.1, Q/L4.1
SLEEVING	SCH. 40 PVC, 2 TIMES LARGER THAN IRRIGATION LINE. BURY 24" UNDER DRIVING SURFACE. SEE SPECS/ DETAILS	N/L4.1

SYM.	MFR.	DESCRIPTION	PRODUCT INFORMATION	DETAIL
C	NDS	INLINE CHECK VALVE SIZE PER LATERAL LINE SIZE	1002-10, 1" VALVE 1002-15, 1 1/2" VALVE 1002-20, 2" VALVE	D/L4.2

3

LEGEND NOTES:
DETAIL CALL OUTS ARE FOR CONVENIENCE ONLY. CONTRACTOR SHALL REVIEW ALL DETAILS & APPLY ALL REQUIREMENTS, AS WELL AS REQUIREMENTS CONTAINED IN NOTES, CALL OUTS, & SPECIFICATIONS.

IRRIGATION NOTES:
1) IRRIGATION EQUIPMENT VALVE BOXES TO BE (MANUFACTURER: APPLIED ENGINEERING PRODUCTS).

CONTROLLER ENCLOSURE NOTE:
1) CONTROLLER ENCLOSURE ASSEMBLY - SUPPLIED BY KTS (RAIN BIRD AUTHORIZED SERVICE PROVIDER) SITE SIGN OFF REQUIRED CONTACT VINNY OSBORN AT KERN TURF SUPPLY, INC.

RAINBIRD EQUIPMENT PURCHASING NOTE:
1) ALL RAIN BIRD PURCHASES MUST BE SUBMITTED TO MARCOS RODRIQUEZ. (REWARDS PROGRAM) EMAIL: MARCOS.RODRIGUEZ@BAKERSFIELDCOLLEGE.EDU

IRRIGATION PLAN KEYNOTES

(A) LOCATE MAINLINE, LATERAL LINE, & IRRIGATION EQUIPMENT IN PLANTER AREA. SHOWN HERE FOR CLARITY.

-

-

TR-5 ← VALVE NUMBER
6.8 | 3/4" ← VALVE SIZE
APPROX. GALLONS PER MINUTE (GPM)

VALVE NUMBER LEGEND
TR - TREE
TU - TURF
GR - GROUNDCOVER
SH - SHRUB
ES - ESTABLISHMENT/ GROW IN

SCH 40 LATERAL PIPE SIZING FOR IN-FIELD ADJUSTMENTS

(IN NO CASE IS VELOCITY TO EXCEED 3.75 F.P.S.)

0 - 10	GPM: 1"
10 - 23	GPM: 1.5"
23 - 38	GPM: 2"
38 - 57	GPM: 2.5"
57 +	GPM: 3"

- SIZE PIPE PER PLAN

SYSTEM DESIGN PARAMETERS:
- PRESSURE AT POINT OF CONNECTION:
LOW: 75 PSI
HIGH: 100 PSI
- MAXIMUM DESIGN VOLUME: 50 GPM
- MAXIMUM DESIGN OPERATING PRESSURE: 100 PSI
- PRESSURE TEST MIN. REQ. @ 110 PSI FOR 48 HOURS

NORTH
0 10 20 40
SCALE: 1"=20'-0"

CHECKED BY:

DRAWN BY:

PBK
ARCHITECT PBK Architects, Inc.
PBK.com
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7790 North Palm Avenue
Fresno, CA 93711
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NEW RESIDENCE HALL

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DSA APPL. NO. 03-122124 FILE: 15-C1

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dan@sierradesignsla.com

LANDSCAPE ARCHITECT
LICENSED LANDSCAPE ARCHITECT
DANIEL M. VEYNA
LIC. 2409
EXP: 1-2026
STATE OF CALIFORNIA

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

REVISIONS

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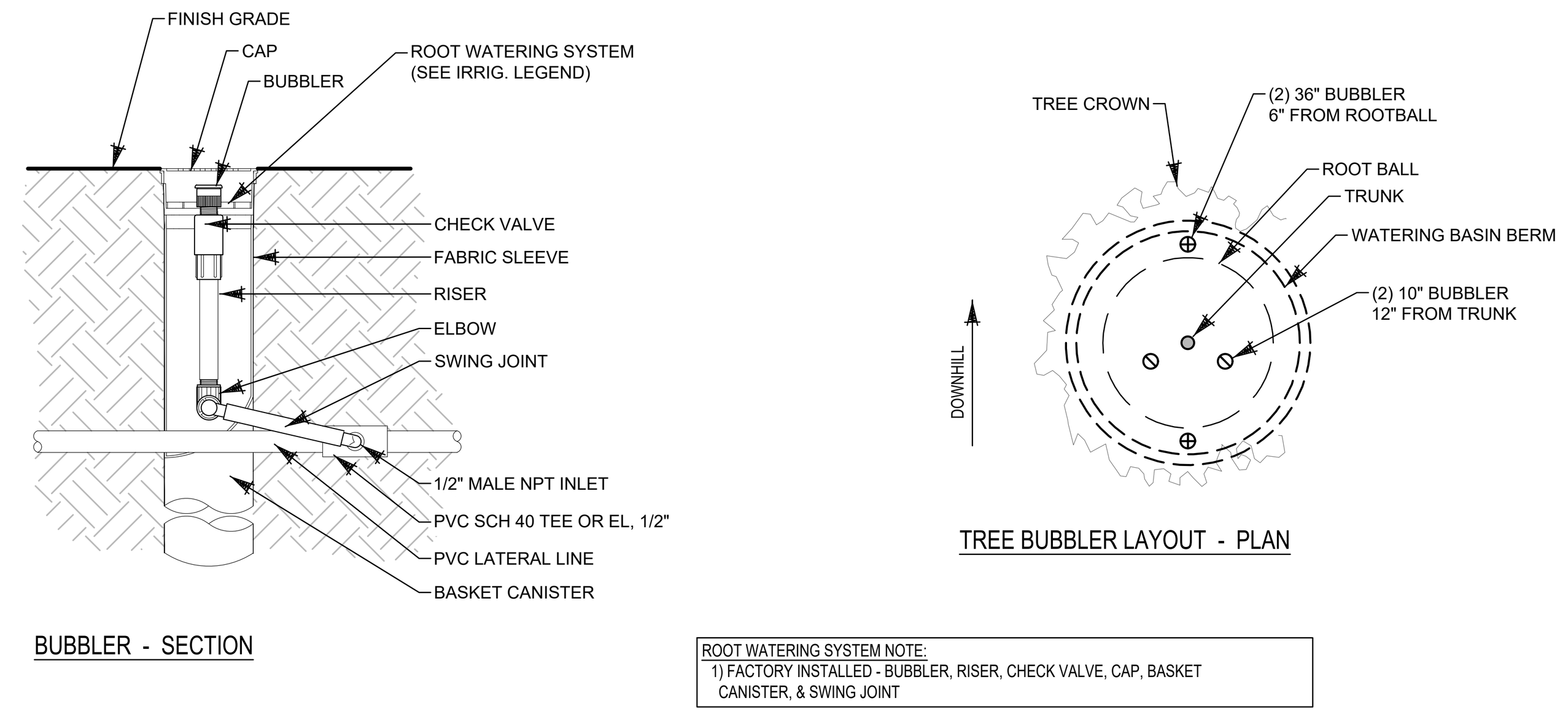
3	ADDENDUM No. 6	04/11/2024

BID

IRRIGATION PLAN TREES & SHRUBS

L2.1 3

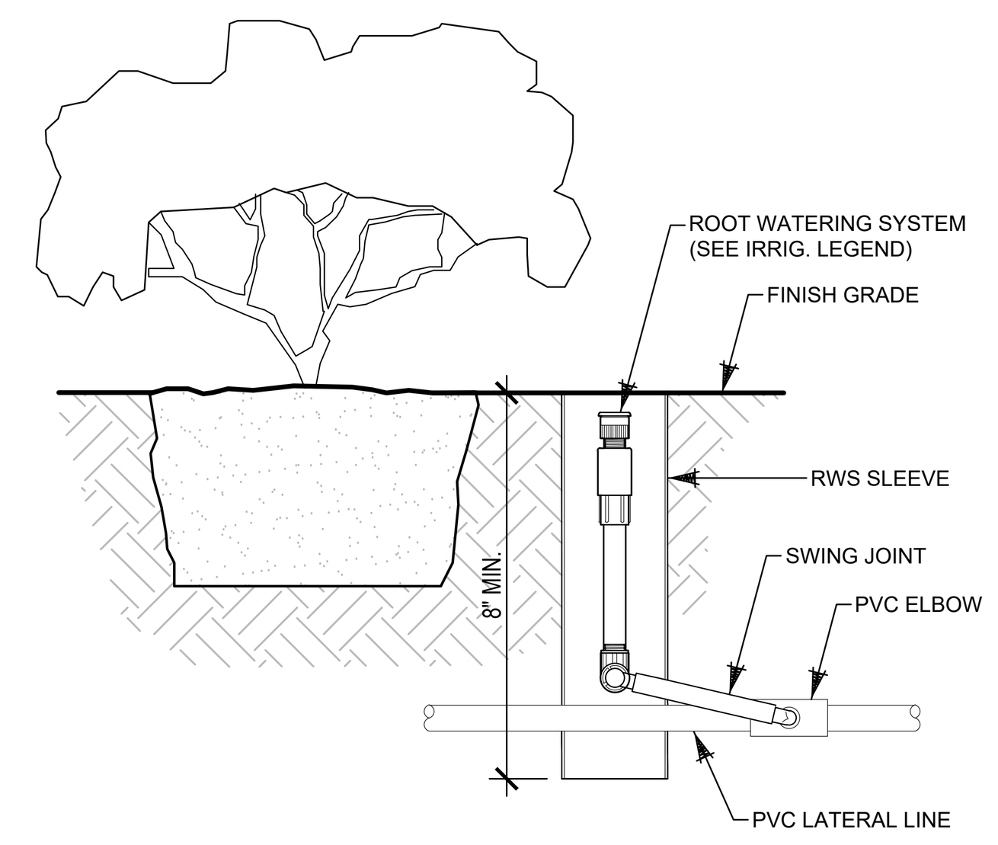


BUBBLER - SECTION

TREE BUBBLER LAYOUT - PLAN

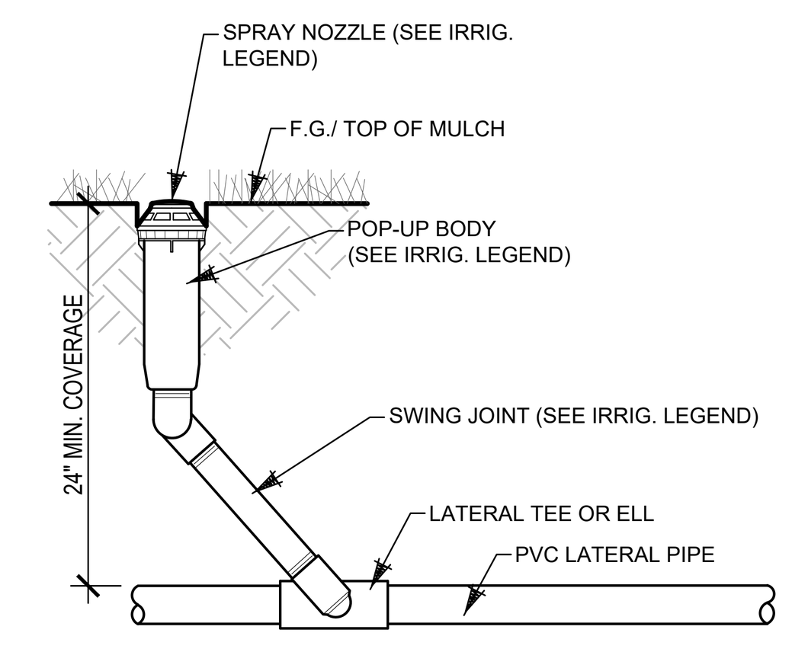
ROOT WATERING SYSTEM NOTE:
1) FACTORY INSTALLED - BUBBLER, RISER, CHECK VALVE, CAP, BASKET CANISTER, & SWING JOINT

A TREE ROOT WATERING - SECTION/ PLAN NTS



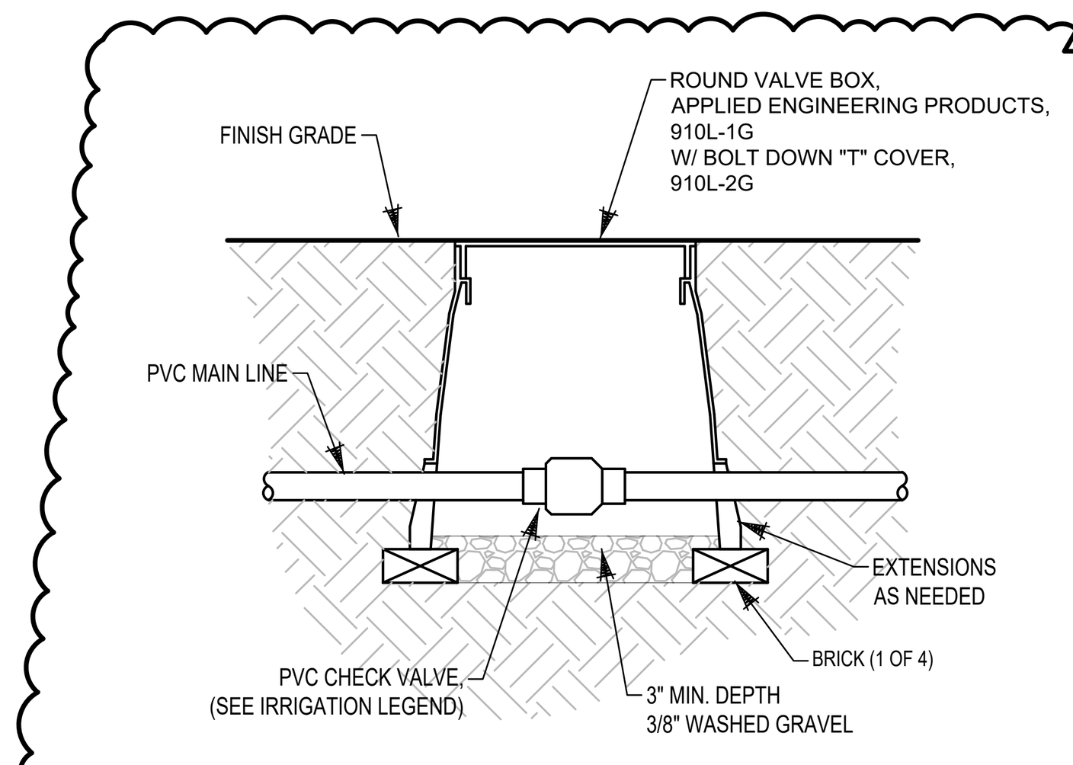
ROOT WATERING SYSTEM NOTE:
1) FACTORY INSTALLED - BUBBLER, RISER, CHECK VALVE, CAP, BASKET CANISTER, & SWING JOINT

B SHRUB ROOT WATERING - SECTION NTS



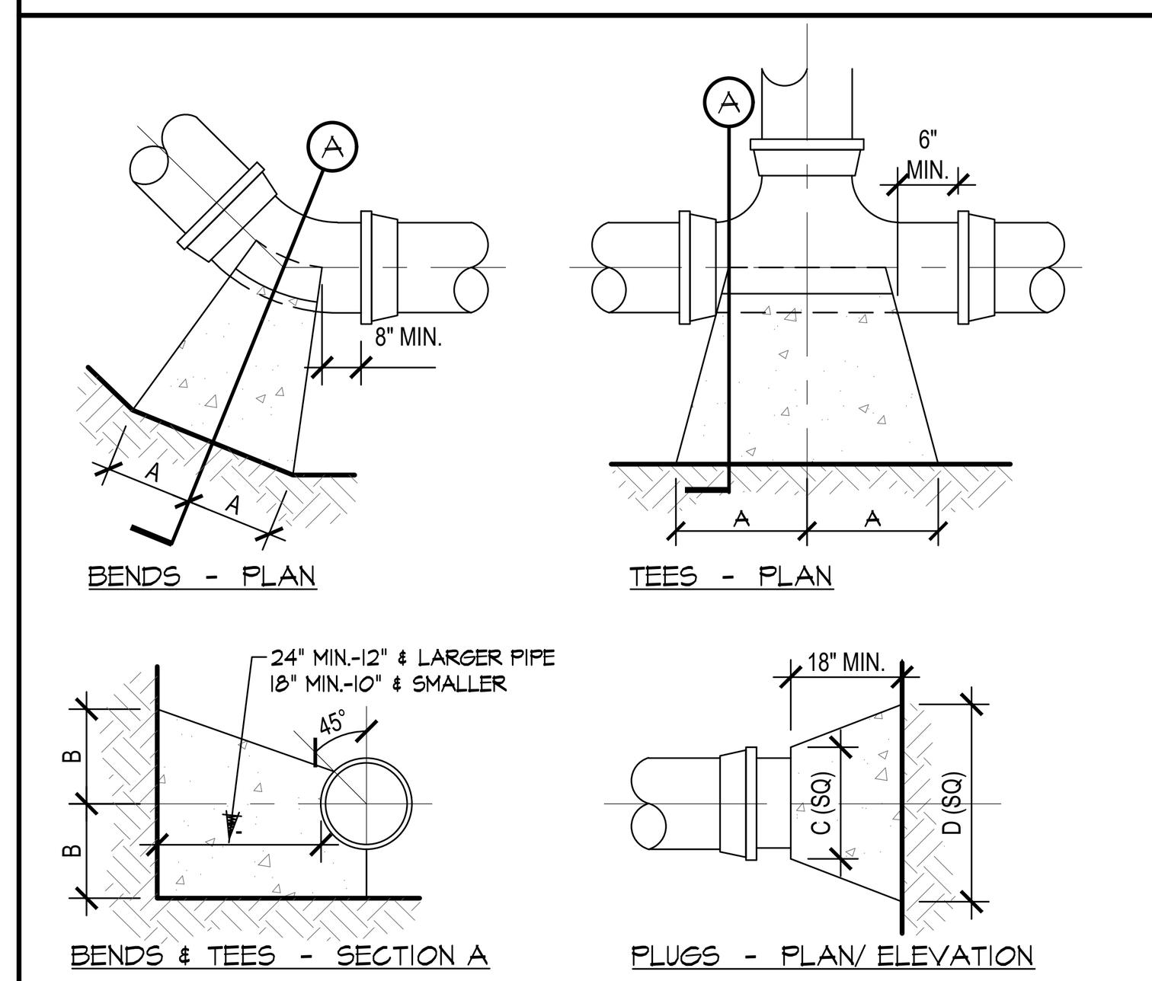
NOTE:
1) SIZE FITTINGS TO MATCH ROTOR HEAD INLET SIZE
2) HAND BUILD SWING JOINTS.

C POP-UP SPRAY - SECTION NTS



NOTE:
1) CONTRACTOR TO PURCHASE 5 MORE CHECK VALVES THAN CALLED OUT ON IRRIGATION PLANS.
2) SIZE CHECK VALVE TO MATCH LATERAL LINE SIZE

D INLINE CHECK VALVE - SECTION AT LATERAL LINE NTS



BENDS - PLAN

TEES - PLAN

BENDS & TEES - SECTION A

PLUGS - PLAN/ ELEVATION

STANDARD THRUST BLOCKS FOR WATER MAINS

TYPE	SIZE	1/4 BEND A	1/4 BEND B	1/8 BEND A	1/8 BEND B	1/16 BEND A	1/16 BEND B	TEES A	TEES B	PLUGS C	PLUGS D
TYPE I 4000 PSF SOIL	6"	8"	10"	6"	8"	3"	8"	8"	8"	10"	15"
	8"	12"	12"	8"	10"	5"	9"	9"	12"	12"	20"
	10"	16"	14"	10"	12"	6"	10"	11"	14"	14"	14"
	12"	19"	16"	12"	14"	8"	11"	14"	16"	16"	30"
	14"	23"	18"	14"	16"	10"	12"	16"	18"	18"	34"
	16"	26"	20"	16"	18"	11"	13"	18"	20"	20"	38"
TYPE II 2000 PSF SOIL	6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"
	8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
	10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
	12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
	14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
	16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"

NOTE: BASE IN 100 PSI STATIC PRESSURE PLUS A.W.W.A. WATER HAMMER. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.

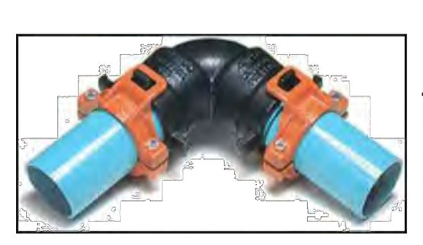
NOTES:
1. SUPPLY LINES 3-INCHES IN DIAMETER & LARGER SHALL RECEIVE CONCRETE THRUST BLOCKS.
2. FORM THRUST BLOCKS PER PLUMBING SPECIFICATIONS
3. INSTALL ALL PIPE IN STRICT ACCORDANCE W/ PIPE MANUFACTURERS INSTRUCTIONS & RECS,
4. FOR OTHER IRRIGATION EQUIPMENT SEE DETAILS
5. STRAIGHT RUNS OF GASKETED PIPE TO BE THRUST BLOCKED AT 40' O.C. MIN. & 100' O.C. MAX.

E THRUST BLOCKING NTS

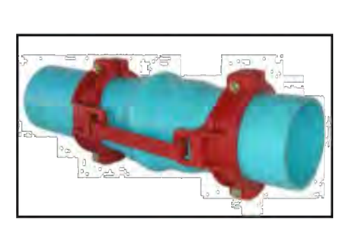
Leemco, INC.
Piping Solutions

10-YEAR Warranty Parts & Labor ask for details

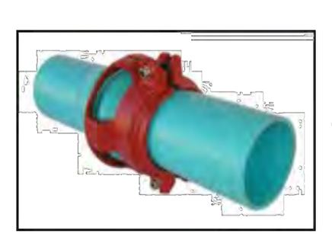
Joint Restraint System
For IPS, DPS & DIN Plastic Pipe



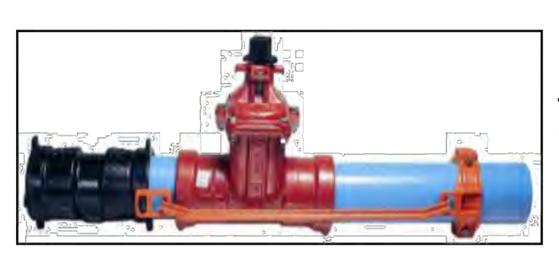
PIPE TO FITTING
LH-Series... 2" - 12" IPS Pipe Sizes
LHD-Series... 4" - 24" DPS Pipe Sizes
DLH-Series... 63 - 400MM DIN Pipe Sizes



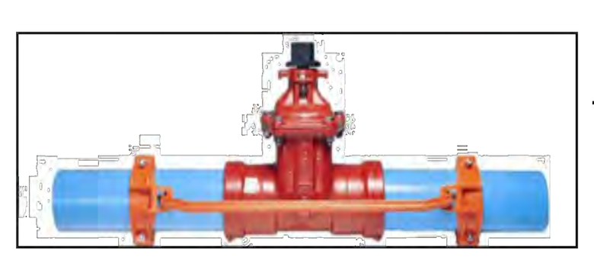
PIPE TO PIPE
LB-Series... 2" - 12" IPS Pipe Sizes
LBD-Series... 4" - 24" DPS Pipe Sizes
DLB-Series... 63 - 400MM DIN Pipe Sizes



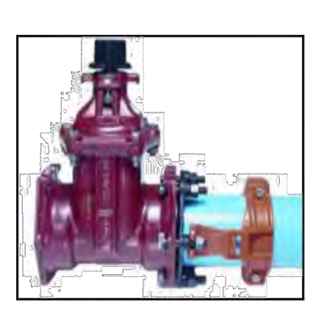
PIPE TO PIPE
LPP-Series... 2" - 12" IPS Pipe Sizes



PIPE TO FITTING - For Gate Valves
LGK-Series... 2" - 12" IPS Pipe Sizes
LGKD-Series... 4" - 12" DPS Pipe Sizes
DLGK-Series... 63 - 400MM DIN Pipe Sizes



PIPE TO PIPE - For Gate Valves
LG-Series... 2" - 12" IPS Pipe Sizes
LGD-Series... 4" - 12" DPS Pipe Sizes
DLG-Series... 63 - 400MM DIN Pipe Sizes



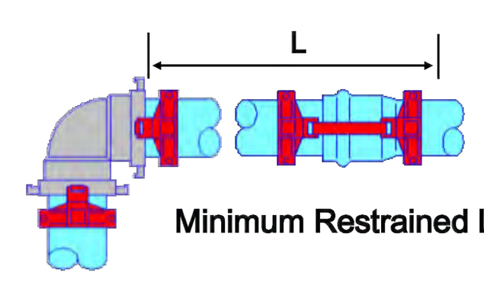
PIPE TO PIPE - For MJ Gate Valves
LMJ-Series... 2" - 12" IPS Pipe Sizes
LMJD-Series... 4" - 12" DPS Pipe Sizes
DLMJ-Series... 63 - 400MM DIN Pipe Sizes

FOR ALL LEEMCO RESTRAINTS THE CONTRACTOR SHALL:
1. RECEIVE TRAINING BY A LEEMCO REP. PRIOR TO INSTALLATION.
2. USE A TORQUE WRENCH REQUIRED TO ACHIEVE TORQUE REQUIREMENTS, SEE LEEMCO SPECS./ DETAILS.

Design Criteria

All tees, Bends, Reducers and End Caps should be restrained using LH-Series restraints. A certain number of joints before and after a restrained fitting may also require joint restraints as set forth in Tables below.

Below Tables establish values for the minimum length of pipe ("L") within which other joints must be restrained. Values (in feet/meters) are based on 125 PSI line pressure, 24" cover, Sandy-Clay type soil and a safety factor of 2. For other line pressures, multiply the "L" values by the actual pressure and divide by 125.



Minimum Restrained Length (L) in feet or meters

Pipe-Pipe Restraints for IPS & DPS pipe... minimum restrained length ("L") in feet

Pipe Size	Pipe OD IPS	Pipe OD DPS	Bends 11	Bends 22	Bends 45	Bends 90	Step Reduction 1	Step Reduction 2	Step Reduction 3	Dead End	Gate Valve
2"	2.38		1	1	2	6				19	10
2.5"	2.88		1	2	4	9	4			23	12
3"	3.50		2	3	6	11	8	10		30	15
4"	4.50	4.80	2	4	9	20	14	20	31	45	23
6"	6.63	6.90	3	6	13	29	30	40	53	63	31
8"	8.63	9.05	4	8	15	38	33	55	63	75	38
10"	10.75	11.10	5	9	19	45	36	56	75	96	48
12"	12.75	13.20	5	10	21	53	38	60	83	112	56
14"		15.30	6	11	24	58	40	62	86	130	62
16"		17.40	6	13	27	65	42	64	88	146	73
18"		19.50	7	14	29	69	44	70	90	162	81
20"		21.60	8	15	32	76	46	80	92	178	89
24"		25.80	9	18	37	88	63	90	114	209	105

Pipe-Pipe Restraints for DIN pipe... minimum restrained length ("L") in meters

Pipe Size	Pipe OD Max MM	Pipe OD Inches	Bends 11	Bends 22	Bends 45	Bends 90	Step Reduction 1	Step Reduction 2	Step Reduction 3	Dead End	Gate Valve
63	64	2.48	0.3	0.3	0.6	1.8				5.8	3.0
75	76	2.95	0.3	0.6	1.2	2.7	1.2			7.0	3.7
90	91	3.54	0.6	0.9	1.8	3.4	2.4	3.0		9.1	4.6
110	111	4.33	0.6	1.2	2.7	6.1	4.3	6.0	9.4	13.7	7.0
160	162	6.30	0.9	1.8	3.7	8.7	8.9	12.0	15.0	18.9	9.5
200	202	7.87	1.0	2.0	3.9	9.5	9.0	13.7	15.7	20.7	10.5
225	228	8.86	1.5	2.4	4.6	11.6	10.1	16.8	19.2	22.9	11.6
250	253	9.84	1.6	3.0	6.2	14.8	10.2	17.4	24.6	31.5	15.8
280	283	11.02	1.8	3.3	7.2	17.4	10.5	18.0	26.2	35.4	17.4
312	319	12.28	1.8	3.5	8.1	19.5	10.7	18.5	27.0	39.0	19.5
400	406	15.75	2.1	3.6	8.7	20.7	10.9	18.9	28.4	48.6	24.3

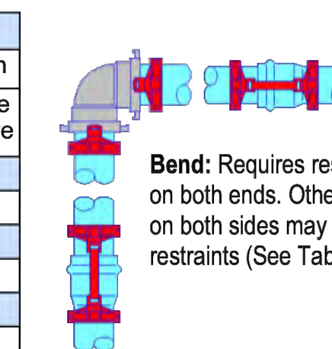
NOTE: Step Reduction Example: 1 Step (8x6), 2 Step (8x4), 3 Step (8x3)

Quick Selection Guide

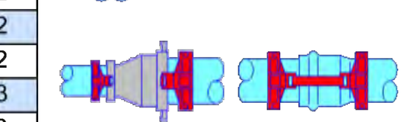
Based on 125 PSI pressure and 20 - foot length of pipe
(for shorter pipe lengths, use tables on previous page)

Pipe-Pipe Restraints
Table below shows the number of adjacent joints to restrain...based on 20 foot length

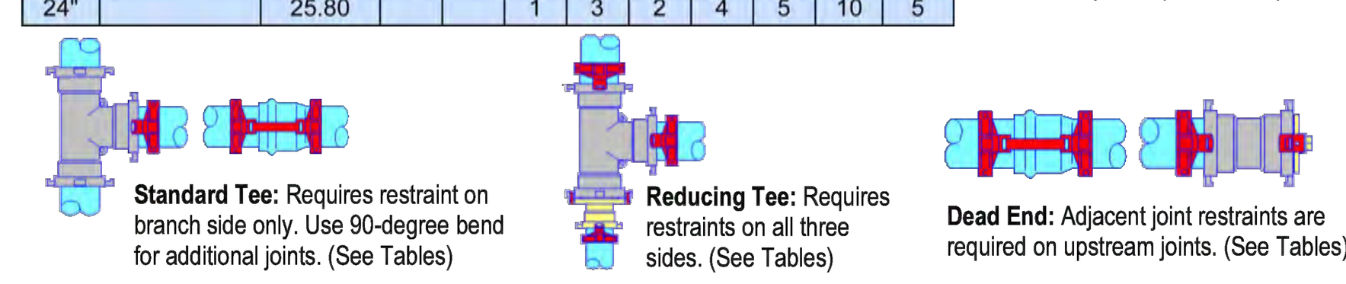
Pipe Size	Pipe OD IPS	Pipe OD DPS	Bends 11	Bends 22	Bends 45	Bends 90	Step Reduction 1	Step Reduction 2	Step Reduction 3	Dead End	Gate Valve
2"	2.38										
2.5"	2.88									1	
3"	3.50									1	
4"	4.50	4.80				1		1	1	2	1
6"	6.63	6.90				1	1	2	2	3	1
8"	8.63	9.05				1	1	2	3	3	2
10"	10.75	11.10			1	2	1	2	3	4	2
12"	12.75	13.20			1	2	2	3	4	5	2
14"		15.30			1	3	2	3	4	6	3
16"		17.40			1	3	2	3	4	7	3
18"		19.50			1	3	2	3	4	8	4
20"		21.60			1	3	2	4	4	9	4
24"		25.80			1	3	2	4	5	10	5



Bend: Requires restraints on both ends. Other joints on both sides may require restraints (See Tables).



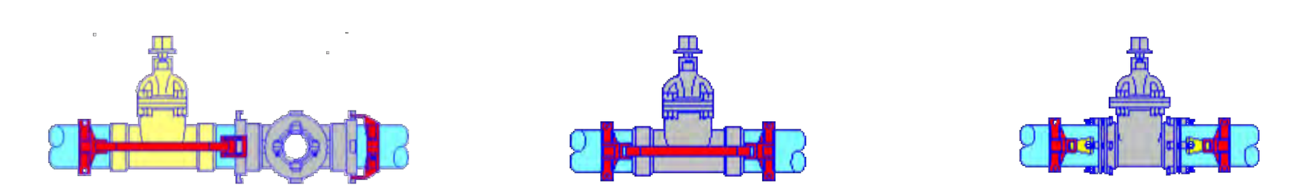
Reducers: Must be restrained on both ends. Additional joints on the larger end are required. (See Tables)



Standard Tee: Requires restraint on branch side only. Use 90-degree bend for additional joints. (See Tables)

Reducing Tee: Requires restraints on all three sides. (See Tables)

Dead End: Adjacent joint restraints are required on upstream joints. (See Tables)

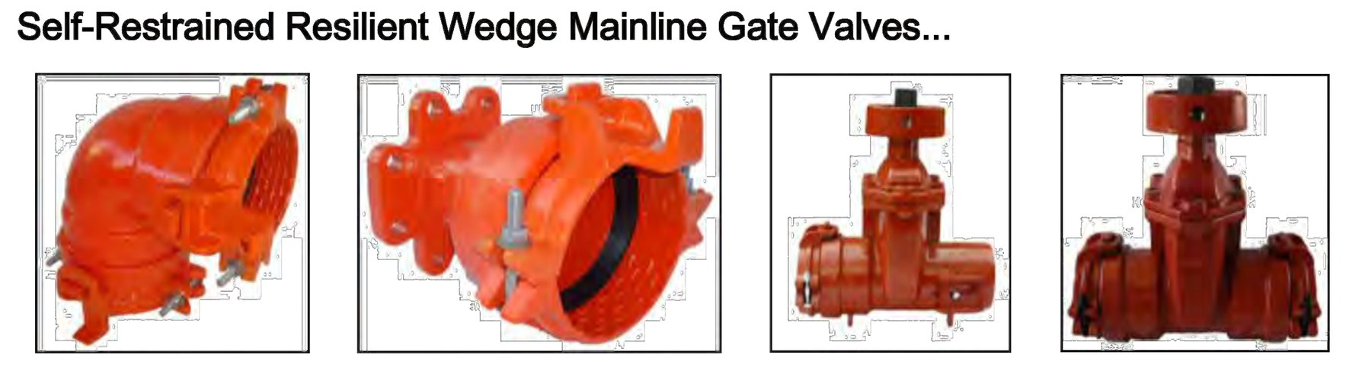


LGK-Series: Additional joints require restraints. (See Tables)

LG-Series: Additional joints on both sides require restraints.

LMJ-Series: Additional joints on both sides require restraints.

Leemco also offers a variety of Self-Restrained Fittings and Self-Restrained Resilient Wedge Mainline Gate Valves...



Please refer to our Self-Restrained Fitting & Mainline Gate Valve brochures for more information.
Note: 316-Series stainless steel hardware is available for an additional charge.
Please contact your Leemco Representative for more information.

F JOINT RESTRAINT - SECTION NTS

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DSA APPL. NO. 03-122124
FILE: 15-C1

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KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

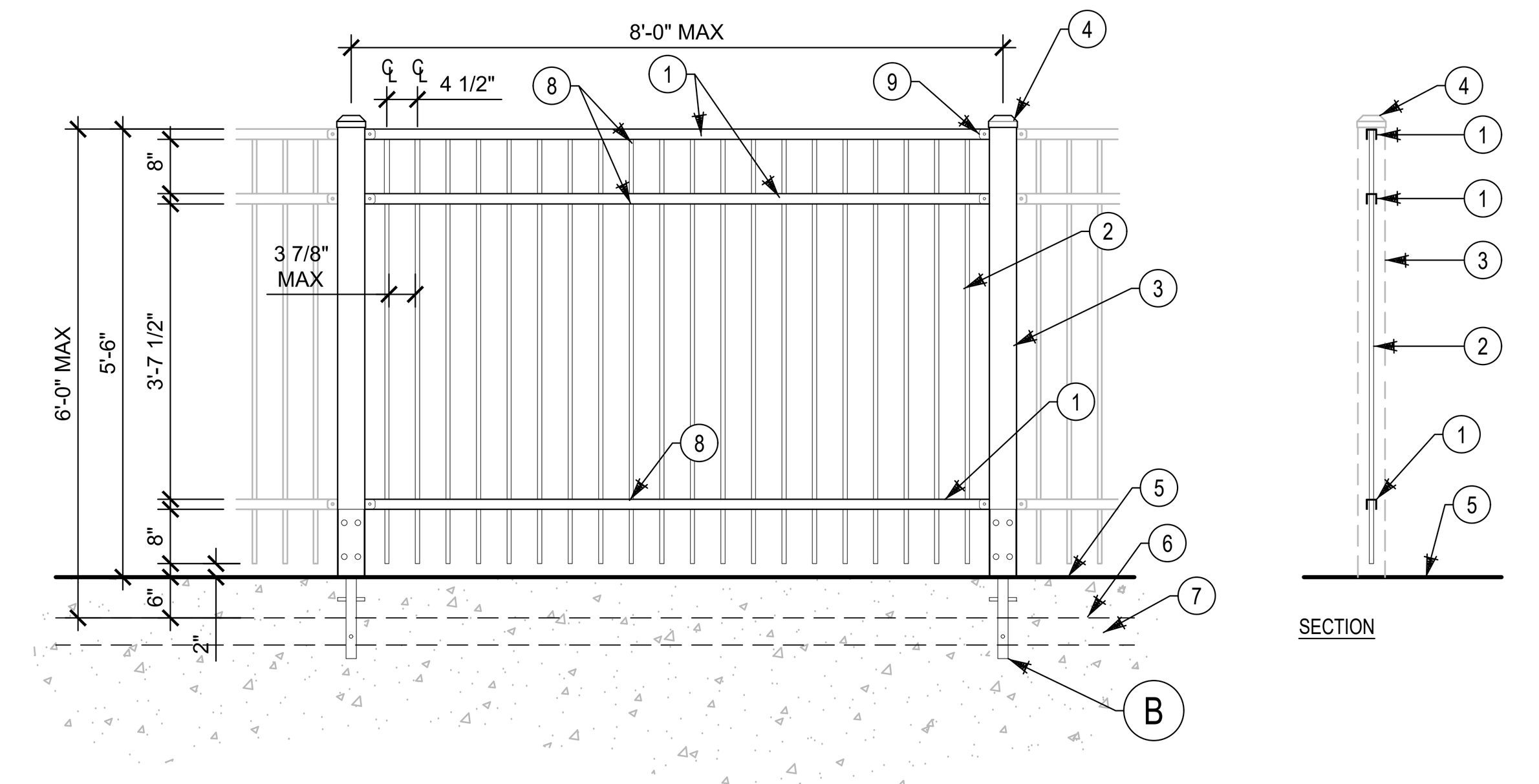
REVISIONS

#	DESCRIPTION	DATE
3	ADDENDUM No. 6	04/11/2024

BID

IRRIGATION DETAILS

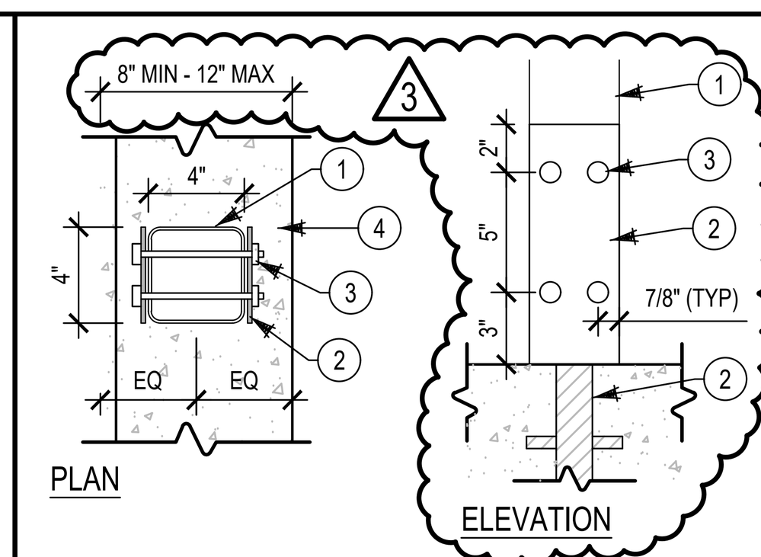
L4.2 (3)

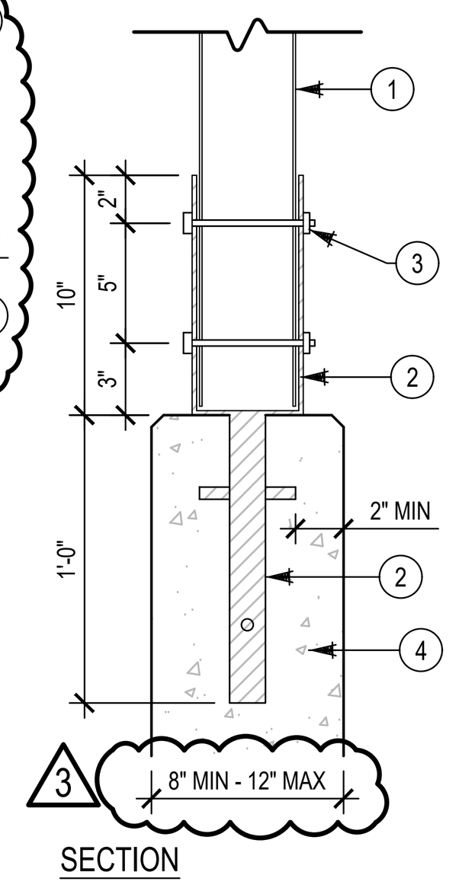


LEGEND:
1) TOP RAIL, TOP RAIL, 1/2"x1 1/2", 12 GA CHANNEL, STEEL
2) PICKET, SQ, 3/4" TUBE STEEL, 16 GA
3) POST, 4"X4", SQ TUBE STEEL, 12 GA
4) CAP, STEEL
5) TOP OF CURB/ WALL
6) FINISH GRADE/ WALK BEYOND
7) CONCRETE WALK BEYOND
8) PICKET WELD IN CHANNEL (TYP)
9) BRACKET (12 GA) & 3/8"X2" A307 BOLT, STEEL (TYP)

NOTES:
1) METAL FINISH: POWDER COAT COLOR: PANTONE 7600 C
2) STEEL TO BE HOT DIP GALVANIZED
3) HARDWARE TO BE HEAVY DUTY EXTERIOR GRADE

A FENCE ON WALL/ CURB - SECTION/ ELEVATION NTS

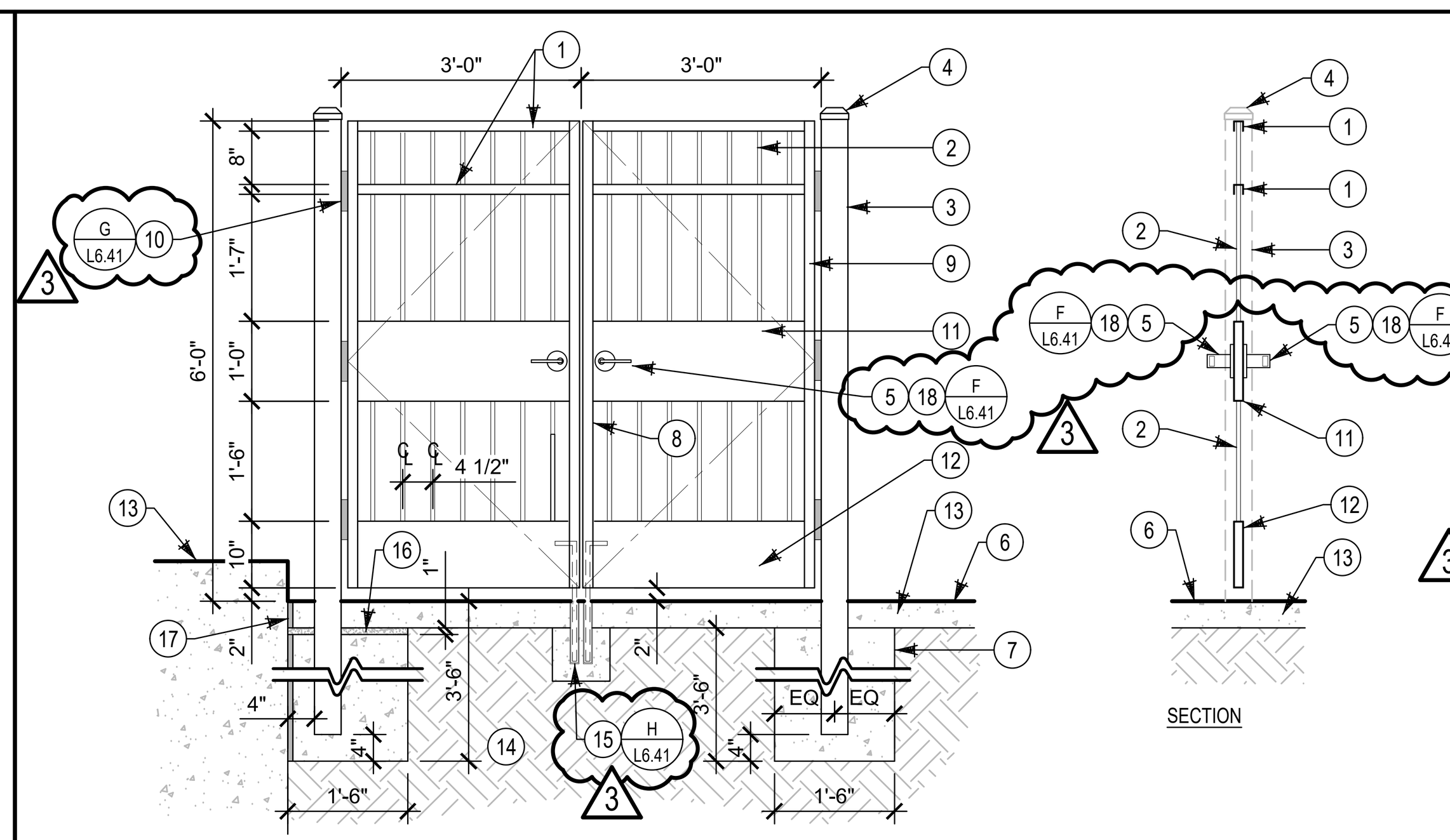




LEGEND:
1) FENCE POST, 4X4, TUBE STEEL, 12 GAUGE
2) U POST ANCHOR, STEEL, 7 GAUGE, EMBED IN WALL AT CONCRETE POUR
3) 3/8"X5 1/2" BOLT, GAL. STEEL, (4) PER POST
4) CONCRETE WALL OR PAVING, COORD. MOUNTING POST LOCATIONS W/ WALL STRUCTURAL STEEL

NOTES:
A) METAL FINISH: POWDER COAT COLOR: PANTONE 7600 C
B) STEEL TO BE HOT DIP GALVANIZED
C) HARDWARE TO BE HEAVY DUTY EXTERIOR GRADE

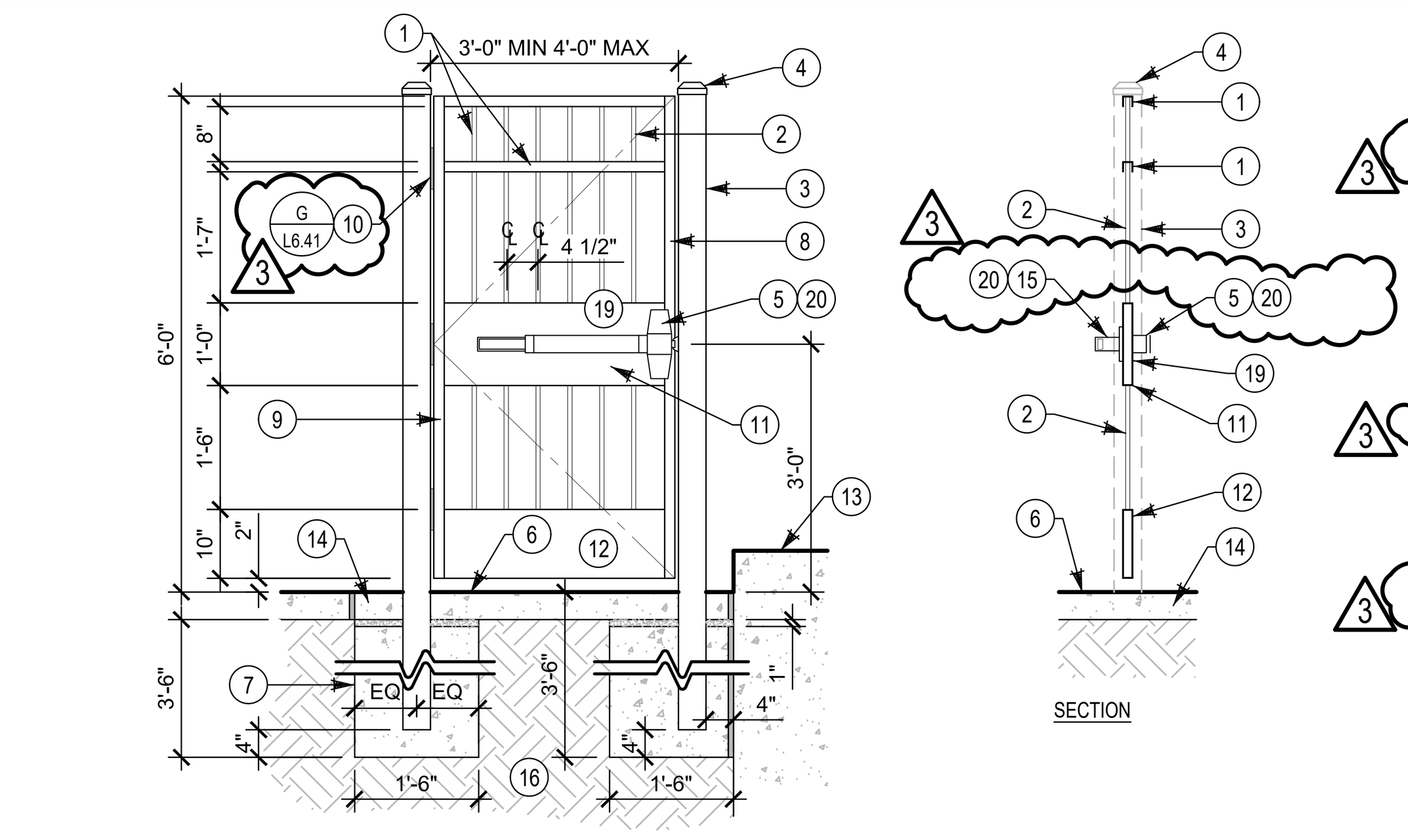
B FENCE POST MOUNT - SECTION NTS



LEGEND:
1) TOP RAIL, 1 1/2"x1 1/2", 12 GAUGE CHANNEL, STEEL
2) PICKET, SQUARE, 3/4" TUBE STEEL, 16 GA
3) POST, 4", SQ TUBE STEEL, 12 GAUGE
4) CAP, STEEL
5) CYLINDER LOCK & LEVER HANDLE HARDWARE, HEAVY DUTY, EXTERIOR GRADE
6) FINISH GRADE
7) CONCRETE FOOTING
8) LATCH STYLE, 1 1/2"x1 1/2", TUBE STEEL
9) HINGE STYLE, 1 1/2"x1 1/2", TUBE STEEL
10) HINGE, HEAVY DUTY, STEEL (TYP OF 6)
11) MID RAIL, 1/8" THICK, STEEL, WELDED TO STYLE
12) BOTTOM RAIL, 1/8" THICK, STEEL, WELDED TO STYLE
13) CONC. WALK
14) COMPACT SUBGRADE
15) 18" CANE BOLT, STEEL. POSITION RECEIVING SLEEVE TO SECURE OPEN GATE AT MAX ANGLE & CLOSED POSITION
16) SAND
17) FULL DEPTH ISOLATION JOINT
18) LOCK SET, LATCH, HANDLE HARDWARE, & PANIC BARS TO MATCH KCCD & BCC STANDARDS. CONTRACTOR TO VERIFY MFR & MODEL

NOTES:
1) METAL FINISH: POWDER COAT, COLOR: PANTONE 7600 C
2) DOOR HARDWARE TO OPERATE W/ 5 LBS MAX FORCE OPENING FORCE TO BE 5 LBS MAX FORCE
3) STEEL TO BE HOT DIP GALVANIZED
4) HARDWARE TO BE EXTERIOR GRADE HEAVY DUTY
5) DRILL 1/4" WEEP HOLES AT UNDERSIDE OF HORIZONTAL TUBES & BOTTOM OF VERTICAL TUBES

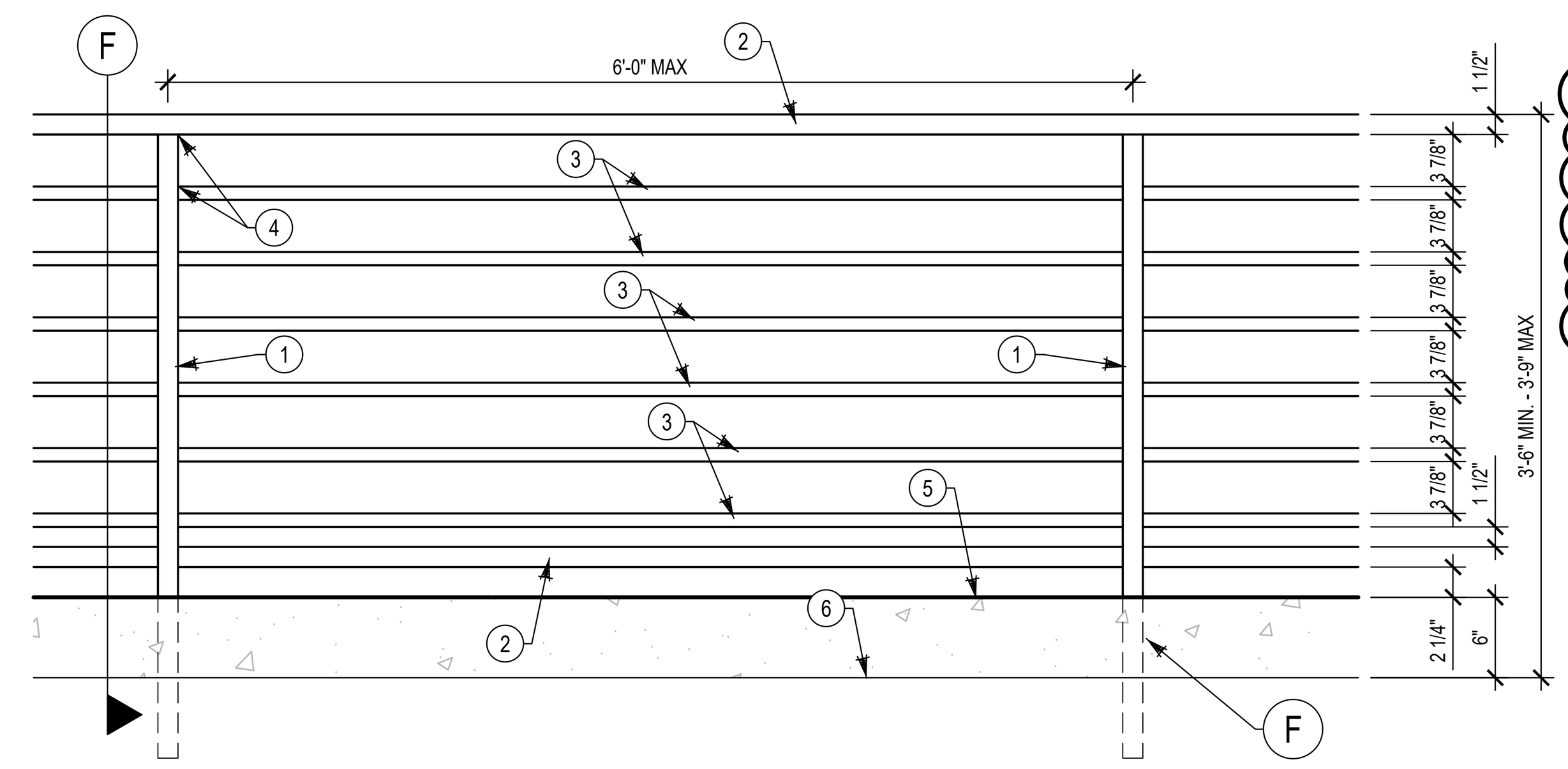
C FENCE SERVICE GATE - ELEVATION NTS



LEGEND:
1) TOP RAIL, TOP RAIL, 1 1/2"x1 1/2", 12 GAUGE CHANNEL, STEEL
2) PICKET, SQUARE, 3/4" TUBE STEEL, 16 GA
3) POST, 4"X4", SQ TUBE STEEL, 12 GAUGE
4) CAP, STEEL
5) PUSH BAR, BASIS FOR DESIGN MFR: HOOVER FENCE CO, MODEL: #D-6000, PROVIDE REQ. ACCESSORIES TO COMPLETE INSTALL
6) FINISH GRADE
7) CONCRETE FOOTING
8) LATCH STYLE, 1 1/2"x1 1/2", TUBE STEEL
9) HINGE STYLE, 1 1/2"x1 1/2", TUBE STEEL
10) HINGE, STEEL, HEAVY DUTY
11) MID RAIL, 1/8" THICK, STEEL PLATE, WELDED TO STYLE, FOUR SIDES (TOP,BOTTOM, FRONT, BACK)
12) BOTTOM RAIL, 1/8" THICK, STEEL, WELDED TO STYLE
13) TOP OF WALL
14) CONCRETE WALK
15) LEVER HANDLE HARDWARE, HEAVY DUTY, EXTERIOR GRADE
16) COMPACT SUBGRADE
17) SAND
18) FULL DEPTH ISOLATION JOINT
19) CARD READER & CONTACT INCLUDED (COORD W EE FOR CONDUIT & INSTALL) (EXCEPT AT RA UNIT 4' WIDE DOOR, INSTALL MANUAL LOCK & LATCH AT THIS DOOR)
20) LOCK SET, LATCH, HANDLE HARDWARE, & PANIC BARS TO MATCH KCCD & BCC STANDARDS. CONTRACTOR TO VERIFY MFR & MODEL

NOTES:
1) METAL FINISH: POWDER COAT, COLOR: PANTONE 7600 C
2) DOOR HARDWARE TO OPERATE W/ 5 LBS MAX FORCE OPENING FORCE TO BE 5 LBS MAX FORCE
3) STEEL TO BE HOT DIP GALVANIZED
4) HARDWARE TO BE EXTERIOR GRADE HEAVY DUTY
5) DRILL 1/4" WEEP HOLES AT UNDERSIDE OF HORIZONTAL TUBES & BOTTOM OF VERTICAL TUBES

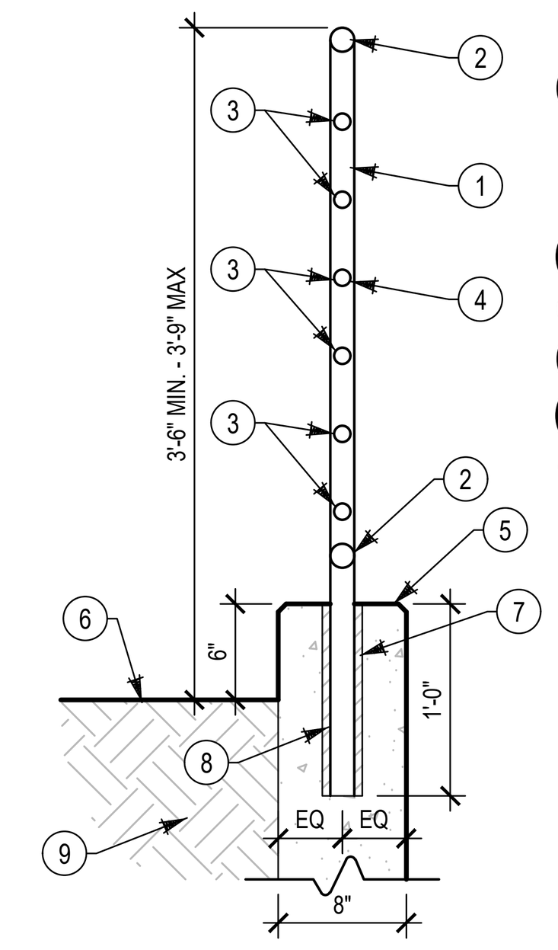
D FENCE GATE - SECTION/ ELEVATION NTS



LEGEND:
1) POST, 1 1/2" DIA., ROUND TUBE STEEL
2) TOP & BOTTOM RAIL, 1 1/2" DIA, ROUND TUBE STEEL
3) HORIZONTAL PICKET, 1" DIA, ROUND TUBE STEEL
4) WELDED JOINT, (TYP)
5) TOP OF CONCRETE WALL
6) FINISH GRADE

NOTES:
1) METAL FINISH: POWDER COAT COLOR: PANTONE 7600 C
2) STEEL TO BE HOT DIP GALVANIZED

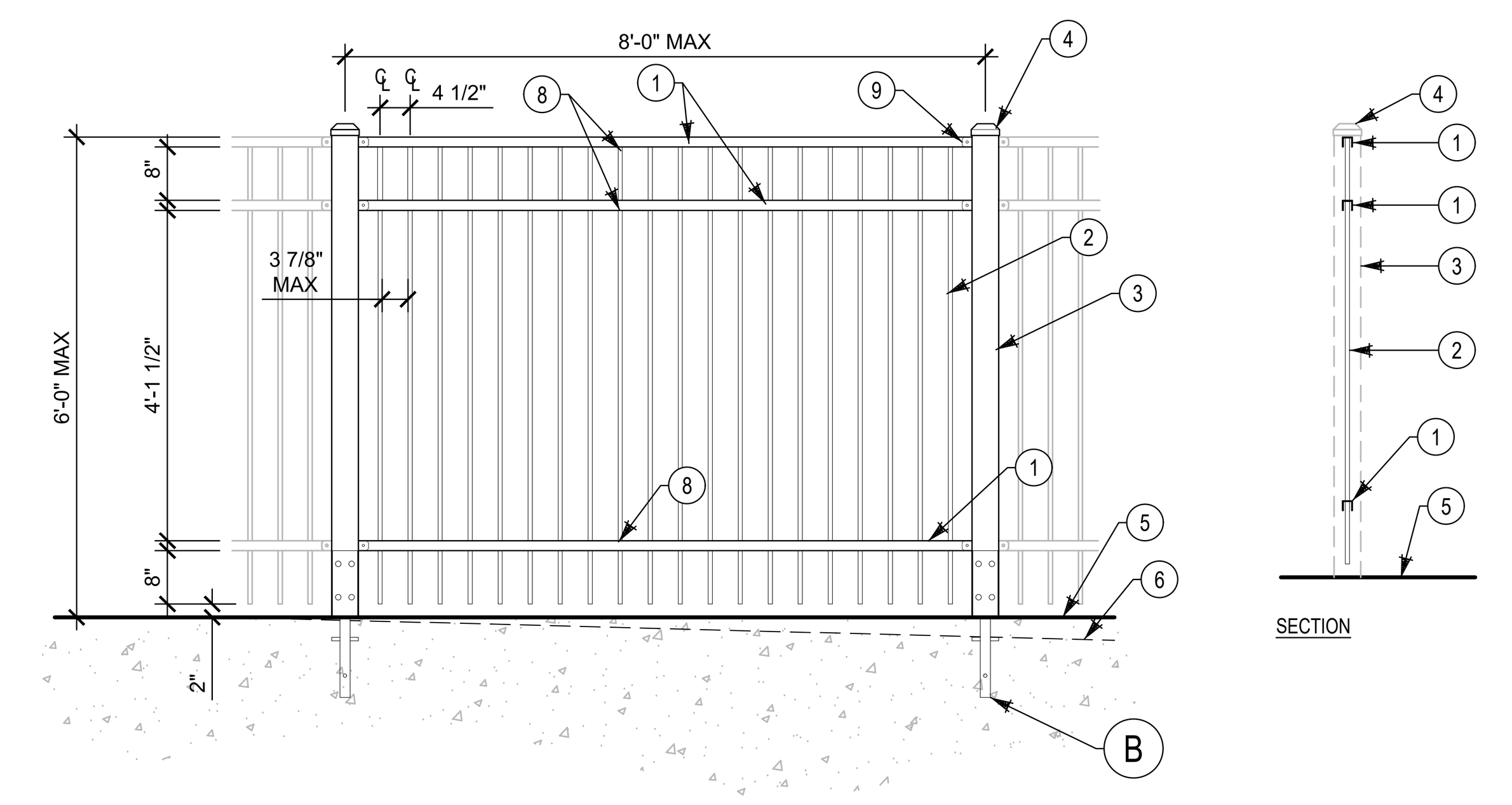
E GUARDRAIL ON TOP OF WALL - ELEVATION NTS



LEGEND:
1) POST, 1 1/2" DIA., ROUND TUBE STEEL
2) TOP & BOTTOM RAIL, 1 1/2" DIA, ROUND TUBE STEEL
3) HORIZONTAL PICKET, 1" DIA, ROUND TUBE STEEL
4) WELDED JOINT, (TYP)
5) TOP OF CONCRETE WALL
6) FINISH GRADE
7) CONCRETE CORE
8) MORTAR FILL
9) COMPACT SUBGRADE

NOTES:
1) METAL FINISH: POWDER COAT COLOR: PANTONE 7600 C
2) STEEL TO BE HOT DIP GALVANIZED

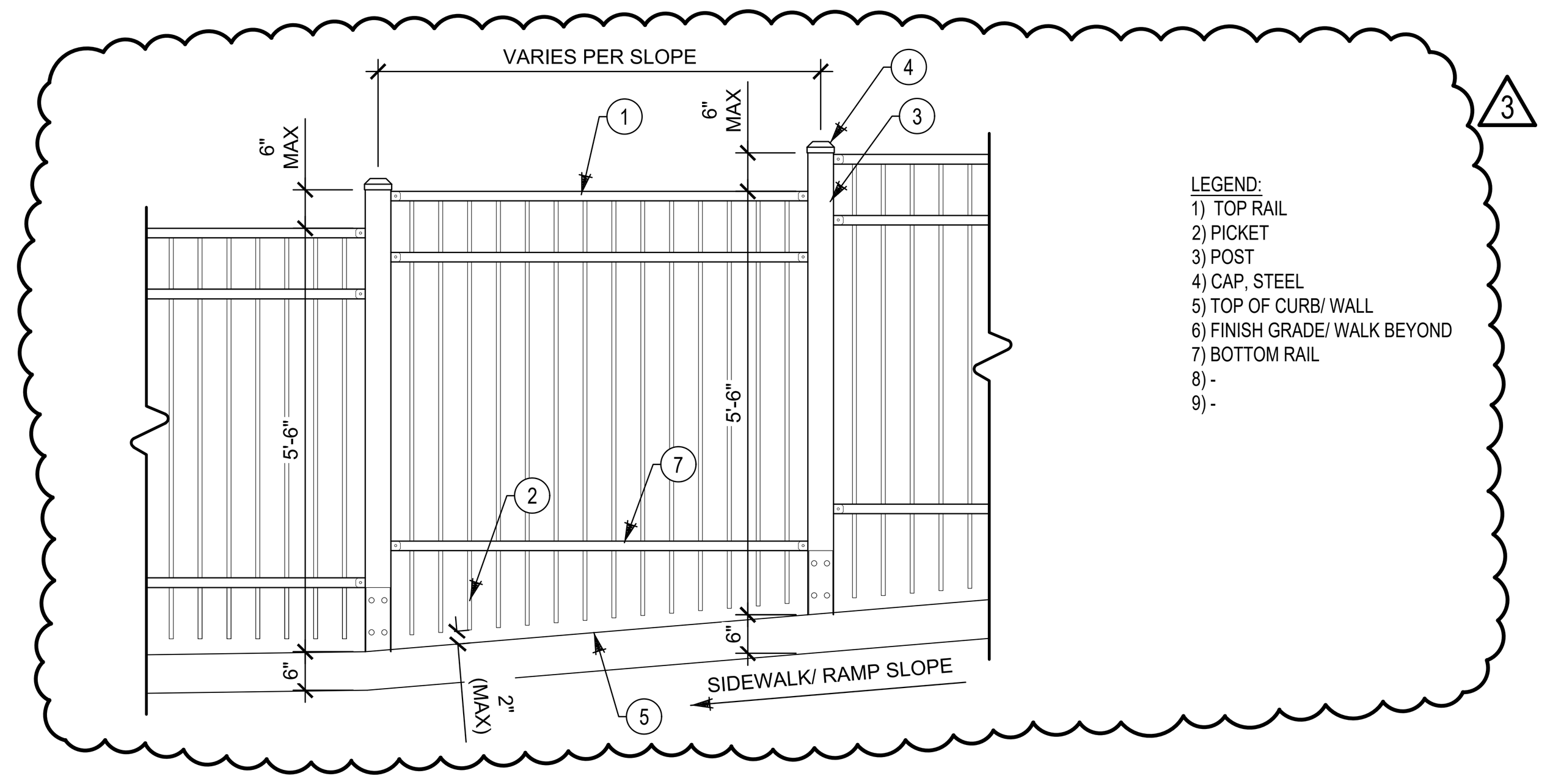
F GUARDRAIL ON TOP OF WALL - SECTION NTS



LEGEND:
1) TOP RAIL, TOP RAIL, 1/2"x1 1/2", 12 GA CHANNEL, STEEL
2) PICKET, SQUARE, 3/4" STEEL, 16 GA
3) POST, POST, 4", TUBE STEEL, 12 GA
4) CAP, STEEL
5) TOP OF CURB/ WALL & RA PATIO FINISH GRADE
6) FINISH GRADE/ WALK BEYOND
7) -
8) PICKET WELD IN CHANNEL (TYP)
9) BRACKET (12 GA) & 3/8"X2" FASTENER, STEEL (TYP)

NOTES:
1) METAL FINISH: POWDER COAT COLOR: PANTONE 7600 C
2) STEEL TO BE HOT DIP GALVANIZED
3) HARDWARE TO BE HEAVY DUTY EXTERIOR GRADE

G FENCE ON WALL/ CURB - SECTION/ ELEVATION AT RA PATIO NTS



LEGEND:
1) TOP RAIL
2) PICKET
3) POST
4) CAP, STEEL
5) TOP OF CURB/ WALL
6) FINISH GRADE/ WALK BEYOND
7) BOTTOM RAIL
8) -
9) -

H FENCE ON WALL/ CURB - ELEVATION AT SLOPES NTS

METAL WORK NOTES:
A) CONTRACTOR TO SUBMIT SHOP DRAWING OF LANDSCAPE METAL WORK, INCLUDING BUT NOT LIMITED TO FENCES, FENCE GATES, GUARDRAILS, HANDRAILS

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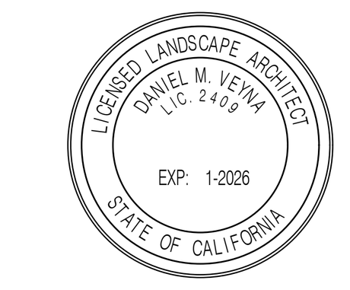
LANDSCAPE ARCHITECT



ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

REVISIONS

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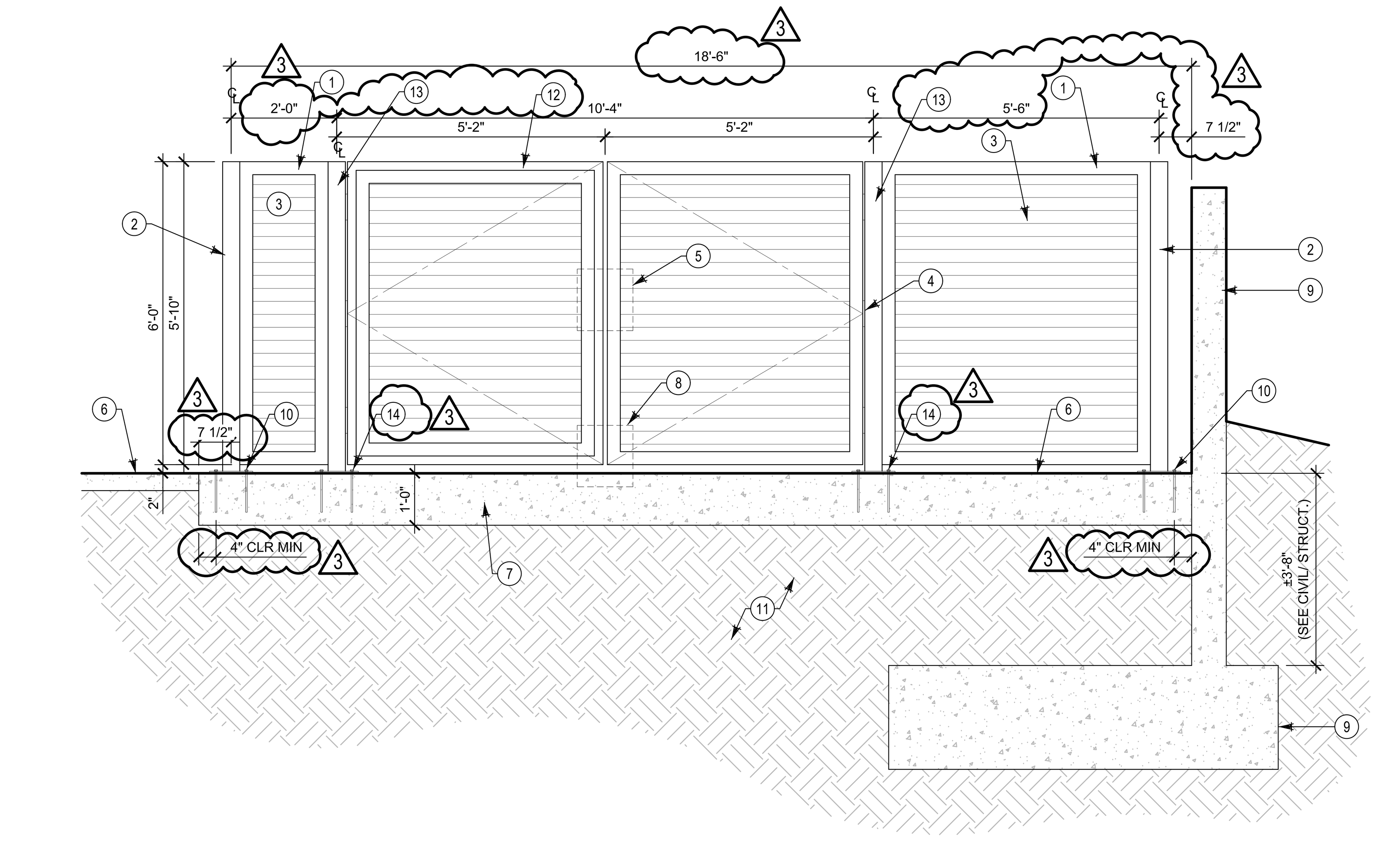
BID

FENCE & GUARDRAIL DETAILS

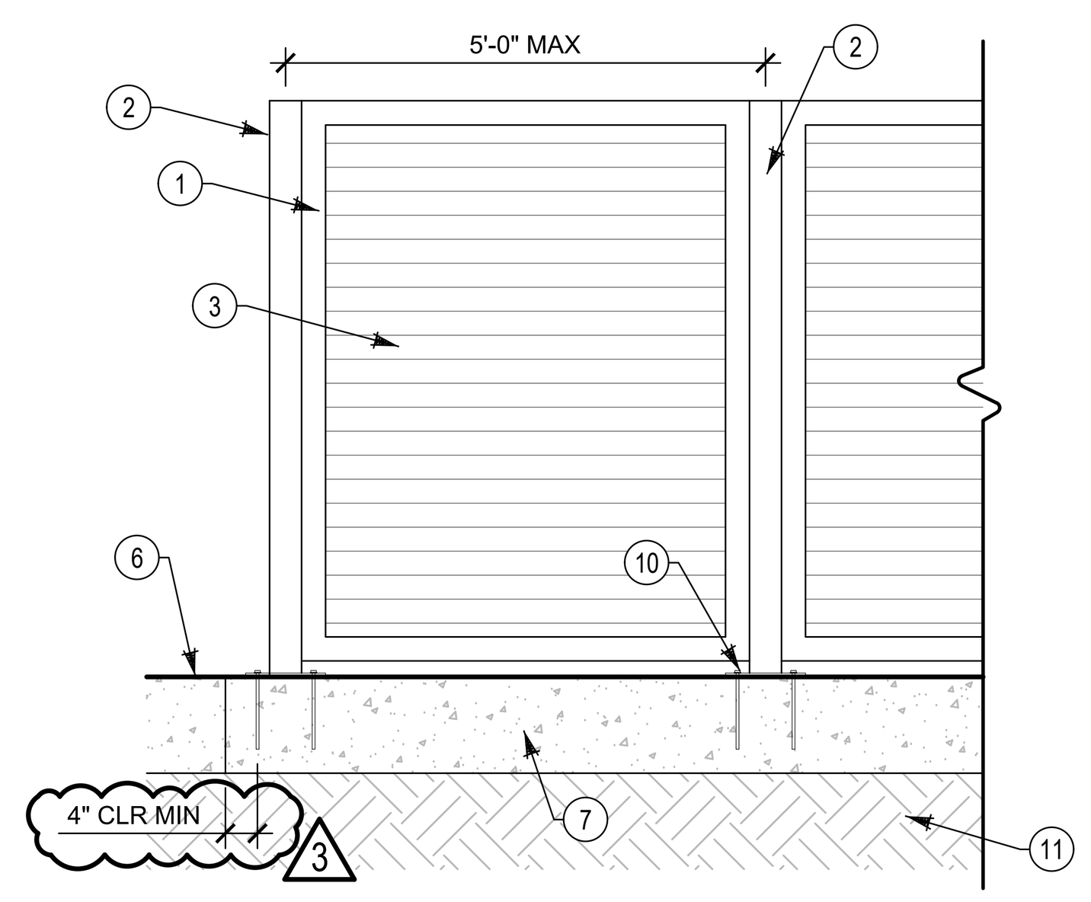
L6.4 3



LEGEND:
1) FRAME (L6.41/D)
2) POST (L6.41/D)
3) LOUVER PANEL (L6.41/D)
4) HINGES (L6.41/G)
5) LOCK & HANDLES (L6.41/F)
6) FINISH GRADE, CONCRETE PAVING
7) CONC. THICKENED EDGE
8) DROP ROD, PREFAB (L6.41/H)
9) CONC. RET. WALL (SEE CIVIL/ STRUCTURAL)
10) PANEL POST BASE PLATE (L6.41/J)
11) COMPACT SUBGRADE
12) DOUBLE GATE (L6.41/E)
13) DOUBLE GATE POST (L6.41/E)
14) DOUBLE GATE POST BASE PLATE (L6.41/K)

NOTES:
A) METAL FINISH: POWDER COAT
COLOR: PANTONE 7600 C

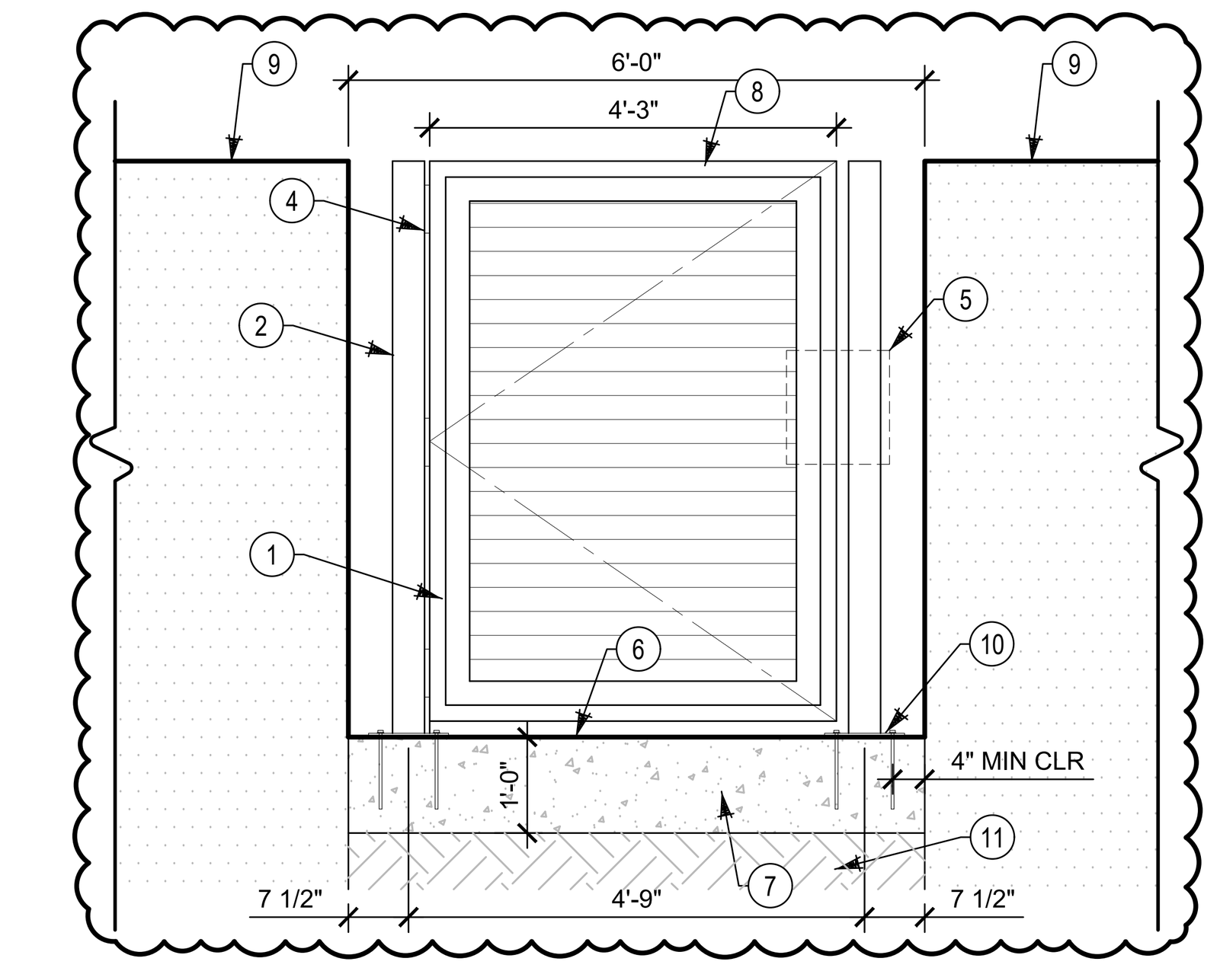
A FENCE GATE AT MECH. YARD - ELEVATION/ SECTION NTS



LEGEND:
1) FRAME (L6.41/D)
2) POST (L6.41/D)
3) LOUVER PANEL (L6.41/D)
4) -
5) -
6) FINISH GRADE, CONCRETE PAVING
7) CONC. THICKENED EDGE
8) -
9) -
10) PANEL POST BASE PLATE (L6.41/J)
11) COMPACT SUBGRADE

NOTES:
A) METAL FINISH: POWDER COAT
COLOR: PANTONE 7600 C

B FENCE AT MECH. YARD - ELEVATION/ SECTION NTS

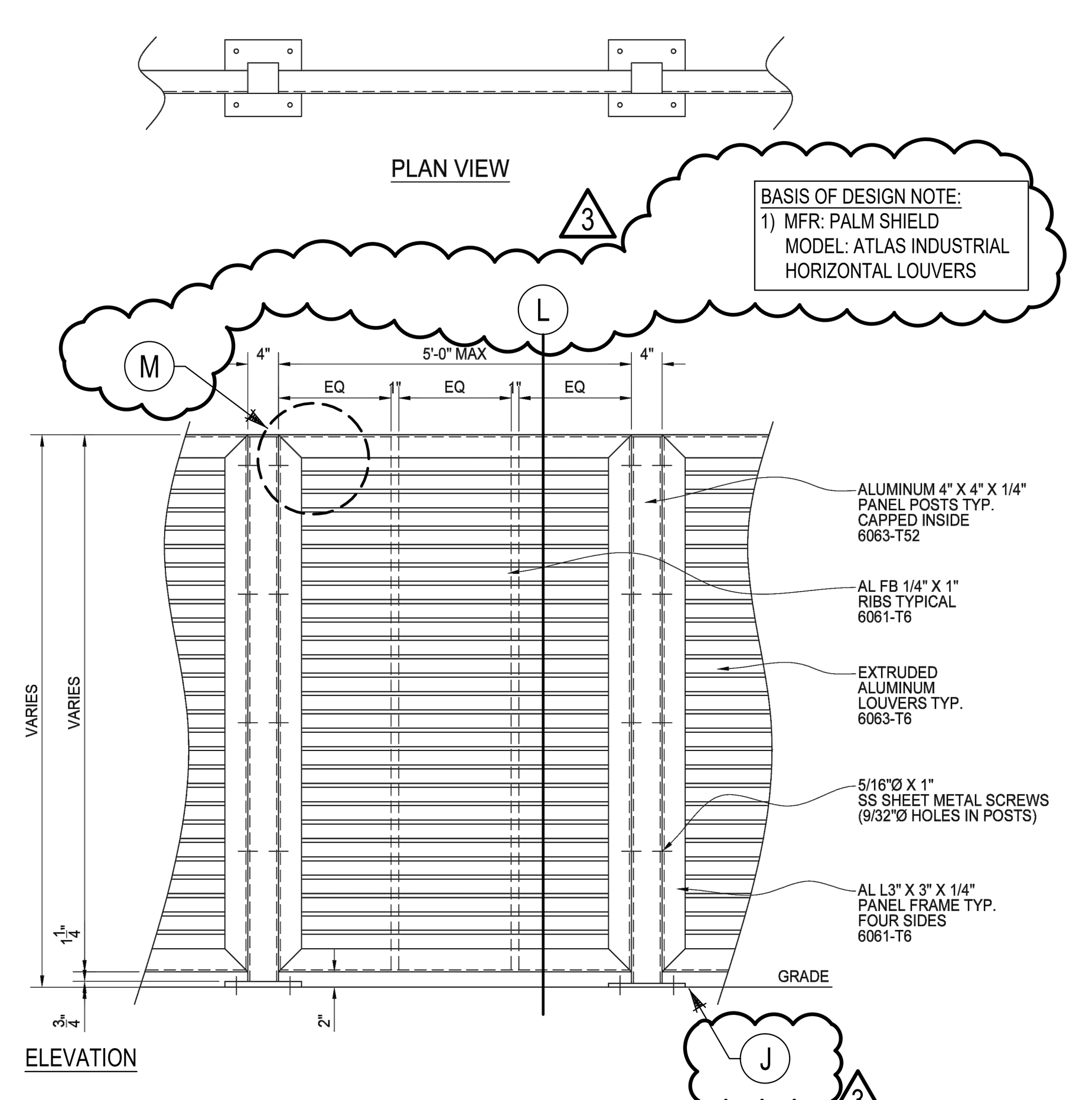


LEGEND:
1) -
2) POST (L6.41/D)
3) -
4) HINGES (L6.41/G)
5) LOCK & HANDLES (L6.41/F)
6) FINISH GRADE, CONCRETE PAVING
7) CONC. THICKENED EDGE
8) SINGLE GATE (L6.41/I)
9) CONC. RET. WALL (SEE CIVIL/ STRUCTURAL)
10) GATE POST BASE PLATE (L6.41/K)
11) COMPACT SUBGRADE

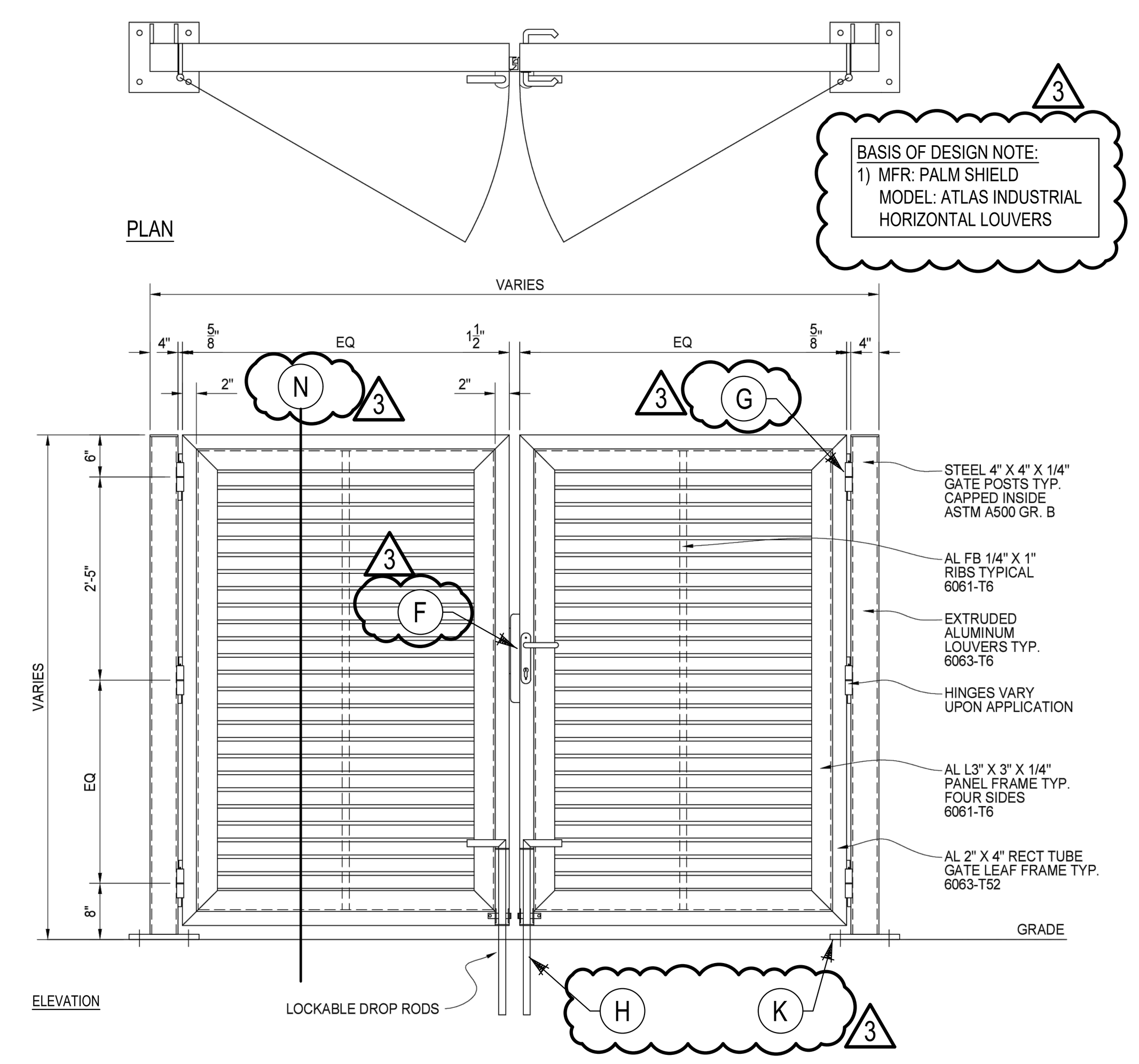
NOTES:
A) METAL FINISH: POWDER COAT
COLOR: PANTONE 7600 C

C GATE AT MECH. YARD - ELEVATION/ SECTION NTS

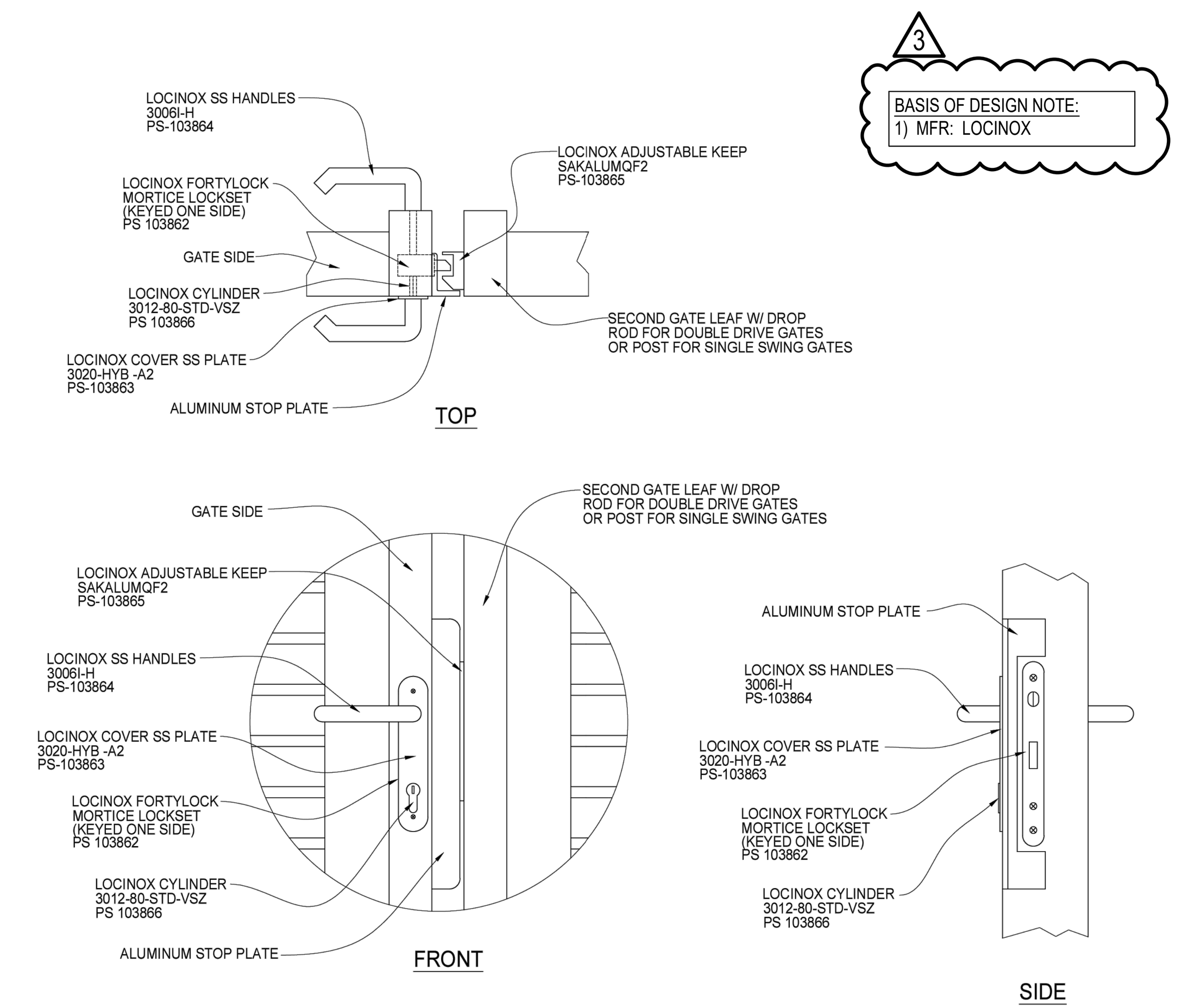
METAL WORK NOTES:
A) CONTRACTOR TO SUBMIT SHOP DRAWING OF LANDSCAPE METAL WORK, INCLUDING BUT NOT LIMITED TO FENCES, FENCE GATES, GUARDRAILS, HANDRAILS



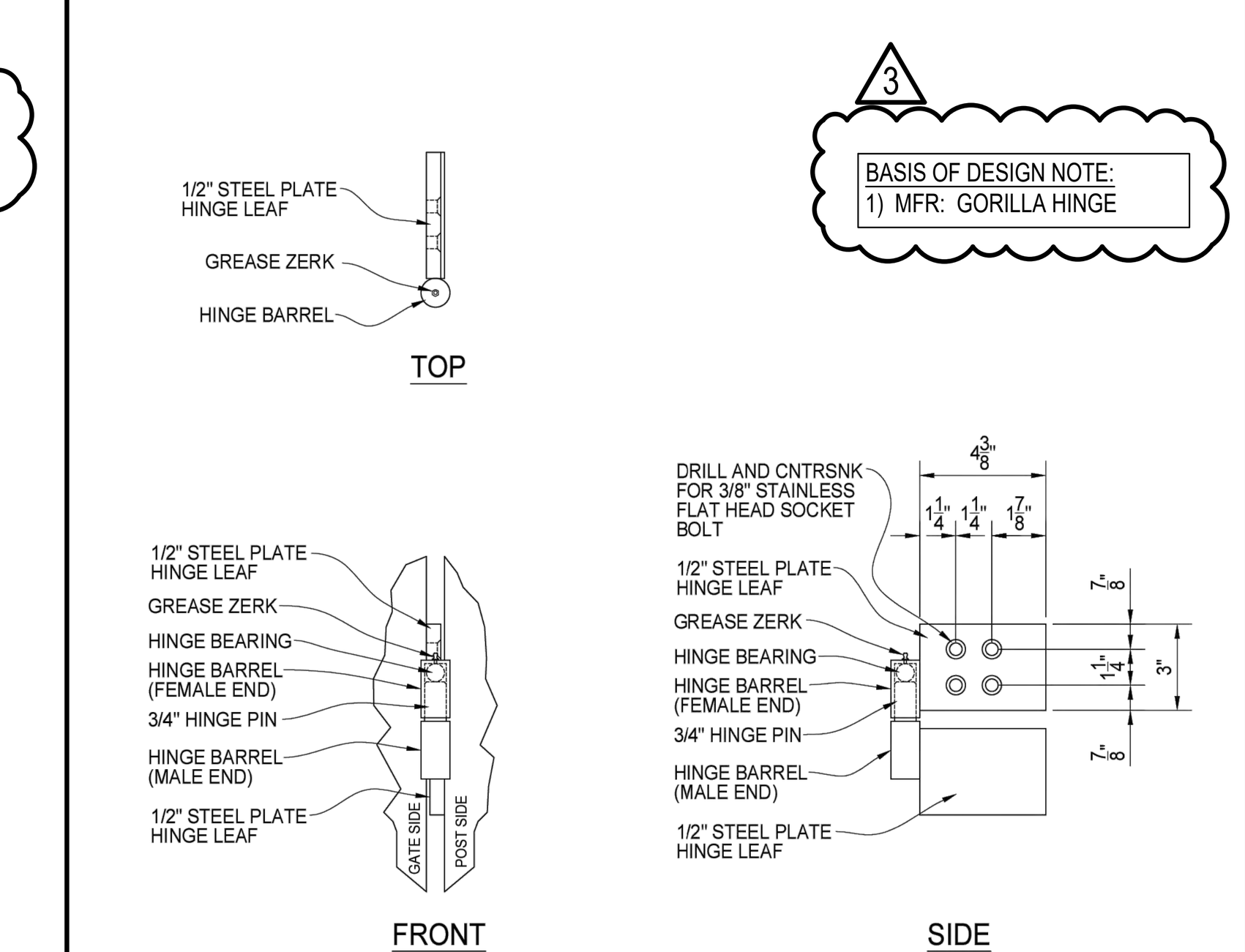
D PANEL - DETAILS NTS



E DOUBLE DRIVE GATE - DETAILS NTS



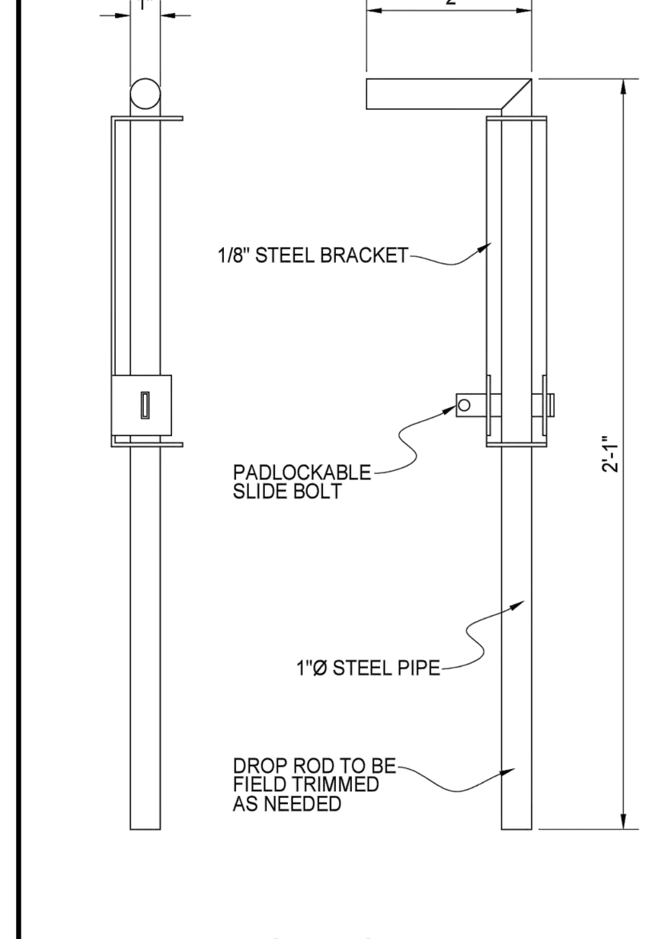
F LATCH & LOCK - DETAILS NTS



GORILLA HINGE DETAIL

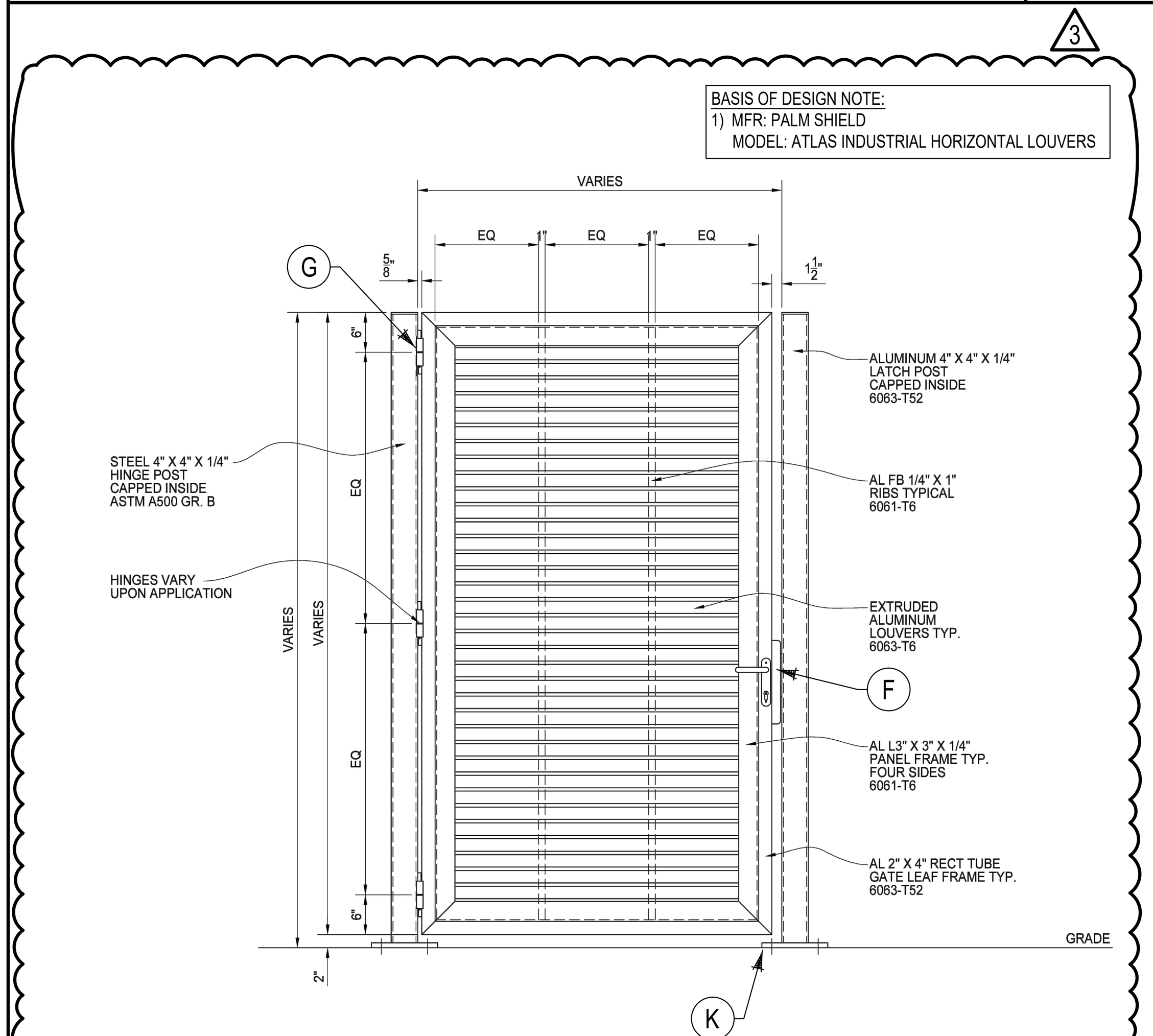
ZERK END IS FEMALE AND BOLTS TO GATE FRAME.
MALE END IS TO BE FIELD WELDED TO GATE POST.
(CAN BE SHOP WELDED UPON REQUEST)
FIELD WELDING ALLOWS FOR MINOR ADJUSTMENTS TO BE MADE FOR PROPER ALIGNMENT.
A "STOP" CAN BE FIELD WELDED TO THE GATE POST ABOVE THE HINGE TO PREVENT LIFT OFF.
GORILLA HINGES ARE PRE-GREASED, BUT SHOULD BE GREASED AGAIN UPON INSTALLATION AND PERIODICALLY TO MAINTAIN PROPER FUNCTION.

G HINGE - DETAILS NTS

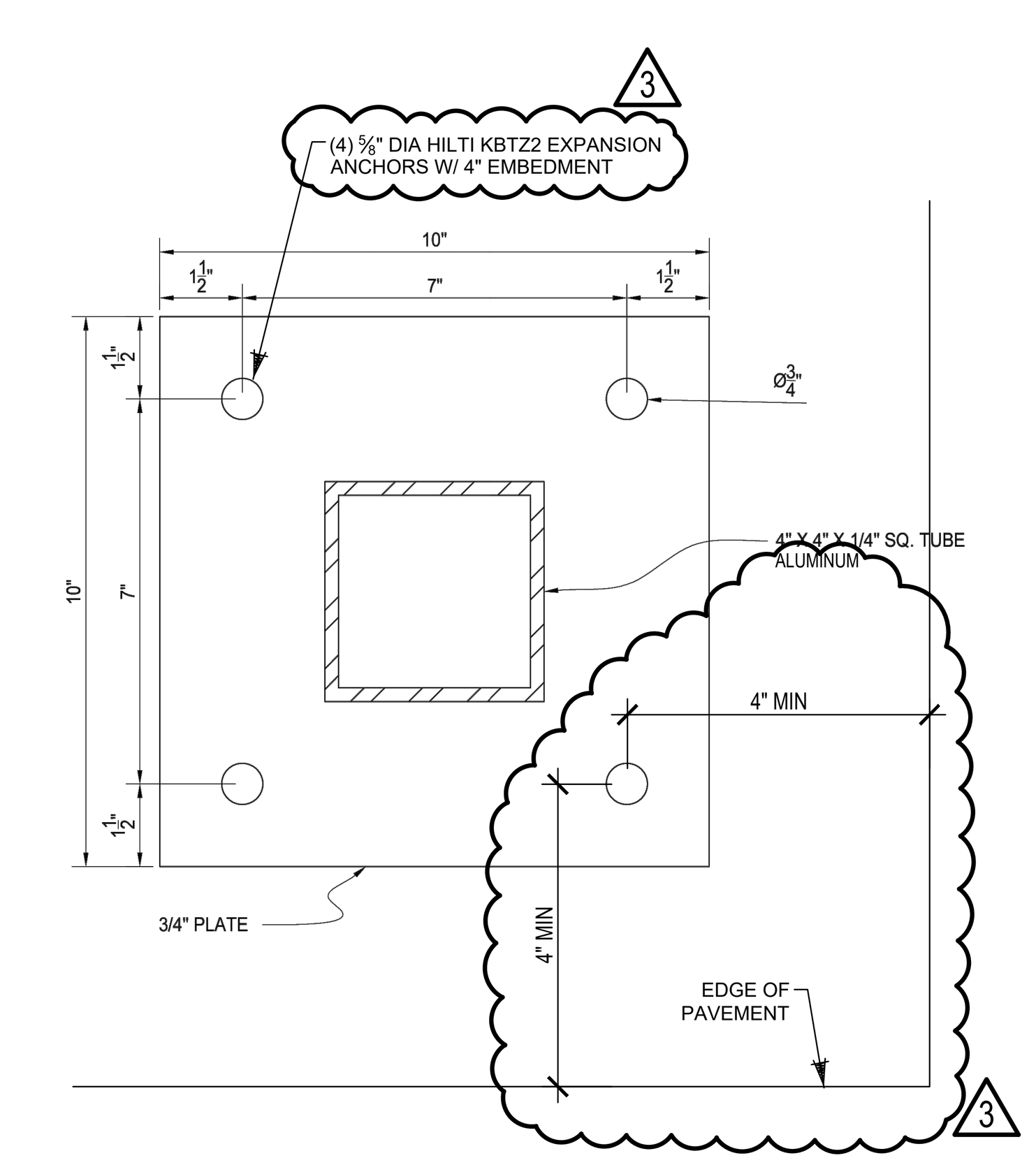


DROP ROD DETAIL

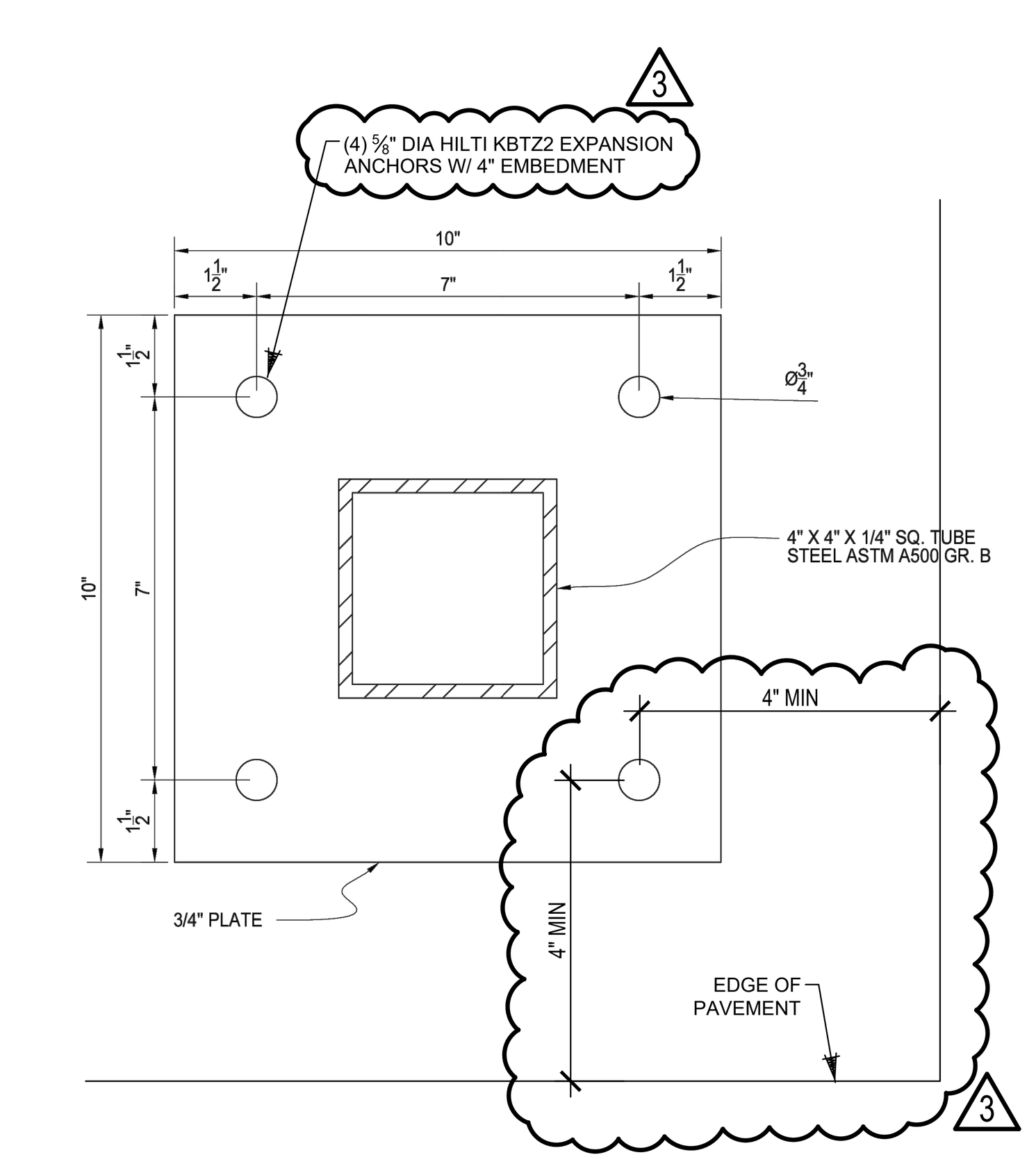
H DROP ROD - DETAILS NTS



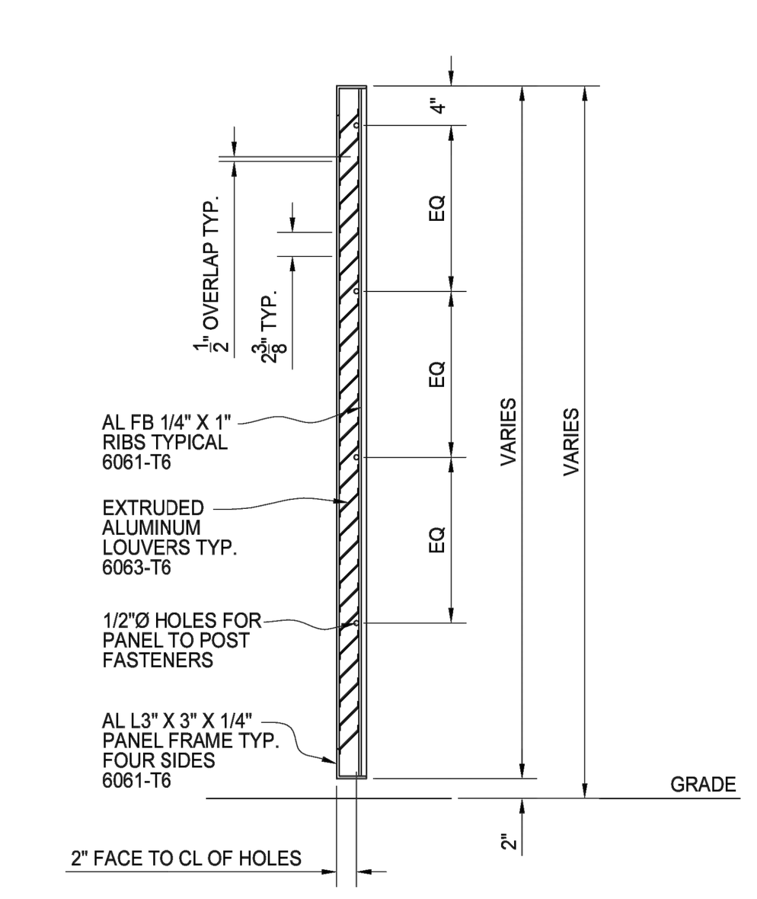
I SINGLE GATE - ELEVATION NTS



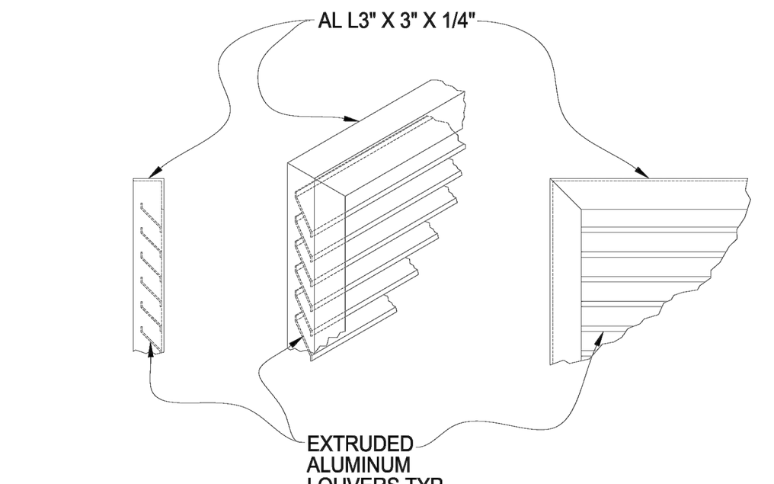
J FENCE POST BASE PLATE - SECTION NTS



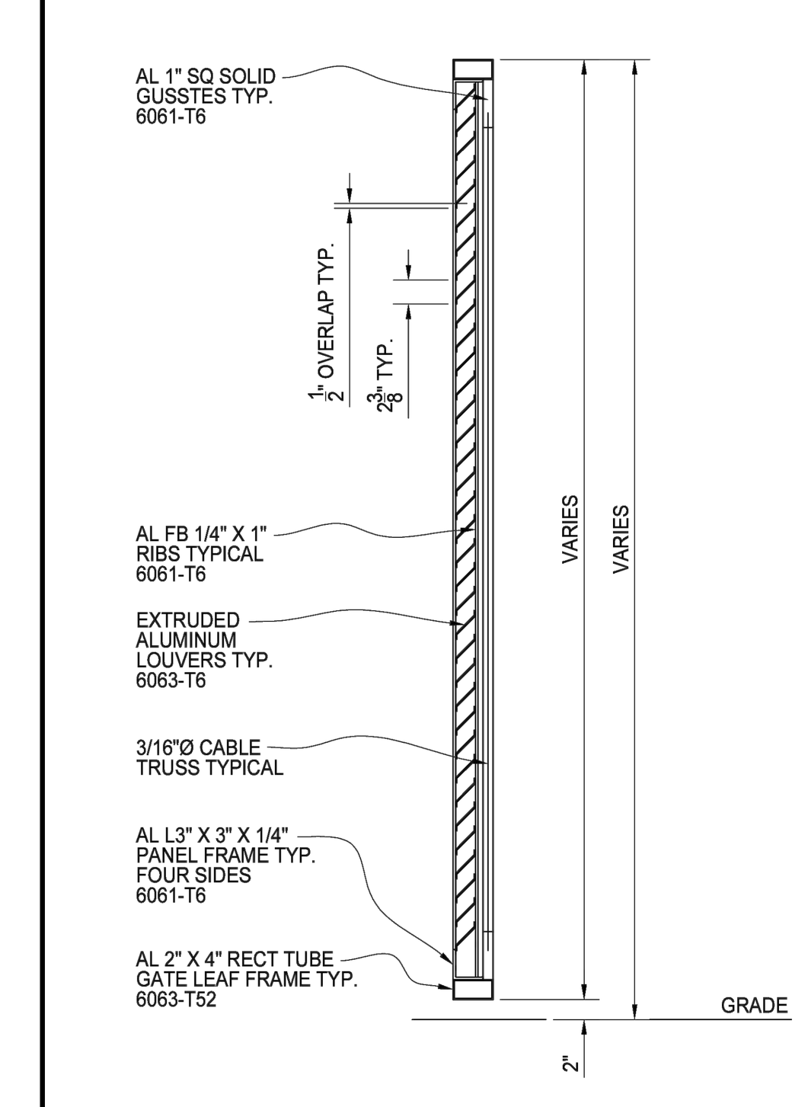
K GATE BASE PLATE - SECTION NTS



L PANEL - SECTION NTS



M PANEL CORNER - ISOMETRIC NTS



N GATE - SECTION NTS

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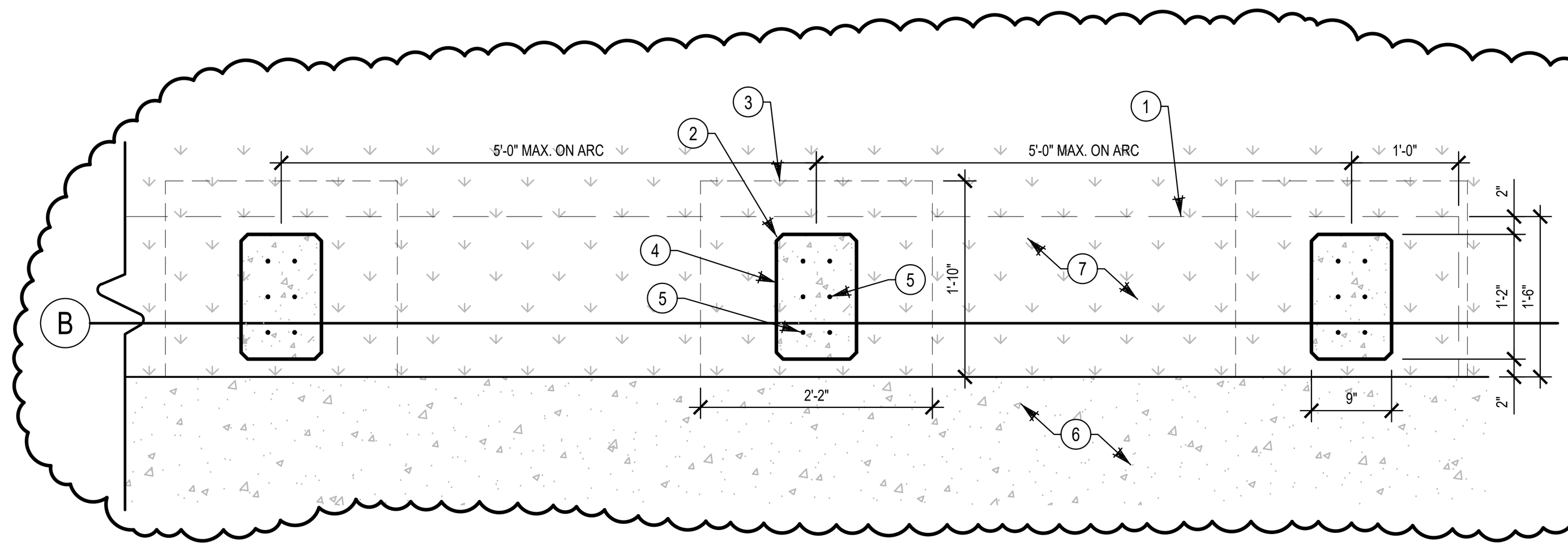
FENCE DETAILS

L6.41

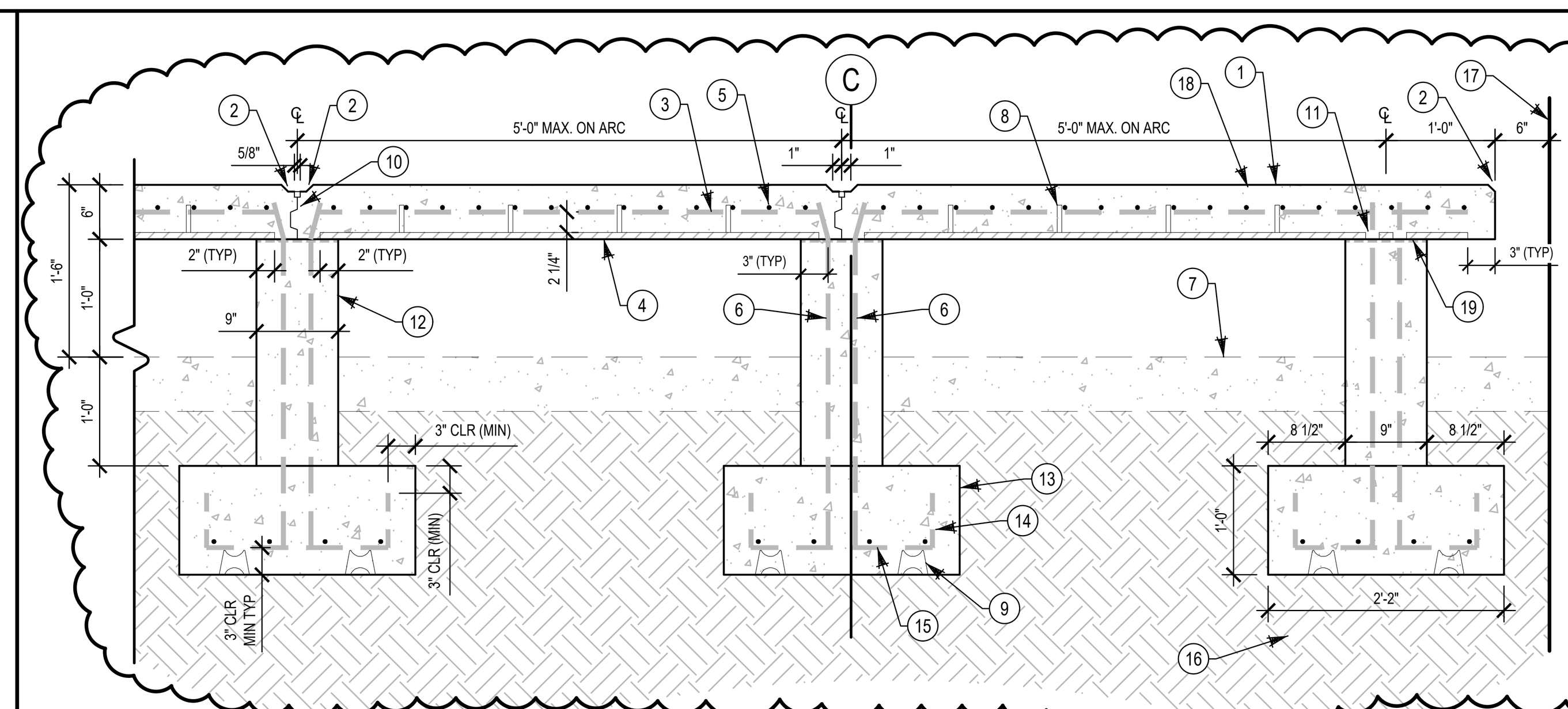
CHECKED BY:

DRAWN BY:



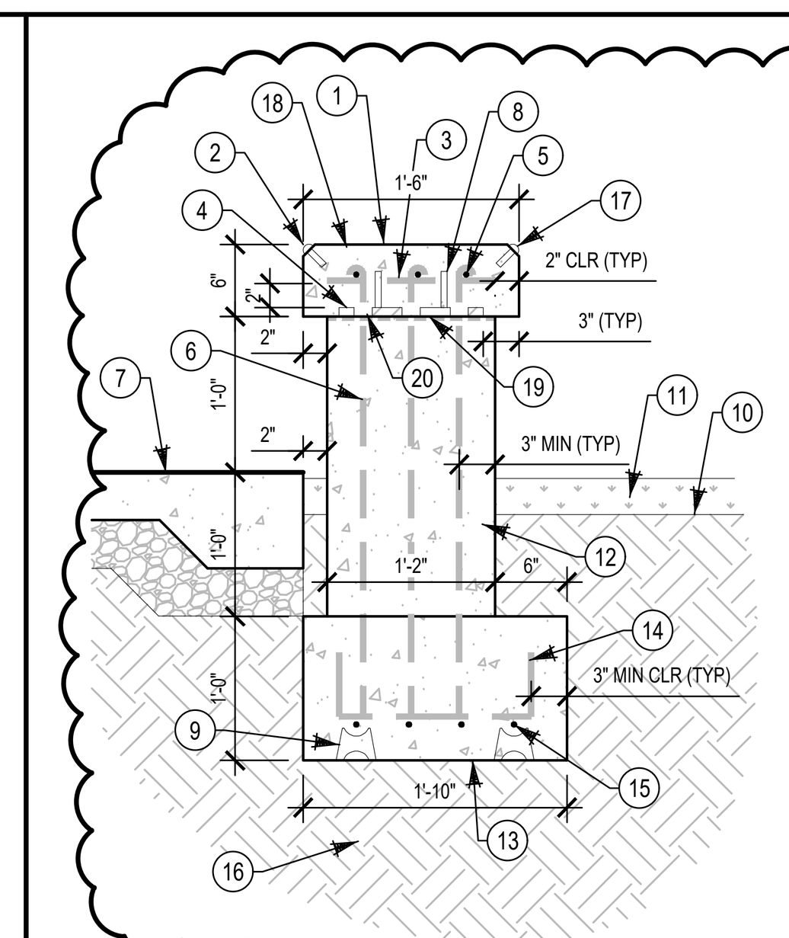
LEGEND:
1. CONCRETE SEAT TOP ABOVE
2. 3/4" CHAMFER (TYP)
3. CONCRETE FOOTING BELOW
4. CONCRETE PEDESTAL
5. (3) #4 HORIZ. REBAR CONT. (TYP)
6. PAVING
7. PLANTER AREA

(A) CONCRETE BENCH - PLAN NTS



LEGEND:
1. CONCRETE SEAT TOP
2. 3/4" CHAMFER CONT. (TYP)
3. #4 HORIZ. REBAR, 4 OC (TYP)
4. 3/4" THICK, GAL. STEEL PLATE, INSET IN CONC
5. #4 HORIZ. REBAR, 4" OC (TYP)
6. (3) #4 VERT. REBAR (TYP)
7. FINISH GRADE ADJ. PAVING BEYOND
8. 3" NELSON STUD, WELDED, 1'-0" O.C TO PLATE, TWO ROWS
9. REBAR CHAIR, STAGGERED 24" O.C. MAX
10. CONTROL JOINT
MFR: BOMETALS INC.
MODEL: QUICKEY
SIZE: 6"
11. SLOTTED HOLE IN PLATE FOR REBAR
12. CONCRETE PEDESTAL
13. CONCRETE FOOTING
14. (4) #4 U SHAPE REBAR, CONT. (TYP)
15. (4) #4 U SHAPE REBAR, CONT. (TYP)
16. COMPACT SUBGRADE
17. BUILDING FACADE
18. NON-SKID FINISH
MFR: CONCRETE FLOOR SOLUTIONS
MODEL: ALUMINIUM OXIDE
GRIT: 54 MESH
19. SLIP PLATE BETWEEN PEDESTAL & SEAT TOP
MFR: SLIP PLATE
MODEL: DRY FILM GRAPHITE LUBRICANT 1

(B) CONCRETE BENCH - SECTION/ ELEVATION NTS

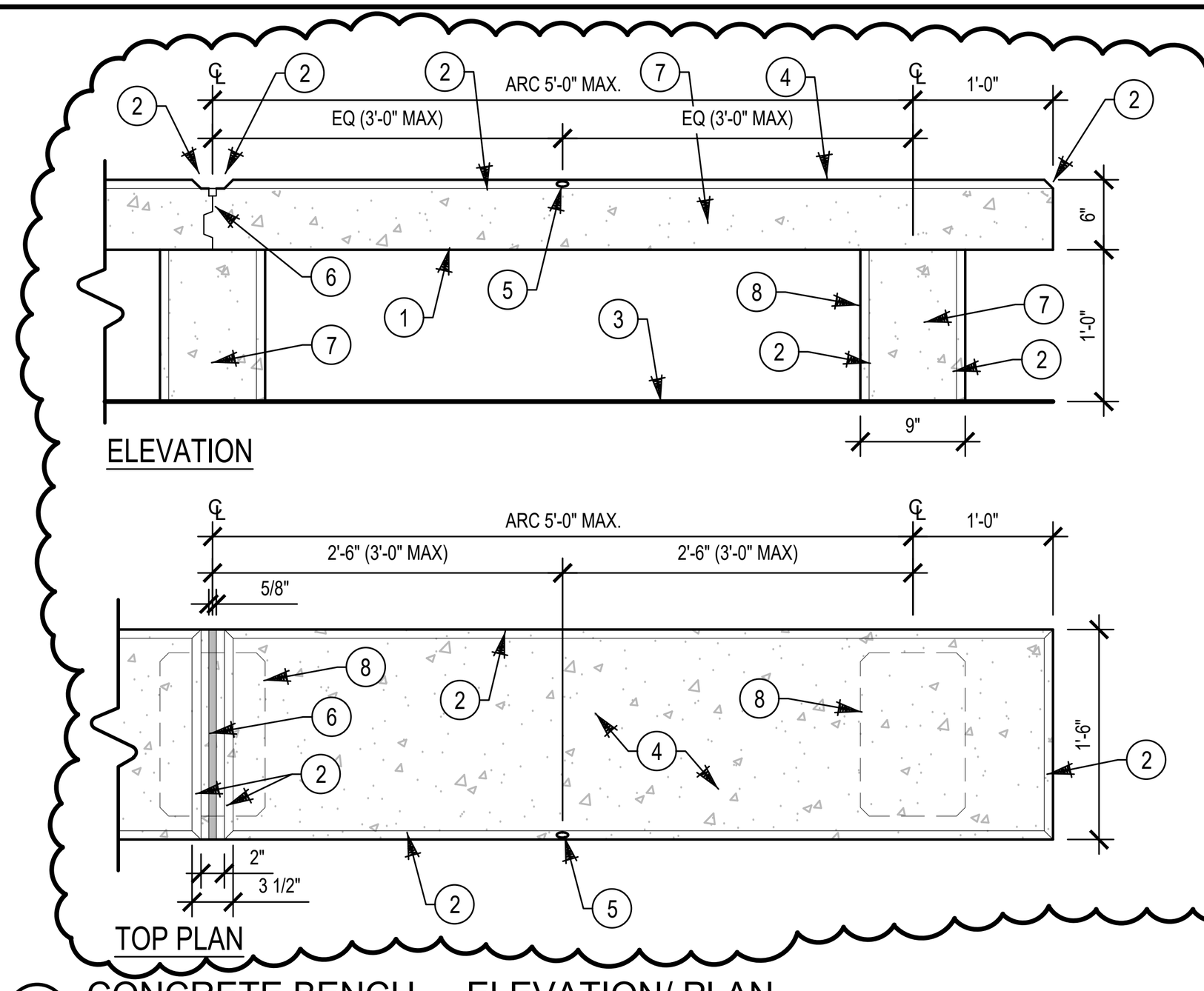


LEGEND:
1. CONCRETE SEAT TOP
2. 3/4" CHAMFER (TYP)
3. #4 HORIZ. REBAR, 4" OC (TYP)
4. 3/4" THICK, GAL. STEEL PLATE, INSET IN CONC
5. #4 HORIZ. REBAR CONT., 4" OC (TYP)
6. #4 VERT. REBAR (TYP), 4" OC (TYP)
7. FINISH GRADE ADJ. PAVING
8. 3" NELSON STUD, 1'-0" O.C., WELDED TO PLATE, TWO ROWS
9. REBAR CHAIR, STAGGERED 24" O.C. MAX
10. FINISH GRADE PLANTER
11. MULCH
12. CONCRETE PEDESTAL
13. CONCRETE FOOTING
14. (4) #4 U SHAPE REBAR, CONT. (TYP)
15. (4) #4 U SHAPE REBAR, CONT. (TYP)
16. COMPACT SUBGRADE
17. ANTI-SKATEBOARD BUTTON
MFR: PARK WAREHOUSE
MODEL: GRINDERMINDER, HEMISPHERE
FINISH: STAINLESS STEEL BRUSHED FINISH
18. NON-SKID FINISH
MFR: CONCRETE FLOOR SOLUTIONS
MODEL: ALUMINIUM OXIDE
GRIT: 54 MESH
19. MFR: SLIP PLATE
MODEL: DRY FILM GRAPHITE LUBRICANT 1
20. SLOTTED HOLE IN PLATE FOR REBAR

(C) CONCRETE BENCH - SECTION NTS

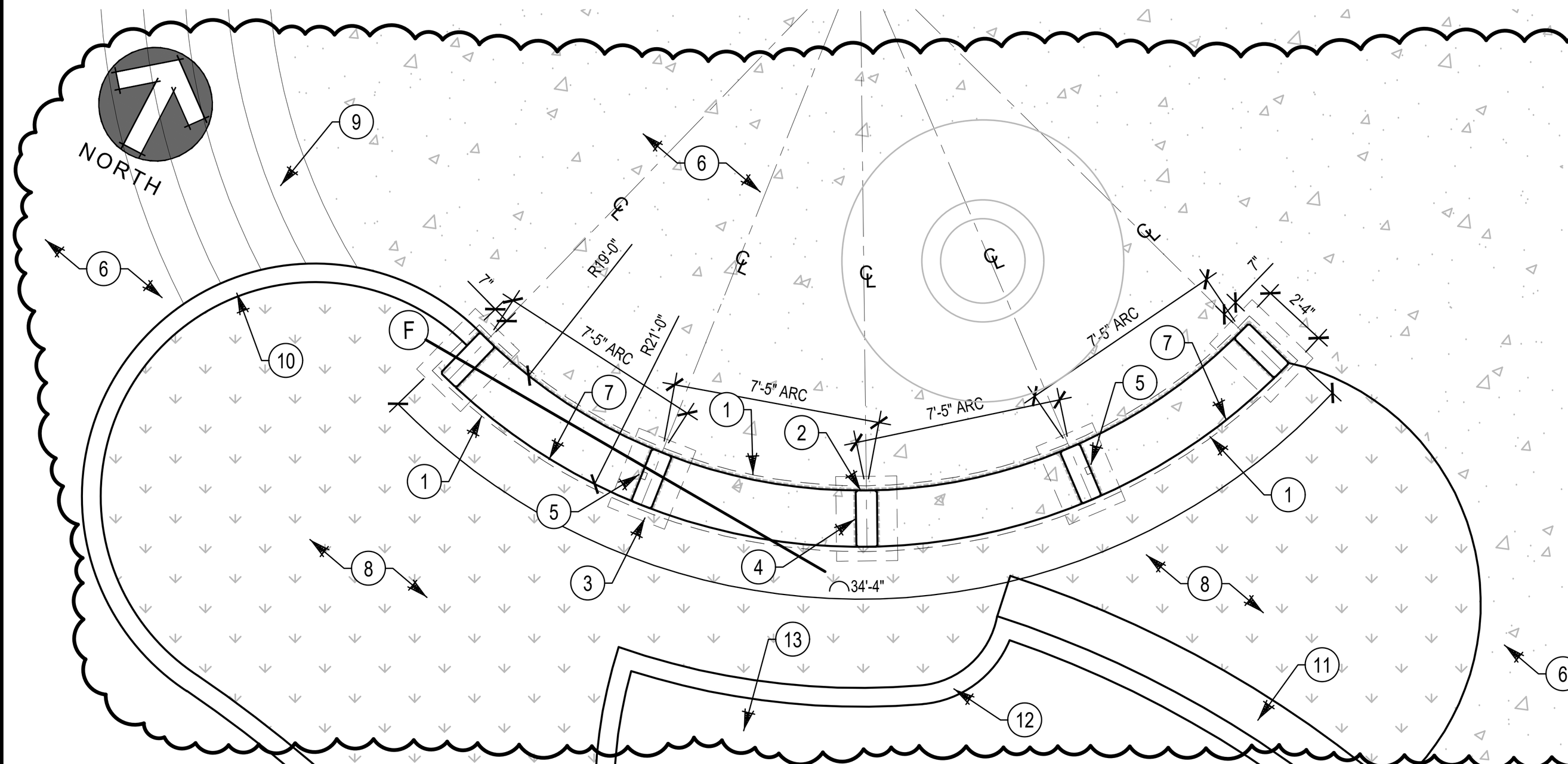
BENCH & LANDSCAPE COUNTER CONCRETE NOTE:

A) CONCRETE STRENGTH: 4500 PSI
B) 6 SACKS PER CUBIC YARD
C) MAX. AGGREGATE SIZE 3/4" DIA



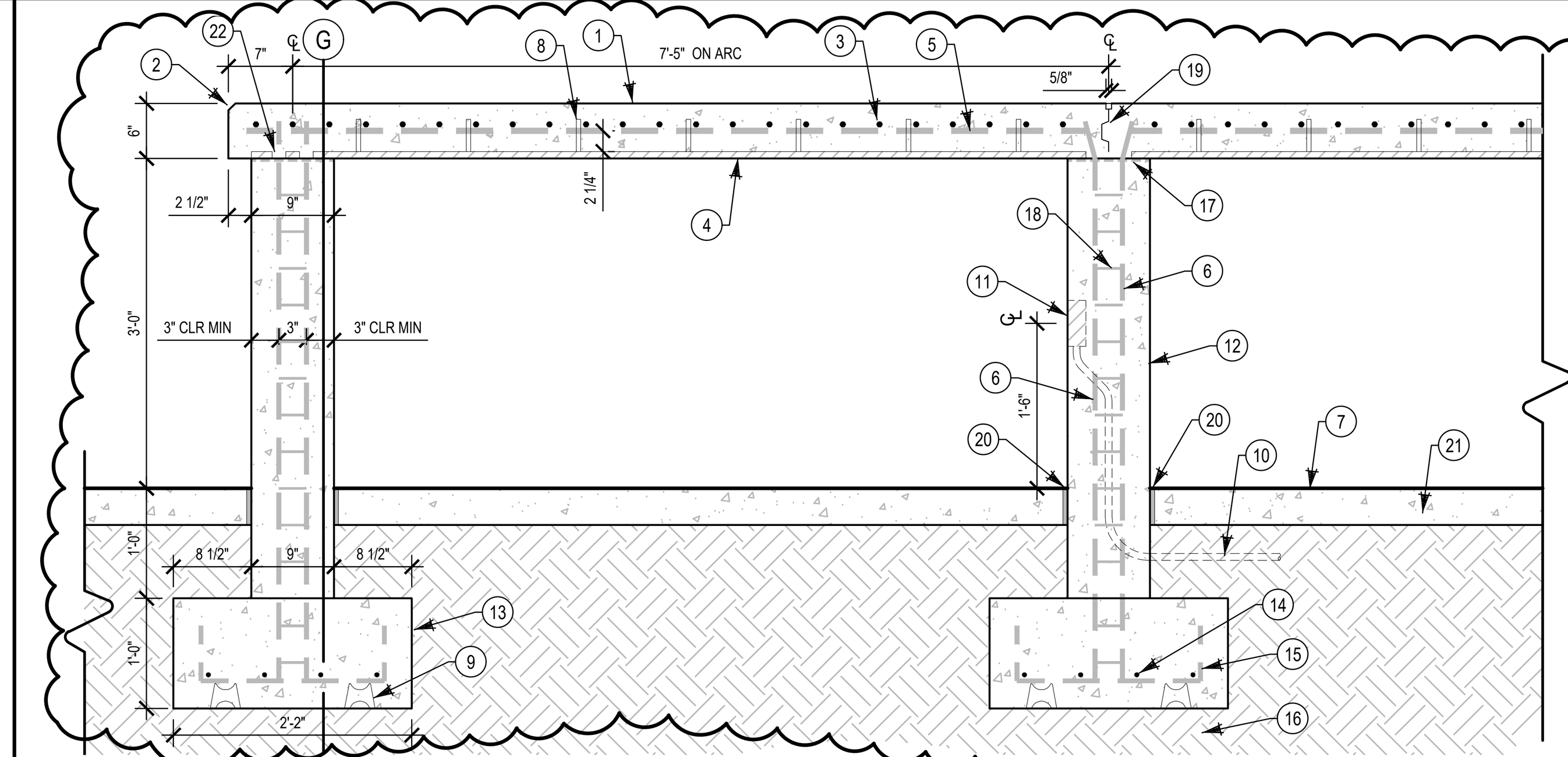
LEGEND:
1. CONCRETE SEAT TOP
2. 3/4" CHAMFER CONT. (TYP)
3. FINISH SURFACE
4. NON-SKID FINISH BENCH TOP FACE
MFR: CONCRETE FLOOR SOLUTIONS
MODEL: ALUMINIUM OXIDE
GRIT: 54 MESH
5. ANTI-SKATEBOARD BUTTON
MFR: PARK WAREHOUSE
MODEL: GRINDERMINDER, HEMISPHERE
FINISH: STAINLESS STEEL BRUSHED FINISH
6. CONTROL JOINT
MFR: BOMETALS INC.
MODEL: QUICKEY
SIZE: 6"
7. SMOOTH FINISH ALL FACES, EXCEPT SEAT TOP FACE
8. CONCRETE PEDESTAL

(D) CONCRETE BENCH - ELEVATION/ PLAN NTS



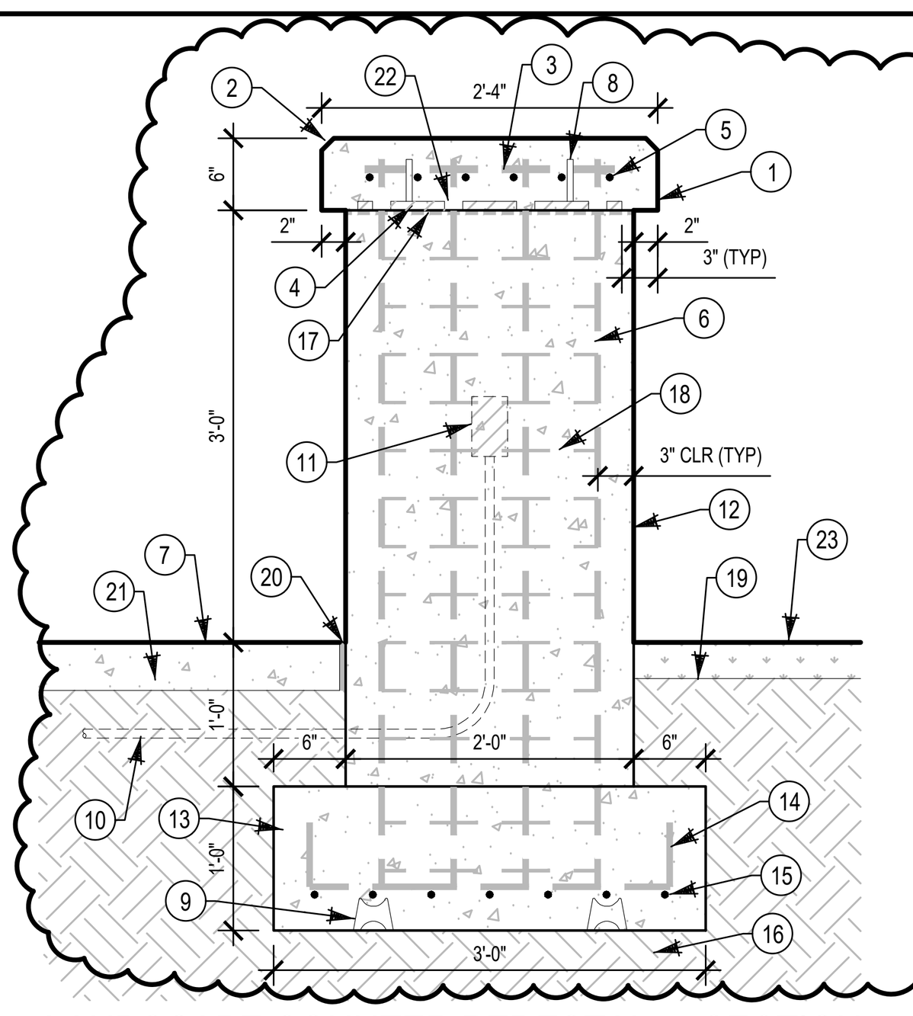
LEGEND:
1. COUNTER TOP ABOVE
2. CONCRETE PEDESTAL
3. CONCRETE FOOTING BELOW
4. FULL DEPTH ISOLATIN JOINT (TYP)
5. CONVENIENCE OUTLET IN PEDESTAL (SEE EE PLANS)
6. PAVING
7. EDGE OF PAVING
8. PLANTER AREA
9. STAIRS
10. CONCRETE RET. WALL
11. CONCRETE BENCH
12. CONCRETE MOW CURB
13. TURF

(E) LANDSCAPE COUNTER (LONG) - PLAN NTS



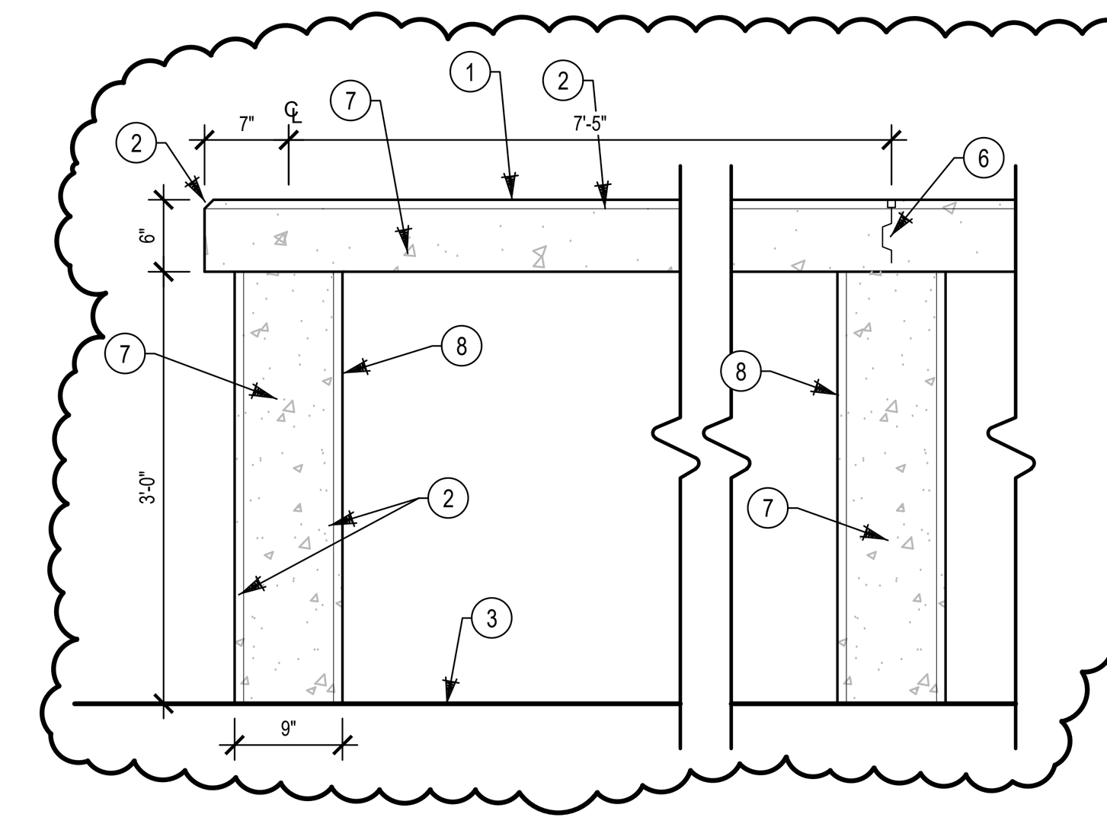
LEGEND:
1. CONCRETE SEAT TOP
2. 3/4" CHAMFER (TYP)
3. #5 HORIZ. REBAR, 4" OC (TYP)
4. 3/4" THICK, GAL. STEEL PLATE, INSET IN CONC
5. #5 HORIZ. REBAR, 4" OC (TYP)
6. #4 VERT. REBAR (TYP), 6" OC (TYP)
7. FINISH SURFACE
8. 3" NELSON STUD, 1'-0" O.C., WELDED TO PLATE, TWO ROWS
9. REBAR CHAIR, STAGGERED 24" O.C. MAX
10. ELECTRICAL CONDUIT (SEE EE PLANS)
11. EXT. GRADE DUAL ELEC. OUTLET (EMBED IN CONC., NOT SURFACE MOUNTED) (SEE EE PLANS)
12. CONCRETE PEDESTAL
13. CONCRETE FOOTING
14. (4) #4 U SHAPE REBAR, CONT. (TYP)
15. (7) #4 U SHAPE REBAR, CONT. (TYP)
16. COMPACT SUBGRADE
17. MFR: SLIP PLATE
MODEL: DRY FILM GRAPHITE LUBRICANT 1
18. #2 REBAR, CAGE, 4" OC (TYP)
19. CONTROL JOINT
MFR: BOMETALS INC.
MODEL: QUICKEY
SIZE: 6"
20. FULL DEPTH ISOLATION JOINT (TYP)
21. CONCRETE PAVING
22. SLOTTED HOLE IN PLATE FOR REBAR

(F) LANDSCAPE COUNTER - SECTION NTS



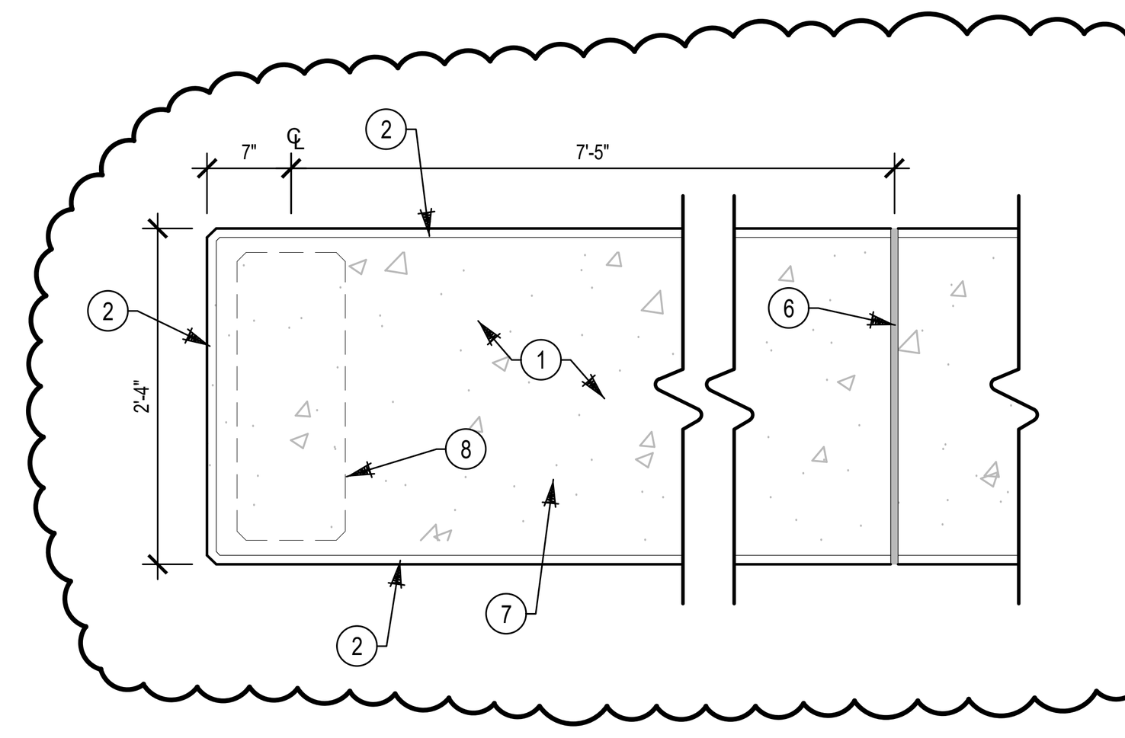
LEGEND:
1. CONCRETE SEAT TOP
2. 3/4" CHAMFER CONT. (TYP)
3. #5 HORIZ. REBAR, 4" OC (TYP)
4. 3/4" THICK, GAL. STEEL PLATE, INSET IN CONC
5. #5 HORIZ. REBAR, 4" OC (TYP)
6. #4 VERT. REBAR (TYP), 6" OC (TYP)
7. FINISH SURFACE
8. 3" NELSON STUD, 1'-0" O.C., WELDED TO PLATE, TWO ROWS
9. REBAR CHAIR, STAGGERED 24" O.C. MAX
10. ELECTRICAL CONDUIT (SEE EE PLANS)
11. EXT. GRADE DUAL ELEC. OUTLET (EMBED IN CONC., NOT SURFACE MOUNTED) (SEE EE PLANS)
12. CONCRETE PEDESTAL
13. CONCRETE FOOTING
14. (4) #4 U SHAPE REBAR, CONT. (TYP)
15. (7) #4 U SHAPE REBAR, CONT. (TYP)
16. COMPACT SUBGRADE
17. MFR: SLIP PLATE
MODEL: DRY FILM GRAPHITE LUBRICANT 1
18. #2 REBAR, CAGE, 4" OC (TYP)
19. PLANTER AREA FINISH GRADE
20. FULL DEPTH ISOLATION JOINT (TYP)
21. CONCRETE PAVING
22. SLOTTED HOLE IN PLATE FOR REBAR
23. TOP OF MULCH

(G) LANDSCAPE COUNTER PEDESTAL - SECTION NTS



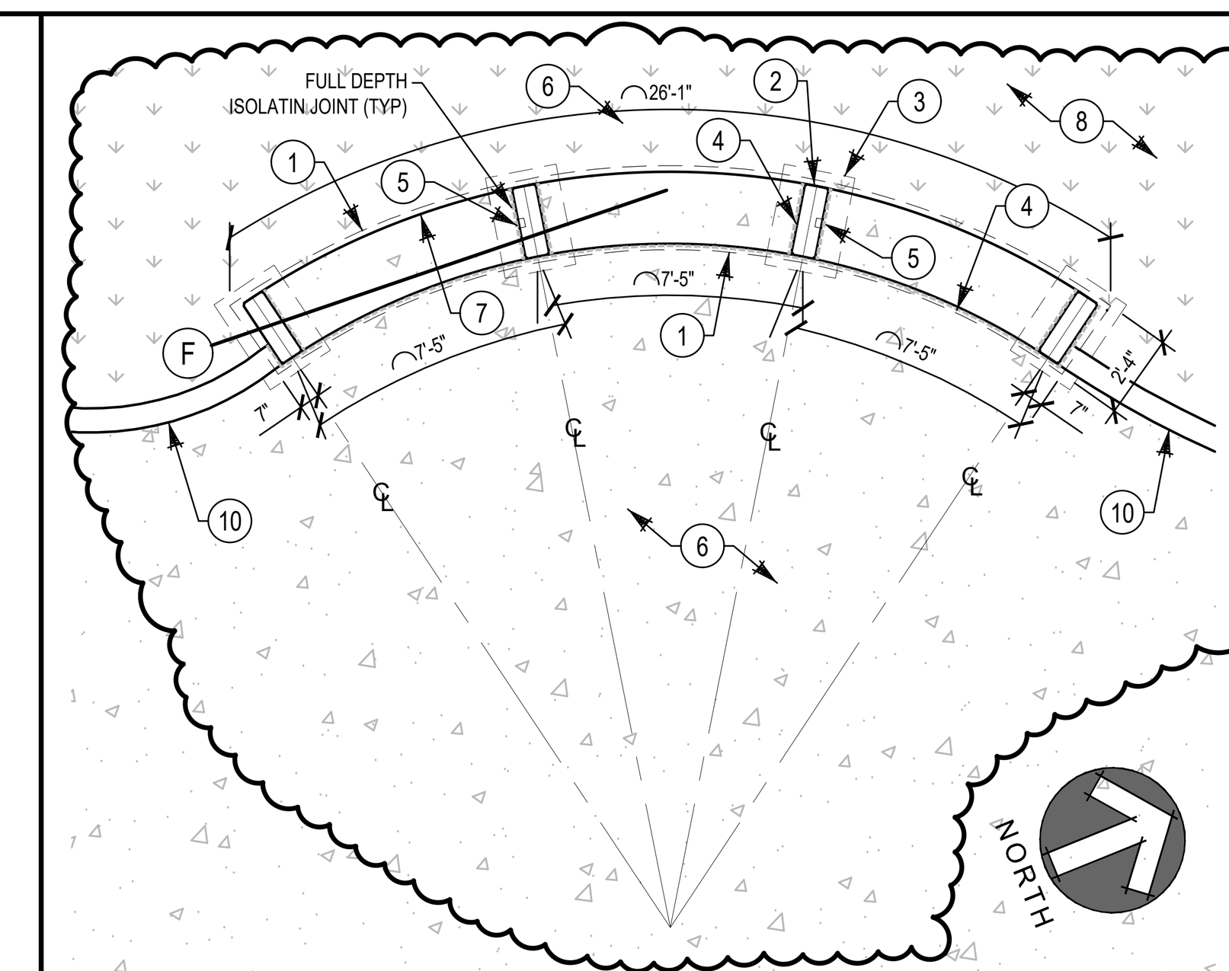
LEGEND:
1. CONCRETE COUNTER TOP
2. 3/4" CHAMFER CONT. (TYP)
3. FINISH SURFACE
4. -
5. -
6. CONTROL JOINT
MFR: BOMETALS INC.
MODEL: QUICKEY
SIZE: 6"
7. SMOOTH FINISH ALL FACES
8. CONCRETE PEDESTAL

(H) LANDSCAPE COUNTER - ELEVATION NTS



LEGEND:
1. CONCRETE COUNTER TOP
2. 3/4" CHAMFER CONT. (TYP)
3. -
4. -
5. -
6. CONTROL JOINT
MFR: BOMETALS INC.
MODEL: QUICKEY
SIZE: 6"
7. SMOOTH FINISH ALL FACES
8. CONCRETE PEDESTAL

(I) LANDSCAPE COUNTER TOP - PLAN NTS

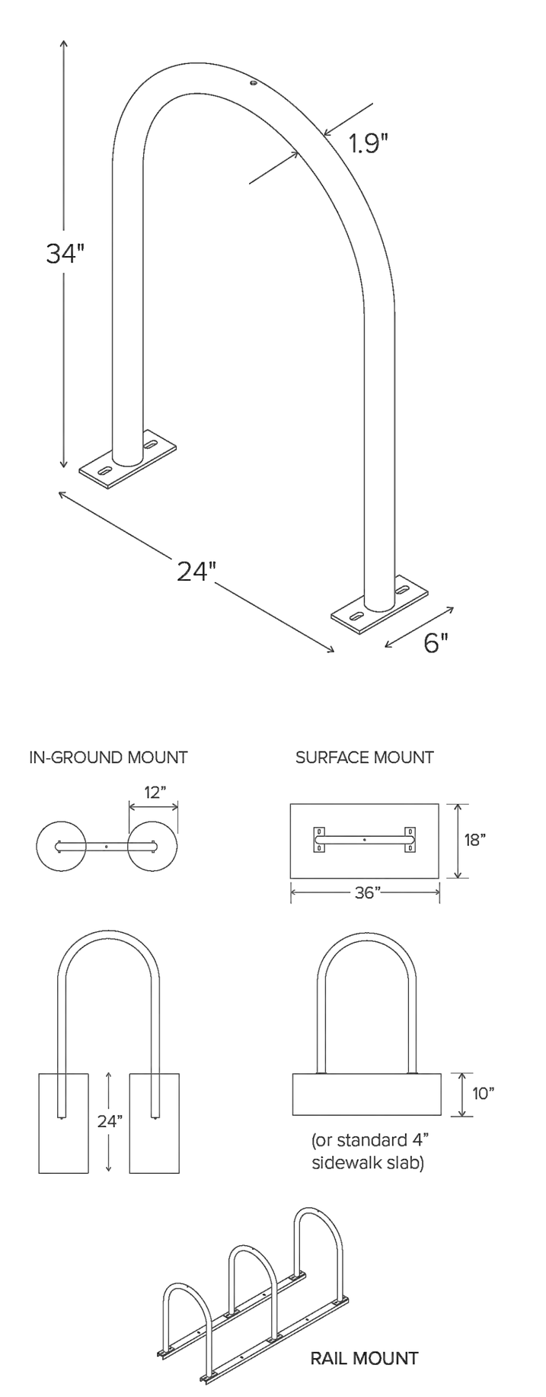


LEGEND:
1. COUNTER TOP ABOVE
2. CONCRETE PEDESTAL
3. CONCRETE FOOTING BELOW
4. FULL DEPTH ISOLATIN JOINT (TYP)
5. CONVENIENCE OUTLET IN PEDESTAL (SEE EE PLANS)
6. PAVING
7. EDGE OF PAVING
8. PLANTER AREA
9. STAIRS
10. CONCRETE RET. WALL

(J) LANDSCAPE COUNTER (SHORT) - PLAN NTS

(K) UNUSED NTS

DERO Hoop Rack — Submittal Sheet



CAPACITY: 2 Bikes

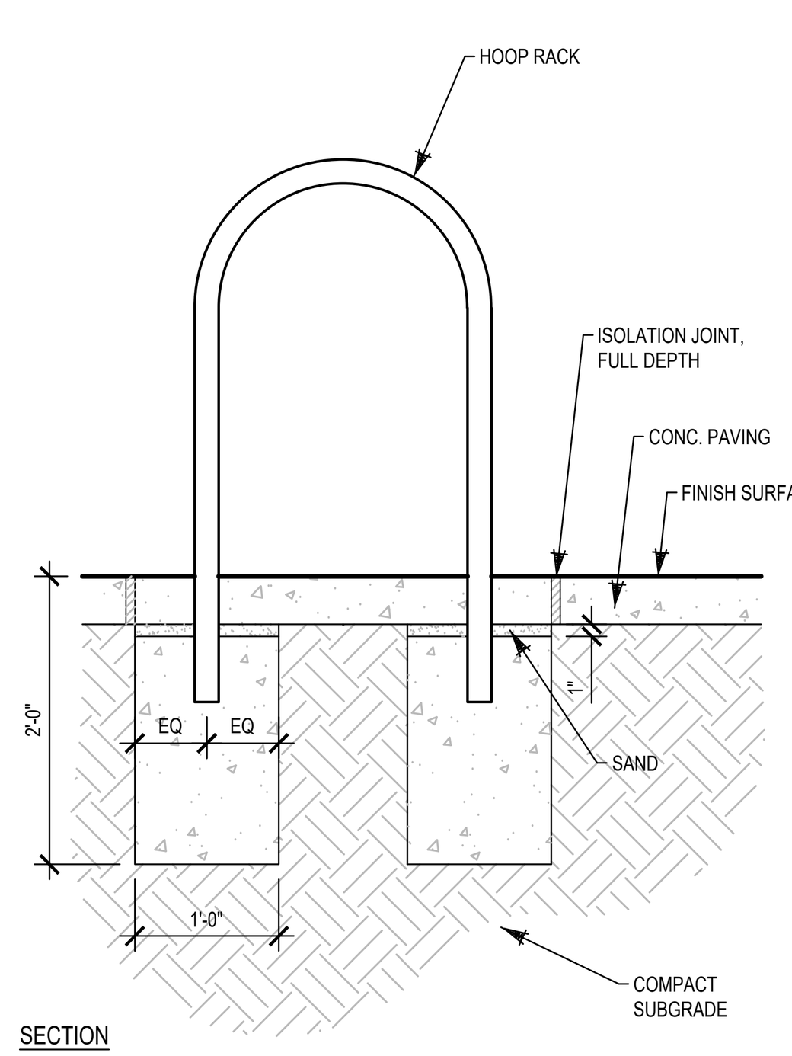
MATERIALS: 1.5" schedule 40 pipe (1.9" OD)

FINISHES:
- Galvanized — An after fabrication hot dipped galvanized finish is our standard option.
- Powder Coat — Our powder coat finish assures a high level of adhesion and durability by following these steps: 1. Sandblast 2. Epoxy primer electrostatically applied 3. Final thick TGIC polyester powder coat
- Stainless — Stainless Steel: 304 grade stainless steel material finished in either a high polished shine or a satin finish.

MOUNT OPTIONS:
- Surface — Foot Mount has two 2.5" x 6" x .25" feet with two anchors per foot. Specify foot mount for this option. Tamper-resistant fasteners available upon request.
- In-Ground — In-ground mount is embedded into concrete base. Specify in-ground mount for this option.
- Rail — Rail Mounted Downtown Racks are bolted to two parallel rails which can be left freestanding or anchored to the ground. Rails are heavy duty 3" x 1.4" x 3/16" thick galvanized mounting rails. Specify rail mount for this option.

90 45A 45B 60A 60B

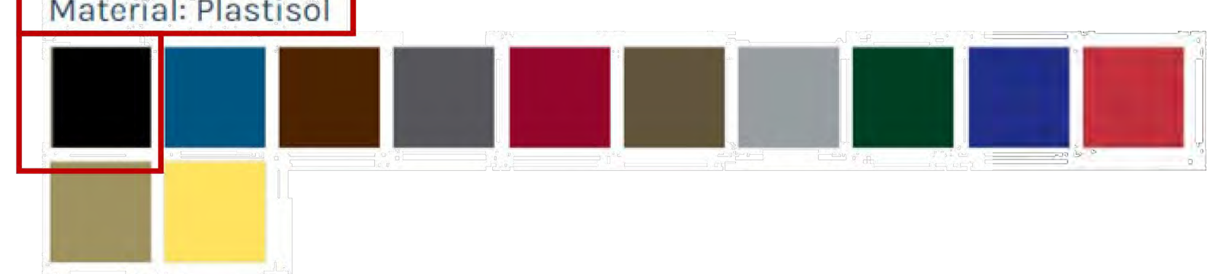
OPTIONAL LEAN BAR: Add Lean Bar



(L) BIKE RACK - SECTOIN/ CUT SHEET NTS

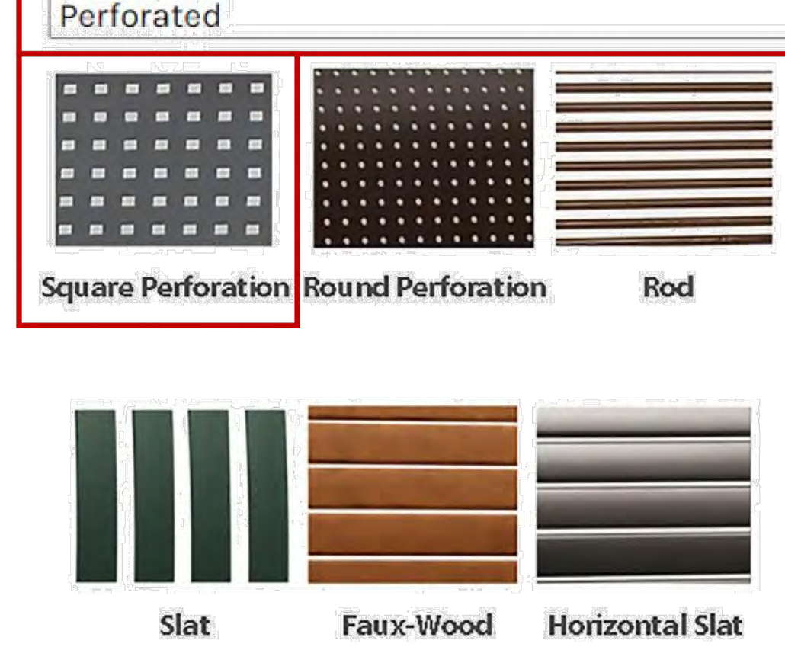
Can Color

Material: Plastisol



Pattern

Perforated



mfr: Wabash Valley
website: wabashvalley.com
model: Classic Collection
model #: LR355P
size: 55 Gallon
pattern: perforated
lid: Solid Bonnet
color: black
liner: 55 gallon liner

RECEPTACLES

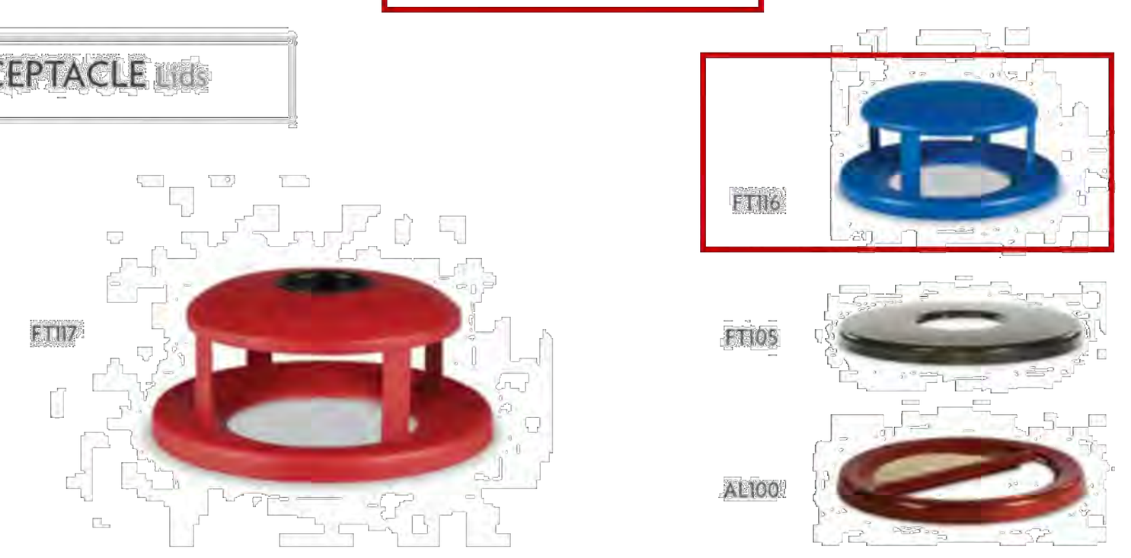
RECEPTACLES Tapered & 55-Gallon

Tapered receptacle: Liners, mounting posts and lids sold separately.

55-gallon receptacle: Designed for use with any standard-size steel drum (not included).

Optional new 55-gallon liner

RECEPTACLE Lids



Choose your lid and style:
Powder-coated flat-top lids in inward or outward slope.
Bonnet lids in solid, ashtray or serving tray options.
Cast ash/trash lid.
Foam-molded plastic dome-top lid.
Flat-top recycle lid labeled "Recycle Only" with 5" diameter hole opening.
Dome-top recycle lid labeled "Recycle Only" in black with 4" diameter hole opening.

(M) TRASH CAN - CUT SHEET NTS

BENCH & LANDSCAPE COUNTER NOTES:
A) CONTRACTOR TO SUBMIT SHOP DRAWING OF CUSTOM LANDSCAPE CONCRETE BENCH, & CONCRETE LANDSCAPE COUNTER.

CHECKED BY:

DRAWN BY:

PBK

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PBK.com
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7790 North Palm Avenue
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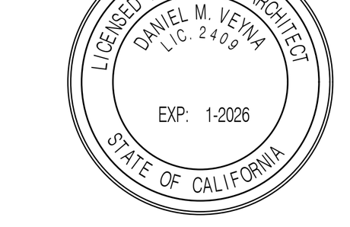
NEW RESIDENCE HALL
1801 PANORAMA DR, BAKERSFIELD, CA 93305
FILE: 15-C1
BID
DSA APPL. NO. 03-122124

LANDSCAPE ARCHITECT LOGO
Sierra Designs, Inc.
Landscape Architecture • Planning
113 N. Church Street, Suite 310
Visalia, CA 93291
ph: 559.733.3690
cell: 559.730.1917
dan@sierradesignsla.com

LANDSCAPE ARCHITECT



ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 02/27/2024

REVISIONS

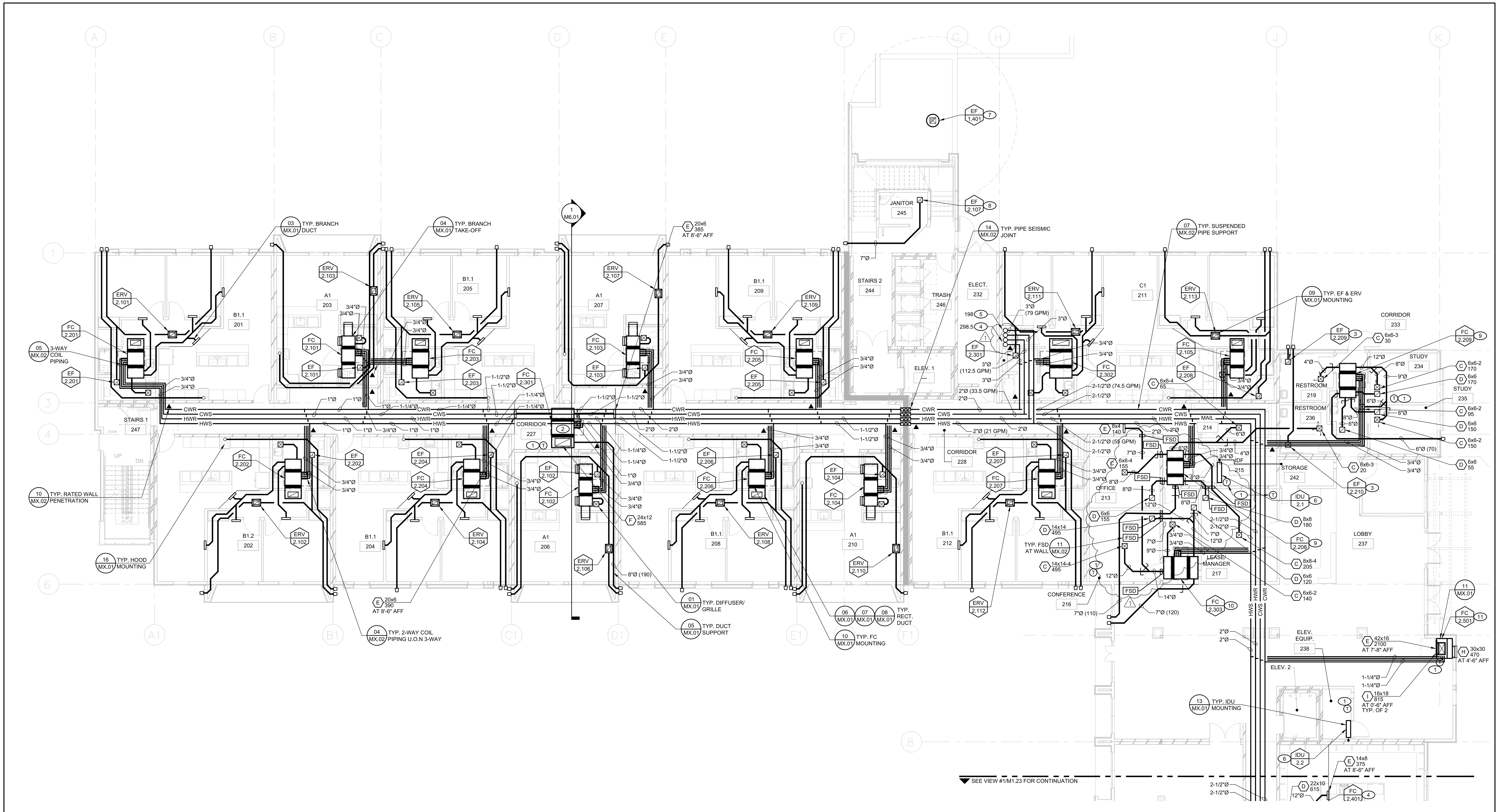
#	DESCRIPTION	DATE
3	ADDENDUM No. 6	04/11/2024

BID

BENCH, COUNTER & FURNITURE DETAILS

L6.5

S2103400AR M1.22-M1.23 MECHANICAL ENLARGED FLOOR PLANS - LEVEL 02 - NORTH & SOUTH.DWG



1 MECHANICAL ENLARGED FLOOR PLAN - LEVEL 02 - NORTH

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

NOTE:
SEE SHEETS M4.01 & M4.02 FOR TYPICAL UNIT LAYOUTS WITH ALL KEYNOTES AND DUCT SIZES SHOWN ON THE ENLARGED PLANS. SOME OF THE UNITS ARE A MIRROR IMAGE SO PIPING CONNECTIONS TO FAN COILS WILL NEED TO BE ORDERED ON OPPOSITE SIDE.

KEYNOTES

1. EMS TEMP. SENSOR MOUNTED AT 48" AFF TO TOP OF BOX. ALL WIRE SHALL BE INSIDE CONDUIT CONCEALED IN WALL.
2. 52"x7" SA & 52"x11' RA DUCT FLEX CONNECTIONS. PROVIDE 52"x12"x12" ACOUSTIC LINED SA PLENUM WITH 10"Ø DUCTS OUT EACH SIDE. PROVIDE 52"x12"x12" ACOUSTIC LINED RA PLENUM WITH DUCT OUT BOTTOM WITH VCD TO GRILLE.
3. 8'x8" EA DUCT CONNECTION WITH TRANSITION TO 8"Ø DUCT AND EXTEND TO WALL CAP.
4. 6" CWS & R RISERS UP TO 2ND FLOOR ATTIC.
5. 4" HWS & R RISERS UP TO 2ND FLOOR ATTIC.
6. REFRIGERANT PIPES FROM IDU RISE ABOVE CEILING OFFSET IN ATTIC AND RISE IN CHASE TO ROOF ODU. ONE LINE SHOWN FOR CLARITY ONLY. INSULATE BOTH LINES.
7. 16"x16" EA DUCT CONNECTION AND DROP THRU ROOF TO CEILING GRILLE.
8. 6"Ø EA DUCT CONNECTION WITH TRANSITION TO 7"Ø DUCT AND EXTEND TO WALL CAP.
9. 38"x7" SA & 38"x11 RA DUCT FLEX CONNECTIONS. PROVIDE 38"x12"x12" ACOUSTIC LINED SA PLENUM WITH DUCTS CONNECTED AS SHOWN. PROVIDE 38"x12"x12" ACOUSTIC LINED RA PLENUM WITH DUCTS CONNECTED AS SHOWN.
10. 52"x7" SA & 52"x11 RA DUCT FLEX CONNECTIONS. PROVIDE 52"x12"x12" ACOUSTIC LINED SA PLENUM WITH DUCTS CONNECTED AS SHOWN. PROVIDE 52"x12"x12" ACOUSTIC LINED RA PLENUM WITH DUCTS CONNECTED AS SHOWN.
11. 30"x12" SA DUCT FLEX CONNECTION WITH ELBOW OVER AND TRANSITION TO GRILLE. THE (2) LOW RA GRILLES IN DOORS ARE PROVIDED BY UNIT MANUFACTURER.

FIRE WALL LEGEND

1-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / 5/8" GYP.

1-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ 5/8" GYP.

2-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ (2) SHAFTLINER

2-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / (2) SHAFTLINER

PBK

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15-C1

ENGINEER LOGO
MEP Engineering
LEAF ENGINEERS A PBK COMPANY
895 W. Ashlan Ave, Suite 101 Clovis, CA 93612
p 559-223-9600 www.LEAFengineers.com
job #: S2103400AR

ENGINEER

REGISTERED PROFESSIONAL ENGINEER
NO. 33380
MECHANICAL
STATE OF CALIFORNIA

ARCHITECT

LICENSED ARCHITECT
C 15885
9-30-23
RENEWAL DATE
STATE OF CALIFORNIA

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM 05	04/05/24

BID

MECHANICAL ENLARGED FLOOR PLAN - LEVEL 02 - NORTH

M1.22

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CHECKED BY: K.K.

DRAWN BY: CAL

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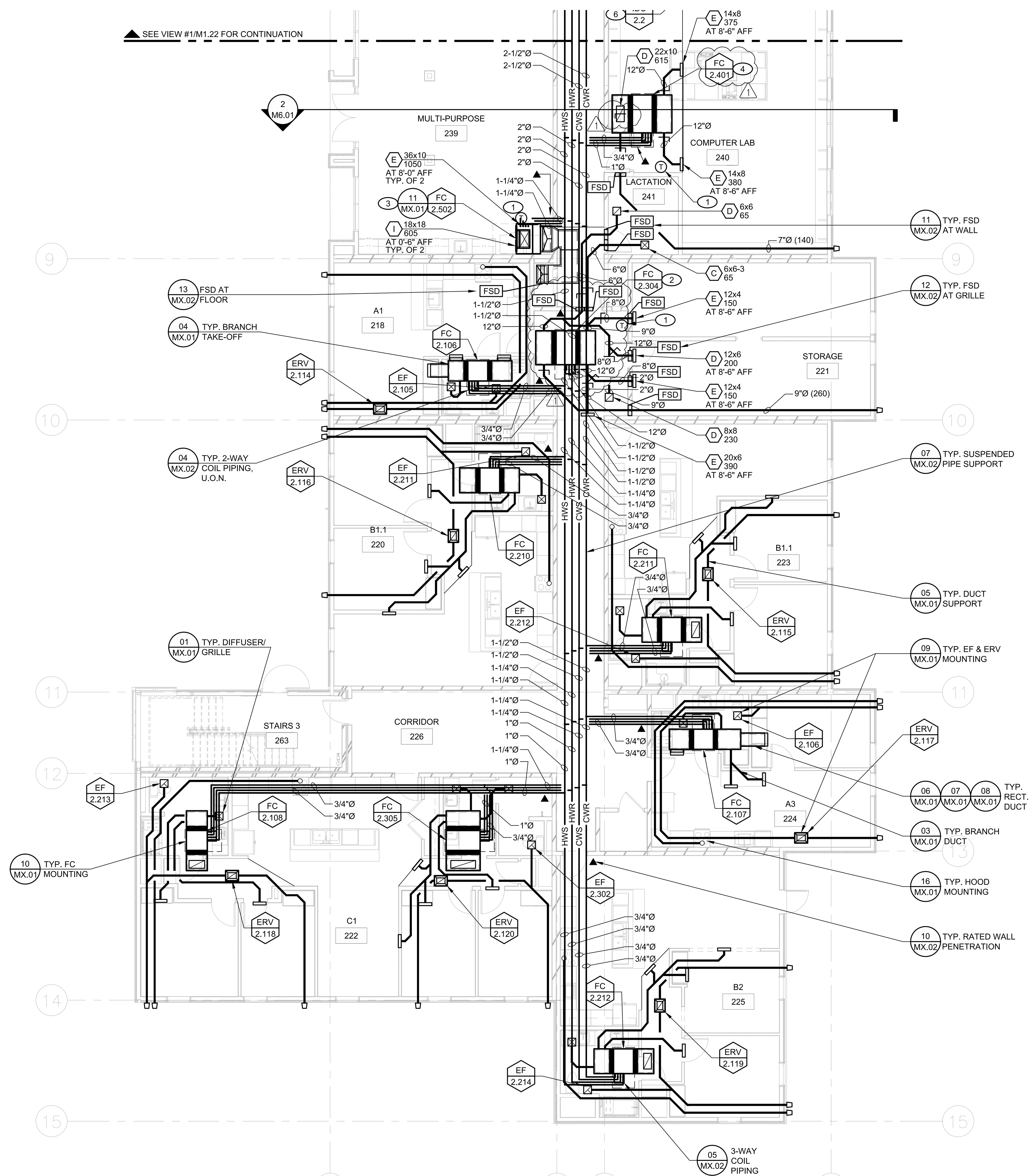

1 MECHANICAL ENLARGED FLOOR PLAN - LEVEL 02 - SOUTH

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

NOTE:
SEE SHEETS M4.01 & M4.02 FOR TYPICAL UNIT LAYOUTS WITH ALL KEYNOTES AND DUCT SIZES SHOWN ON THE ENLARGED PLANS. SOME OF THE UNITS ARE A MIRROR IMAGE SO PIPING CONNECTIONS TO FAN COILS WILL NEED TO BE ORDERED ON OPPOSITE SIDE.

KEYNOTES

1. EMS TEMP. SENSOR MOUNTED AT 48" AFF TO TOP OF BOX. ALL WIRE SHALL BE INSIDE CONDUIT CONCEALED IN WALL.
2. 52"x7" SA & 52"x11' RA DUCT FLEX CONNECTIONS. PROVIDE 52"x12"x12" ACOUSTIC LINED SA PLENUM WITH 10"Ø DUCTS CONNECTED AS SHOWN. PROVIDE 52"x12"x12" ACOUSTIC LINED RA PLENUM WITH DUCTS CONNECTED AS SHOWN.
3. 30"x12" SA DUCT FLEX CONNECTION WITH DUCT INTO BOTTOM OF 40"x40"x12" ACOUSTIC LINED SA PLENUM AND (2) 36"x10" DUCTS OUT SIDES WITH VCD'S TO GRILLES. THE (2) LOW RA GRILLES IN DOORS ARE PROVIDED BY UNIT MANUFACTURER. PROVIDE 36"x10" OA DUCT CONNECTION OUT BACK OF PLENUM WITH ELBOW UP TO ABOVE CEILING, TRANSITION TO 24"x14" AFTER ELBOW OVER AND EXTEND AS SHOWN TO RISER UP IN CHASE TO ROOF.
4. 60"x7" SA & 59"x11' RA DUCT FLEX CONNECTIONS. PROVIDE 60"x14"x14" ACOUSTIC LINED SA PLENUM WITH 12"Ø DUCTS CONNECTED AS SHOWN. PROVIDE 59"x12"x12" ACOUSTIC LINED RA PLENUM WITH DUCTS CONNECTED AS SHOWN.

FIRE WALL LEGEND

1-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / 5/8" GYP.

1-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ 5/8" GYP.

2-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ (2) SHAFTLINER

2-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / (2) SHAFTLINER

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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15-C1

ENGINEER LOGO
MEP Engineering
LEAF ENGINEERS

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE	03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM 05	04/05/24

BID

MECHANICAL ENLARGED FLOOR PLAN - LEVEL 02 - SOUTH

M1.23

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CHECKED BY: K.K.

DRAWN BY: CAL

S2103400AR M1.22-M1.23 MECHANICAL ENLARGED FLOOR PLANS - LEVEL 02 - NORTH & SOUTH.DWG

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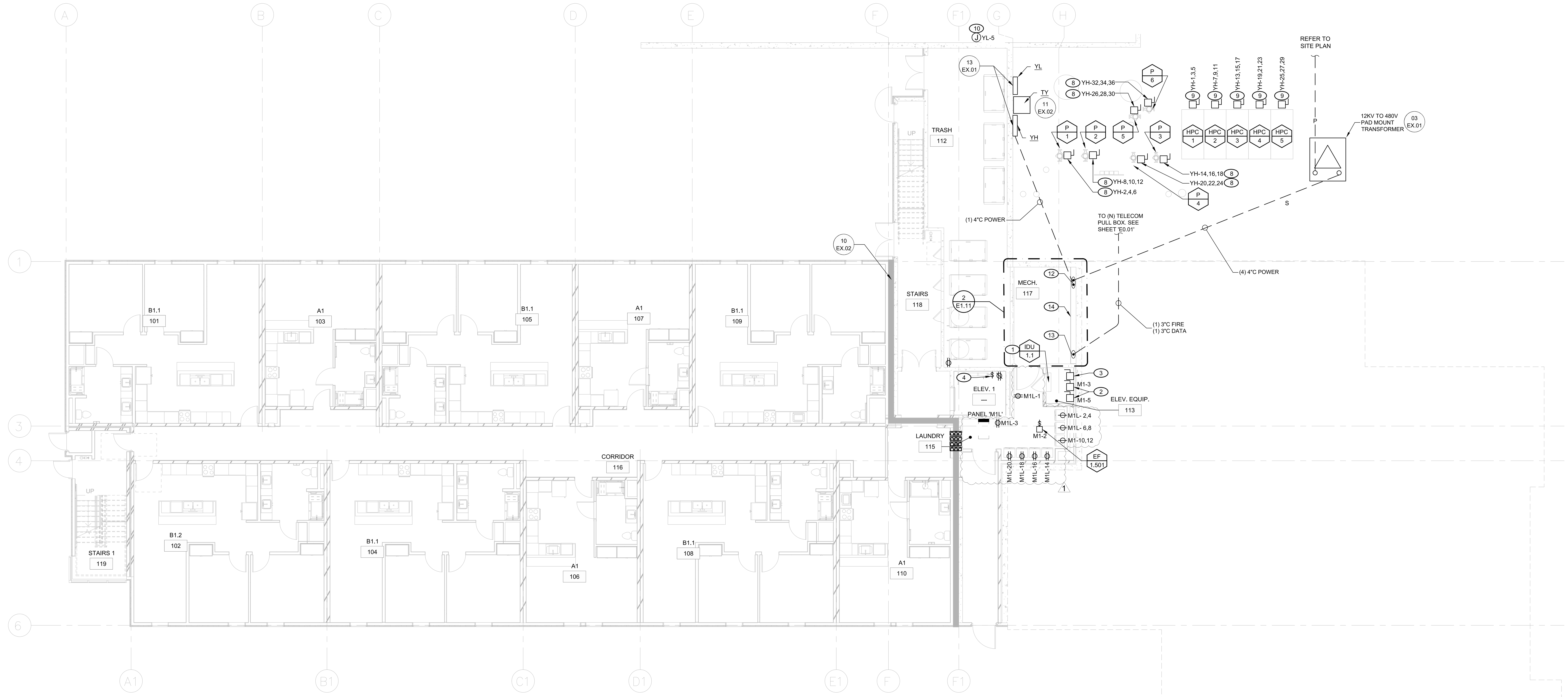
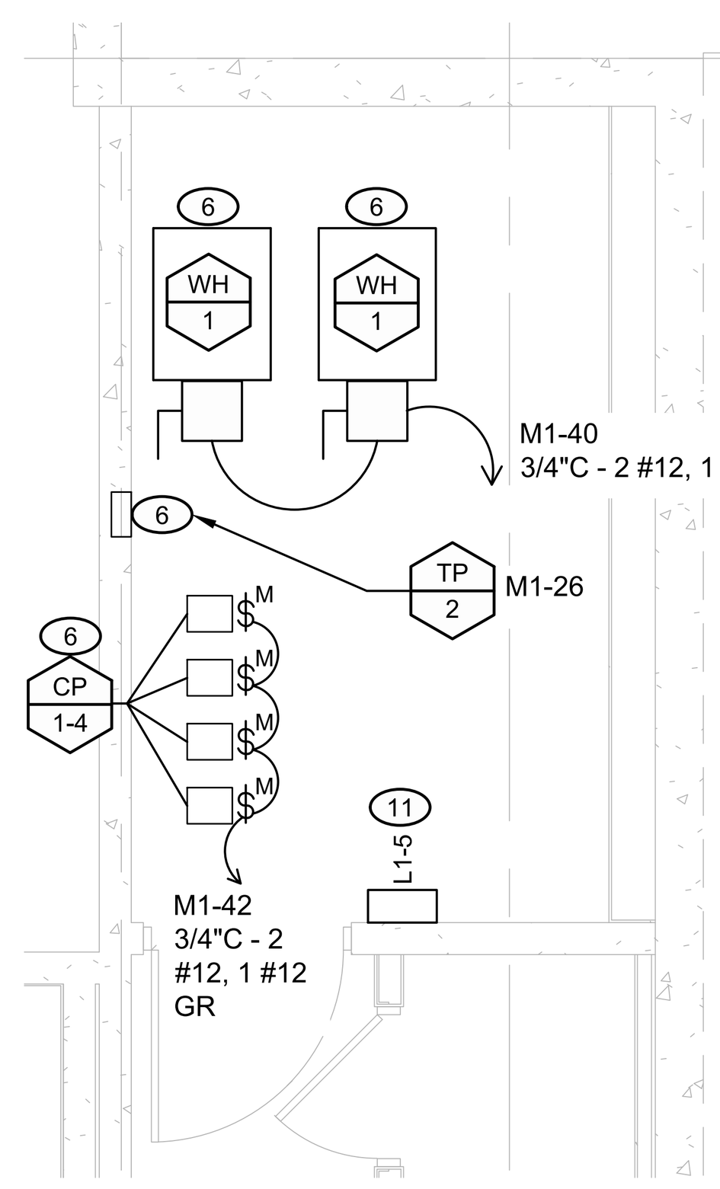


1 ELECTRICAL OVERALL POWER PLAN - LEVEL 01

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



2 ENLARGED MECHANICAL ROOM 117

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

GENERAL NOTES

1. THE TYPICAL UNIT TYPE (A1, A2, A3, ETC.) CAN BE FOUND ABOVE THE ROOM NUMBER (101, 102, ETC.). USE THIS TYPE DESIGNATION AND REFER TO SHEETS E4.01 THROUGH E4.03 TO FIND FIXTURES AND DEVICES INSIDE THE UNIT.
2. POWER CIRCUITS CONSIST OF (2) #12 AWG AND (1) #12 AWG GND IN 3/4" CONDUIT TO INDICATED CIRCUITS UNLESS OTHERWISE NOTED.
3. COORDINATE ALL EQUIPMENT LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. VERIFY PRIOR TO INSTALLATION.
4. MAINTAIN CODE REQUIRED 36" CLEARANCE IN FRONT OF ELECTRICAL PANEL.
5. PROVIDE #10 CONDUCTORS FOR DRYERS IN LAUNDRY ROOM.

KEYNOTES

(1) INDOOR UNIT IS POWERED THROUGH THE OUTDOOR UNIT (MOUNTED ON ROOF). PROVIDE EMPTY CONDUIT WITH PULL STRING BETWEEN UNITS.

(2) PROVIDE 30A, SINGLE POLE DISCONNECT SWITCHES WITH A 20A FUSE FOR ELEVATOR CAB LIGHT(S) AND CONTROLLER. COORDINATE CLEARANCE AROUND DISCONNECT SWITCH PER NEC. 620-72 WITH ELEVATOR INSTALLER. ELECTRICAL CONNECTION FROM SWITCH TO ELEVATOR CAB BY ELEVATOR INSTALLER. INSTALL LOCAL DISCONNECT WITH PADLOCK ACCESSORY FOR HANDLE PER NEC 620-53. CIRCUITED FROM 'MSB'. SEE SINGLE LINE SHEET 'E6.01'.

(3) ELEVATOR AUTOMATIC SHUTDOWN SWITCH. PROVIDE PER SPECIFICATION 26 09 14. MAKE ALL CONNECTIONS TO ELEVATOR CONTROLLER AS REQUIRED BY ELEV. MFR. VERIFY ELEV. EQUIPMENT LOCATIONS WITH ELEV. SUPPLIER BEFORE ELECT. ROUGH-IN. COORDINATE FUSE SIZE, DISCONNECT SWITCH SIZE, CIRCUIT BREAKER SIZE, CONDUCTOR SIZE AND CONDUIT SIZE FOR ELEVATOR WITH ELEVATOR SUPPLIER AND PER SUPPLIER'S RECOMMENDATION(S) PRIOR TO SUBMITTING ELECTRICAL EQUIPMENT. CONNECTION FROM DISCONNECT SWITCH TO ELEVATOR CONTROLLER BY DIVISION 26. COORDINATE LOCATION OF CONTROLLER WITH ELEVATOR INSTALLER IN FIELD. CIRCUITED FROM 'MSB'. SEE SINGLE LINE SHEET 'E6.01'.

(4) PROVIDE RECEPTACLE AND SWITCH FOR SUMP PUMP IN ELEVATOR PIT ALL IN NEMA 4 ENCLOSURES. COORDINATE LOCATION OF RECEPTACLE AND SWITCH WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

(5) NOT USED.

(6) PROVIDE 120V, 1PH POWER FOR (2) GAS WATER HEATERS (6.2A EACH), (5) CIRC PUMPS (1/6HP EACH) AND (1) ELECTRONIC TRAP PRIMER PER PLUMBING PLANS.

(7) PROVIDE ROOM ANNUNCIATION SYSTEM AS SHOWN. MOUNT TRANSFORMER ABOVE ACCESSIBLE CEILING AND POWER FROM 120V CIRCUIT IN UNIT ELECTRICAL PANEL. SEE DETAIL 03 ON SHEET EX.03 FOR MORE INFORMATION.

(8) PROVIDE 30A, 3P, NEMA 3R RATED DISCONNECT WITH 15A FUSES FOR PUMP UNIT. SEE SINGLE LINE ON SHEET 'E6.01' FOR FEEDER CONDUIT AND CONDUCTOR SIZE.

(9) PROVIDE 200A, 3P, NEMA 3R RATED DISCONNECT WITH 110A FUSES FOR HEAT PUMP CHILLER UNIT. SEE SINGLE LINE ON SHEET 'E6.01' FOR FEEDER CONDUIT AND CONDUCTOR SIZING.

(10) PROVIDE 120V POWER TO FIRE ALARM SPRINKLER BELL.

(11) PROVIDE 120V POWER TO FIRE ALARM NAC PANEL.

(12) ROUTE CONDUIT RISERS FOR POWER WITHIN 12" FURRED WALL AND TERMINATE IN NEW MAIN SWITCHBOARD ON SECOND FLOOR.

(13) ROUTE CONDUIT RISERS FOR FIRE ALARM AND DATA WITHIN 12" FURRED WALL AND STUB INTO SECOND FLOOR ELECTRICAL ROOM.

(14) PROPOSED LOCATION OF 12" FURRED UTILITY WALL. COORDINATE WITH ARCHITECTURAL AND PLUMBING CONTRACTOR PRIOR TO FINAL UTILITY RISER INSTALLATIONS.

FIRE WALL LEGEND

1-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / 5/8" GYP.

1-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ 5/8" GYP.

2-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ (2) SHAFTLINER

2-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / (2) SHAFTLINER

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PBK.com
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7790 North Palm Avenue
Fresno, CA 93711
559-448-8400 P
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NEW RESIDENCE HALL

1801 PANORAMA DR, BAKERSFIELD, CA 93305

BID

DSA APPL. NO. 03-122124 FILE: 15-C1

ENGINEER LOGO
MEP Engineering
LEAF ENGINEERS

ENGINEER

ARCHITECT

C 15885
9-30-23
RENEWAL DATE
STATE OF CALIFORNIA

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

ELECTRICAL OVERALL POWER PLAN - LEVEL 01

E1.11

This document is for plan review only

CHECKED BY: K.K.

DRAWN BY: CAL

S2103400AR E1.11 ELECTRICAL OVERALL POWER PLAN - LEVEL 01.DWG

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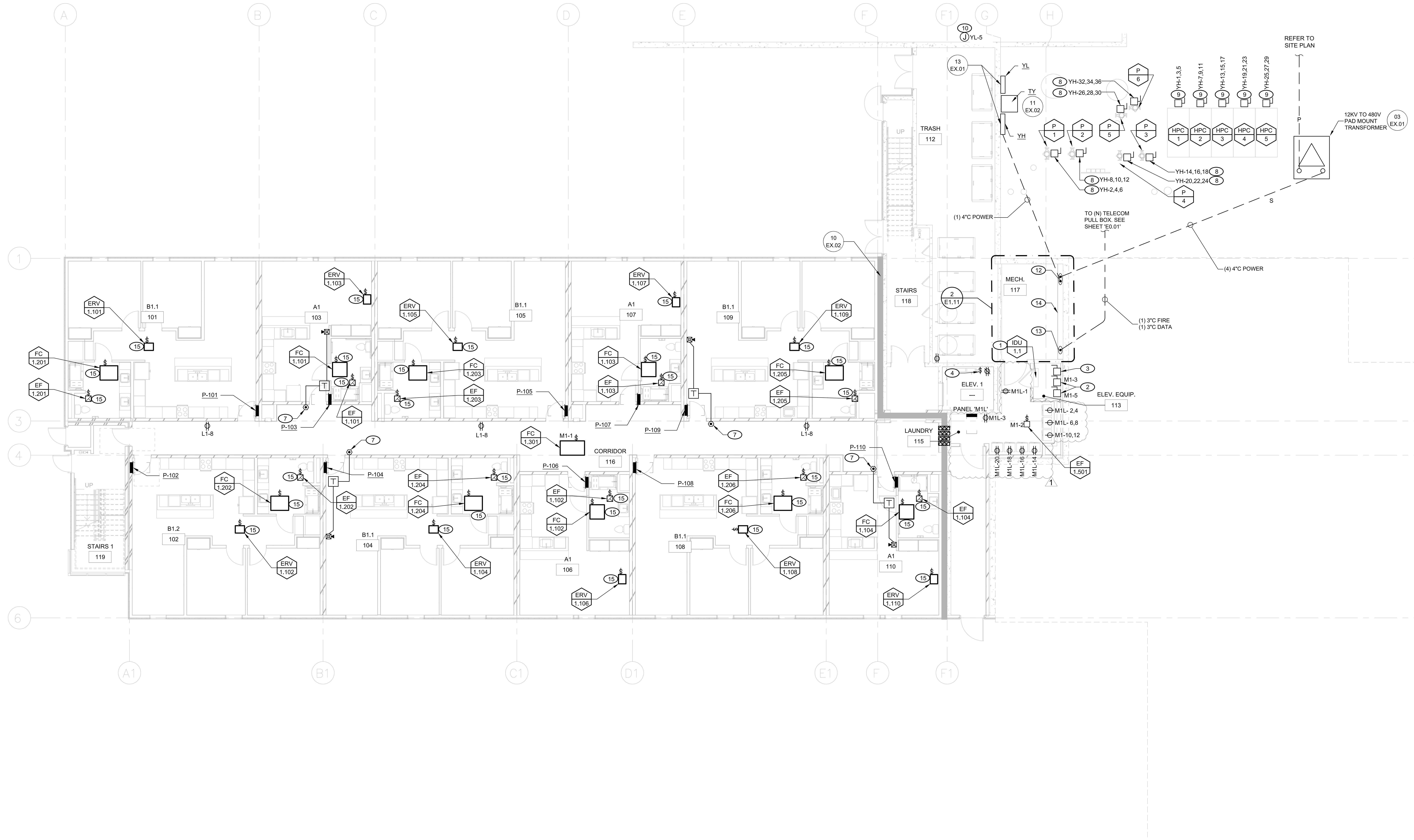
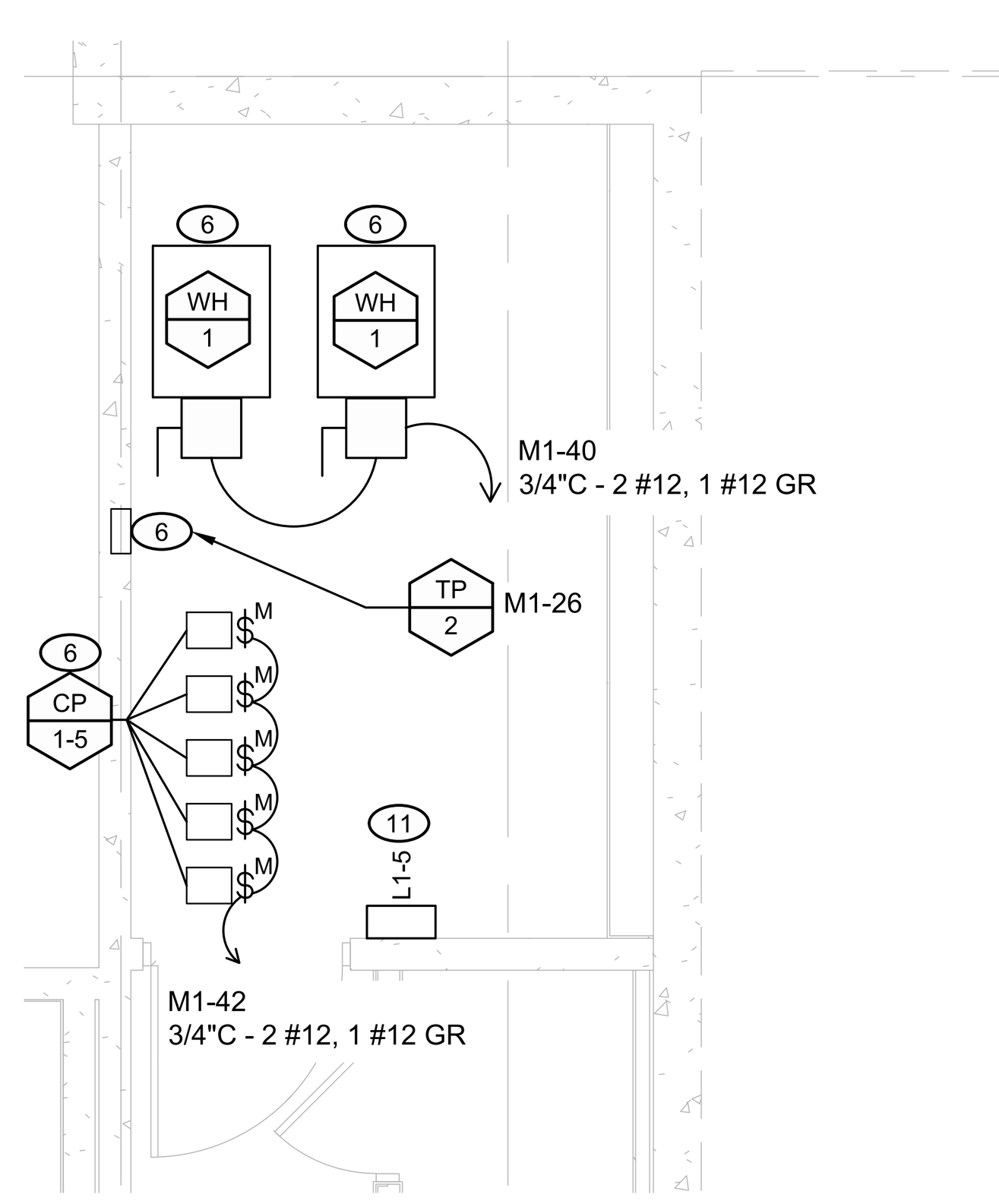
3/12/2024 8:44:10 AM



1 ELECTRICAL OVERALL POWER PLAN - LEVEL 01

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



2 ENLARGED MECHANICAL ROOM 117

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

GENERAL NOTES

1. THE TYPICAL UNIT TYPE (A1, A2, A3, ETC.) CAN BE FOUND ABOVE THE ROOM NUMBER (101, 102, ETC.). USE THIS TYPE DESIGNATION AND REFER TO SHEETS E4.01 THROUGH E4.03 TO FIND FIXTURES AND DEVICES INSIDE THE UNIT.
2. POWER CIRCUITS CONSIST OF (2) #12 AWG AND (1) #12 AWG GND IN 3/4" CONDUIT TO INDICATED CIRCUITS UNLESS OTHERWISE NOTED.
3. COORDINATE ALL EQUIPMENT LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. VERIFY PRIOR TO INSTALLATION.
4. MAINTAIN CODE REQUIRED 36" CLEARANCE IN FRONT OF ELECTRICAL PANEL.
5. PROVIDE #10 CONDUCTORS FOR DRYERS IN LAUNDRY ROOM.

KEYNOTES

(1) INDOOR UNIT IS POWERED THROUGH THE OUTDOOR UNIT (MOUNTED ON ROOF). PROVIDE EMPTY CONDUIT WITH PULL STRING BETWEEN UNITS.

(2) PROVIDE 30A, SINGLE POLE DISCONNECT SWITCHES WITH A 20A FUSE FOR ELEVATOR CAB LIGHT(S) AND CONTROLLER. COORDINATE CLEARANCE AROUND DISCONNECT SWITCH PER NEC. 620-72 WITH ELEVATOR INSTALLER. ELECTRICAL CONNECTION FROM SWITCH TO ELEVATOR CAB BY ELEVATOR INSTALLER. INSTALL LOCAL DISCONNECT WITH PADLOCK ACCESSORY FOR HANDLE PER NEC 620-53. CIRCUITED FROM 'MSB'. SEE SINGLE LINE SHEET 'E6.01'.

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(5) NOT USED.

(6) PROVIDE 120V, 1PH POWER FOR (2) GAS WATER HEATERS (6.2A EACH), (5) CIRC PUMPS (1/6HP EACH) AND (1) ELECTRONIC TRAP PRIMER PER PLUMBING PLANS.

(7) PROVIDE ROOM ANNUNCIATION SYSTEM AS SHOWN. MOUNT TRANSFORMER ABOVE ACCESSIBLE CEILING AND POWER FROM 120V CIRCUIT IN UNIT ELECTRICAL PANEL. SEE DETAIL 03 ON SHEET EX.03 FOR MORE INFORMATION.

(8) PROVIDE 30A, 3P, NEMA 3R RATED DISCONNECT WITH 15A FUSES FOR PUMP UNIT. SEE SINGLE LINE ON SHEET 'E6.01' FOR FEEDER CONDUIT AND CONDUCTOR SIZE.

(9) PROVIDE 200A, 3P, NEMA 3R RATED DISCONNECT WITH 110A FUSES FOR HEAT PUMP CHILLER UNIT. SEE SINGLE LINE ON SHEET 'E6.01' FOR FEEDER CONDUIT AND CONDUCTOR SIZING.

(10) PROVIDE 120V POWER TO FIRE ALARM SPRINKLER BELL.

(11) PROVIDE 120V POWER TO FIRE ALARM NAC PANEL.

(12) ROUTE CONDUIT RISERS FOR POWER WITHIN 12" FURRED WALL AND TERMINATE IN NEW MAIN SWITCHBOARD ON SECOND FLOOR.

(13) ROUTE CONDUIT RISERS FOR FIRE ALARM AND DATA WITHIN 12" FURRED WALL AND STUB INTO SECOND FLOOR ELECTRICAL ROOM.

(14) 12" FURRED UTILITY WALL. COORDINATE WITH ARCHITECTURAL AND PLUMBING CONTRACTOR PRIOR TO FINAL UTILITY RISER INSTALLATIONS.

(15) FOR POWER SUPPLY CIRCUITS FOR DWELLING UNIT'S MECHANICAL, SEE PANEL SCHEDULES FOR TYPICAL DWELLING UNIT, SHEET 'E6.03'.

FIRE WALL LEGEND

1-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / 5/8" GYP.

1-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ 5/8" GYP.

2-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ (2) SHAFTLINER

2-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / (2) SHAFTLINER

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NEW RESIDENCE HALL

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BID

DSA APPL. NO. 03-122124 FILE: 15-C1

ENGINEER LOGO
MEP Engineering
LEAF ENGINEERS

ENGINEER

ARCHITECT

C 15885
9-30-23
RENEWAL DATE
STATE OF CALIFORNIA

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR

DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

ADD ALT. NO.1 - ELECTRICAL OVERALL POWER PLAN - LEVEL 01

E1.11A

CHECKED BY: K.K.
DRAWN BY: CAL

S2103400AR E6.02 ELECTRICAL PANEL SCHEDULES.DWG

PANEL: DP-1		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 225A		BUS RATING: 225A				LOCATION: 1ST FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
SPACE		70/2	1	2	20/1		SPARE
SPACE		-	3	4	20/1		SPARE
SPACE		70/2	5	6	20/1		SPARE
SPACE		-	7	8	20/1		SPARE
SPACE		70/2	9	10	20/1		SPARE
SPACE		-	11	12	20/1		SPARE
SPACE		70/2	13	14	20/1		SPARE
SPACE		-	15	16	20/1		SPARE
SPACE		70/2	17	18	20/1		SPARE
SPACE		-	19	20	20/1		SPARE
SPACE		70/2	21	22	20/1		SPARE
SPACE		-	23	24	20/1		SPARE
SPACE		70/2	25	26	20/1		SPARE
SPACE		-	27	28	20/1		SPARE
SPACE		70/2	29	30	20/1		SPARE
SPACE		-	31	32	20/1		SPARE
SPACE		70/2	33	34	20/1		SPARE
SPACE		-	35	36	20/1		SPARE
SPACE		70/2	37	38	20/1		SPARE
SPACE		-	39	40	20/1		SPARE
SPACE		20/1	41	42	20/1		SPARE
KVA FOR PHASE A	0.0					0	AMPERES
KVA FOR PHASE B	0.0					0	AMPERES
KVA FOR PHASE C	0.0					0	AMPERES
TOTAL KVA	0.0						

NOTES: DEMAND CALCULATION (CEC 220.84) (.43) = <200A
-THIS PANEL DISTRIBUTES TO A PANEL INSIDE EACH UNIT ON THE 1ST FLOOR

PANEL: DP-2		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 400A		BUS RATING: 400A				LOCATION: 2ND FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
P-201	5100	70/2	1	2	70/2	5100	P-213
-	5200	-	3	4	-	5200	-
P-202	5100	70/2	5	6	70/2	5100	P-214
-	5200	-	7	8	-	5200	-
P-203	5100	70/2	9	10	70/2	5100	P-215
-	5200	-	11	12	-	5200	-
P-204	5100	70/2	13	14	70/2	5100	P-216
-	5200	-	15	16	-	5200	-
P-205	5100	70/2	17	18	70/2	5100	P-217
-	5200	-	19	20	-	5200	-
P-206	5100	70/2	21	22	70/2	5100	P-218
-	5200	-	23	24	-	5200	-
P-207	5100	70/2	25	26	70/2	5100	P-219
-	5200	-	27	28	-	5200	-
P-208	5100	70/2	29	30	70/2	5100	P-220
-	5200	-	31	32	-	5200	-
P-209	5100	70/2	33	34	70/2	5100	P-221
-	5200	-	35	36	-	5200	-
P-210	5100	70/2	37	38	70/2	5100	P-222
-	5200	-	39	40	-	5200	-
P-211	5100	70/2	41	42	70/2	5100	P-223
-	5200	-	43	44	-	5200	-
P-212	5100	70/2	45	46	70/2	5100	P-224
-	5200	-	47	48	-	5200	-
SPARE		20/1	49	50	70/2	5100	P-225
SPARE		20/1	51	52	-	5200	-
SPARE		20/1	53	54	20/1		SPARE
KVA FOR PHASE A	87.5					729	AMPERES
KVA FOR PHASE B	87.6					730	AMPERES
KVA FOR PHASE C	82.4					687	AMPERES

PANEL: DP-3		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 400A		BUS RATING: 400A				LOCATION: 3RD FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
P-301	5100	70/2	1	2	70/2	5100	P-313
-	5200	-	3	4	-	5200	-
P-302	5100	70/2	5	6	70/2	5100	P-314
-	5200	-	7	8	-	5200	-
P-303	5100	70/2	9	10	70/2	5100	P-315
-	5200	-	11	12	-	5200	-
P-304	5100	70/2	13	14	70/2	5100	P-316
-	5200	-	15	16	-	5200	-
P-305	5100	70/2	17	18	70/2	5100	P-317
-	5200	-	19	20	-	5200	-
P-306	5100	70/2	21	22	70/2	5100	P-318
-	5200	-	23	24	-	5200	-
P-307	5100	70/2	25	26	70/2	5100	P-319
-	5200	-	27	28	-	5200	-
P-308	5100	70/2	29	30	70/2	5100	P-320
-	5200	-	31	32	-	5200	-
P-309	5100	70/2	33	34	70/2	5100	P-321
-	5200	-	35	36	-	5200	-
P-310	5100	70/2	37	38	70/2	5100	P-322
-	5200	-	39	40	-	5200	-
P-311	5100	70/2	41	42	70/2	5100	P-323
-	5200	-	43	44	-	5200	-
P-312	5100	70/2	45	46	70/2	5100	P-324
-	5200	-	47	48	-	5200	-
SPARE		20/1	49	50	70/2	5100	P-325
SPARE		20/1	51	52	-	5200	-
SPARE		20/1	53	54	20/1		SPARE
KVA FOR PHASE A	87.5					729	AMPERES
KVA FOR PHASE B	87.6					730	AMPERES
KVA FOR PHASE C	82.4					687	AMPERES

PANEL: DP-4		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 400A		BUS RATING: 400A				LOCATION: 4TH FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
P-401	5100	70/2	1	2	70/2	5100	P-413
-	5200	-	3	4	-	5200	-
P-402	5100	70/2	5	6	70/2	5100	P-414
-	5200	-	7	8	-	5200	-
P-403	5100	70/2	9	10	70/2	5100	P-415
-	5200	-	11	12	-	5200	-
P-404	5100	70/2	13	14	70/2	5100	P-416
-	5200	-	15	16	-	5200	-
P-405	5100	70/2	17	18	70/2	5100	P-417
-	5200	-	19	20	-	5200	-
P-406	5100	70/2	21	22	70/2	5100	P-418
-	5200	-	23	24	-	5200	-
P-407	5100	70/2	25	26	70/2	5100	P-419
-	5200	-	27	28	-	5200	-
P-408	5100	70/2	29	30	70/2	5100	P-420
-	5200	-	31	32	-	5200	-
P-409	5100	70/2	33	34	70/2	5100	P-421
-	5200	-	35	36	-	5200	-
P-410	5100	70/2	37	38	70/2	5100	P-422
-	5200	-	39	40	-	5200	-
P-411	5100	70/2	41	42	70/2	5100	P-423
-	5200	-	43	44	-	5200	-
P-412	5100	70/2	45	46	70/2	5100	P-424
-	5200	-	47	48	-	5200	-
SPARE		20/1	49	50	20/1		SPARE
SPARE		20/1	51	52	20/1		SPARE
SPARE		20/1	53	54	20/1		SPARE
KVA FOR PHASE A	82.4					687	AMPERES
KVA FOR PHASE B	82.4					687	AMPERES
KVA FOR PHASE C	82.4					687	AMPERES

PANEL: M-1		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 400A		BUS RATING 400A				LOCATION: 2ND FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
FC-1.301	400	20/1	1	2	20/1	392	COMMON AREA EXHAUST FANS
ELEVATOR-1 CAB LIGHTS	500	20/1	3	4	20/1		SPARE
ELEVATOR-1 CONTROLLER	500	20/1	5	6	20/2	2000	ODU-1.1
ELEVATOR-2 CAB LIGHTS	500	20/1	7	8	-	2000	-
ELEVATOR-2 CONTROLLER	500	20/1	9	10	150/3	13800	PANEL 'M1L'
TRAP PRIMER	500	20/1	11	12	-	13800	-
SPARE		20/1	13	14	-	13800	-
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
SPARE		20/1	19	20	20/1		SPARE
SPARE		20/1	21	22	20/1		SPARE
SPARE		20/1	23	24			SPACE
PANEL M2	3324	60/3	25	26			SPACE
-	5284	-	27	28			SPACE
-	3984	-	29	30			SPACE
PANEL M3	1992	60/3	31	32			SPACE
-	1400	-	33	34	200/3	20173	PANEL M4
-	1600	-	35	36	-	19673	-
SPARE		20/1	37	38	-	18313	-
SPARE		20/1	39	40	20/1	1488	(2) WH-1
SPARE		20/1	41	42	20/1	1008	CP-1 THRU CP--4
KVA FOR PHASE A	40.7					339	AMPERES
KVA FOR PHASE B	43.1					360	AMPERES
KVA FOR PHASE C	43.1					359	AMPERES
TOTAL KVA	126.9						

PANEL: M-2		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 100A		BUS RATING 100A				LOCATION: 2ND FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
SPARE		20/1	1	2	20/1	392	COMMON AREA EXHAUST FANS
FC-2.301	400	20/1	3	4	20/1	400	FC-2.209
FC-2.208	400	20/1	5	6	20/2	1200	ODU-2.1
FC-2.304	400	20/1	7	8	-	1200	-
FC-2.303	1152	20/1	9	10	20/2	2000	ODU-2.2
FC-2.401	384	20/1	11	12	-	2000	-
FC-2.501	1332	20/1	13	14			SPARE
FC-2.502	1332	20/1	15	16			SPARE
SPARE			17	18			SPARE
SPARE			19	20			SPARE
SPARE			21	22			SPARE
SPARE			23	24			SPARE
KVA FOR PHASE A	3.3					28	AMPERES
KVA FOR PHASE B	5.3					44	AMPERES
KVA FOR PHASE C	4.0					33	AMPERES
TOTAL KVA	12.6						

NOTES:
-THIS PANEL IS FOR MECHANICAL EQUIPMENT ON THE 2ND FLOOR

PANEL: M-3		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 100A		BUS RATING 100A				LOCATION: 3RD FLR ELEC RM	
VOLTAGE: 120.208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
SPARE		20/1	1	2	20/1	392	COMMON AREA EXHAUST FANS
SPARE		20/1	3	4	20/1		SPARE
SPARE		20/1	5	6	20/2	1200	ODU-3.1
SPARE		20/1	7	8	-	1200	-
FC-3.301	400	20/1	9	10	20/1	500	ACCESS CONTROL PANEL
FC-3.303	400	20/1	11	12	20/1		SPARE
FC-3.304	400	20/1	13	14	20/1		SPARE
INTRUSION ALARM PANEL	500	20/1	15	16	20/1		SPARE
SPACE			17	18	20/1		SPARE
SPACE			19	20	20/1		SPARE
SPACE			21	22	20/1		SPARE
SPACE			23	24	20/1		SPARE
KVA FOR PHASE A	2.0					17	AMPERES
KVA FOR PHASE B	1.4					12	AMPERES
KVA FOR PHASE C	1.6					13	AMPERES
TOTAL KVA	5.0						

NOTES:
-THIS PANEL IS FOR MECHANICAL EQUIPMENT ON THE 3RD FLOOR

PANEL: M-4		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 200A		BUS RATING 225A				LOCATION: 4TH FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
FC-4.301, 4.303, 4.304 & EF FANS	1200	20/1	1	2	20/2	1200	ODU4.1
EF-4.601	700	20/1	3	4	-	1200	-
SPACE			5	6	175/3	17773	PANEL 'M4L'
SPACE			7	8	-	17773	-
SPACE			9	10	-	17773	-
SPACE			11	12			SPACE
SPACE			13	14			SPACE
SPACE			15	16			SPACE
SPACE			17	18			SPACE
SPACE			19	20			SPACE
SPARE		20/1	21	22			SPACE
SPARE		20/1	23	24			SPACE
SPARE		20/1	25	26			SPACE
SPARE		20/1	27	28			SPACE
SPARE		20/1	29	30			SPACE
SPARE		20/1	31	32			SPACE
SPARE		20/1	33	34			SPACE
SPARE		20/1	35	36			SPACE
SPARE		20/1	37	38			SPACE
SPARE		20/1	39	40			SPACE
SPARE		20/1	41	42	20/1	540	ROOF TOP RECEPTACLES
KVA FOR PHASE A	20.2					168	AMPERES
KVA FOR PHASE B	19.7					164	AMPERES
KVA FOR PHASE C	18.3					153	AMPERES
TOTAL KVA	58.2						

NOTES: 60% DEMAND FACTOR REDUCES DEMAND TO <125A
-THIS PANEL IS FOR MECHANICAL AND LAUNDRY EQUIPMENT ON THE 4TH FLOOR

PANEL: M-1L		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 150A		BUS RATING 225A				LOCATION: LAUNDRY 115	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LAUNDRY RECEP	500	20/1	1	2	30/2	2500	LAUNDRY DRYER
LAUNDRY RECEP	500	20/1	3	4	-	2500	-
SPARE		20/1	5	6	30/2	2500	LAUNDRY DRYER
SPARE		20/1	7	8	-	2500	-
SPARE		20/1	9	10	30/2	2500	LAUNDRY DRYER
SPARE		20/1	11	12	-	2500	-
SPARE		20/1	13	14	20/1	1800	LAUNDRY WASHER
SPARE		20/1	15	16	20/1	1800	LAUNDRY WASHER
SPARE		20/1	17	18	20/1	1800	LAUNDRY WASHER
SPARE		20/1	19	20	20/1	1800	LAUNDRY WASHER
SPARE		20/1	21	22			SPACE
SPARE		20/1	23	24			SPACE
SPACE			25	26			SPACE
SPARE			27	28			SPACE
SPARE			29	30			SPACE
SPARE			31	32			SPACE
SPARE			33	34			SPACE
SPARE			35	36			SPACE
SPARE			37	38			SPACE
SPARE			39	40			SPACE
SPARE			41	42			SPACE
KVA FOR PHASE A	9.1					76	AMPERES
KVA FOR PHASE B	7.3					61	AMPERES
KVA FOR PHASE C	6.8					57	AMPERES
TOTAL KVA	23.2						

NOTES:
-THIS PANEL IS FOR MECHANICAL AND LAUNDRY EQUIPMENT ON THE 1ST FLOOR

1

PANEL: M-4L		ENCLOSURE: NEMA 1				AIC RATING: 10K	
MAIN RATING: 175A		BUS RATING 225A				LOCATION: 4TH FLR ELEC RM	
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
SPARE		20/1	1	2			SPACE
LAUNDRY	1600	20/1	3	4			SPACE
LAUNDRY	1600	20/1	5	6	30/2	2500	LAUNDRY DRYER
LAUNDRY	1600	20/1	7	8	-	2500	-
LAUNDRY	1600	20/1	9	10	30/2	2500	LAUNDRY DRYER
LAUNDRY	1600	20/1	11	12	-	2500	-
LAUNDRY	1600	20/1	13	14	30/2	2500	LAUNDRY DRYER
LAUNDRY	1600	20/1	15	16	-	2500	-
LAUNDRY	1600	20/1	17	18	30/2	2500	LAUNDRY DRYER
RECEPS LAUNDRY 425	520	20/1	19	20	-	2500	-
SPARE		20/1	21	22	30/2	2500	LAUNDRY DRYER
SPARE		20/1	23	24	-	2500	-
SPARE		20/1	25	26	30/2	2500	LAUNDRY DRYER
SPARE		20/1	27	28	-	2500	-
SPARE		20/1	29	30	30/2	2500	LAUNDRY DRYER
SPARE		20/1	31	32	-	2500	-
SPARE		20/1	33	34	30/2	2500	LAUNDRY DRYER
SPARE		20/1	35	36	-	2500	-
SPARE		20/1	37	38			SPACE
SPARE		20/1	39	40			SPACE
SPARE		20/1	41	42			SPACE
KVA FOR PHASE A	16.2					135	AMPERES
KVA FOR PHASE B	17.3					144	AMPERES
KVA FOR PHASE C	19.8					165	AMPERES
TOTAL KVA	53.3						

NOTES: 60% DEMAND FACTOR REDUCES DEMAND TO <125A
-THIS PANEL IS FOR MECHANICAL AND LAUNDRY EQUIPMENT ON THE 4TH FLOOR

PANEL: 'L1'		ENCLOSURE: NEMA 1				MOUNTING: SURFACE	
MAIN BREAKER: 225A		AIC RATING: 10K				LOCATION: 1ST FLR ELEC RM	
BUS RATING: 225A		VOLTAGE: 208Y/120V 3PH 4W					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
L1 - LIGHTING	408	20/1	1	2	20/1	500	LCP
		20/1	3	4	20/1	195	EXTERIOR BLDG LIGHTING
FIRE ALARM NAC PANEL	500	20/1	5	6	20/1	1300	EXTERIOR SITE LIGHTING
SPARE		20/1	7	8	20/1	540	RECEPS COORIDOR
SPARE		20/1	9	10	20/1		SPARE
SPARE		20/1	11	12	20/1		SPARE
SPARE		20/1	13	14	20/1		SPARE
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
PANEL 'L2'	6563	100/3	19	20	100/3	3461	PANEL 'L4'
"	4831	-	21	22	-	2624	"
"	5266	-	23	24	-	1540	"
PANEL 'L3'	3314	100/3	25	26	20/1		SPARE
"	2552	-	27	28	20/1		SPARE
"	1400	-	29	30	20/1		SPARE
KVA FOR PHASE A	14.8					123	AMPERES
KVA FOR PHASE B	10.2					85	AMPERES
KVA FOR PHASE C	10.0					83	AMPERES
TOTAL KVA	35.0						
NOTES:							

PANEL: L-2		ENCLOSURE: NEMA 1				MOUNTING: SURFACE	
MAIN BREAKER: 100A		AIC RATING: 10K				LOCATION: 2ND FLR ELEC RM	
BUS RATING: 100A		VOLTAGE: 208Y/120V 3PH 4W					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LTG-SHARED SPACES	603	20/1	1	2	20/1	720	RECEPS RM 234 & 235
LTG-SHARED SPACES	1211	20/1	3	4	20/1	720	RECEPS RM 219,236, 233 & 242
LTG-SHARED SPACES	1026	20/1	5	6	20/1	20/1	SPARE
EM INVERTER "EML2"	700	20/1	7	8	20/1	20/1	SPARE
			9	10			
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			
KVA FOR PHASE A	2.0					16.8583	AMPERES
KVA FOR PHASE B	1.9					16	AMPERES
KVA FOR PHASE C	1.0					9	AMPERES
TOTAL KVA	5.0						
NOTES:							

PANEL: L-3		ENCLOSURE: NEMA 1				MOUNTING: SURFACE	
MAIN BREAKER: 100A		AIC RATING: 10K				LOCATION: 3RD FLR ELEC RM	
BUS RATING: 100A		VOLTAGE: 208Y/120V 3PH 4W					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LTG-SHARED SPACES	1014	20/1	1	2	20/1		SPARE
EM INVERTER "EML3"	512	20/1	3	4	20/1		SPARE
SPARE		20/1	5	6	20/1		SPARE
SPARE		20/1	7	8	20/1		SPARE
SPARE		20/1	9	10	20/1		SPARE
SPARE		20/1	11	12	20/1		SPARE
SPARE		20/1	13	14	20/1		SPARE
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
SPARE		20/1	19	20	20/1		SPARE
SPARE		20/1	21	22	20/1		SPARE
SPARE		20/1	23	24	20/1		SPARE
			25	26			
			27	28			
			29	30			
KVA FOR PHASE A	1.0					8.45	AMPERES
KVA FOR PHASE B	0.5					4	AMPERES
KVA FOR PHASE C	0.0					0	AMPERES
TOTAL KVA	1.5						
NOTES:							

PANEL: L-4		ENCLOSURE: NEMA 1				MOUNTING: SURFACE	
MAIN BREAKER: 100A		AIC RATING: 10K				LOCATION: 4TH FLR ELEC RM	
BUS RATING: 100A		VOLTAGE: 208Y/120V 3PH 4W					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LTG-SHARED SPACES	1201	20/1	1	2	20/1		SPARE
EM INVERTER "EML4"	544	20/1	3	4	20/1		SPARE
SPARE		20/1	5	6	20/1		SPARE
SPARE		20/1	7	8	20/1		SPARE
SPARE		20/1	9	10	20/1		SPARE
SPARE		20/1	11	12	20/1		SPARE
SPARE		20/1	13	14	20/1		SPARE
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
SPARE		20/1	19	20	20/1		SPARE
SPARE		20/1	21	22	20/1		SPARE
SPARE		20/1	23	24	20/1		SPARE
			25	26			
			27	28			
			29	30			
KVA FOR PHASE A	1.2					10.0083	AMPERES
KVA FOR PHASE B	0.5					5	AMPERES
KVA FOR PHASE C	0.0					0	AMPERES
TOTAL KVA	1.7						
NOTES:							

PANEL: EML1							LOCATION: 1ST FLR ELEC RM
MAIN RATING: 20A							
VOLTAGE: 120/208V 3PH 4W		MOUNTING: SURFACE					
LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
EXTERIOR EM LIGHTING	225	20/1	1	2	20/1	360	STAIRS 1 - EM LIGHTING
L1 - EM LIGHTING	392	20/1	3	4	20/1	448	STAIRS 2 - EM LIGHTING
SPARE		20/1	5	6	20/1	360	STAIRS 3 - EM LIGHTING
KVA FOR PHASE A	0.9					7.875	AMPERES
KVA FOR PHASE B	0.8					7	AMPERES
TOTAL KVA	1.8						

CHECKED BY: K.K.
DRAWN BY: CAL

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3/12/2024 9:00:42 AM

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REGISTERED PROFESSIONAL ENGINEER
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Exp. 6-30-2025
ELECTRICAL
STATE OF CALIFORNIA

ARCHITECT
LICENSED ARCHITECT
JOHN HAMILTON SMITH
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9-30-23
RENEWAL DATE
STATE OF CALIFORNIA

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR
DATE 02/27/2024

REVISIONS

#	DESCRIPTION	DATE
	ADDENDUM No. 6	04/11/2024

BID

ELECTRICAL PANEL SCHEDULES

E6.02

This document is for plan review only

S2103400AR E6.02A ELECTRICAL PANEL SCHEDULES - ADD. ALT. 1.DWG

PANEL: DP-1 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 225A | BUS RATING: 225A | LOCATION: 1ST FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
P-101	5100	70/2	1	2	20/1		SPARE
-	5200	-	3	4	20/1		SPARE
P-102	5100	70/2	5	6	20/1		SPARE
-	5200	-	7	8	20/1		SPARE
P-103	5100	70/2	9	10	20/1		SPARE
-	5200	-	11	12	20/1		SPARE
P-104	5100	70/2	13	14	20/1		SPARE
-	5200	-	15	16	20/1		SPARE
P-105	5100	70/2	17	18	20/1		SPARE
-	5200	-	19	20	20/1		SPARE
P-106	5100	70/2	21	22	20/1		SPARE
-	5200	-	23	24	20/1		SPARE
P-107	5100	70/2	25	26	20/1		SPARE
-	5200	-	27	28	20/1		SPARE
P-108	5100	70/2	29	30	20/1		SPARE
-	5200	-	31	32	20/1		SPARE
P-109	5100	70/2	33	34	20/1		SPARE
-	5200	-	35	36	20/1		SPARE
P-110	5100	70/2	37	38	20/1		SPARE
-	5200	-	39	40	20/1		SPARE
SPARE		20/1	41	42	20/1		SPARE
KVA FOR PHASE A	36.0					300	AMPERES
KVA FOR PHASE B	36.1					301	AMPERES
KVA FOR PHASE C	30.9					258	AMPERES
TOTAL KVA	103.0						

NOTES: DEMAND CALCULATION (CEC 220.84) (.43) = <200A
-THIS PANEL DISTRIBUTES TO A PANEL INSIDE EACH UNIT ON THE 1ST FLOOR

PANEL: DP-2 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 400A | BUS RATING: 400A | LOCATION: 2ND FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
P-201	5100	70/2	1	2	70/2	5100	P-213
-	5200	-	3	4	-	5200	-
P-202	5100	70/2	5	6	70/2	5100	P-214
-	5200	-	7	8	-	5200	-
P-203	5100	70/2	9	10	70/2	5100	P-215
-	5200	-	11	12	-	5200	-
P-204	5100	70/2	13	14	70/2	5100	P-216
-	5200	-	15	16	-	5200	-
P-205	5100	70/2	17	18	70/2	5100	P-217
-	5200	-	19	20	-	5200	-
P-206	5100	70/2	21	22	70/2	5100	P-218
-	5200	-	23	24	-	5200	-
P-207	5100	70/2	25	26	70/2	5100	P-219
-	5200	-	27	28	-	5200	-
P-208	5100	70/2	29	30	70/2	5100	P-220
-	5200	-	31	32	-	5200	-
P-209	5100	70/2	33	34	70/2	5100	P-221
-	5200	-	35	36	-	5200	-
P-210	5100	70/2	37	38	70/2	5100	P-222
-	5200	-	39	40	-	5200	-
P-211	5100	70/2	41	42	70/2	5100	P-223
-	5200	-	43	44	-	5200	-
P-212	5100	70/2	45	46	70/2	5100	P-224
-	5200	-	47	48	-	5200	-
SPARE		20/1	49	50	70/2	5100	P-225
SPARE		20/1	51	52	-	5200	-
SPARE		20/1	53	54	20/1		SPARE
KVA FOR PHASE A	87.5					729	AMPERES
KVA FOR PHASE B	87.6					730	AMPERES
KVA FOR PHASE C	82.4					687	AMPERES

PANEL: DP-3 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 400A | BUS RATING: 400A | LOCATION: 3RD FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
P-301	5100	70/2	1	2	70/2	5100	P-313
-	5200	-	3	4	-	5200	-
P-302	5100	70/2	5	6	70/2	5100	P-314
-	5200	-	7	8	-	5200	-
P-303	5100	70/2	9	10	70/2	5100	P-315
-	5200	-	11	12	-	5200	-
P-304	5100	70/2	13	14	70/2	5100	P-316
-	5200	-	15	16	-	5200	-
P-305	5100	70/2	17	18	70/2	5100	P-317
-	5200	-	19	20	-	5200	-
P-306	5100	70/2	21	22	70/2	5100	P-318
-	5200	-	23	24	-	5200	-
P-307	5100	70/2	25	26	70/2	5100	P-319
-	5200	-	27	28	-	5200	-
P-308	5100	70/2	29	30	70/2	5100	P-320
-	5200	-	31	32	-	5200	-
P-309	5100	70/2	33	34	70/2	5100	P-321
-	5200	-	35	36	-	5200	-
P-310	5100	70/2	37	38	70/2	5100	P-322
-	5200	-	39	40	-	5200	-
P-311	5100	70/2	41	42	70/2	5100	P-323
-	5200	-	43	44	-	5200	-
P-312	5100	70/2	45	46	70/2	5100	P-324
-	5200	-	47	48	-	5200	-
SPARE		20/1	49	50	70/2	5100	P-325
SPARE		20/1	51	52	-	5200	-
SPARE		20/1	53	54	20/1		SPARE
KVA FOR PHASE A	87.5					729	AMPERES
KVA FOR PHASE B	87.6					730	AMPERES
KVA FOR PHASE C	82.4					687	AMPERES

PANEL: DP-4 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 400A | BUS RATING: 400A | LOCATION: 4TH FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
P-401	5100	70/2	1	2	70/2	5100	P-413
-	5200	-	3	4	-	5200	-
P-402	5100	70/2	5	6	70/2	5100	P-414
-	5200	-	7	8	-	5200	-
P-403	5100	70/2	9	10	70/2	5100	P-415
-	5200	-	11	12	-	5200	-
P-404	5100	70/2	13	14	70/2	5100	P-416
-	5200	-	15	16	-	5200	-
P-405	5100	70/2	17	18	70/2	5100	P-417
-	5200	-	19	20	-	5200	-
P-406	5100	70/2	21	22	70/2	5100	P-418
-	5200	-	23	24	-	5200	-
P-407	5100	70/2	25	26	70/2	5100	P-419
-	5200	-	27	28	-	5200	-
P-408	5100	70/2	29	30	70/2	5100	P-420
-	5200	-	31	32	-	5200	-
P-409	5100	70/2	33	34	70/2	5100	P-421
-	5200	-	35	36	-	5200	-
P-410	5100	70/2	37	38	70/2	5100	P-422
-	5200	-	39	40	-	5200	-
P-411	5100	70/2	41	42	70/2	5100	P-423
-	5200	-	43	44	-	5200	-
P-412	5100	70/2	45	46	70/2	5100	P-424
-	5200	-	47	48	-	5200	-
SPARE		20/1	49	50	20/1		SPARE
SPARE		20/1	51	52	20/1		SPARE
SPARE		20/1	53	54	20/1		SPARE
KVA FOR PHASE A	82.4					687	AMPERES
KVA FOR PHASE B	82.4					687	AMPERES
KVA FOR PHASE C	82.4					687	AMPERES

PANEL: M-1 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 400A | BUS RATING 400A | LOCATION: 2ND FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
FC-1.301	400	20/1	1	2	20/1	392	COMMON AREA EXHAUST FANS
ELEVATOR-1 CAB LIGHTS	500	20/1	3	4	20/1		SPARE
ELEVATOR-1 CONTROLLER	500	20/1	5	6	20/2	2000	ODU-1.1
ELEVATOR-2 CAB LIGHTS	500	20/1	7	8	-	2000	-
ELEVATOR-2 CONTROLLER	500	20/1	9	10	150/3	13800	PANEL 'M1L'
TRAP PRIMER	500	20/1	11	12	-	13800	-
SPARE		20/1	13	14	-	13800	-
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
SPARE		20/1	19	20	20/1		SPARE
SPARE		20/1	21	22	20/1		SPARE
SPARE		20/1	23	24			SPACE
PANEL M2	3324	60/3	25	26			SPACE
-	5284	-	27	28			SPACE
-	3984	-	29	30			SPACE
PANEL M3	1992	60/3	31	32			SPACE
-	1400	-	33	34	200/3	20173	PANEL M4
-	1600	-	35	36	-	19673	-
SPARE		20/1	37	38	-	18313	-
SPARE		20/1	39	40	20/1	1488	(2) WH-1
SPARE		20/1	41	42	20/1	1008	CP-1 THRU CP--4
KVA FOR PHASE A	40.7					339	AMPERES
KVA FOR PHASE B	43.1					360	AMPERES
KVA FOR PHASE C	43.1					359	AMPERES
TOTAL KVA	126.9						

PANEL: M-2 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 100A | BUS RATING 100A | LOCATION: 2ND FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
SPARE		20/1	1	2	20/1	392	COMMON AREA EXHAUST FANS
FC-2.301	400	20/1	3	4	20/1	400	FC-2.209
FC-2.208	400	20/1	5	6	20/2	1200	ODU-2.1
FC-2.304	400	20/1	7	8	-	1200	-
FC-2.303	1152	20/1	9	10	20/2	2000	ODU-2.2
FC-2.401	384	20/1	11	12	-	2000	-
FC-2.501	1332	20/1	13	14			SPARE
FC-2.502	1332	20/1	15	16			SPARE
SPARE			17	18			SPARE
SPARE			19	20			SPARE
SPARE			21	22			SPARE
SPARE			23	24			SPARE
KVA FOR PHASE A	3.3					28	AMPERES
KVA FOR PHASE B	5.3					44	AMPERES
KVA FOR PHASE C	4.0					33	AMPERES
TOTAL KVA	12.6						

NOTES:
-THIS PANEL IS FOR MECHANICAL EQUIPMENT ON THE 2ND FLOOR

PANEL: M-3 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 100A | BUS RATING 100A | LOCATION: 3RD FLR ELEC RM
VOLTAGE: 120.208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
SPARE		20/1	1	2	20/1	392	COMMON AREA EXHAUST FANS
SPARE		20/1	3	4	20/1		SPARE
SPARE		20/1	5	6	20/2	1200	ODU-3.1
SPARE		20/1	7	8	-	1200	-
FC-3.301	400	20/1	9	10	20/1	500	ACCESS CONTROL PANEL
FC-3.303	400	20/1	11	12	20/1		SPARE
FC-3.304	400	20/1	13	14	20/1		SPARE
INTRUSION ALARM PANEL	500	20/1	15	16	20/1		SPARE
SPACE			17	18	20/1		SPARE
SPACE			19	20	20/1		SPARE
SPACE			21	22	20/1		SPARE
SPACE			23	24	20/1		SPARE
KVA FOR PHASE A	2.0					17	AMPERES
KVA FOR PHASE B	1.4					12	AMPERES
KVA FOR PHASE C	1.6					13	AMPERES
TOTAL KVA	5.0						

NOTES:
-THIS PANEL IS FOR MECHANICAL EQUIPMENT ON THE 3RD FLOOR

PANEL: M-4 | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 200A | BUS RATING 225A | LOCATION: 4TH FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
FC-4.301, 4.303, 4.304 & EF FANS	1200	20/1	1	2	20/2	1200	ODU4.1
EF-4.601	700	20/1	3	4	-	1200	-
SPACE			5	6	175/3	17773	PANEL 'M4L'
SPACE			7	8	-	17773	-
SPACE			9	10	-	17773	-
SPACE			11	12			SPACE
SPACE			13	14			SPACE
SPACE			15	16			SPACE
SPACE			17	18			SPACE
SPACE			19	20			SPACE
SPARE		20/1	21	22			SPACE
SPARE		20/1	23	24			SPACE
SPARE		20/1	25	26			SPACE
SPARE		20/1	27	28			SPACE
SPARE		20/1	29	30			SPACE
SPARE		20/1	31	32			SPACE
SPARE		20/1	33	34			SPACE
SPARE		20/1	35	36			SPACE
SPARE		20/1	37	38			SPACE
SPARE		20/1	39	40			SPACE
SPARE		20/1	41	42	20/1	540	ROOF TOP RECEPTACLES
KVA FOR PHASE A	20.2					168	AMPERES
KVA FOR PHASE B	19.7					164	AMPERES
KVA FOR PHASE C	18.3					153	AMPERES
TOTAL KVA	58.2						

NOTES: 60% DEMAND FACTOR REDUCES DEMAND TO <125A
-THIS PANEL IS FOR MECHANICAL AND LAUNDRY EQUIPMENT ON THE 4TH FLOOR

PANEL: M-1L | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 150A | BUS RATING: 225A | LOCATION: LAUNDRY 115
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LAUNDRY RECEP	500	20/1	1	2	30/2	2500	LAUNDRY DRYER
LAUNDRY RECEP	500	20/1	3	4	-	2500	-
SPARE		20/1	5	6	30/2	2500	LAUNDRY DRYER
SPARE		20/1	7	8	-	2500	-
SPARE		20/1	9	10	30/2	2500	LAUNDRY DRYER
SPARE		20/1	11	12	-	2500	-
SPARE		20/1	13	14	20/1	1800	LAUNDRY WASHER
SPARE		20/1	15	16	20/1	1800	LAUNDRY WASHER
SPARE		20/1	17	18	20/1	1800	LAUNDRY WASHER
SPARE		20/1	19	20	20/1	1800	LAUNDRY WASHER
SPARE		20/1	21	22			SPACE
SPARE		20/1	23	24			SPACE
SPACE			25	26			SPACE
SPARE			27	28			SPACE
SPARE			29	30			SPACE
SPARE			31	32			SPACE
SPARE			33	34			SPACE
SPARE			35	36			SPACE
SPARE			37	38			SPACE
SPARE			39	40			SPACE
SPARE			41	42			SPACE
KVA FOR PHASE A	9.1					76	AMPERES
KVA FOR PHASE B	7.3					61	AMPERES
KVA FOR PHASE C	6.8					57	AMPERES
TOTAL KVA	23.2						

NOTES:
-THIS PANEL IS FOR MECHANICAL AND LAUNDRY EQUIPMENT ON THE 1ST FLOOR

1

PANEL: M-4L | ENCLOSURE: NEMA 1 | AIC RATING: 10K
MAIN RATING: 175A | BUS RATING 225A | LOCATION: 4TH FLR ELEC RM
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
SPARE		20/1	1	2			SPACE
LAUNDRY	1600	20/1	3	4			SPACE
LAUNDRY	1600	20/1	5	6	30/2	2500	LAUNDRY DRYER
LAUNDRY	1600	20/1	7	8	-	2500	-
LAUNDRY	1600	20/1	9	10	30/2	2500	LAUNDRY DRYER
LAUNDRY	1600	20/1	11	12	-	2500	-
LAUNDRY	1600	20/1	13	14	30/2	2500	LAUNDRY DRYER
LAUNDRY	1600	20/1	15	16	-	2500	-
LAUNDRY	1600	20/1	17	18	30/2	2500	LAUNDRY DRYER
RECEPS LAUNDRY 425	520	20/1	19	20	-	2500	-
SPARE		20/1	21	22	30/2	2500	LAUNDRY DRYER
SPARE		20/1	23	24	-	2500	-
SPARE		20/1	25	26	30/2	2500	LAUNDRY DRYER
SPARE		20/1	27	28	-	2500	-
SPARE		20/1	29	30	30/2	2500	LAUNDRY DRYER
SPARE		20/1	31	32	-	2500	-
SPARE		20/1	33	34	30/2	2500	LAUNDRY DRYER
SPARE		20/1	35	36	-	2500	-
SPARE		20/1	37	38			SPACE
SPARE		20/1	39	40			SPACE
SPARE		20/1	41	42			SPACE
KVA FOR PHASE A	16.2					135	AMPERES
KVA FOR PHASE B	17.3					144	AMPERES
KVA FOR PHASE C	19.8					165	AMPERES
TOTAL KVA	53.3						

NOTES: 60% DEMAND FACTOR REDUCES DEMAND TO <125A
-THIS PANEL IS FOR MECHANICAL AND LAUNDRY EQUIPMENT ON THE 4TH FLOOR

PANEL: 'L1' | ENCLOSURE: NEMA 1 | MOUNTING: SURFACE
MAIN BREAKER: 225A | AIC RATING: 10K | LOCATION: 1ST FLR ELEC RM
BUS RATING: 225A | VOLTAGE: 208Y/120V 3PH 4W

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
L1 - LIGHTING	408	20/1	1	2	20/1	500	LCP
		20/1	3	4	20/1	195	EXTERIOR BLDG LIGHTING
FIRE ALARM NAC PANEL	500	20/1	5	6	20/1	1300	EXTERIOR SITE LIGHTING
SPARE		20/1	7	8	20/1	540	RECEPS COORIDOR
SPARE		20/1	9	10	20/1		SPARE
SPARE		20/1	11	12	20/1		SPARE
SPARE		20/1	13	14	20/1		SPARE
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
PANEL 'L2'	6563	100/3	19	20	100/3	3461	PANEL 'L4'
"	4831	-	21	22	-	2624	"
"	5266	-	23	24	-	1540	"
PANEL 'L3'	3314	100/3	25	26	20/1		SPARE
"	2552	-	27	28	20/1		SPARE
"	1400	-	29	30	20/1		SPARE
KVA FOR PHASE A	14.8					123	AMPERES
KVA FOR PHASE B	10.2					85	AMPERES
KVA FOR PHASE C	10.0					83	AMPERES
TOTAL KVA	35.0						

NOTES:

PANEL: L-2 | ENCLOSURE: NEMA 1 | MOUNTING: SURFACE
MAIN BREAKER: 100A | AIC RATING: 10K | LOCATION: 2ND FLR ELEC RM
BUS RATING: 100A | VOLTAGE: 208Y/120V 3PH 4W

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LTG-SHARED SPACES	603	20/1	1	2	20/1	720	RECEPS RM 234 & 235
LTG-SHARED SPACES	1211	20/1	3	4	20/1	720	RECEPS RM 219,236, 233 & 242
LTG-SHARED SPACES	1026	20/1	5	6	20/1		SPARE
EM INVERTER "EML2"	700	20/1	7	8	20/1		SPARE
			9	10			
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			
KVA FOR PHASE A	2.0					16.8583	AMPERES
KVA FOR PHASE B	1.9					16	AMPERES
KVA FOR PHASE C	1.0					9	AMPERES
TOTAL KVA	5.0						

NOTES:

PANEL: L-3 | ENCLOSURE: NEMA 1 | MOUNTING: SURFACE
MAIN BREAKER: 100A | AIC RATING: 10K | LOCATION: 3RD FLR ELEC RM
BUS RATING: 100A | VOLTAGE: 208Y/120V 3PH 4W

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LTG-SHARED SPACES	1014	20/1	1	2	20/1		SPARE
EM INVERTER "EML3"	512	20/1	3	4	20/1		SPARE
SPARE		20/1	5	6	20/1		SPARE
SPARE		20/1	7	8	20/1		SPARE
SPARE		20/1	9	10	20/1		SPARE
SPARE		20/1	11	12	20/1		SPARE
SPARE		20/1	13	14	20/1		SPARE
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
SPARE		20/1	19	20	20/1		SPARE
SPARE		20/1	21	22	20/1		SPARE
SPARE		20/1	23	24	20/1		SPARE
			25	26			
			27	28			
			29	30			
KVA FOR PHASE A	1.0					8.45	AMPERES
KVA FOR PHASE B	0.5					4	AMPERES
KVA FOR PHASE C	0.0					0	AMPERES
TOTAL KVA	1.5						

NOTES:

PANEL: L-4 | ENCLOSURE: NEMA 1 | MOUNTING: SURFACE
MAIN BREAKER: 100A | AIC RATING: 10K | LOCATION: 4TH FLR ELEC RM
BUS RATING: 100A | VOLTAGE: 208Y/120V 3PH 4W

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
LTG-SHARED SPACES	1201	20/1	1	2	20/1		SPARE
EM INVERTER "EML4"	544	20/1	3	4	20/1		SPARE
SPARE		20/1	5	6	20/1		SPARE
SPARE		20/1	7	8	20/1		SPARE
SPARE		20/1	9	10	20/1		SPARE
SPARE		20/1	11	12	20/1		SPARE
SPARE		20/1	13	14	20/1		SPARE
SPARE		20/1	15	16	20/1		SPARE
SPARE		20/1	17	18	20/1		SPARE
SPARE		20/1	19	20	20/1		SPARE
SPARE		20/1	21	22	20/1		SPARE
SPARE		20/1	23	24	20/1		SPARE
			25	26			
			27	28			
			29	30			
KVA FOR PHASE A	1.2					10.0083	AMPERES
KVA FOR PHASE B	0.5					5	AMPERES
KVA FOR PHASE C	0.0					0	AMPERES
TOTAL KVA	1.7						

NOTES:

PANEL: EML1 | LOCATION: 1ST FLR ELEC RM
MAIN RATING: 20A
VOLTAGE: 120/208V 3PH 4W | MOUNTING: SURFACE

LOAD	VA	BKR	CIR	CIR	BKR	VA	LOAD
EXTERIOR EM LIGHTING	225	20/1	1	2	20/1	360	STAIRS 1 - EM LIGHTING
L1 - EM LIGHTING	392	20/1	3	4	20/1	448	STAIRS 2 - EM LIGHTING
SPARE		20/1	5	6	20/1	360	STAIRS 3 - EM LIGHTING
KVA FOR PHASE A	0.9					7.875	AMPERES
KVA FOR PHASE B	0.8					7	AMPERES
TOTAL KVA	1.8						

CHECKED BY: K.K.
DRAWN BY: CAL
Z:\Projects\CLO\21\S2103400AR\Dv8-Dwgs\8a BIM CAD\Cnst\MEP\TIES\S2103400AR E6.02A ELECTRICAL PANEL SCHEDULES - ADD. ALT. 1.dwg
2/22/2024 11:56:22 AM

PBK
ARCHITECT PBK Architects, Inc.
FRESNO
7790 North Palm Avenue
Fresno, CA 93711
559-448-8400 P
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NEW RESIDENCE HALL
1801 PANORAMA DR, BAKERSFIELD, CA 93305
BID
DSA APPL. NO. 03-122124 FILE: 15-C1

ENGINEER LOGO
MEP Engineering
LEAF ENGINEERS

ENGINEER

ARCHITECT

CLIENT
KCCD - BAKERSFIELD

PROJECT NUMBER
S2103400AR
DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM No. 6	04/11/2024

BID

ADD ALT. NO. 1 - ELECTRICAL PANEL SCHEDULES

E6.02A

This document is for plan review only

DEVICE SCHEDULE

SYMBOL	DESCRIPTION	MODEL	MANUFACTURER	BACKBOX	MOUNTING HEIGHT	C.S.F.M. NUMBER
FACP	FIRE ALARM CONTROL PANEL	NFS2-3030	NOTIFIER	---	+60" A.F.F.	7165-0028:0224
FAA	FIRE ALARM ANNUNCIATOR	LCD2-80	NOTIFIER	---	+60" A.F.F.	7165-0028:0224
NAC	NOTIFICATION CIRCUIT POWER BOOSTER EXTENDER PANEL	PSE-6	NOTIFIER	---	+60" A.F.F.	7315-0028:0513
S P	SMOKE DETECTOR (PHOTOELECTRIC)	FSP-951 B300-6	NOTIFIER	3.5" OR 4" OCTAGON BOX WITH RAISED ROUND COVER	CEILING	7272-0028:0503 7300-1653:0109
S SB	SMOKE DETECTOR W/ SOUNDER BASE	FSP-951 B200-S	NOTIFIER	3.5" OR 4" OCTAGON BOX WITH RAISED ROUND COVER	CEILING	7272-0028:0503 7300-1653:0213
F	MANUAL PULL STATION	NBG-12LX	NOTIFIER	4" SQUARE BOX, 2-1/8" MINIMUM DEPTH	48" MAX	7150-0028:0199
AIM	ADDRESSABLE INPUT MONITOR MODULE	FMM-1	NOTIFIER	SINGLE GANG ELECTRICAL 2-1/2" MINIMUM DEPTH	---	7300-0028:0219
ARM	ADDRESSABLE RELAY MODULE	FRM-1	NOTIFIER	SINGLE GANG ELECTRICAL 2-1/2" MINIMUM DEPTH	---	7300-0028:0219
PAM	MULTI-VOLTAGE RELAY	PAM-1	NOTIFIER	SINGLE GANG ELECTRICAL 2-1/2" MINIMUM DEPTH	---	7300-0028:0219
	FIRE ALARM HORN/STROBE	PC2RL	SYSTEM SENSOR	4 11/16" SQ. x 2 1/8" DP. OUTLETBOX	CEILING	7135-1653:0503
F H	FIRE ALARM HORN ONLY	HRL	SYSTEM SENSOR	4 11/16" SQ. x 2 1/8" DP. OUTLETBOX	+96" AFF	7135-1653:0503
	FIRE ALARM CEILING MOUNTED STROBE	SRL	SYSTEM SENSOR	4" SQ. x 2 1/8" DP.	CEILING	7125-1653:0504
EOL	END OF LINE RESISTOR					
DH	DOOR HOLDER					

Addenda 5 Changes

SEQUENCE OF OPERATIONS

*REFERENCE NFPA 72 2019, FIGURE A.14.6.2.4 (PAGE 72-228)

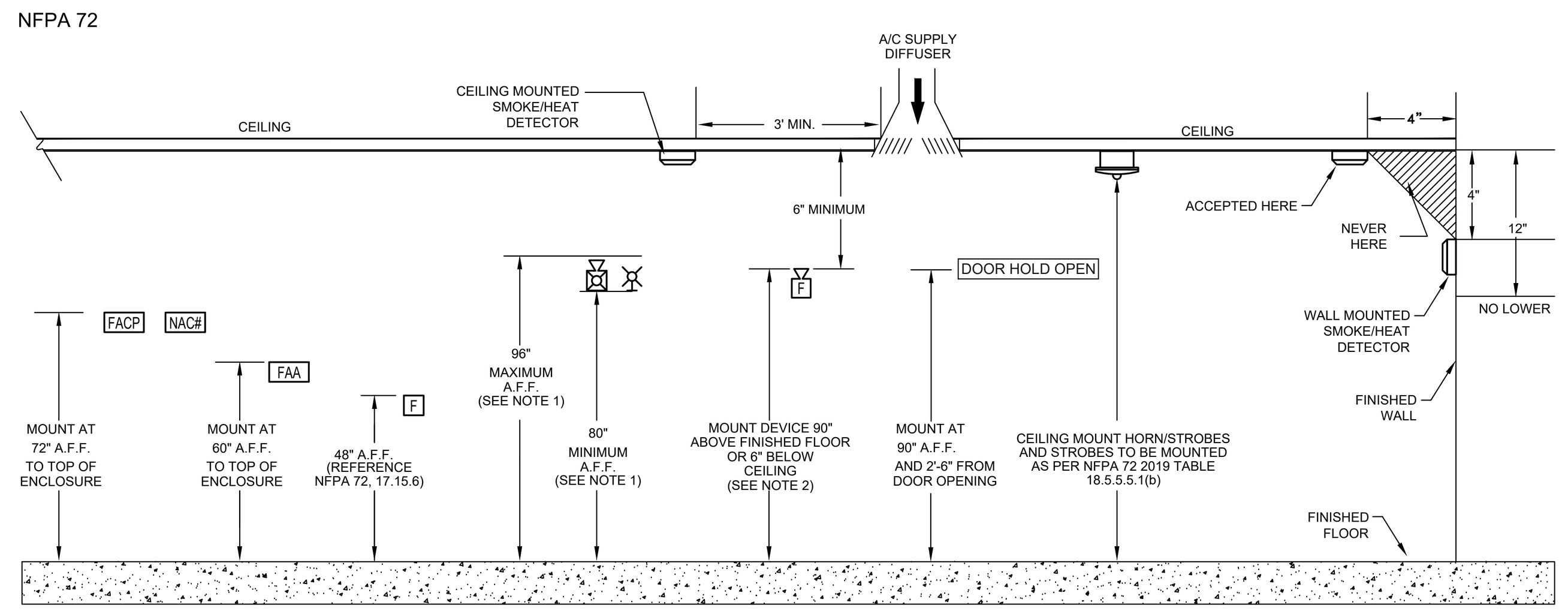
● = ACTION
☐ = NO ACTION

FIRE ALARM SYSTEM OUTPUTS:
A. ACTUATE COMMON ALARM SIGNAL INDICATOR @ FACP
B. ACTUATE ALL AUDIBLE/VISUAL ALARM SIGNALS IN BUILDING
C. ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR @ FACP
D. ACTUATE AUDIBLE SUPERVISORY SIGNAL @ FACP
E. ACTUATE AUDIBLE COMMON TROUBLE SIGNAL @ FACP
F. SHUT DOWN HVAC UNIT FAN
G. TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION
H. TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION
I. TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION
J. CLOSE FSD's AND FIRE DOORS IN RATED WALLS
K. RELEASE ELECTRONICALLY HELD DOORS
L. SOUND TEMPORAL CODE 4 SIGNAL

	FIRE ALARM SYSTEM INPUTS	A	B	C	D	E	F	G	H	I	J	K	L
1.	MANUAL FIRE ALARM PULL STATION	●	●					●				●	
2.	SMOKE OR HEAT DETECTOR	●	●					●			●	●	
3.	FIRE SPRINKLER WATER FLOW	●	●					●			●	●	
4.	DUCT SMOKE DETECTOR			●	●		●		●		●		
5.	TAMPER SWITCH			●	●				●				
6.	PIV			●	●				●				
7.	OS&Y			●	●				●				
8.	FIRE ALARM AC POWER FAILURE					●				●			
9.	FIRE ALARM SYSTEM LOW BATTERY					●				●			
10.	FIRE ALARM OPEN CIRCUIT					●				●			
11.	FIRE ALARM GROUND FAULT					●				●			
12.	NAC CIRCUIT SHORT					●				●			
13.	CELLULAR COMMUNICATOR FAULT					●				●			
14.	CO DETECTOR	●	●					●					●

FIRE ALARM ELEVATION MOUNTING DETAIL

NFPA 72



NOTES:

1. WALL-MOUNTED APPLIANCES SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80 IN. (2.03m) AND NOT GREATER THAN 96 IN. (2.44m) ABOVE THE FINISHED FLOOR OR AT THE MOUNTING HEIGHT SPECIFIED USING THE PERFORMANCE-BASED ALTERNATIVE OF 18.5.5.7. (NFPA 72, CHAPTER 18.5.5.1*)
2. WHERE LOW CEILING HEIGHTS DO NOT PERMIT ALL MOUNTING AT A MINIMUM OF 80 IN. (2.03m), WALL MOUNTED VISUAL NOTIFICATION APPLIANCES SHALL BE MOUNTED WITHIN 6 IN. (150mm) OF THE CEILING. (NFPA 72, CHAPTER 18.5.5.2)

GENERAL NOTES

1. APPLICABLE STANDARD NFPA 72, as adopted and amended in CBC Chapter 35
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN APPROVED BY DSA.
3. UPON COMPLETION OF SYSTEM INSTALLATION, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
8. WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND THEIR TOPS 96" MAXIMUM FROM FINISHED FLOOR.
9. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
10. AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (dBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR FIVE dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
11. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
12. AUDIBLE OCCUPANT NOTIFICATION SIGNALS FOR CO ALARM SHALL PRODUCE A FOUR-PULSE, TEMPORAL PATTERN.
13. VISIBLE DEVICES SHOULD NOT EXCEED TWO FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15. ALL FIRE ALARM WIRING SHALL BE FPLOR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE TYPE THHN OR THWN.
16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
17. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS.
19. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
20. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
21. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
22. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 7.8.2.
23. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
24. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
25. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
26. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
27. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.
28. ALL CARBON MONOXIDE SIGNALS SHALL SOUND A FOUR-PULSE TEMPORAL PATTERN PER NFPA 720, 5.8.6.5.1.
29. ALL EQUIPMENT SHALL BE U.L. AND C.S.F.M. LISTED.
30. ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS THAT REQUIRE SERVICING, TROUBLESHOOTING, ETC.
31. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC., THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
32. ALL FAN SHUTDOWN FUNCTIONS, DAMPER CLOSURES, AND ASSOCIATED MECHANICAL SYSTEM FIRE ALARM INTERFACE SHALL BE BY MECHANICAL CONTRACTOR.
33. ALL DUCT SMOKE DETECTORS SHALL BE MOUNTED BY THE MECHANICAL CONTRACTOR. DUCT SMOKE DETECTORS EXPOSED TO THE WEATHER SHALL BE WEATHER PROTECTED BY THE MECHANICAL CONTRACTOR. ALL AIR VELOCITY TESTING SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR.
34. ALL 120VAC POWER REQUIREMENTS FOR THE FIRE ALARM SYSTEM SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR AND SHALL MEET ALL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
35. ALL FIRE ALARM DEVICE BACKBOXES, FIRE ALARM TERMINAL CABINETS, GUTTERS, JUNCTION BOXES, AND ASSOCIATED CONDUITS SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. REFER TO FIRE ALARM SYMBOL LIST AND/OR MOUNTING DETAILS FOR ADDITIONAL INFORMATION. SYSTEM SUPPLIER PROVIDED BACKBOXES SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
36. SMOKE DETECTOR TESTING SHALL BE ACCOMPLISHED PER THE MANUFACTURER'S INSTRUCTIONS.
37. ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. THE FIRE ALARM CONTROL PANEL TO SUPERVISE THE ANNUNCIATOR PANEL, ALL INITIATING AND INDICATING DEVICE CIRCUITS.
38. ALL WIRING SHALL BE CUT FOR IN AND OUT. WIRING SHALL NOT BE LOOPED THROUGH DEVICES.
39. POINT, COMMON ANNUNCIATION, AND T-TAPPING ARE PROHIBITED.
40. PROVIDE 3/4" CONDUIT FROM FIRE ALARM CONTROL PANEL TO TELEPHONE BACKBOARD FOR OWNER PROVIDED CENTRAL STATION MONITORING.
41. ALL CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
42. ALL FLOW SWITCHES SHALL BE 2 WIRE WITH NON-ELECTRONIC RETARD TYPE SIMILAR TO THE GAMEWELL-FCI MODEL "WFD SERIES" ONLY.
43. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
44. FIRE ALARM SYSTEM SHALL BE UL LISTED (UUJS).
45. CBC 907.6.5.3 (SFM AMENDMENT) REQUIRES FIRE ALARM TO... "TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISORY STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISORY STATION SHALL BE LISTED AS EITHER UUFX (CENTRAL STATION) OR UUJS (REMOTE AND PROPRIETARY) BY THE UNDERWRITERS LABORATORY INC. (UL) OR OTHER APPROVED LISTING AND TESTING LABORATORY OR SHALL COMPLY WITH THE REQUIREMENTS OF STANDARD, FM 3011)."
46. SUBSTITUTION OF SYSTEM COMPONENTS OR MANUFACTURER WILL REQUIRE THE CONTRACTOR TO SEPARATELY OBTAIN APPROVAL WITH THE CSFM AT CONTRACTOR'S EXPENSE AND SHALL MEET ALL REQUIREMENTS OF THE SYSTEM AS DESIGNED AND PRE-APPROVED. ALL PROPOSED SUBSTITUTIONS SHALL BE LISTED WITH THE CALIFORNIA STATE FIRE MARSHAL.
47. FINAL ACCEPTANCE TEST TO INCLUDE TESTING THE CONNECTION BETWEEN THE FIRE ALARM PANEL AND THE SUPERVISING STATION.

WIRING LEGEND

N	NAC CIRCUIT	12/2 CABLE UNSHIELDED
P	24 VDC POWER CIRCUIT	12/2 CABLE UNSHIELDED
Z	SLC INITIATION LOOP	16/2 TWISTED UNSHIELDED
B	NETWORK LOOP	18/2 TWISTED UNSHIELDED

Central Station Monitoring Information

Tel-Tech Security Systems, Inc.
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Mobile#: 661-428-1920
License #: 472338

SHEET INDEX

APPLICABLE CODES

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2020 *
2019 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR *
2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
(2018 INTERNATIONAL BUILDING CODE, VOL. 1 & 2, AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
(2017 NATIONAL ELECTRICAL CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
(2018 IAPMO UNIFORM MECHANICAL CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
(2018 IAPMO UNIFORM PLUMBING CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
(2018 INTERNATIONAL FIRE CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
(2018 INTERNATIONAL EXISTING BUILDING CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2019 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
2016 ASME A17.1/CSA B44-13 SAFETY CODE FOR ELEVATORS AND ESCALATORS

PARTIAL LIST OF APPLICABLE STANDARDS
NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED): 2016 EDITION
NFPA 720 STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE DETECTION AND WARNING EQUIPMENT; 2015 EDITION
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; 1999 EDITION
UL 1971 STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED; 2002 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.

FIRE ALARM REQUIREMENTS

PROVIDE THE FIRE ALARM SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION OF THE FIRE ALARM SYSTEM. THE SUBMITTAL SHALL CONTAIN THE FOLLOWING:

1. SHOP DRAWINGS: COMPLETE 1/8" SCALE FLOOR PLANS SHOWING ALL DEVICES, COMPONENTS, CONDUIT AND WIRING INDICATING A COMPLETE AND OPERABLE SYSTEM AS DESIGNED AND SPECIFIED. REPRODUCED COPIES OF BID SET FIRE ALARM PLANS ARE NOT ACCEPTABLE AS SHOP DRAWINGS. SHOP DRAWINGS MUST ALSO INDICATE DEVICE MOUNTING HEIGHTS, ROOM NAMES AND NUMBERS AND THE LOCATION OF ALL FIRE RATED WALLS.
2. ELECTRICAL CONTRACTOR'S AND FIRE ALARM SYSTEM INSTALLER'S NAME, ADDRESS, PHONE NUMBER AND C-10 LICENSE NUMBER.
3. LIST OF SYSTEM COMPONENTS, EQUIPMENT AND DEVICES, INCLUDING MANUFACTURERS' MODEL NUMBER(S) AND CALIFORNIA STATE FIRE MARSHALL LISTING NUMBERS.
4. ORIGINAL COPIERS OF MANUFACTURERS' SPECIFICATION SHEETS FOR ALL EQUIPMENT AND DEVICES INDICATED.
5. VOLTAGE DROP CALCULATIONS -- INCLUDE THE FOLLOWING INFORMATION FOR THE WORST CASE:
   A. POINT-TO-POINT OR OHMS LAW CALCULATIONS.
   B. IDENTIFICATION OF ZONE USED IN CALCULATIONS.
   C. VOLTAGE DROP PERCENT (NOT TO EXCEED MANUFACTURERS' REQUIREMENTS).

      NOTE: IF VOLTAGE DROP EXCEEDS 10%, INDICATE MANUFACTURERS' LISTED OPERATING RANGE(S) OR EQUIPMENT AND DEVICES.

   D. NOTE CIRCUIT NUMBER FOR WORST CASE CALCULATION.
6. BATTERY TYPE(S), AMPS HOURS AND LOAD CALCULATIONS INCLUDE THE FOLLOWING INFORMATION:
   A. NORMAL OPERATION: 100% OF APPLICABLE DEVICES FOR 24 HOURS = CONTROL PANEL AMPS PLUS LIST OF AMPS PER DEVICE WHICH DRAW POWER FROM THE PANEL DURING STANDBY POWER - I.E.:
      a. ZONE MODULES.
      b. DETECTORS.
      c. OTHER DEVICES (IDENTIFY).
   B. ALARM CONDITION: 100% OF APPLICABLE DEVICES FOR 15 MINUTES = CONTROL PANEL AMPS PLUS LIST OF AMPS PER DEVICE WHICH DRAW POWER FROM THE PANEL DURING STANDBY POWER - I.E.:
      a. ZONE MODULES.
      b. SIGNAL MODULES.
      c. DETECTORS.
      d. SIGNAL DEVICES.
      e. ANNUNCIATOR.
      f. OTHER DEVICES (IDENTIFY).
   C. NORMAL OPERATION + ALARM OPERATION:
      a. TOTAL AMP HOURS REQUIRED.
      b. TOTAL AMP HOURS PROVIDED.

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 CHAPTER 13, 26 AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.g. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRIC, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. 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:

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 POUND 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 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 FORCES 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, SECTION 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 START OF AND DURING THE HANGING AND BRACING OF DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY 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 DETAILS.

MP☐ MD☐ PP☐ E☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM-0295-13).

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ARCHITECT

CLIENT	KCCD - BAKERSFIELD
PROJECT NUMBER	S2103400AR
DATE	02/27/2024

REVISIONS

#	DESCRIPTION	DATE

BID

FIRE ALARM SHEET INDEX, SYMBOLS, LEGEND & NOTES

FA0.01

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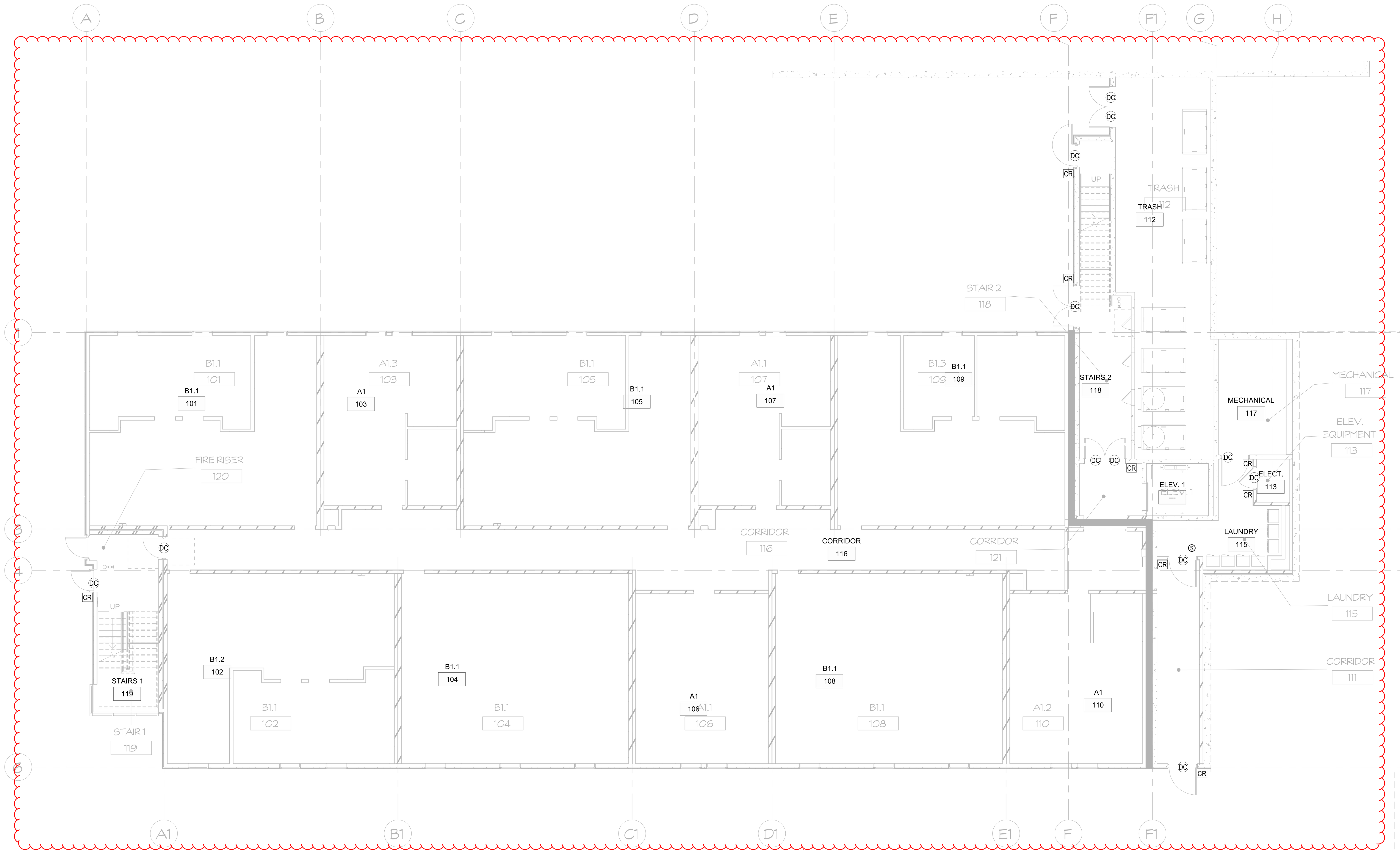

ADDENDA 6 CHANGES
REFER TO ABOVE FOR REMOVED
TECHNOLOGY DEVICES.

1 TECHNOLOGY ENLARGED PLAN - LEVEL 01 - NORTH

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

GENERAL NOTES

1. REFER TO SHEET T0.01 FOR TECHNOLOGY GENERAL NOTES.
2. REFER TO SHEET T4.01 FOR TECHNOLOGY ENLARGE PLAN FOR DATA ROOM INFORMATION.
3. COORDINATE ALL EQUIPMENT LOCATIONS WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS. VERIFY PRIOR TO INSTALLATION.
4. ALL STRUCTURE CABLING IN THIS AREA WILL BE ROUTED TO THE IDF ROOM ON THIS FLOOR.

KEYNOTES

(1) PROVIDE AND INSTALL (2) CAT6 CABLES TO THIS LOCATION. INSTALL AT +18" AFF FOR WORKSTATION AND THEN ROUTE TO NEAREST IDF SERVING THIS FLOOR. COORDINATE REQUIREMENTS AND LOCATION WITH CONTRACTOR.

(2) AT 42" AFF, CONTRACTOR TO INSTALL 'LCD' DROP AT CASEWORK AS SHOWN. ALL BOXES ARE AT SAME ELEVATION NEXT TO EACH OTHER. PROVIDE ALL A/V CABLING CONNECTIONS REQUIRED FOR LCD INTERFACE. ROUTE DATA BACK TO IDF SERVING THIS AREA.

(3) WIRELESS ACCESS POINT, CEILING MOUNT. PROVIDE DATA OUTLET FOR WIRELESS ACCESS POINT, (2) CAT6A CABLES, 2-PORT PLENUM RATED SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING AS INDICATED ON DRAWINGS. USE J-HOOKS TO THE CABLE TRAY AND THEN TO SUPPORT NEW CABLING ABOVE ACCESSIBLE CEILING SPACE, FOR INACCESSIBLE CEILINGS SPACES NEW CONDUITS SHALL BE PROVIDED ABOVE CEILING TO THE IDF CABINET SERVING THIS PROVIDE 10' SLACK CABLE COILS ABOVE CEILING AT OUTLET LOCATION FOR FUTURE RELOCATION.

(4) CEILING MOUNTED PAGING SPEAKER. REFER TO SPECIFICATIONS FOR MODEL NUMBER AND ADDITIONAL DETAILS.

(5) CEILING MOUNTED MOTION DETECTOR. REFER TO SPECIFICATIONS FOR MODEL NUMBER AND ADDITIONAL DETAILS.

FIRE WALL LEGEND

1-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / 5/8" GYP.

1-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ 5/8" GYP.

2-HR - NEW WOOD STUD WALL 5/8" GYP./ (2) 2x6 STUD/ (2) SHAFTLINER

2-HR - NEW WOOD STUD WALL 5/8" GYP./ 2x6 / (2) SHAFTLINER

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PROJECT NUMBER
S2103400AR

DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM 06	04/08/24

BID

TECHNOLOGY ENLARGED PLAN - LEVEL 01 - NORTH

T1.11

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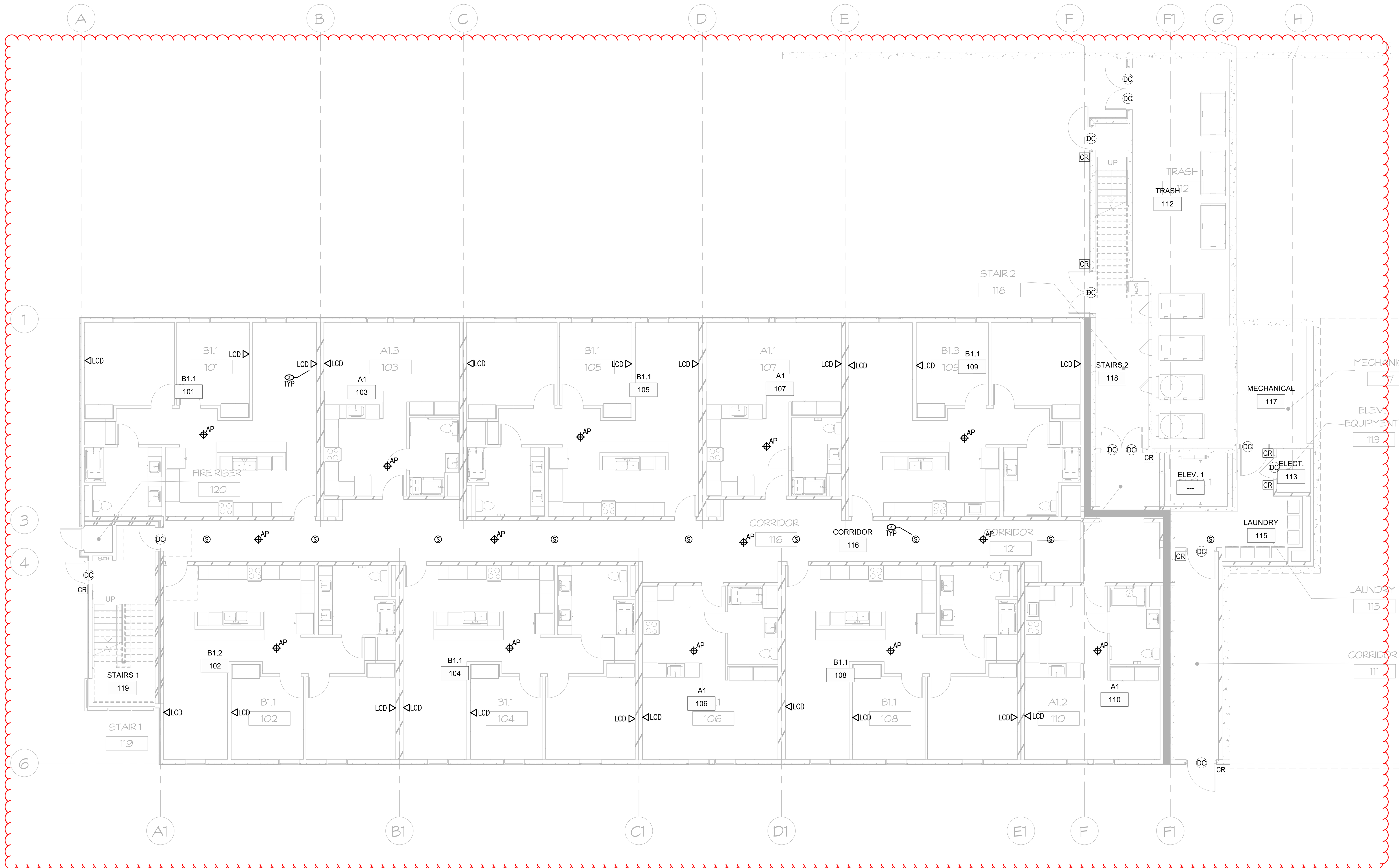

ADDENDA 6 CHANGES
ALL D2 DATA DROPS IN ROOMS REMOVED. ALL ALARM MOTION SENSORS AT CEILINGS WERE REMOVED.

1 TECHNOLOGY ENLARGED PLAN - LEVEL 01 - NORTH

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KEYNOTES

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(2) AT 42" AFF, CONTRACTOR TO INSTALL 'LCD' DROP AT CASEWORK AS SHOWN. ALL BOXES ARE AT SAME ELEVATION NEXT TO EACH OTHER. PROVIDE ALL A/V CABLING CONNECTIONS REQUIRED FOR LCD INTERFACE. ROUTE DATA BACK TO IDF SERVING THIS AREA.

(3) WIRELESS ACCESS POINT, CEILING MOUNT. PROVIDE DATA OUTLET FOR WIRELESS ACCESS POINT, (2) CAT6A CABLES, 2-PORT PLENUM RATED SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING AS INDICATED ON DRAWINGS. USE J-HOOKS TO THE CABLE TRAY AND THEN TO SUPPORT NEW CABLING ABOVE ACCESSIBLE CEILING SPACE, FOR INACCESSIBLE CEILINGS SPACES NEW CONDUITS SHALL BE PROVIDED ABOVE CEILING TO THE IDF CABINET SERVING THIS PROVIDE 10' SLACK CABLE COILS ABOVE CEILING AT OUTLET LOCATION FOR FUTURE RELOCATION.

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9-30-23
RENEWAL DATE
STATE OF CALIFORNIA

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1	ADDENDUM 06	04/08/24

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ALT. NO. 1 - TECHNOLOGY ENLARGED PLAN - LEVEL 01 - NORTH

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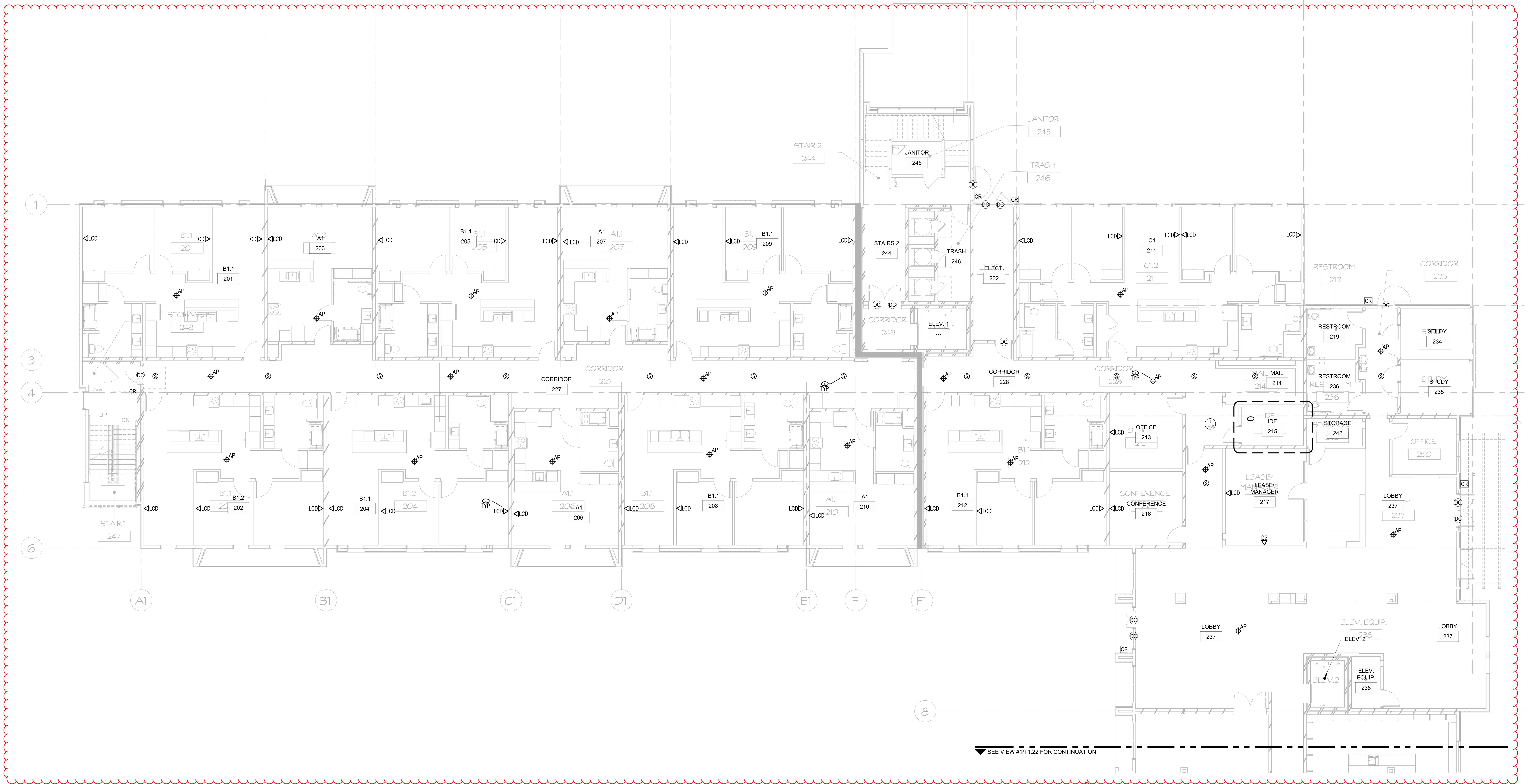

1 TECHNOLOGY ENLARGED PLAN - LEVEL 02 - NORTH

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

ADDENDA 6 CHANGES
ALL D2 DATA DROPS IN ROOMS REMOVED. ALL ALARM MOTION SENSORS AT CEILINGS WERE REMOVED.

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4. ALL STRUCTURE CABLING IN THIS AREA WILL BE ROUTED TO THE IDF ROOM ON THIS FLOOR.

KEYNOTES

(1) INDICATES THE LOCATION OF THE IDF. CONTRACTOR SHALL PROVIDE AND INSTALL ALL RACKS/CABINETS AS SHOWN ON ENLARGED AND RISER PLANS. AND PROVIDE AND INSTALL ALL DEVICES REQUIRED TO TERMINATE ALL NEW DATA/VOICE CABLES THAT ARE SCHEDULED TO ROUTE TO THIS ROOM FOR TERMINATION.

(2) PROVIDE AND INSTALL (2) CAT6 CABLES TO THIS LOCATION. INSTALL AT +18" AFF FOR WORKSTATION AND THEN ROUTE TO NEAREST IDF SERVING THIS FLOOR. COORDINATE REQUIREMENTS AND LOCATION WITH CONTRACTOR.

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STATE OF CALIFORNIA

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PROJECT NUMBER
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DATE 03/22/2024

REVISIONS

#	DESCRIPTION	DATE
1	ADDENDUM 06	04/08/24

BID

TECHNOLOGY ENLARGED PLAN - LEVEL 02 - NORTH

T1.21

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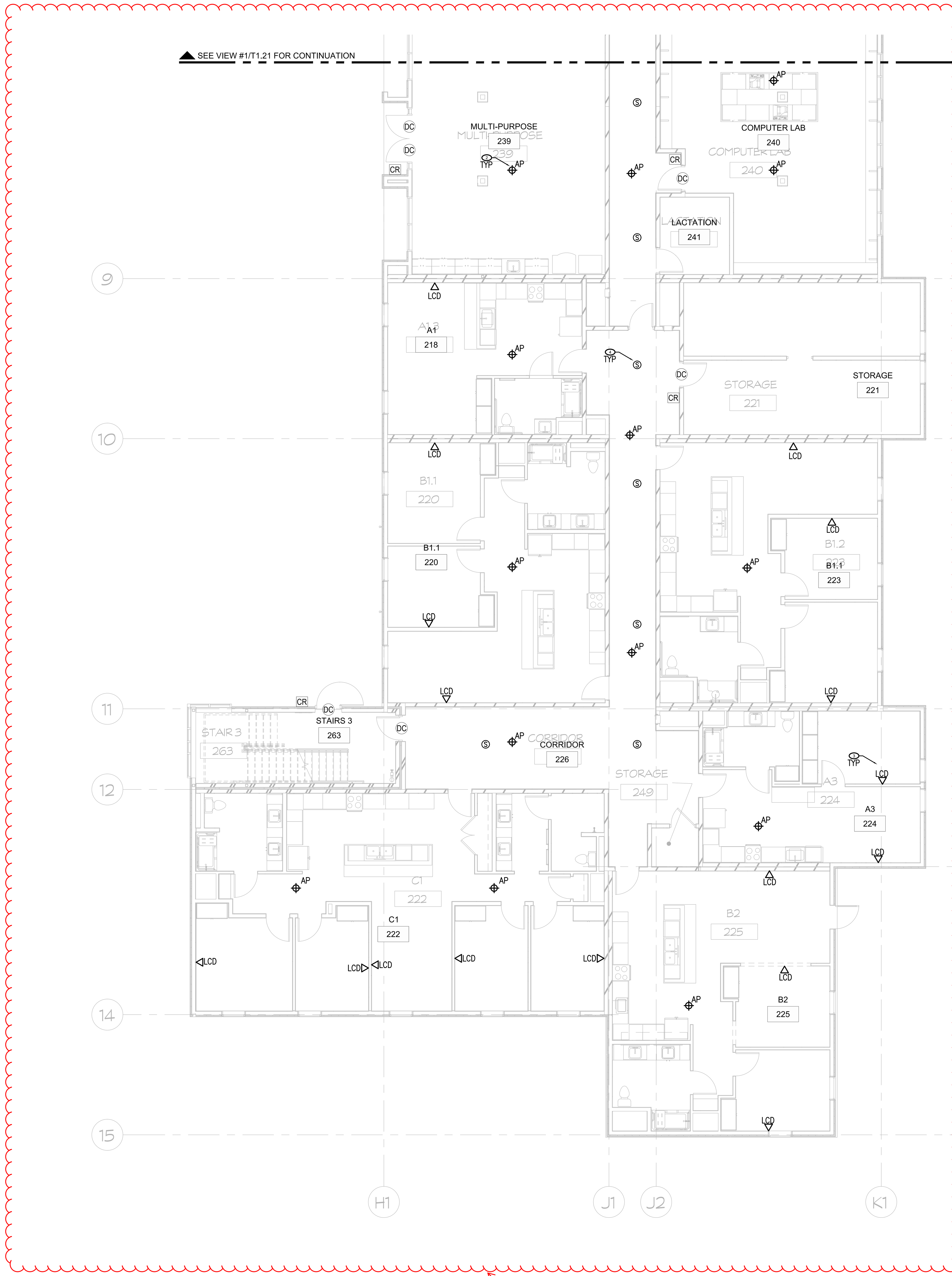

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1 TECHNOLOGY ENLARGED PLAN - LEVEL 02 - SOUTH

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

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MEP Engineering
LEAF ENGINEERS

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ARCHITECT
C 15885
9-30-23
RENEWAL DATE
STATE OF CALIFORNIA

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KCCD - BAKERSFIELD

PROJECT NUMBER
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TECHNOLOGY ENLARGED PLAN - LEVEL 02 - SOUTH

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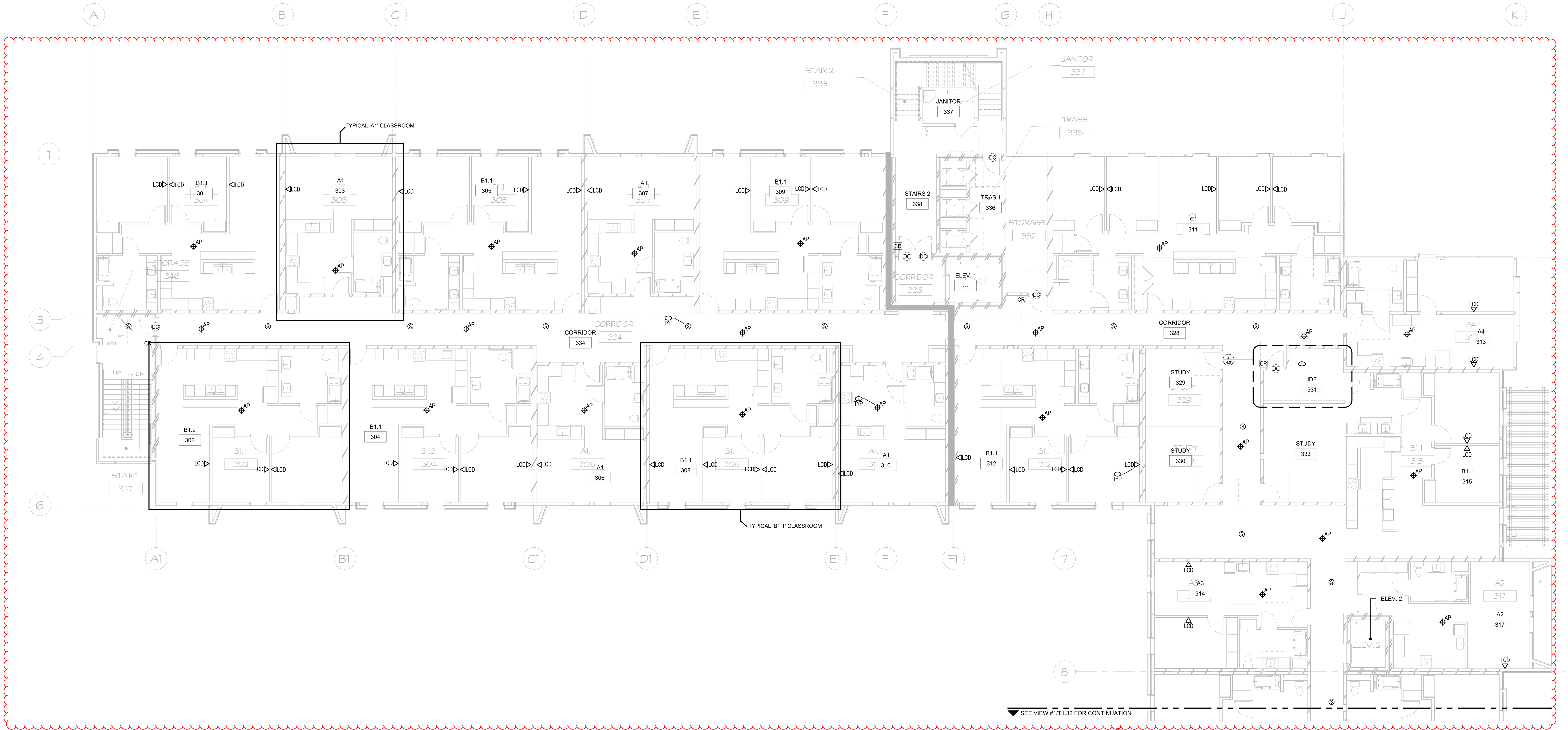

1 TECHNOLOGY ENLARGED PLAN - LEVEL 03 - NORTH

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

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TECHNOLOGY ENLARGED PLAN - LEVEL 03 - NORTH

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ADDENDA 6 CHANGES
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p 559-223-9600 www.LEAFengineers.com
job #: S2103400AR

ENGINEER
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
ELECTRICAL
Exp. 6-30-2025

ARCHITECT
LICENSED ARCHITECT
JOHN HAMILTON SMITH
C 15885
9-30-23
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TECHNOLOGY ENLARGED PLAN - LEVEL 03 - SOUTH

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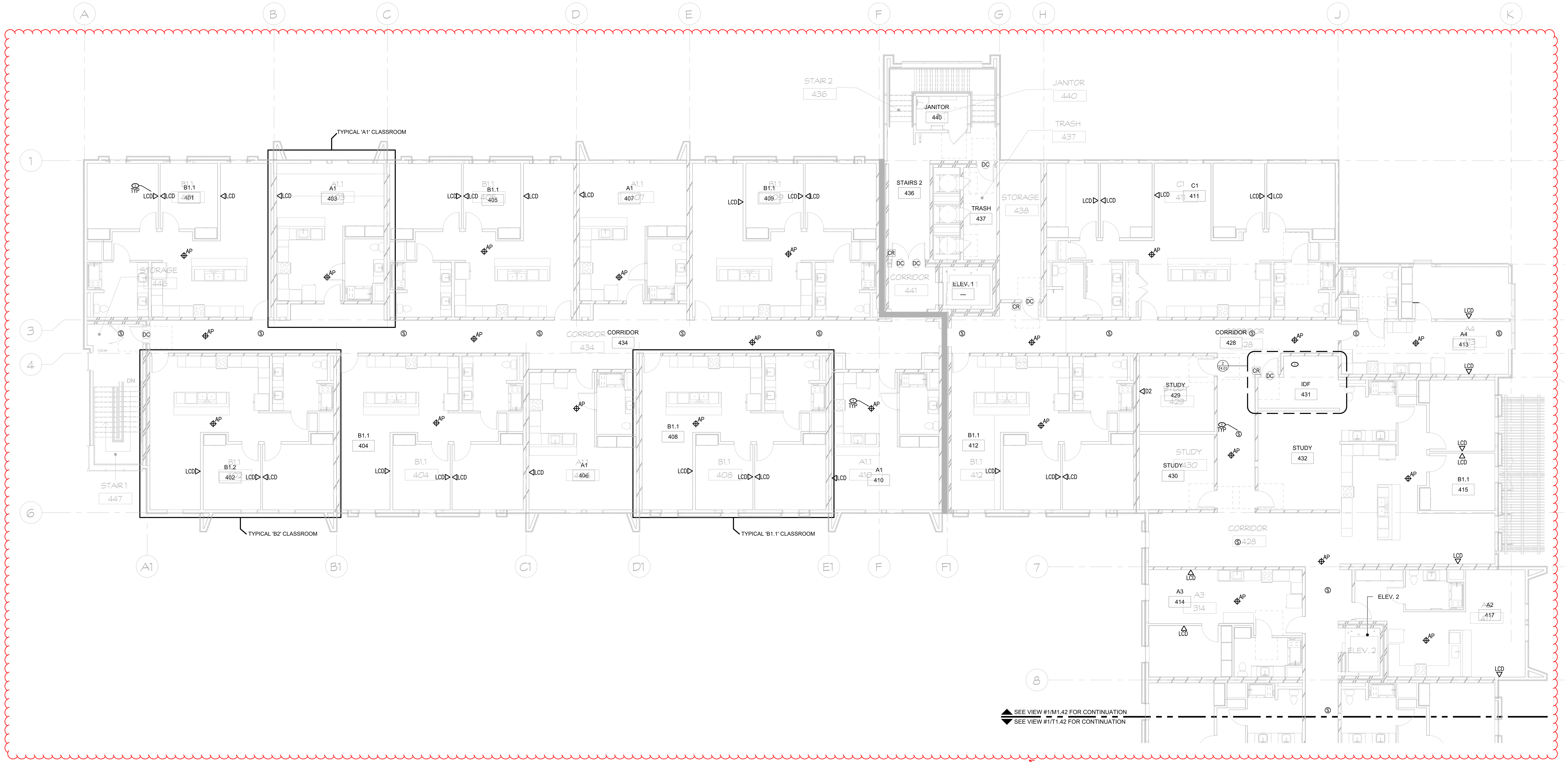

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TECHNOLOGY ENLARGED PLAN - LEVEL 04 - NORTH

T1.41

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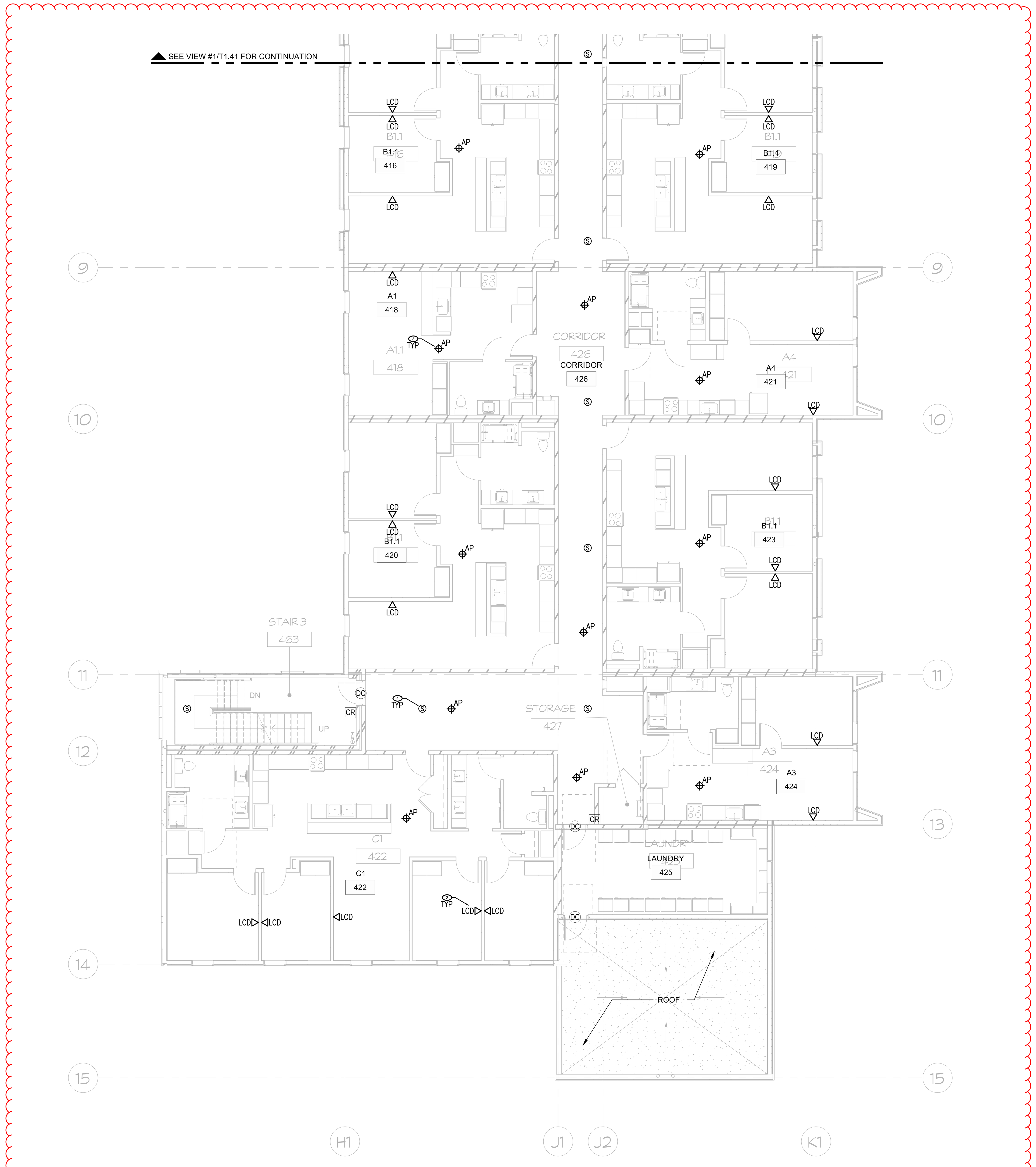

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TECHNOLOGY ENLARGED PLAN - LEVEL 04 - SOUTH

T1.42

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SECTION 07 14 00 FLUID-APPLIED WATERPROOFING

PART 1 GENERAL

1.01 Summary

A. Section Includes:
   1. Fluid-Applied Waterproofing

B. Related Requirements
   1. Section 01 25 00 – Substitution Procedures
   2. Section 01 33 00 – Submittal Procedures
   3. Section 01 70 00 – Execution and Closeout Requirements
   4. Section 01 74 00 – Cleaning and Waste Management

C. Reference Standards
   1. American National Standard Institute (ANSI) Publications:
      a. 118.4 — Standard Specifications for Latex-Portland Cement Mortar
   2. ASTM International (ASTM) Publications:
      a. C109/C109M-21 — Standard Test Methods for Compressive Strength of Hydraulic Cement Mortars
      b. C348-21 — Standard Test Methods for Flexural Strength of Hydraulic-Cement mortars
      c. C469/C469M-22 — Standard Test Methods for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression
      d. C531-18 (2023) — Standard Test Methods for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes
      e. C666/C666M-15 — Standard Test Methods for Resistance of Concrete to Rapid Freezing and Thawing
      f. E96/E96M-23 — Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials
   3. CRD Publications:
      a. C48 – 92 — Standard Test Method for Water Permeability of Concrete

1.02 Submittals

A. Section 01 33 00

1.03 Informational Submittals

A. Product data
B. Safety Data Sheets

1.04 Closeout Submittals

A. Warranty Documentation
B. Section 01 70 00.

1.05 Delivery, Storage and Handling

A. Deliver materials to site in undamaged condition.
B. Store per manufacturer's instructions.

1.06 Warranty

A. Manufacturer Standard Warranty

PART 2 PRODUCTS

2.01 Manufacturers

A. Acceptable Manufacturer:
   1. Master Builders Solutions Construction Systems US, LLC
      889 Valley Park Drive, Shakopee, MN 55379
      Phone: 1-800-433-9517
      Website: www.master-builders-solutions.com/en-us
B. Other Manufacturers:
   1. Submit substitution request.
      a. Section 01 25 00.

2.02 Acrylic-Polymer emulsion

A. MasterEmaco® A 660 (Acryl 60)
   1. One component, water-based, non-yellowing acrylic polymer emulsion
   2. Comply with ASTM C109, ASTM C348

2.03 Waterproof Cement-Based Coating

A. MasterSeal® 581 (Thoroseal®)
   1. Waterproofing
   2. Resistant to positive and negative hydrostatic pressure
   3. Below grade exterior
   4. Comply with CRD C48, ASTM C348, ASTM C469, ASTM C666, ASTM E96, ASTM C531, ANSI 118.4
   5. Color: Gray

PART 3 EXECUTION

3.01 Examination

A. Verification of Conditions
   1. Verify surface is dry, and free of contaminants, including dust, dirt, laitance, paints, oils, grease, and curing compounds; and ready to receive Work.
   2. Verify substrate is cured, and has achieved 80 percent design strength.

3. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface Preparation
   1. Clean surface per manufacturer's installation instructions.
   2. Mechanically remove efflorescence.
   3. Patch rock pockets, honeycombs, voids, and cracks, and allow to cure.
   4. Saturate substrate with water, and allow to dry before beginning application.

3.03 Mixing

1. Blend MasterEmaco A 660 with water.
2. Mix in MasterSeal 581 following manufacturer's written instructions.

3.04 Application

1. Apply per manufacturer's installation instructions and as noted below.
2. Coats:
   a. 1st – Back brush or broom to fill voids and achieve uniformity and optimum adhesion. Finish with a horizontal stroke to evenly coat surface. Cure 24 hours before applying another coat.
   b. 2nd – Apply and finish with a vertical stroke. Cure 24 hours before applying another coat.
   c. 3rd – Apply and finish. Cure 7 days before backfilling.
3. Do not exceed pot life recommended by manufacturer.

3.05 Cleaning

A. Waste Management
   1. Dispose of waste.
   2. Section 01 74 00.

END OF SECTION

SECTION 23 90 00 - DIRECT DIGITAL CONTROL AND ENERGY MANAGEMENT SYSTEM

PART 1 - GENERAL

1.1 GENERAL MECHANICAL PROVISIONS:

A. The General Mechanical Provisions of Section 23 90 00 shall form a part of this Section with the same force and effect as though repeated here.

1.2 SCOPE:

A. General: The direct digital control and energy management system (DDC/EMS)includes control panels, control devices, valves, actuators, all line and low voltage control and interlock wiring (including wiring to controllers, switches, timers, relays, etc.) and conduit and related equipment, as required for proper operation of all equipment. Provide all equipment, programming, labor, materials and services necessary for a complete, lawful and operating DDC/EMS as shown or noted on the drawings and as specified herein. All control wiring, line and low voltage shall be installed in conduit. Power wiring, power to DDC/EMS control panels and disconnect switches are included in the Electrical Specifications, except that power wiring for control devices such as controllers, valves, etc., is included in the control system. Electrical work shall be in accordance with Electrical Specifications. The system shall be direct digital control/electric. **The control system shall be direct digital. Shall be Johnson Controls "Facility Explorer. The system shall be Niagara 4, HTML5 based, with open license supervisory controller.** The system shall communicate over the Campus Ethernet LAN/WAN, and shall include the latest upgrading (software and firmware) during the warranty period. The data wiring shall have an Ethernet connection at the DDC/EMS panel. A Graphical User Interface (GUI) shall be provided. Coordinate with Section 23 00 01, Heating, Ventilating and Air Conditioning and with Division 26. Comply with ASHRAE 55 and Title 24.
   1. All work described in this section shall be installed, wired, circuit tested and calibrated by factory certified technicians qualified for this work.

B. Contractor Qualifications: All controls shall be furnished and installed by a Johnson Controls ASI (Authorized Systems Integrator) who is licensed, N4 certified and approved by the controls manufacturer for design, installation, start-up and service of their product. The Contractor must also have a written agreement with the local factory authorized distributor who can in addition to the contractor, supply training and support to the owner directly. Distributor must maintain $100,000 of locally stocked inventory of like product installed at this site. The Contractor must have sufficient personnel to respond to a trouble call at the site within four hours. The Contractor's local manager shall have a minimum of five years' experience in the design, installation, start-up and service of similar systems. The Contractor shall submit a list of at least five projects which are similar in size, scope and contract value to this project. This list shall include the Owner's contact person, phone number and controls contract value.

C. Submittals: Within 60 days of contract award, submit eight (8) copies of shop drawings showing the following aspects of the DDC/EMS system (CAD file with DXF format if required of floor and site plans can be secured from the Architect).
   1. All termination points, terminal cabinets, and cabling.
   2. Schedule of input and output points.
   3. Locations of all visible DDC/EMS system components (i.e. interior and exterior sensors, terminal strips, panels, trench and pull boxes, etc.), identifying specifically any exposed conduit.

4. Descriptive literature for all material and equipment items shall include manufacturer's name and catalog numbers, dimensions, capacities, and all other characteristics and accessories as listed in the specifications or on the drawings.
5. Submit copies of forms to be used for testing and verification showing all data which is to be recorded. Three copies of complete report shall be submitted for review.
6. Complete written sequence of operation for all controlled equipment.

D. Installation and Operation Manuals: Furnish Installation and Operating Manuals for all components. These manuals shall contain full documentation which shall include, without being limited to, the following:
1. General description and specifications.
2. Installation and initial checkout procedures.
3. Complete alignment and calibration procedures for all components.
4. Detailed schematics and assembly drawings and communication trunk diagram with control unit addresses.
5. BACNet architecture diagrams
6. Sequence of Operations
7. Commissioning Sheets on every controller installed.
8. Controller points lists.

1.3 SYSTEM ARCHITECTURE

A. DDC/EMS Equipment: The main controller shall contain the network communications and information management programs providing integrated global control, trend logging, local and remote alarming and fully menu driven user interface. The local network controller must be an intelligent, stand-alone microprocessor based controller which can have a variety of configurations based on their application.

B. Campus-Wide Data Transfer System: The DDC/EMS shop drawings shall indicate where all equipment items are to be located for input and output to complete the system. The conduit/cabling system shall inter-tie these points as required to complete one system to meet the design criteria herein. Conduit shall be used for all EMS wiring whenever access is limited (hard-lid, walls, etc). When EMS wiring is installed in/above accessible areas (such as T-bar ceilings), free-air with J-hooks and wire-ties is acceptable. However, EMS wiring cannot be intermixed or bundled with any other cabling/wiring (Fire Alarm, internet, etc). System high speed communication shall be hardwired using a Belden shielded cable as recommended by DDC manufacturer.

C. User Interface Communication: The user may communicate with the DDC/EMS system with a workstation located at the District Office over the WAN, with a remote workstation, with an On-Campus Operator Workstation, or with a Lap-Top computer (Service Tool).

D. Standard Network Support: All Master Controllers, Workstation(s) and File Server shall be capable of residing directly on the owner’s Ethernet TCP/IP LAN/WAN. Furthermore, the Master Controllers, Workstation(s) and File Server shall be capable of using standard, commercially available, off-the-shelf Ethernet infrastructure components such as routers, switches and hubs. With this design the owner may utilize the investment of an existing or new enterprise network or structured cabling system. This also allows the option of the maintenance of the LAN/WAN to be performed by the owner’s Information Technology Department as all devices utilize standard TCP/IP components. If the DDC/EMS contractor needs an additional data port that is not already provided, its installation must be coordinated with the District’s IT department (and IT infrastructure contractor if applicable) and shall be installed at the DDC/EMS contractor’s expense. As a result, the DDC/EMS contractor shall ensure any additional data port locations are clearly indicated and that the existing EMS data ports they intend to utilize are

addressed/identified prior to construction so they are not damaged or removed. This coordination shall occur between the Campus Construction Office, IT department, DDC/EMS operator, IT infrastructure contractor (if applicable), and the project's general construction contractor manager.

PART 2 - PRODUCTS

2.1 GENERAL:

A. General Requirements: The Electronic Microprocessor Based Direct Digital Control and Energy Management System (DDC/EMS) shall monitor the data environment and perform control functions in relation to a programmed strategy and the status of the data environment. The system shall use solid state computer based digital and analog technology. The system shall be standard with the manufacturer to insure on-going parts availability and trained technical support. The DDC/EMS shall be of the user programmable type requiring no special computer education for operation. All necessary instruction manuals and user orientation training shall be supplied by the manufacturer or agent thereof. The DDC/EMS shall be UL listed as a Direct Digital Control and Energy Management System. The programmable control requirements of the DDC/EMS shall include, but not be limited to:

OPTIMUM START/STOP (BASED ON HISTORICAL DATA)
TIME OF DAY ROUTINES
SCHEDULED OCCUPANCY ROUTINES INCLUDING HOLIDAYS
CUSTOM TAILORED REPORTING
ACCUMULATING RUN TIME
CRITICAL CONDITION ALARMING
FLUID FLOW SWITCH AND CONTROL ALARMING
PID CONTROL ON ANALOG OUTPUTS
HOT WATER RESET
DAY/NIGHT SETBACK
ECONOMIZER/PURGE
CUSTOM TAILORED REPORTING
POINT OVERRIDE ABILITY FOR EVERY DIGITAL AND ANALOG OUTPUT
SEPARATE MODES AS REQUIRED BY CONTROL SEQUENCE
ALL EXTERIOR LIGHTING CIRCUITS CONTROLLED BY SYSTEM

B. Environment: The DDC/EMS shall operate in an environment of 40 120 degrees F and 10 95% relative humidity. Sensors and control elements shall operate under the temperature, pressure, humidity, and vibration conditions normally encountered in the installed location. The DDC/EMS shall maintain accuracy as follows:
1. +/ 0.5 F for the space temperatures in the 0 F 130 F range.
2. +/ 0.5 F for duct temperatures in the 40 F 130 F range.
3. +/ 1.0 F for outside air temperatures in the 30 230 F range.
4. +/ 1.0 F for water temperature in the 30 230 F range.
5. KWH and KW monitoring within 1.0%.

C. MicroSD Backup: The system shall be tolerant of power failure and automatically save database to on-board MicroSD chip. On power restoration, the system shall automatically and without operator intervention of execution of manual restart procedures:
1. Come On Line.
2. Update all monitored functions.
3. Resume operation based on current time and status.
4. Implement special building start up strategies as required.
5. Log time of power outages and start ups.

D. Program Storage: All FX-90 hardware licenses and certificates shall be stored on local MicroSD memory chip employing encrypted “safe boot” technology.

E. Protocol: Protocol shall be BACnet. The Main Controller shall be enabled to support and shall be licensed with the following Open protocol drivers (client and server) by default
   1. BACnet
   2. Lon
   3. Modbus
   4. SNMP
   5. KNX

F. The Main Controller shall provide the following hardware features as a minimum:
   1. Two 10/100 Mbps Ethernet ports.
   2. Two Isolated RS-485 ports with biasing switches.
   3. 1 GB RAM
   4. 4 GB Flash Total Storage / 2 GB User Storage
   5. Wi-Fi (Client or WAP)
   6. USB Flash Drive
   7. High Speed Field Bus Expansion
   8. -20-60°C Ambient Operating Temperature
   9. Integrated 24 VAC/DC Global Power Supply
   10. MicroSD Memory Card Employing Encrypted Safe Boot Technology

G. The FX-90 Controller shall be provided with a 1 Year (SMA) Software Maintenance Agreement. Labor to implement not included.

H. The FX-90 shall be licensed for 100 devices minimum. If the amount of controllers on the complete project exceeds 100, the FX-80 shall be licensed to support all of the devices plus an additional 10 for future expansion.

2.2 SYSTEMS DESCRIPTION:

A. Modular Design/Expandability: The DDC/EMS shall be of a modular design providing distributed processing capability, and allowing future expansion of both input/output points and processing/control functions. The modular DDC/EMS shall be configured on the main/local concept. The main controller shall have the capability of adding local controllers and the local controllers shall be capable of adding I/O modules.

B. Main (Master) Description: The master shall function as the overall system coordinator, accept control programs, perform automated energy management functions, control peripheral devices and perform all necessary mathematical calculations. The master shall be a microcomputer of modular design. The word size shall be 16 bits or larger, with a memory cycle time less than 1 microsecond. All chips shall be second sourced. The master shall have the following:
   1. Protected Access: Key lock protected access to output override switches and internal circuitry.
   2. Memory: The master shall have memory required for systems operation and diagnostics or MCP software.
   3. Real Time Clock: The master shall have a battery backed uninterruptable "Real Time Clock". The accuracy shall be within ten seconds per day. The RTC shall provide the following information: Time of Day, Day, Month, Year, and Day of Week. The system shall be programmed to automatically correct the clock for day light savings time and leap years and Time Sync.
   4. Power: The master shall operate from 120 VAC +/- 20%, 60 Hz. Line voltages below the operating range of the system shall be considered outages. The

master shall have over voltage surge protection, and require no additional AC power signal conditioning.

5. Parallel Processing: The master shall be capable of parallel processing, executing separate control programs simultaneously. Any control program may affect control of another program if desired. Each program shall have full access to all I/0 facilities of the processors.
6. Communications Processor: Each master shall provide communication to the District's Workstation(s) (LAN) and the field buses. In addition, each master must have communications ports that support portable service tool and connection to third party controllers such as a chiller control panel or Variable Frequency Drives.
7. Uninterruptable Functions: Control functions shall not be interrupted due to program entry or other user communications.

C. Local Controller Units: The local units function as a stand-alone controller and as an Input/Output interface of the DDC/EMS and the Data Environment.

1. HVAC units must be fully controlled by a controller connected to the DDC/EMS that can be fully programmed by the DDC/EMS contractor.
2. Monitoring: Local units shall be used to connect the data environment to the system and contain all necessary Input/Output functions to read field sensors and operate controlled equipment based on internal instructions or instructions from the Master. The units shall be fully supervised to detect failures. The units shall report the status of all points in its data environment at the rate of at least once every second. Local units shall connect directly to the Master with a twisted pair shielded RS-485 interface.al unit failure.
3. Unit Failure: Upon failure of the unit (including transmission failure), the unit shall automatically fail off or to a predetermined state for three-way valves. All local units must run independently in the event of a central unit failure (including transmission failure) in bypass mode via the thermostat.
4. Power: The unit shall operate from 120 VAC, +/-20%, 60 Hz, 220 VAC, +/-20%, 50 Hz or 24 VAC +/- 20%, 50/60 Hz power. For voltages below the operating threshold the unit shall totally shutdown and de energize its outputs.
5. LAN and/or Field Bus: Each unit shall communicate with any unit through the RS-485 interface LAN and/or field bus.
6. Auxiliary Port: Each unit shall be equipped with an auxiliary port to allow local interrogation of input and output values, and keyboard override of outputs through laptop.

2.3 INPUT/OUTPUT CAPABILITY:

A. Inputs: The DDC/EMS shall accept information in the form of a temperature, voltage, digital signal (on off) or pulse counter.

1. Analog Inputs: The Analog Input (AI) function shall monitor each analog input, perform A/D conversion, and hold the digital value in a buffer for interrogation. The A/D conversion shall have a minimum resolution of 10 bits. Input ranges shall be within the range of 0-10 VDC.
2. Digital Inputs: The Digital Input (DI) function shall accept dry contact closures and voltage level or resistance level (5VDC reference voltage) transitions. A voltage level below 1 volt or a resistance below 500 ohms shall be read as ON (closed), a voltage level above 3 volts or a resistance above 1400 ohms shall be read as OFF (open).
3. Pulse Accumulator Inputs: The pulse accumulator function shall have the same characteristics as the DI, except that, in addition, a buffer shall be included to totalize pulses between interrogations. Each input shall accept pulses at a minimum of 2 per second.

4. Temperature Inputs: Temperature inputs originating from a thermistor, shall be monitored and buffered as an AI, except that, automatic conversion to degrees F shall occur without any additional signal conditioning.
5. Input Wiring: All analog inputs shall be two wire devices, with shielded wire for accurate operation.

B. Outputs:
1. Master and local controllers - Form C relay outputs rated at 5 amp, 24 VAC/DC or 2 amp, 30 VAC for on/off or Pulse Width Modulation for maintained operation of field devices. Output pulse width shall be selectable between 0.1 and 3200 seconds with a minimum resolution of 0.1 seconds. Isolation and protection against voltage surges shall be provided. Central plant controllers shall be equipped with an ON/OFF/AUTO switch to manually obtain either output state or able to be overridden from GUI. Manual overrides shall be reported to the master at each update. An LED shall be provided to indicate the state of each digital output.
2. All digital and analog output points on every controller must have an override (highest priority) input point in the controller's point list in the FX80. This override point must be clearly labeled and identifiable. For example, "DO1ovrd" would be the point to override Digital Output 1.

2.4 SOFTWARE:

A. User Software: HTML5 based. Provide software (required upgrades) for Laptop Computer (Service Tool) and Facilities office workstation, as required.

B. Software Features:
1. Mathematical Requirements: The DDC/EMS shall have a math package capable of addition, subtraction, multiplication, division, square root, greater than and less than functions, minimum and maximum selection functions, and up to five levels of parenthesis for computation of variables. Control commands may be executed based on these calculated variables which are available to the program on a global basis. Math expressions may be used in action and exit commands of control program. The mathematical software shall be capable of mixed mode arithmetic, utilizing Boolean logic statements in combination with basic arithmetic to provide conditional mathematical computations.
2. Passwords: The DDC/EMS shall have multiple levels of user programmable passwords in addition to a master password, for programming security. Separate passwords may be user programmed. Level of password will define user's access level and ability to change system.
3. Trend Logging: The DDC/EMS shall trend log variables. Any system variable (inputs, outputs, numerals, can be trend logged.
4. Messages: The DDC/EMS shall provide alarming, preventative maintenance and status reporting messages.
5. Documentation Format: The programming language of the DDC/EMS shall be plain English based such that a printout of the control program shall serve as the primary documentation for the system.
6. Micro Processor Integrity Checking: Each DDC/EMS microprocessor shall continuously monitor and check itself and produce error messages in the event of a malfunction.
7. Data Plotting: The DDC/EMS shall provide plots of values of system variables on a graph. Graphs may consist of combinations of up to 3 system variables at a time from the history logs.

C. Color Graphics Requirements Provide District Standard **DGLUX** color graphics which allow user to access and change (based on user access level) all schedules and

setpoints (including damper or control valve positions) directly through the user graphics. Real time data shall continuously be updated. Navigation between the screens (forward and backwards) shall be accomplished with the use of a mouse. The minimum graphic screens shall include the following:

1. Site lay-out locations of all equipment being controlled, control component locations, and spaces served. Provide multiple screens-minimum of 1 screen per building plus site and others as needed for clarity. By "clicking" mouse on the desired equipment area a flow diagram will be displayed for the related equipment (as described below - Item 2). By "clicking" the mouse on a conditioned space, a graphic display of the zone conditions (as described below - Item 3) will be displayed.
2. Each building must have a graphical summary page of all the zones in that building that displays zone temperature, set point, discharge air temperature, and fan command.
3. Zone & HVAC Equipment Description on GUI: Each item of HVAC equipment must be clearly identified by what area it serves and its unit number. For example, if HC-2A serves Classroom 4, the GUI should list it as “Classroom 4, HC-2A.” It should NOT be listed as only “HC-2A” or “Classroom 4.”
4. Flow diagrams shall be provided for each HVAC system, such as air-handling system, chilled water system, hot water system, condenser water system, package unit system, brine system with all inputs and outputs dynamically displayed.
5. Each temperature control zone shall have a screen providing set points, temperatures, and related HVAC system status data.
6. Scheduling screens allowing On/Off times to be set.

D. Software Manual: The software manual shall describe programming and testing, starting with a system overview and proceeding to a detailed description of each software feature. The manual shall instruct the user on programming or reprogramming any portion of the system. This shall include all control programs, variables, set points, time periods, messages, passwords and other information necessary to load, alter, test and execute the system. The manual shall include commands, editing and writing control programs, printouts and logs, mathematical calculations, and instructions on modifying any control point, verifying error status, changing passwords, and initiating or disabling control programs.

E. Software Licenses: The owner shall be named the license holder of all software associated with any and all incremental work on the project(s). All Niagara 4 software licenses shall have the “accept.station.in=*”; “accept.station.out=*”; “accept.wb.in=*”; and “accept.we.out=*” section of the software licenses. The intent is to insure that the installed Niagara 4 products may be completely open for integrations. Owner shall be free to direct the modification of the software license, regardless of supplier. In addition, the Owner shall receive ownership of all job-specific software configuration documentation, data files, and application-level software developed for this project. This shall include all custom, job-specific software code and documentation for all configuration and programming that is generated for a given project and/or configured for use within Niagara Framework (Niagara 4) based controllers and/or servers and any related LAN/WAN/Intranet and Internet connected routers and devices. Any and all required IDs and passwords for access to any component or software program shall be provided to the Owner.

2.5 USER INTERFACE:

A. LAN Connections: If an additional LAN connection is needed, the conduit and cable from LAN rack is to be installed by electrical contractor. The planned location of all LAN connections (new and existing) to EMS equipment must be coordinated with the District’s

networking staff and EMS staff as early as possible. Final connections shall be made by DDC/EMS Contractor.

B. Direct Computer Communication: The DDC/EMS shall have a computer compatible communication mode for communication with other intelligent devices, which performs data integrity checking, with automatic retransmission of data when errors are detected.

C. FX80 software must include all applications to make all folders viewable and accessible in the FX80.

2.6 SYSTEM COMPONENTS:

A. Control Components:
1. Wall Switches: Plates for all wall switches and timers shall match those specified in Division 26.
2. Labels: All labels, signs, etc. shall be engraved, laminated plastic, white on black background, 1/8" high lettering, minimum.
3. Temperature Sensors:
a. Sensor Type: All temperature sensors shall be made of a highly stable, precision thermistor material accurate to within ±0.36 Degrees F. Identify each temperature sensor with a "Lamicoid" label keyed to the control system as-built drawings.
b. Room Sensor: Room temperature sensor shall have Executive Decorator housing with programmable visible temperature indication. Housing shall include an occupancy override, temperature setpoint adjustment and a service tool jack.
c. Vandal Resistant Room Sensor: Where noted, shall be a blank stainless steel wall plate with the sensing element bonded to the back side. The plate back shall be insulated to reduce wall temperature influence.
d. Duct Sensor: Duct temperature sensor shall be a probe type element with 9 inch insertion length. Element shall be installed where air mixture provides a true temperature indication. Where adequate mixing is not practical, the duct temperature sensor shall have an averaging type thermistor element, installed across the entire cross section of the duct.
e. Outdoor Air Sensor: Outdoor air temperature sensor shall be a probe type element mounted in a ventilated, treated white PVC sun shield to minimize radiant energy effects. The sensor and sun shield shall be mounted on a weatherproof outlet box for outdoor installation.
f. Low Differential Air Pressure Applications (0" to 5" W.C.): The differential pressure transmitter shall be of industrial quality and transmit a linear, 4 to 20 mA output in response to variation of differential pressure or air pressure sensing points. Non-interactive zero and span adjustments, adjustable from the outside cover. (0.00 - 1.00" to 5.00") W.C. input differential pressure ranges. 4-20 mA output. Maintain accuracy up to 20 to 1 ratio turndown. Reference Accuracy: +0.2% of full span.
g. CO2 Sensor: The sensor shall have a five year recommended calibration interval. In addition, the sensor shall be provided with a five-year calibration guarantee, providing for free factory replacement if the sensor is found to be out of calibration within five years of the purchase date. The sensor shall have accuracy of ±50 ppm and repeatability of ±20 ppm. All adjustments to the sensor including output scaling, elevation adjustment, relay set point, relay dead-band, linear or exponential output, and single point calibration shall be made via on-board push buttons and LCD display. The LCD display must be covered by a solid door and only viewable when the door is opened for adjustments.

4. Temperature Control Panels: Each panel and each control device or readout on the front of the panel shall be identified with a laminated plastic label with 1/4" high engraved lettering, white on black background. Pilot lights shall be the push to test type.
5. Smoke Detectors: Furnished by Division 23 and installed by Division 26. Power and fire alarm wiring by Division 28. Control wiring by Division 23. Coordinate with Division 26.
6. Status Sensor: Current sensing status sensor (with sensitivity adjustment for belt loss detection).
7. Electric Actuators:
   a. General: Fully modulating, UL listed. Visual position indicator, manual override and clear weather shield where exposed to weather. 24 volt. Belimo.
   b. Valve Actuators: Provide with factory mounting brackets and linkage to the control valve. Capable of shutting off against a 50 psi differential.
   c. Damper Actuators: Positive position feed back and spring return. OSA dampers shall be spring return closed. Actuators shall be direct mounted onto the damper control shaft without linkage. Damper actuators shall be sized to provide a minimum of 5 in-lbs torque per square foot of damper face area.
8. VFD: Provide VFD drives for equipment as scheduled on drawings. Microprocessor-based, sensorless vector drives to provide adjustable speed control for three-phase motors. Include standard features that can be programmed to customize the drive's performance to suit a wide variety of applications, a digital display and operating and programming keys on a removable keypad and a SA Communication card as standard. JCI or equal.

B. Lighting Contactors: Lighting contactor with metal enclosure will be furnished, installed, and wired to the lighting panel by the electrical contractor. See electrical contract documents for location. The DDC/EMS Contractor shall provide low voltage relay(s) required at the contactor panel and wire to the contactors to complete the DDC/EMS side of the lighting control. DDC/EMS Contractor shall provide required photo cells. Relays shall be suitable for up to 277 volts.

C. Lightning Arrestor and Surge Suppressors: Shall be provided as approved and/or manufactured by the DDC/EMS equipment manufacturer.

D. Conduit: Conduit to be a minimum 1" diameter, and to have at least 25% spare capacity, except drops to room sensors may be run in ½" conduit. Conduit shall be run in electrical or mechanical trenches wherever possible. Site conduit (building to building) will be installed (and terminated inside the building) by Division 26.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION:

A. General: All electrical work shall be in accordance with the California Electrical Code and the Electrical Specification Sections. All electric/electronic systems shall be hardwired in conduit, except as specifically allowed by 1.3, B. Wiring shall be concealed in walls, above the ceilings, or below grade unless otherwise noted. Exposed wiring shall run parallel to room surfaces; location shall be approved by the Architect. No structural member shall be weakened by cutting, notching, boring or otherwise. Provide a 120 volt circuit for each device requiring external power. Dedicated circuits shall be provided where required. Any devices or wiring exposed to the weather shall be protected in weatherproof enclosures such as NEMA 3R and weatherproof conduit.

B. Labeling of System: DDC/EMS Contractor shall provide complete labeling of all terminals at all panels or equipment terminal strips and wiring. Equal to Brady marking on wires and number on terminals in sequence corresponding to control diagram.

C. Programming:
   1. The Direct Digital Control and Energy Management System (DDC/EMS) operational program shall be provided by the DDC/EMS Contractor. The DDC/EMS Contractor shall be responsible for programming the system and shall coordinate the scheduling (on/off times) with the Owner. Prior to start-up, the DDC/EMS Contractor shall provide any testing program he feels necessary to fully test the operation of the various components.
   2. The DDC/EMS Contractor shall load the operational program into the DDC/EMS controller from his office via the District's network (via VPN) or at the job site via a direct connect cable. Prior to starting up the system, the DDC/EMS Contractor shall:
      a. Confirm that the control system has been connected to the Campus LAN/WAN and that the LAN/Wan is working.
      b. Confirm the functionality of the DDC/EMS controllers and all input points by reading the input values, and comparing them with a measured temperature, pressure, voltage, current, or resistance as appropriate. Calibrate all transducers as required.
      c. Confirm the functionality of all digital output points by manual operational of the relay contacts. Use proper discretion in starting and stopping equipment.
      d. Confirm the functionality of all analog output points by manually imposing an adjustable voltage on the appropriate circuit to check proper operation of the controlled device. Calibrate all transducers as required.
      e. The DDC/EMS Contractor shall notify the General Contractor (one week in advance of) when the system will be ready for loading and testing the operational program. The DDC/EMS Contractor's start-up technician shall be present while the program is being loaded and shall communicate with the programmer prior and after program loading to confirm proper operation.

D. Training: Prior to final acceptance, the DDC/EMS Contractor shall provide operational training to the Owner's personnel. The training sessions shall include a complete demonstration of the system. Dates and times of the training sessions shall be coordinated through the Owner not less than one week prior to session. A total of 40 hours of instruction shall be provided. The DDC/EMS Contractor shall maintain a log of training sessions including dates, times and names/titles of those attending. The DDC/EMS Contractor shall submit a copy of this log on request. Contractor shall provide 1 week factory certified training schedule and class at owners' discretion.

E. Testing and Acceptance: The DDC/EMS Contractor shall furnish a complete and operating system. The DDC/EMS Contractor shall also verify, in the presence of the Owner, the system accuracy and proper function of each controlled device and sensor. The following items shall be successfully demonstrated prior to acceptance by the Owner:
   1. All system outputs including controllers, relays, and other control devices shall be addressed and start/stop functions demonstrated.
   2. All inputs shall be displayed and all event-initiated functions shall be demonstrated.
   3. Demonstrate program integrity and power restore sequence during and after a power failure and restoration.

4. Deliver all Record Drawings, wiring diagrams, equipment specifications, installation and Operation Manuals and other documentation as required to describe the system.
5. Complete operator training in the use, programming, and operation of the system.

F. Start-up of the System:
1. The start-up period starts when the following conditions are met:
   a. The DDC/EMS system and all involved HVAC equipment have been installed, connected to the DDC/EMS system and are ready to operate.
   b. A start-up meeting has been conducted with representative of the General Contractor, Architect/Engineer, Maintenance Staff, and the DDC/EMS Contractor.
   c. Consensus is reached, by the representatives at the above referenced meeting that it is appropriate for the start-up process to start.
2. The alarm pagers called by the control system during the start-up period shall be the pagers carried by the Mechanical Contractor and/or DDC/EMS Contractor as appropriate. The Mechanical Contractor and DDC/EMS Contractor shall respond to all pages from the control system and work cooperatively to insure that the building environmental standards are maintained.
3. The start-up process shall be completed and the warranty period shall start when the following conditions are met.
   a. All training to be provided as part of the project has been completed.
   b. No "alarm" or "condition reports" are being generated by the DDC/EMS system for seven (7) calendar days (168 hours) due to incomplete or inaccurate installation or programming.
   c. All adjustments and "fine tuning" of the system have been completed.

G. Verification: A written testing and start-up report must be submitted for approval before acceptance. In addition to the DDC/EMS Contractor's testing and start-up report, the Owner may independently verify the test results. The report on test results shall include setpoints and operating ranges of all components.

END OF SECTION 23 90 00

SECTION 28 46 00 – FIRE DETECTION AND ALARM SYSTEM

INTELLIGENT FIRE ALARM DETECTION SYSTEM

PART 1 - GENERAL

1.1 **RELATED SECTIONS**

A. Section 13800 – Building Automation and Control.

B. Section 13900 (21 00 00) – Fire Suppression.

C. Section (27 15 00) – (Fire Alarm Communications Horizontal Cabling).

D. Section (28 10 00) - (Electronic Access Control System)

E. Section (28 05 44) – (Emergency Responder Radio BDA System)

F. Section (27 52 23) – (Integrated Electronic Communications)

1.2 **SUMMARY**

A. This section of the specification includes the furnishing, installation, and connection of an intelligent reporting, microprocessor controlled, addressable, fire detection and emergency alarm communication system. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, control panels, auxiliary control devices, annunciators, power supplies, and wiring as shown on the drawings and specified herein.

B. The fire alarm shall comply with requirements of NFPA Standard 72 for Fire Alarm Control Unit except as modified and supplemented by this specification. The system shall be electrically supervised and monitor the integrity of all conductors.

C. The system shall be an active/interrogative type system where each addressable device is repetitively scanned, causing a signal to be transmitted to the main Fire Alarm Control Unit (FACU) indicating that the device and its associated circuit wiring is functional. Loss of this signal at the main FACU shall result in a trouble indication as specified hereinafter for the particular input.

D. The facility shall have an Emergency Voice/Alarm Communication System (EVACS). Digitally stored message sequences shall notify the building occupants that a fire or life safety condition has been reported. Message generator(s) shall be capable of automatically distributing up to eight (8) simultaneous, unique messages to appropriate audio zones within the facility based on the type and location of the initiating event. The Fire Command Center (FCC)

shall also support Emergency manual voice announcement capability for both system wide or selected audio zones and shall include provisions for the system operator to override automatic messages system wide or in selected zones.

E. The system shall support additional, alternate Fire Command Centers, which shall be capable of simultaneous monitoring of all system events. Alternate Fire Command Centers shall also support an approved method of transferring the control functions to an alternate Fire Command Center where necessary.

F. Each designated zone shall transmit separate and different alarm, supervisory and trouble signals to the Fire Command Center (FCC) and designated personnel in other buildings at the site via a multiplex communication network.

G. The fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994

H. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall comply with the UL listing.

I. The installing company shall employ NICET (minimum Level III Fire Alarm Systems) technicians on site to guide the final checkout and to ensure the systems integrity.

J. System Programming:

1. Ability to program the system via the local user interface.
2. The system shall be capable of off-line/on-line programming by the manufacturers programming utility.

K. Provide a cloud base connected life safety platform with the ability to remotely monitor the buildings fire system and capable of providing system diagnostics with full detail reports on annual test and inspections from a web-based server or mobile device application. The software shall also expand to allow for future offerings and provide dedicated account access to facility users and service personal.

L. The system shall automatically track NFPA 72 installation and testing requirements for all fire system devices to ensure that every device is functionally tested upon installation and then periodically as required by Code. A gateway/hub shall be utilized to retrieve the system information using its native protocol and/or bar codes without the need of additional tools and accessories.

M. This section includes the minimum requirements for the following equipment:

- Main Fire Alarm Control Unit
- Signal Line Circuit Control Module
- Enclosures
- Digital Voice Command Center
- Addressable Main Power Supply

- Auxiliary Addressable Power Supply
- Power Supply Expander
- System Circuit Supervision
- Audio Amplifiers
- CLSS Gateway
- Digital Alarm Communicator Transmitter
- Speaker Notification Devices
- Audible/Visual Combination Devices
- Manual Fire Alarm Stations
- Projected Beam Detectors
- Waterflow Indicator
- Annunciator Control Display
- Network Node Communication
- ONYX Works Workstation
- Network Control Display
- Gateway Communication
- Addressable Wireless Devices
- Intelligent Photoelectric Smoke Detectors
- Intelligent Thermal Detectors
- Self-testing Photoelectric Smoke Detectors
- Self-testing Thermal Detectors
- Self-testing Photo Thermal Detectors
- High Sensitivity Photo Smoke Detectors
- Multi-Criteria Smoke Detectors
- Low Frequency Sounder Base
- Intelligent Duct Smoke Detectors
- CO Detectors
- Photoelectric Smoke and CO Detectors
- Batteries and External Charger

1.3 APPLICABLE STANDARDS AND SPECIFICATIONS

A. The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards, if applicable.

B. National Fire Protection Association (NFPA) – USA

No. 13 Sprinkler Systems
No. 70 National Electric Code
No. 90A Air Conditioning Systems
No. 72 National Fire Alarm Code
No. 101 Life Safety Code

C. Underwriters Laboratories Inc. (UL) – USA

No. 268 Smoke Detectors for Fire Protective Signaling Systems
No. 864 Control Units for Fire Protective Signaling Systems
No. 217 Smoke Detectors, Single and Multiple Station
No. 228 Door Closers - Holders for Fire Protective Signaling Systems
No. 268A Smoke Detectors for Duct Applications
No. 521 Heat Detectors for Fire Protective Signaling Systems
No. 464 Audible Signaling Appliances
No. 38 Manually Actuated Signaling Boxes
No. 1481 Power Supplies for Fire Protective Signaling Systems
No. 346 Waterflow Indicators for Fire Protective Signaling Systems
No. 1076 Control Units for Burglar Alarm Proprietary Protective Signaling Systems
No. 1971 Visual Notification Appliances
No. 2017 Standard for General-Purpose Signaling Devices and Systems

D. Local and State Building Codes.

E. Latest Adopted Edition of the International Building Code

F. Latest Adopted Edition of the International Fire Code

G. All requirements of the Authority Having Jurisdiction (AHJ)

1.4 **APPROVALS**

A. The system shall have proper listing and/or approval from the following nationally recognized agencies:

UL	Underwriters Laboratories, Inc.
FM	Factory Mutual
NYFD	New York Fire Department
CSFM	California State Fire Marshal

B. The Fire Alarm Control Unit and all transponders shall meet the modular listing requirements of the tenth edition of UL Standard 864 (Control Units). Each subassembly, including all printed circuits, shall include the appropriate UL modular label. This includes all printed circuit board assemblies, power supplies, and enclosure parts. Systems that do not include modular labels may require return to the factory for system upgrades and are not acceptable.

1.5 **SCOPE**

A. A new intelligent reporting, microprocessor-controlled fire detection system shall be installed in accordance to the project specifications and drawings.

B. The system shall be designed such that each signaling line circuit (SLC) is limited to only 80% of its total capacity at initial installation.

C. System shall interface with the BDA, Card Access, Emergency Communications and CCTV systems for complete system integration.

Basic Performance:

1. Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Class <A, B or X>Signaling Line Circuits (SLC).
2. Initiation Device Circuits (IDC) shall be wired Class <A or B> as part of an addressable device connected by the SLC Circuit.
3. Notification Appliance Circuits (NAC) shall be wired Class <A or B>
4. On Class A configurations a single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.
5. Alarm signals arriving at the FACU shall not be lost following a primary power failure (or outage) until the alarm signal is processed and recorded.
6. Speaker circuits may be controlled by NAC outputs built into the amplifiers, which shall function as addressable points on the Digital Audio Loop.
7. Notification Appliance Circuits (NAC) speaker circuits shall be arranged such that there is a minimum of one speaker circuit per floor of the building or smoke zone whichever is greater.
8. Audio amplifiers and tone generating equipment shall be electrically supervised for normal and abnormal conditions.
9. Notification Appliance Circuits (NAC) speaker circuits and control equipment shall be arranged such that loss of any one (1) speaker circuit will not cause the loss of any other speaker circuit in the system.
10. Speaker circuits shall be arranged such that there is a minimum of one speaker circuit per smoke zone.
11. Speaker circuits shall be electrically supervised for open and short circuit conditions. If a short circuit exists on a speaker circuit, it shall not be possible to activate that circuit.
12. Audio amplifiers and tone generating equipment shall be electrically supervised for abnormal conditions. Digital amplifiers shall provide built-in speaker circuits, field configurable as four Class B, two or four Class A circuits where necessary

    a. Speaker circuits shall be <25 or 70V> VRMS Speaker circuits shall have 20% space capacity for future expansion or increased power output requirements.

D. Basic System Functional Operation

When a fire alarm condition is detected and reported by one of the systems initiating devices, the following functions shall immediately occur:

1. The System Alarm shall flash on display.
2. A local piezo electric signal in the control panel shall sound.
3. The touchscreen LCD display shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.
4. Printing and history storage equipment shall log the information associated each new Fire Alarm Control Unit condition, along with time and date of occurrence.

All system output programs assigned via control-by-event interlock programming to be activated by the particular point in alarm shall be executed, and the associated system outputs (notification appliances and/or relays) shall be activated

The audio portion of the system shall sound the proper audio signal to the appropriate zones.

1.6 SYSTEM MAINTENANCE ANALYSIS AND REPORTING

A. The software shall automatically report fire system events during usage and via Push Notifications when the App is not in the foreground on a mobile device. The software shall also record active events during test and inspection mode and capable of silencing alarm/trouble during the test period remotely.

B. The software shall be capable of downloading and uploading such data to approved handheld devices via web portal or bar codes. Systems that rely solely on the use of bar codes shall not be considered as equal. No proprietary software of any kind shall be required for viewing reports online.

C. The software shall have the capability to provide several services with open protocol to allow for future expansion. At minimum the software shall have the following functionalities:

1. Check point access for commissioning.
2. Detail commissioning reports.
3. Facility Management.
4. Service Site Management
5. Check point remote access for service monitoring
6. User Management

D. The software shall be secure and encrypted with user authentication to meet cyber security requirements. Each user shall have a dedicated account with limitations based on designated clearances. Online access to the web-based reporting system shall run 24/7 with no downtime.

E. Allow active control of fire system during test and inspection when connected to the buildings network for authentication. Off premise services shall only allow for monitoring and history of the system.

F. Forwarding of event notifications and reports by utilizing a mobile device or PC.

G. Full capability to monitor an unlimited number of buildings and shall display events customizable to the user.

1.7 SUBMITTALS

A. General

1. Two copies of all submittals shall be submitted to the Architect/Engineer for review.
2. All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent compatible UL-listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.
3. All substitute equipment proposed as equal to the equipment specified herein, shall meet or exceed the following standards. For equipment other than that specified, the contractor

shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

B. Shop Drawings

1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
2. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
3. Show annunciator layout, configurations, and terminations.

C. Manuals

1. Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets.
2. Wiring diagrams shall indicate internal wiring for each device and the interconnections between the items of equipment.
3. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.
4. Approvals will be based on complete submissions of manuals together with shop drawings.

D. Software Modifications

1. Provide the services of a factory trained and authorized technician to perform all system software modifications, upgrades or changes. Response time of the technician to the site shall not exceed 4 hours.
2. Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on-site. Modification of software shall not require power-down of the system or loss of system fire protection while modifications are being made.

E. Certifications

1. Together with the shop drawing submittal, submit a certification from the major equipment manufacturer indicating that the proposed supervisor of the installation and the proposed performer of contract maintenance is an authorized representative Notifier and has NICET Level IV. Include names and addresses in the certification.

1.8 **GUARANTY**

A. All work performed, and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of

acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one-year period shall be included in the submittal bid.

1.9 POST CONTRACT MAINTENANCE

A. Complete maintenance and repair service for the fire detection system shall be available from a factory trained authorized representative of the manufacturer of the major equipment for a period of one (1) years after expiration of the guaranty.

B. As part of the bid/proposal, include a quote for a maintenance contract to provide all maintenance, tests, and repairs described below. Include also a quote for unscheduled maintenance/repairs, including hourly rates for technicians trained on this equipment, and response travel costs for each year of the maintenance period. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for the period of One (1) year after expiration of the guaranty.

C. Maintenance and testing shall be on a semiannual basis or as required by the AHJ. A preventive maintenance schedule shall be provided by the contractor describing the protocol for preventive maintenance. The schedule shall include:

1. Systematic examination, adjustment and cleaning of all detectors, manual fire alarm stations, control panels, power supplies, relays, waterflow switches and all accessories of the fire alarm system.
2. Each circuit in the fire alarm system shall be tested semiannually.
3. Each smoke detector shall be tested in accordance with the requirements of NFPA 72 Chapter 7.

1.10 POST CONTRACT EXPANSIONS

A. The contractor shall have the ability to provide parts and labor to expand the system specified, if so requested, for a period of three (3) years from the date of acceptance.

B. As part of the submittal, include a quotation for all parts and material, and all installation and test labor as needed to increase the number of intelligent or addressable devices by ten percent (10%). This quotation shall include intelligent smoke detectors, intelligent heat detectors, addressable manual stations, addressable monitor modules and addressable modules equal in number to one tenth of the number required to meet this specification (list actual quantity of each type).

C. The quotation shall include installation, test labor, and labor to reprogram the system for this 10% expansion. If additional FACU hardware is required, include the material and labor necessary to install this hardware.

D. Do not include cost of conduit or wire or the cost to install conduit or wire.

E. Submittals that do not include this estimate of post contract expansion cost will not be accepted.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design Product: Subject to compliance with requirements, provide product indicated on drawings as manufactured by NOTIFIER; a Honeywell company.

2.2 EQUIPMENT AND MATERIAL, GENERAL

A. All equipment and components shall be new, and the manufacturer's current model. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a protected premises protective signaling (fire alarm) system. The authorized representative of the manufacturer of the major equipment, such as control panels, shall be responsible for the satisfactory installation of the complete system. The materials, equipment, and devices shall be tested to function with manufactures approved FACU via a cloud base life safety services system.

B. The system shall fully comply with commissioning and test and inspect reports as outline in NFPA-72. System test shall automatically retrieve the fire systems connected devices utilizing a gateway. In applications where a gateway is not applicable the systems peripheral devices shall be entered manually and/or by using barcodes.

C. All equipment and components shall be installed in strict compliance with each manufacturer's recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc. before beginning system installation. Refer to the riser/connection diagram for all specific system installation/termination/wiring data.

D. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

2.3 CONDUIT AND WIRE

A. Conduit

1. Conduit shall be in accordance with The National Electrical Code (NEC), local and state requirements.
2. Where possible, all wiring shall be installed in conduit or raceway. Conduit fill shall not exceed 40 percent of interior cross-sectional area where three or more cables are contained within a single conduit.
3. Cable must be separated from any open conductors of Power, or Class 1 circuits, and shall not be placed in any conduit, junction box or raceway containing these conductors, as per NEC Article 760.
4. Wiring for 24-volt control, alarm notification, emergency communication and similar power-limited auxiliary functions may be run in the same conduit as initiating and signaling line circuits. All circuits shall be provided with transient suppression devices and the system shall be designed to permit simultaneous operation of all circuits without interference or loss of signals.

5. Conduit shall not enter the Fire Alarm Control Unit, or any other remotely mounted control panel equipment or backboxes, except where conduit entry is specified by the FACU manufacturer.
6. Conduit shall be 3/4-inch (19.1 mm) minimum.

B. System Wiring

1. All fire alarm system wiring must be new.
2. Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the fire alarm system. Number and size of conductors shall be as recommended by the fire alarm system manufacturer, but not less than 18 AWG (1.02 mm) for initiating device circuits, signaling line circuits, and notification appliance circuits.
3. All wire and cable shall be listed and/or approved by a recognized testing agency for use with a protective signaling system.
4. Wire and cable not installed in conduit shall have a fire resistance rating suitable for the installation as indicated in NFPA 70 (e.g., FPLR).
5. The system shall permit the use of IDC and NAC wiring in the same conduit with the multiplex communication loop.
6. All field wiring shall be completely supervised. In the event of a primary power failure, disconnected standby battery, removal of any internal modules, or any open circuits in the field wiring; a trouble signal will be activated until the system and its associated field wiring are restored to normal condition.
7. All analog voice speaker and analog telephone circuits shall use twisted/shielded pair to eliminate cross talk.

C. Terminal Boxes, Junction Boxes

1. All boxes and cabinets shall be UL listed for their intended purpose.

D. Initiating circuits shall be arranged to serve like categories (manual, smoke, waterflow). Mixed category circuitry shall not be permitted except on signaling line circuits connected to intelligent reporting devices.

E. The Fire Alarm Control Unit shall be connected to a separate dedicated branch circuit, maximum 20 amperes. This circuit shall be labeled at the main power distribution panel as FIRE ALARM. Fire Alarm Control Unit primary power wiring shall be 12 AWG. The control panel cabinet shall be grounded securely to either a cold-water pipe or grounding rod.

2.4 **MAIN FIRE ALARM CONTROL UNIT**

A. The main FACU Central Console shall be a NOTIFIER INSPIRE N16 Series Model and shall contain a microprocessor based Central Processing Unit (CPU). The CPU shall communicate with and control the following types of equipment used to make up the system: intelligent addressable smoke and thermal (heat) detectors, addressable modules, control circuits, and notification appliance circuits, local and remote operator terminals, printers, annunciators, and other system-controlled devices.

B. The FACU will be based on a licensing model to allow for future expansion. Licensable features shall include but not limited to additional general zones, logic zones, CLIP mode support and network display support. The FACU shall be backwards compatible to support previous Onyx series devices.

C. The FACU shall be fully networkable to support traditional NOTI-Fire-Net standard and high speed networks.

D. The main FACU shall include the capability to function as a master network controller along with its main functions.

E. Functionality of the FACU shall allow for the ability to annunciate and specify commands directly from the LED touchscreen without the need of a external programmer.

F. In conjunction with intelligent Signaling Loop Modules the main FACU shall perform the following functions:

1. Supervise and monitor all intelligent addressable detectors and monitor modules connected to the system for normal, trouble and alarm conditions.
2. Supervise all initiating signaling and notification circuits throughout the facility by way of connection to addressable monitor and control modules.

3. Detect the activation of any initiating device and the location of the alarm condition. Operate all notification appliances and auxiliary devices as programmed. In the event of CPU failure, all SLC loop modules shall fallback to local mode. Such local mode shall treat the corresponding SLC loop control modules and associated detection devices as conventional two-wire operation. Any activation of a detector in this mode shall automatically activate associated Notification Appliance Circuits.

   Visually and audibly annunciate any trouble, supervisory, security or fire or CO (Carbon Monoxide) alarm condition on operator's terminals, panel display, and annunciators.
4. When a fire alarm condition is detected and reported by one of the systems initiating devices or appliances, the following functions shall immediately occur:

   a. The system alarm shall flash on the display.
   b. A local piezo-electric audible device in the control panel shall sound a distinctive signal.
   c. The touchscreen LCD display shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.
   d. Printing and history storage equipment shall log and print the event information along with a time and date stamp.
   e. All system outputs assigned via preprogrammed equations for a particular point in alarm shall be executed, and the associated system outputs (alarm notification appliances and/or relays) shall be activated.
   f. When a trouble condition is detected and reported by one of the systems initiating devices or appliances, the following functions shall immediately occur:
   g. The system trouble shall flash on the display.

h. A local piezo-electric audible device in the control panel shall sound a distinctive signal.
i. The touchscreen LCD display shall indicate all information associated with the trouble condition, including the type of trouble point and its location within the protected premises.
j. Printing and history storage equipment shall log and print the event information along with a time and date stamp.
k. All system outputs assigned via preprogrammed equations for a particular point in trouble shall be executed, and the associated system outputs (trouble notification appliances and/or relays) shall be activated.

6. When a supervisory, security alarm or pre-alarm condition is detected by an initiating devices or appliance, the following functions shall immediately occur:

a. The system trouble shall flash on the display.
b. A local piezo-electric audible device in the control panel shall sound a distinctive signal.
c. The touchscreen LCD display shall indicate all information associated with the supervisory condition, including the type of trouble point and its location within the protected premises.
d. Printing and history storage equipment shall log and print the event information along with a time and date stamp.
e. All system outputs assigned via preprogrammed equations for a particular point in trouble shall be executed, and the associated system outputs (notification appliances and/or relays) shall be activated.

G. Operator Control

1. Acknowledge

a. Activation of the control panel acknowledge selection in response to new alarms and/or troubles shall silence the local panel piezo electric signal and change the alarm and trouble indicators from flashing mode to steady-ON mode. If multiple alarm or trouble conditions exist, selection of acknowledge shall advance the LCD display to the next alarm or trouble condition. In addition, the FACU shall support Block Acknowledge to allow multiple trouble conditions to be acknowledged with a single tap on the touchscreen button
b. Tapping on the Acknowledge button shall also silence all remote annunciator piezo sounders.

2. Signal Silence

a. Tapping of the Signal Silence button shall cause all programmed alarm notification appliances and relays to return to the normal condition. The selection of notification circuits and relays that are silenceable by this switch shall be fully field programmable within the confines of all applicable standards. The FACU software shall include silence inhibit and auto-silence timers.

3. Drill Switch

   Selection of the Drill mode shall activate all programmed notification appliance circuits. The drill function shall latch until the panel is silenced or reset.

4. System Reset

   Tapping the System Reset button shall cause all electronically latched initiating devices to return to their normal condition. Initiating devices shall re-report if active. Active notification appliance circuits shall not silence upon Reset. Systems that de-activate and subsequently re-activate notification appliance circuits shall not be considered equal. All programmed Control-By-Event equations shall be re-evaluated after the reset sequence is complete if the initiating condition has cleared. Non-latching trouble conditions shall not clear and re-report upon reset.

5. Lamp Test

   Tapping the Lamp Test button shall activate all local system LED's as well as illuminate the LCD display.

6. About Screen
   The system shall provide an "About Screen" that offers panel software and hardware version as well as provide a means to upgrade the software for service personnel.

7. Scrolling
   a. Provide a programmable Alert bar such that Tapping on an active events category in the Alert Bar shall vector the display to those categorized events including but not limited to, Fire Alarm, Supervisory, Trouble, CO Alarm and Disable. Tapping on the display and dragging in a upward or downward motion shall scroll through active events

8. Printing
   a. When connected to a supported printer the panel shall print live events. History may also be exported to USB drive.

H. System Capacity and General Operations

1. The control panel shall be scalable up to 10 SLC modules without the need of replacing the CPU. Each SLM module shall support a maximum of 318 analog/addressable devices for a system capacity of 3,180 points. The system shall be capable of up to 2,400 annunciation points per system regardless of the number of addressable devices.

2. The Fire Alarm Control Unit shall include a full featured high definition 10 inch color 1024x600 resolution LCD with capacitive touch display, including audible and visible feedback, adjustable brightness solid-state LCD. It shall also include a graphical QWERTY-style keypad on the color, touchscreen display. The display shall have the

ability to scroll events by type (i.e. Fire Alarm, Supervisory Alarm, Trouble, etc) using the touchscreen.

3. The touchscreen LCD shall be intuitive and allow for custom configuration of actionable events to be program as a selectable icon on the screen.

4. The touchscreen LCD shall have the ability to display up to 3,000 events in order of priority and time of occurrence. Counters shall be provided to indicate the total number of events by type

5. The panel display may be converted to a Network control display through licensing

6. The touchscreen LCD shall include indication of Fire Alarm, CO Alarm, Trouble, Supervisory, Signals Silenced, Disabled Points, and other (non-fire) events. The LCD will also include LEDs to indicate primary power status and any off-normal event

7. All programming or editing of the existing program in the system shall be achieved without special equipment and without interrupting the alarm monitoring functions of the Fire Alarm Control Unit.

8. The FACU shall be able to provide the following software and hardware features:

    a. Pre-signal and Alarm Delay: The system shall provide means to cause alarm signals to only sound in specific areas with a delay of the alarm from 60 to up to 180 seconds after start of alarm processing. In addition, an Alarm Delay selection shall be available that allows a 15-second time period for acknowledging an alarm signal from a fire detection/initiating device. If the alarm is not acknowledged within 15 seconds, all local and remote outputs shall automatically activate immediately.

    b. Smoke Detector Pre-alarm Indication at Control Panel: To obtain early warning of incipient or potential fire conditions, the system shall support a programmable option to determine system response to real-time detector sensing values above the programmed setting. Two levels of Pre-alarm indication shall be available at the control panel: alert and action.

    c. Alert: It shall be possible to set individual smoke detectors for pre-programmed pre-alarm thresholds. If the individual threshold is reached, the pre-alarm condition shall be activated.

    d. Action: If programmed for Action and the detector reaches a level exceeding the pre-programmed level, the control panel shall indicate an action condition. Sounder bases installed with either heat or smoke detectors shall automatically activate on action Pre-Alarm level, with general evacuation on Alarm level.

    e. The system shall support a detector response time to meet world annunciation requirements of less than 3 seconds.

f. Device Blink Control: Provide a means to enable or disable detector/module LED indicators for special areas.

g. NFPA 72 Smoke Detector Sensitivity Test: The system shall provide an automatic smoke detector test function that meet the requirements of NFPA 72.

h. Programmable Trouble Reminder: The system shall provide means to automatically initiate a reminder that a Fire Alarm or CO Alarm or supervisory event or troubles exist in the system. The reminder will appear on the system display and (if enabled) will sound a piezo alarm.

i. On-line or Off-line or Remote programming: The system shall provide means to allow panel programming either through an off-line software utility program away from the panel or while connected online or remotely connected to the panel via a secured gateway. The system shall also support upload and download of programmed database to a Personal Computer/cloud.

j. History Events: The panel shall be capable maintaining a history file up to the last 10,000 events, each with a time and date stamp and shall allow to scroll through all stored events. History events shall include all alarms, troubles, operator actions, and programming entries. The control panels shall be able to export the history to a USB drive.

k. The system shall provide means for all SLC devices on any SLC loop to be auto programmed into the system by specific address. The system shall recognize specific device type ID's and associate that ID with the corresponding address of the device.

l. Drill: The system shall support means to activate all silence able fire output circuits in the event of a practice evacuation or "drill". If enabled for local control, the front panel switch shall be held for a minimum of 2 seconds prior to activating the drill function.

m. Passwords and Users: The system shall support 5 access levels System Operator, Building Maintenance User, Technician User, Admin User, Master User. and up to 50 usernames and passwords. Each role has default permissions that can be customized. Only the master password shall allow access to password change screens.

n. Two Wire Detection: The system shall support standard two wire detection devices specifically from the following manufacturer; System Sensor.

o. Block Acknowledge: The system shall support a block Acknowledge for Trouble and Disable conditions

p. Service mode: Panel shall support a Service Mode in which state, the panel can be accessed remotely for programming, testing and control. Service mode shall have a time out feature that can be customized. While in Service Mode the panel shall display a trouble condition.

q. Magnet test – Panel shall support A/V magnet test with compatible A/V appliances which allows to test individual A/V appliances on the NAC circuit by applying the magnet to appliance shortly without activating the entire circuit minimizing disruptions during testing and inspection

r. Sensitivity Adjust: The system shall provide Automatic Detector Sensitivity Adjust based on Occupancy schedules including a Holiday list of up to 15 days.

s. Environmental Drift Control: The system shall provide means for setting Environmental Drift Compensation by device. When a detector accumulates dust in the chamber and reaches an unacceptable level but yet still below the allowed limit, the control panel shall indicate a maintenance alert warning. When the detector accumulates dust in the chamber above the allowed limit, the control panel shall indicate a maintenance urgent warning.

t. Custom Action Messages: The system shall provide means to enter up to 100 custom action messages of up to 160 characters each. It shall be possible to assign any of the 100 messages to any point.

u. Custom Action Button: Panel will support up to 32 programmable custom action buttons on the LCD touchscreen display to enable/disable or control panel outputs without the use of additional hardware

v. Print Functions: When connected to a supported printer the panel shall print live events. History may also be exported to USB drive

w. Local Mode: If communication is lost to the central processor the system shall provide added survivability through the intelligent loop control modules. Inputs from devices connected to the SLC and loop control modules shall activate outputs on the same loop when the inputs and outputs have been set with point programming to participate in local mode or when the type codes are of the same type: that is, an input with a fire alarm type code shall activate an output with a fire alarm type code.

x. Resound based on type for security or supervisory: The system shall indicate a Security alarm when a monitor module point programmed with a security Type Code activates. If silenced alarms exist, a Security alarm will Resound the panel sounder. The system shall indicate a Supervisory alarm when a monitor module point programmed with a supervisory Type Code activates. If there are silenced alarms, a Supervisory alarm will Resound the panel sounder.

y. Read status preview - enabled and disabled points: Prior to re-enabling points, the system shall inform the user that a disabled device is in the alarm state. This shall provide notice that the device must be reset before the device is enabled thereby avoiding activation of the notification circuits.

z. Custom Wallpaper: The panel display shall permit uploading of a custom background wallpaper.

aa. Multi-Detector and Cooperating Detectors: The system shall provide means to link one detector to up to two detectors at other addresses on the same loop in cooperative multi-detector sensing. There shall be no requirement for sequential addresses on the detectors and the alarm event shall be a result or product of all cooperating detectors chamber readings.

bb. Tracking/Latching Ductdetector : The system shall support both tracking and latching duct detectors photo types.

cc. Alarm Verification, by device, with timer and tally: The system shall provide a user-defined global software timer function that can be set for a specific detector or indicating panel module input. The timer function shall delay an alarm signal for a user-specified time period and the control panel shall ignore the alarm verification timer if another alarm is detected during the verification period. It shall also be possible to set a maximum verification count between 0 and 20 with the "0" setting producing no alarm verification. When the counter exceeds the threshold value entered, a trouble shall be generated to the panel.

I. Central Processing Unit

1. The Central Processing Unit shall be the same component with the ability to expand to a larger system as required by the project without the need to be replaced.
2. The Central Processing Unit shall communicate with, monitor, and control all other modules within the control panel. Removal, disconnection or failure of any control panel module shall be detected and reported to the system display by the Central Processing Unit.
3. The Central Processing Unit shall contain and execute all control-by-event (including Boolean functions including but not limited to AND, OR, NOT, ANYX, and CROSSZONE) programs for specific action to be taken if an alarm condition is detected by the system. Such control-by-event programs shall be held in non-volatile programmable memory and shall not be lost with system primary and secondary power failure.
4. The Central Processing Unit shall also provide a real-time clock for time annotation, to the second, of all system events.
5. Consistent with UL864 standards, the CPU and associated equipment are to be protected so that voltage surges or line transients will not affect them.
6. Each peripheral device connected to the CPU shall be continuously scanned for proper operation. Data transmissions between the CPU and peripheral devices shall be reliable

and error free. The transmission scheme used shall employ dual transmission or other equivalent error checking techniques.

7. The CPU shall provide three EIA-485 ports for the serial connection to annunciation and control subsystem components.
8. The EIA-232 serial output circuit shall be optically isolated to assure protection from earth ground.
9. The CPU shall provide one high-speed serial connection for support of network communication modules.
10. The CPU shall provide a trouble relay.
11. The EIA-232 interface may be used for network connection to a proprietary-receiving unit.
12. An expandable power supply shall be allowed for future system modifications.

J. System Display

1. The system display shall provide all the controls and indicators used by the system operator and may also be used to program operational parameters.
2. The display assembly shall contain, and display as required, custom alphanumeric labels for all intelligent detectors, addressable modules, and software zones.
   The system display shall provide a full featured high definition 10 inch color LCD with touch capability display, including audible and visible feedback, adjustable brightness solid-state LCD. It shall also include a graphical QWERTY-style keypad when needed on the color, touchscreen display. The display shall have the ability to scroll events by type (i.e. Fire Alarm, Supervisory Alarm, Trouble, etc) using the touchscreen The display shall indicate the status of the following system parameters: AC POWER, FIRE ALARM, PREALARM, SECURITY, SUPERVISORY, SYSTEM TROUBLE, OTHER EVENT, SIGNALS SILENCED, POINT DISABLED, and any off normal conditions.
3. The system display shall provide a graphical QWERTY style keypad when needed with control capability to command all system functions, entry of any alphabetic or numeric information, and field programming. Five access levels System Operator, Building Maintenance User, Technician User, Admin User, Master User. Up to 50 usernames and passwords shall be accessible through the display interface to prevent unauthorized system control or programming.
4. The system display shall include the following operator control selections: ACKNOWLEDGE, SIGNAL SILENCE, RESET, DRILL, and LAMP TEST. Additionally, the display interface shall allow scrolling of active events including,
5. FIRE ALARM, CO ALARM, SECURITY, SUPERVISORY, TROUBLE, DISABLE and OTHER EVENTS. The touchscreen LCD shall be intuitive and allow for custom configuration of actional events to be program as a selectable icon on the screen.

K. Loop (Signaling Line Circuit) Control Module

1. The Loop Control Module shall monitor and control a minimum of 318 intelligent addressable devices. This includes 159 intelligent detectors (Photoelectric, or Thermal) and 159 monitor or control modules.

2. The Loop Control Module shall contain its own microprocessor and shall be capable of operating in a local/ mode (any addressable device input shall be capable of activating any or all addressable device outputs) in the unlikely event of a failure in the main CPU.
3. The Loop Control Module shall provide power and communicate with all intelligent addressable detectors and modules on a single pair of wires. This SLC Loop shall be capable of operating as a NFPA Class A, B or X circuit.
4. The SLC interface board shall be able to drive a twisted unshielded circuit up to 12,500 feet in length. The SLC Interface shall also be capable of driving an NFPA Class A, no twist, no shield circuit for limited distances determined by the manufacturer. In addition, SLC wiring shall meet the listing requirements for it to exit the building or structure. "T"-tapping shall be allowed in either case.
5. The SLC interface board shall receive analog or digital information from all intelligent detectors and shall process this information to determine whether normal, alarm, or trouble conditions exist for that particular device. Each SLC Loop shall be isolated and equipped to annunciate an Earth Fault condition. The SLC interface board software shall include software to automatically maintain the detector's desired sensitivity level by adjusting for the effects of environmental factors, including the accumulation of dust in each detector. The analog information may also be used for automatic detector testing and the automatic determination of detector maintenance requirements.

L. Enclosures

1. The control panel shall be housed in a UL-listed cabinet suitable for surface or semi-flush mounting. The cabinet and front shall be corrosion protected, given a rust-resistant prime coat, and manufacturer's standard finish.
2. The back box and door shall be constructed of 0.060 steel with provisions for electrical conduit connections into the sides and top.
3. The door shall provide a key lock and include a transparent opening for viewing all indicators. For convenience, the door shall have the ability to be hinged on either the right or left-hand side and dress plates can be installed and removed without requiring any specialized tools.
4. The control unit shall be modular in structure for ease of installation, maintenance, and future expansion.
5. The FACU shall have a modular dress panel and door design with interchangeable door hinge locations.

M. Digital Voice Command Center

1. The Digital Voice Command Center located with the FACU, shall contain all equipment required for all audio control, signaling and supervisory functions. This shall include speaker zone indication and control, digital voice units, and master microphone
2. Function: The Voice Command Center equipment shall perform the following functions:

a. Operate as a supervised multi-channel emergency voice communication system. The system shall have the capability to support up to eight (8) simultaneous messages.
b. Operate as a two-way emergency telephone system control center.
c. Audibly and visually annunciate the active or trouble condition of every speaker circuit and emergency telephone circuit.
d. Audibly and visually annunciate any trouble condition for digital tone and voice units required for normal operation of the system.
e. Provide all-call Emergency Paging activities through activation of a single control switch.
f. As required, provide vectored paging control to specific audio zones via dedicated control switches.
g. Provide a factory recorded "library" of voice messages and tones in standard WAV. File format, which may be edited and saved on a PC running a current Windows® operating system.
h. Provide a software utility capable of off-line programming for the DVC operation and the audio message files. This utility shall support the creation of new programs as well as editing and saving existing program files. Uploading or downloading the shall DVC not inhibit the emergency operation of other nodes on the fire alarm network.
i. Support an optional mode of operation with four analog audio outputs capable of being used with UL 864 fire-listed analog audio amplifiers and SCL controlled switching.
j. The Digital Voice Command shall be modular in construction and shall be capable of being field programmable without requiring the return of any components to the manufacturer and without requiring use of any external computers or other programming equipment.
k. The Digital Voice Command and associated equipment shall be protected against unusually high voltage surges or line transients.

N. Addressable Main Power Supply

1. The Addressable Main Power Supply shall be universal input and shall accept either 120/240 VAC, 50/60 Hz, without any modifications and shall provide all necessary power for the FACU.
2. The Addressable Main Power Supply shall provide the required power to the CPU using a switching 24 VDC regulator and shall incorporate a battery charger for 24 hours of standby power using dual-rate charging techniques for fast battery recharge.
3. The Addressable Main Power Supply shall provide a battery charger for 24 hours of standby using dual-rate charging techniques for fast battery recharge. The supply shall be capable of charging batteries ranging in capacity from 7-100 amp-hours within a 48-hour period.
4. The Addressable Main Power Supply shall provide a very low frequency sweep earth detect circuit, capable of detecting earth faults.
5. The Addressable Main Power Supply shall be power-limited per UL864 requirements.
6. Up to three addressable main power supplies may be added within the same FACU to expand power capacity

7. Each addressable main power supply shall provide a minimum of 4 programmable Notification appliance circuits (NAC)
8. Power distribution of Each addressable main power supply can be customizable to provide system power, NAC, power, Auxillary power and battery charging

O. Auxiliary Addressable Power Supply

1. The auxiliary addressable power supply is a remote 24 VDC power supply used to power Notification Devices and field devices that require regulated 24VDC power. The power supply shall also include and charge backup batteries.
2. The addressable power supply for the fire alarm system shall provide up a minimum of 6.0 amps of 24-volt DC regulated power for Notification Appliance Circuit (NAC) power or 5 amps of 24-volt DC general power. The power supply shall have an additional .5 amp of 24 VDC auxiliary power for use within the same cabinet as the power supply. It shall include an integral charger designed to charge 7.0 - 25.0-amp hour batteries.
3. The addressable power supply shall provide four individually addressable Notification Appliance Circuits that may be configured as two Class "A" and two Class "B" or four Class "B" only circuits. All circuits shall be power-limited per UL 864 requirements.
4. The addressable power supply shall provide built-in synchronization for certain Notification Appliances on each circuit without the need for additional synchronization modules. The power supply's output circuits shall be individually selected for synchronization. A single addressable power supply shall be capable of supporting both synchronized and non-synchronized Notification Devices at the same time.
5. The addressable power supply shall operate on 120 or 240 VAC, 50/60 Hz.
6. The interface to the power supply from the Fire Alarm Control Unit (FACU) shall be via the Signaling Line Circuit (SLC) or other multiplexed means Power supplies that do not use an intelligent interface are not suitable substitutes. The required wiring from the FACU to the addressable power supply shall be a single unshielded twisted pair wire. Data on the SLC shall be transmitted between 24 VDC, 5 VDC and 0 VDC at approximately 3.33k baud.
7. The addressable power supply shall supervise for battery charging failure, AC power loss, power brownout, battery failure, NAC loss, and optional ground fault detection. In the event of a trouble condition, the addressable power supply shall report the incident and the applicable address to the FACU via the SLC.
8. The addressable power supply shall have an AC Power Loss Delay option. If this option is utilized and the addressable power supply experiences an AC power loss, reporting of the incident to the FACU will be delayed. A delay time of eight or sixteen hours shall be Dip-switch selected.
9. The addressable power supply shall have an option for Canadian Trouble Reporting and this option shall be Dip-switch selectable.
10. The addressable power supply mounts in either the FACU backbox or its own dedicated surface mounted backbox with cover.
11. Each of the power supply's four output circuits shall be DIP-switch selected for Notification Appliance Circuit or General Purpose 24 VDC power. Any output circuit shall be able to provide up to 2.5 amps of 24 VDC power.
12. The addressable power supply's output circuits shall be individually supervised when they are selected to be either a Notification Appliance Circuit when wired Class "A" or by the use of and end-of-line resistor. When the power supply's output circuit is selected as

General 24VDC power, the circuit shall be individually supervised when an end-of-line relay is used.

13. When selected for Notification Appliance Circuits, the output circuits shall be individually DIP-switch selectable for Steady, March Time, Dual Stage or Temporal.
14. When selected as a Notification Appliance Circuit, the output circuits of the addressable power supply shall have the option to be coded by the use of a universal zone coder.
15. The addressable power supply shall interface and synchronize with other power supplies of the same type. The required wiring to interface multiple addressable power supplies shall be a single unshielded, twisted pair wire.
16. An individual or multiple interfaced addressable power supplies shall have the option to use an external charger for battery charging. Interfaced power supplies shall have the option to share backup battery power.

P. Power Supply Expander

The PSE is a device designed for use as either a remote 24-volt power supply or used to power Notification Appliances.

1. The PSE shall offer up to 6.0 amps or 10 amps of regulated 24volt power. It shall include an integral charger designed to charge up to 33-amp hour batteries.
2. The Power Supply Expanders shall have two or three fully isolated input triggers configurable, pairing any input with any output. The input trigger shall be a Notification Appliance Circuit (from the Fire Alarm Control Unit) or a control module. Five or Seven outputs shall be available for connection to the Notification devices Class B or Class A (without losing any output using converter card)
3. UL-Listed NAC synchronization using System Sensor, Wheelock, Gentex or AMSECO appliances. Sync signal maybe triggered from FACU NAC or remote sync outputs allowing cascading or daisy chain multiple power supplies.
4. The PSE shall include trouble history modes for diagnostic support. PSE shall include individual NAC power and trouble LEDs for diagnostic efficiency.
5. The Power Supply Expanders shall include the ability to delay the AC fail delay per NFPA requirements.
6. Self-Contained in compact, locking cabinet constructed of heavy gauge steel with a corrosion-resistant powder coat chip and scratch-resistant finish. Cabinet shall consist of 10 double knockouts and a removable door for ease of installation and wiring.
7. The PSE shall be capable of utilizing a wide range of end of line supervision values (normal 2K- 27K ohms).
8. The PSE shall be completely configurable via onboard dip switches, with no extra software required.

Q. System Circuit Supervision

1. The FACU shall supervise all circuits to intelligent devices, transponders, annunciators and peripheral equipment and annunciate loss of communication with these devices. The CPU shall continuously scan above devices for proper system operation and upon loss of response from a device shall sound an audible trouble, indicate which device or devices are not responding and print the information in the history buffer and on the printer.

2. Transponders that lose communication with the CPU shall sound an audible trouble and light an LED indicating loss of communications.
3. Sprinkler system valves, standpipe control valves, PIV, and main gate valves shall be supervised for off-normal position.
4. All speaker and emergency phone circuits shall be supervised for opens and shorts. Each transponder speaker and emergency phone circuit shall have an individual ON/OFF indication (green LED).

R. Field Wiring Terminal Blocks

All wiring terminal blocks shall be the plug-in/removable type and shall be capable of terminating up to 12 AWG wire. Terminal blocks that are permanently fixed to the PC board are not acceptable.

S. Audio Amplifiers

1. The Audio Amplifiers will provide Audio Power (@25 Volts RMS & 70V RMS) for distribution to speaker circuits.
2. Multiple audio amplifiers may be mounted in a single enclosure, either to supply incremental audio power, or to function as an automatically switched backup amplifier(s).
3. The audio amplifier shall provide the following built-in controls:

    a. Amplifier Address Selection Switches
    b. Signal Silence of communication loss annunciation Reset
    c. Level adjustment for background music
    d. Enable/Disable for Earth Fault detection on DAP A
    e. Switch for 2-wire/4-wire FFT riser

4. Adjustment of the correct audio level for the amplifier shall not require any special tools or test equipment.
5. Includes audio input and amplified output supervision, back up input, and automatic switch over function, (if primary amplifier should fail).
6. System shall be capable of backing up digital amplifiers.
7. One-to-one backup shall be provided by either a plug-in amplifier card or a designated backup amplifier of identical model as the primary amplifier.
8. One designated backup amplifier shall be capable of backing up multiple primary amplifiers mounted in the same or adjacent cabinets.
9. Multi-channel operation from a single amplifier shall be supported by the addition of an optional plug-in amplifier card.

T. Audio Message Generator (Prerecorded Voice)/Speaker Control:

1. Each initiating zone or intelligent device shall interface with an emergency voice communication system capable of transmitting a prerecorded voice message to all speakers in the building.

2. Actuation of any alarm initiating device shall cause a prerecorded message to sound over the speakers. The message shall be repeated four (4) times. Pre- and post-message tones shall be supported.
3. A built-in microphone shall be provided to allow paging through speaker circuits.
4. System paging from emergency telephone circuits shall be supported.
5. The audio message generator shall have the following indicators and controls to allow for proper operator understanding and control:
    - Lamp Test
    - Trouble
    - Off-Line Trouble
    - Microphone Trouble
    - Phone Trouble
    - Busy/Wait
    - Page Inhibited
    - Post Announcement Tone
6. Emergency Two-Way Telephone Control Switches/Indicators:
    - The emergency telephone circuit control panel shall include visual indication of active and trouble status for each telephone circuit in the system.
    - The telephone circuit control panel shall include switches to manually activate or deactivate each telephone circuit in the system.

U. Controls with associated LED Indicators

1. Speaker Switches/Indicators

    a. The speaker circuit control switches/indicators shall include visual indication of active and trouble status for each speaker circuit in the system.
    b. The speaker circuit control panel shall include switches to manually activate or deactivate each speaker circuit in the system.

V. Remote Transmissions

1. Provide local energy or polarity reversal or trip circuits as required.
2. The system shall be capable of operating a polarity reversal or local energy or fire alarm transmitter for automatically transmitting fire information to the fire department.
3. Provide capability and equipment for transmission of zone alarm and trouble signals to remote operator's terminals, system printers and annunciators.
4. Transmitters shall be compatible with the systems and equipment they are connected to such as timing, operation and other required features.

W. System Expansion

1. Design the main FACU and required components so that the system can be expanded in the future (to include the addition of twenty percent more circuits or zones) without disruption or replacement of the existing control panel. This shall include hardware capacity, software capacity and cabinet space.

X. Field Programming

1. The system shall be programmable, configurable and expandable in the field using the programming utility provided by the manufacturer .
2. All field defined programs shall be stored in non-volatile memory.
3. Five levels of password protection shall be provided in addition to a key-lock cabinet. Building Maintenance User, Technician User, Admin User, Master User and up to 50 usernames and passwords. Each role has default permissions that can be customized. Only the master password shall allow access to password change screens.
4. The system shall enforce the change from factory default password and it shall be a minimum of Eight (8) characters with a maximum of 16
5. The system programming shall be "backed" up via an upload/download program and stored on compatible removable media and also provide means to backup the file to the cloud.

   A system back-up disk shall be completed and given in duplicate to the building owner and/or operator upon completion of the final inspection. The program that performs this function shall be "non-proprietary", in that, it shall be possible to forward it to the building owner/operator upon his or her request.
6. The installer's field programming and hardware shall be functionally tested on a computer against known parameters/norms which are established by the FACU manufacturer. A software program shall test Input-to-Output correlations, device Type ID associations, point associations, time equations, etc. This test shall be performed on windows-compatible PC with a verification software package. A system generated report of the test results shall be provided to the engineer(s) on record.

Y. Specific System Operations

1. Smoke Detector Sensitivity Adjust: Means shall be provided for adjusting the sensitivity of any or all analog intelligent smoke detectors in the system from the system keypad or from the keyboard of the video terminal. Sensitivity range shall be within the allowed UL window.
2. Alarm Verification: Each of the Intelligent Addressable Smoke Detectors in the system may be independently selected and enabled to be an alarm verified detector. The alarm verification function shall be programmable from 5 to 50 seconds and each detector shall be able to be selected for verification during the field programming of the system or any time after system turn-on. Alarm verification shall not require any additional hardware to be added to the control panel. The FACU shall keep a count of the number of times that each detector has entered the verification cycle. These counters may be displayed and reset by the proper operator commands.

Z. System Point Operations

1. Any addressable device in the system shall have the capability to be enabled or disabled through the system display.
2. System output points shall be capable of being turned on or off from the system display
3. Point Read: The system shall be able to display the following point status diagnostic functions without the need for peripheral equipment. Each point shall be annunciated for the parameters listed:

   a. Device Status.

b. Device Type.
c. Custom Device Label.
d. Software Zone Label.
e. Device Zone Assignments.
f. Analog Detector Sensitivity.
g. All Program Parameters.

4. System History Recording and Reporting: The Fire Alarm Control Unit shall contain a history buffer that will be capable of storing up to 10000 system events. Each of these events will be stored, with time and date stamp, until an operator requests that the contents be either displayed or printed. The contents of the history buffer may be manually reviewed; one event at a time, and the actual number of activations may also be displayed and or printed. History events shall include all alarms, troubles, operator actions, and programming entries.
5. The history buffer shall use non-volatile memory. Systems which use volatile memory for history storage are not acceptable.
6. Automatic Detector Maintenance Alert: The Fire Alarm Control Unit shall automatically interrogate each intelligent system detector and shall analyze the detector responses over a period of time.
7. If any intelligent detector in the system responds with a reading that is below or above normal limits, then the system will enter the trouble mode, and the particular Intelligent Detector will be annunciated on the system display and printed on the optional system printer. This feature shall in no way inhibit the receipt of alarm conditions in the system, nor shall it require any special hardware, special tools or computer expertise to perform.
8. The system shall include the ability (programmable) to indicate a "pre-alarm" condition. This will be used to alert maintenance personal when a detector is at 80% of its alarm threshold in a 60 second period.

2.5 CLOUD BASED REPORTING AND MONITORING REQUIREMENTS

A. All equipment, components and software shall be new and meet manufacturer’s current model. The materials, equipment, and devices shall be tested to function with manufacture’s approved FACU via a cloud-based life safety services system.

B. The system shall fully comply with commissioning and test and inspect reports as outlined in NFPA-72. System test shall automatically retrieve the fire systems connected devices utilizing a gateway. In applications where a gateway is not applicable the systems peripheral devices shall be imported from the panel programming file, entered manually and/or by using barcodes.

C. Connected Life Safety Services Software Platform:

1. The software shall meet all the requirements outline in the System Maintenance and Analysis Reporting section of this specification.

a. System shall be compatible with IOS and Android mobile functionality and have web-based access with Windows and MAC based platforms without the need to install software on a dedicated network server.
b. Functions through the mobile App and Web access should have all the following features:

1) Device count per building
2) Event log on App and Web access
3) Control and reporting via Mobile App
4) Automatic data input
5) Automatic report generation
6) Cause & Effect testing
7) Ability to change panel device labels

2. The system shall support an IP based gateway to enable the panel or local Noti-Fire-Net to be connected to an ONYX-Works workstation via the Inter-net or Intranet. This gateway shall also support the ability to integrate the system to an interactive firefighter's display.

D. Permanently installed Fixed Gateway: The system shall be capable of being interfaced with a fixed gateway to integrate with 3rd Party Service Management Software.

E. CLSS Gateway:

1. Provide a CLSS gateway for connection to a NOTIFIER fire system panel, serving as an interface between the FACU, Cloud and peripheral devices. The CLSS gateway shall be capable of reading the connected device system data base from a single or network of panels and shall transmit the data to the Connected Life Safety Services (CLSS) cloud.
2. Equipment standard features shall allow Blue Tooth mobile paring for gateway configuration and control capability.
3. Connection to NOTIFIER INSPIRE N16 series fire system panels utilizing Universal Protocol Ports via NUP
4. Provide Nominal Voltage consumption of 12V to 32V DC from the FACU or an external power supply.
5. The CLSS gateway shall allow for alarm transmission to a central station via IP and CELLULAR (LTE).
6. The system shall support the ability to generate automated commissioning reports or test and inspection reports for installation or test & inspection personnel via the Connected Life Safety Service (CLSS) platform. The reports should be stored in cloud, enabling appropriate stakeholders to retrieve test and inspect report immediately after completion of the system commissioning or test and inspection.
7. Inspection report shall indicate the method in which the device disposition was captured. Either by event received from a connected gateway, barcode scan, or manual user entry,

8. The CLSS platform shall support the ability to automatically capture every addressable device connected to the system ensuring that each addressable device is accounted for and properly tested. CLSS shall also support importing any non-addressable devices associated with the system to ensure all system devices are accounted for and properly tested.

9. For self-testing devices CLSS shall identity any issues associated with the integrity or the ability for the smoke detector to properly detect smoke such as a dust cap not being removed or someone tampering with the detector by obstructing the smoke detector chamber.
10. The CLSS Gateway shall support the ability to send events from a single Notifier N16 panel or a network of up to 16 panels using standard BACnet communications protocol
11. The CLSS Gateway shall support the ability to send events from single Notifier N16 panel or a network of up to 10 panels using standard MODbus communications protocol

F. Digital Alarm Communication Transmitter

1. The CLSS gateway shall include an interface to allow for cell communication, per UL/NFPA/FCC requirements. It shall include the ability for split reporting of panel events.
2. Communication via cellular shall be concluded by utilizing AT&T or Verizon communication services.
3. The CLSS Gateway shall be completely field programmable utilizing the CLSS mobile app. Diagnostic information such as cell signal strength, connection method, and connection status of the communicator should be available to users via the website and mobile app.
4. Communication shall include vital system status such as:
    1 Independent Zone (Alarm, trouble, non-alarm, supervisory)
    2 Independent Addressable Device Status
    3 AC (Mains) Power Loss
    4 Low Battery and Earth Fault
    5 System Off Normal
    6 6, 12 or 24 Hour Test Signal
    7 Abnormal Test Signal (per UL requirements)
    8 Communications Failure between panel and gateway
5. It shall support independent zone/point reporting when used in the Contact ID format. In this format the communicator shall support transmission of up to 3180 Points. This enables the central station to have exact details concerning the origin of the fire or response emergency.

2.6 **SYSTEM COMPONENTS**

A. Speakers: Notifier-System Sensor PN SPRL or SPRL Series

1. All speakers/audibles shall operate on 25 VRMS or 70VRMS with field selectable output taps from 0.5 to 2.0 Watts.
2. Speakers/audibles in corridors and public spaces shall produce a nominal sound output of 84 dBA at 10 feet (3m).
3. Frequency response shall be a minimum of 400 HZ to 4000 HZ. Capable of producing 520 HZ low Frequency for hearing impaired, etc.

B. Audible/Visual Combination Devices

1. Shall meet the applicable requirements of Section A listed above for audibility.
2. Shall meet the requirements of Section D listed below for visibility.
3. Visuals shall be installed at a height no less than 90 inches from the floor and no less than 6 inches below the finished ceiling when the greater of the two cannot be achieved as required per NFPA-72

C. Programmable Electronic Sounders

1. Electronic sounders shall operate on 24 VDC nominal.
2. Electronic sounders shall be field programmable without the use of special tools, at a sound level of at least 80 dBA measured at 10 feet from the device & low frequency 520Hz sounders shall provide sound level at least 75 dBA measured at the pillow per NFPA 72
3. Shall be flush or surface mounted as shown on plans.

D. Strobe lights, such as the Notifier-System Sensor PN SRL series, shall meet the requirements of the ADA, UL Standard 1971, be fully synchronized, and shall meet the following criteria:

1. The maximum pulse duration shall be 20 milliseconds.
2. Strobe intensity shall meet the requirements of UL 1971.
3. The flash rate shall meet the requirements of UL 1971.

E. Manual Fire Alarm Stations

1. Manual fire alarm stations shall be non-code, non-break glass type, equipped with key lock so that they may be tested without operating the handle.
2. Stations must be designed such that after an actual activation, they cannot be restored to normal except by key reset.
3. An operated station shall automatically condition itself so as to be visually detected, as operated, at a minimum distance of 100 feet (30.5 m) front or side.
4. Manual stations shall be constructed of high impact Lexan, with operating instructions provided on the cover. The word FIRE shall appear on the manual station in letters one half inch (12.7 mm) in size or larger.
5. Manual Fire Alarm station shall be located within 5ft of each exit door and mounted between 42-48 inches from the finish floor as required per NFPA-72 and ADA requirements.
6. Add additional manual fire alarm stations when the distance between stations exceeds 200ft.

F. Intelligent Duct Smoke Detector

The smoke detector housing shall accommodate an intelligent photoelectric detector that provides continuous analog monitoring and alarm verification from the panel. When sufficient smoke is sensed, an alarm signal is initiated at the FACP, and appropriate action taken to change over air handling systems to help prevent the rapid distribution of toxic smoke and fire gases throughout the areas served by the duct system. The Intelligent Duct Smoke Detector shall support the installation of addressable Photoelectric detector capable or being tested remotely. The Intelligent Duct Detector housing shall be model # DNR(W) and the remote test capable photoelectric smoke detector shall be NOTIFIER model # FSP-951R.

G. Projected Beam Detectors

1. The projected beam type shall 24 VDC device.
2. The detector shall be listed to UL 268A
3. The detector shall operate in either a short range (16' - 100') or long range (100' - 330') mode.
4. The temperature range of the device shall be -22 degrees F to 131 degrees F.
5. The detector shall feature a bank of four alignment LEDs on both the receiver and the transmitter that are used to ensure proper alignment of unit without special tools.
6. Beam detectors shall feature automatic gain control which will compensate for gradual signal deterioration from dirt accumulation on lenses.
7. The unit shall be both ceiling and wall mountable.
8. The detector shall have the ability to be tested using calibrated test filters or magnet activated remote test station.

H. Waterflow Monitoring

1. The FACU shall be capable of monitoring any 3rd party water flow devices and annunciating with unique indication for alarm or supervisory condition
2. The FACU addressable monitoring point shall monitor normally open contacts and display status
3. Need to add points around monitoring for opens/shorts, ground faults

I. LED Annunciator Control Display

1. The annunciator shall provide the FACU or NCD with local or remote, serially connected annunciators. Arrays of LED’s indicate, at the panel or at the remote location the status of the system.
2. The annunciator shall provide 60 RGB LEDs allowing for multiple programmable color indications
3. The annunciator shall provide 30 capacitive touch programmable control points.

4. The annunciator communicates to the FACU via a two-wire serial interface. Power is provided by the FACU via 24 VDC power and is inherently supervised
5. Up to 80 annunciators can be supported by the FACU., it shall allow up to 10 annunciators to be configured as routers with each router supporting an additional 15 annunciators

J. Remote LCD annunciator

1. The 5inch capacitive full color touchscreen LCD annunciator shall display all system events.
2. An audible indication of alarm shall be integral to the display.
3. The display shall be UL listed for fire alarm application.
4. It shall be possible to connect up to 10 LCD displays and be capable of wiring distances up to 6,000 feet from the control panel.
5. Each LCD display shall mimic the main control panel.

2.7 **NETWORK NODE**

A. Standard Network Communication

1. The network architecture shall be based on a Local Area Network (LAN), a firmware package that utilizes a peer-to-peer, inherently regenerative communication format and protocol. The protocol shall be based on ARCNET or equivalent. The network shall use a deterministic token-passing method. Collision detection and recovery type protocols are not acceptable substitutes due to life safety requirements. In addition, there shall be no master, polling computer, central file computer, display controller or other central element (weak link) in the network which, on failure, may cause complete loss of network communications or cause major degradation of network capability. There shall be no cascading of CPUs or master/slave relationships at the network level to facilitate network communications. Failure of any node shall not cause failure or communication degradation of any other node or change the network communication protocol among surviving nodes located within distance limitations. Each node/panel shall communicate on the network at a baud rate of not less than 312 KBPS (kilobits per second). A node may be an intelligent Fire Alarm Control Unit (FACU), ONYX Workstation (ONYX Works), Gateways (Modbus protocol, BACnet protocol etc), , Network Control Display (NCD), The network shall be capable of expansion to at least 103 nodes.
2. Each network node address shall be capable of storing Event equations. The event equations shall be used to activate outputs on one network node from inputs on other network nodes.
3. The network shall be capable of communicating via wire or fiber optic medium. A wire network shall include a fail-safe means of isolating the nodes in the unlikely event of complete power loss to a node.

4. A network repeater shall be available to increase the twisted-pair distance capability in 3,000 ft. increments. As an option, a repeater shall be available for fiber optics that increases the wire distance in 8 dB increments. A mix (hybrid) fiber/wire network repeater shall also be supported. Systems that have distance limitations, and have no available means to regenerate signals are not suitable substitutes.

B. High Speed Network Communication

1. The high-speed network (HS-NCM) architecture shall be based on a Local Area Network (LAN), a firmware package that utilizes a peer-to-peer, inherently regenerative communication format and protocol. The network shall use a deterministic token-passing method. Collision detection and recovery type protocols are not acceptable substitutes due to life safety requirements. In addition, there shall be no master, polling computer, central file computer, display controller or other central element (weak link) in the network which, on failure, may cause complete loss of network communications or cause major degradation of network capability. There shall be no cascading of CPUs or master/slave relationships at the network level to facilitate network communications. Failure of any node shall not cause failure or communication degradation of any other node or change the network communication protocol among surviving nodes located within distance limitations. Each node/panel shall communicate on the network at a baud rate of not less than 3Mbps on wire or 100Mbps on fiber. A node may be an intelligent NOTIFIER INSPIRE N16 Series Fire Alarm Control Unit (FACU), ONYX Works Workstation (ONYX Works), Gateways (Modbus protocol, BACnet protocol etc), Network Control Display (NCD), Digital Voice Command Center (DVC) or
   The network shall be capable of expansion to at least 200 nodes using high speed network cards.
2. Network shall allow upload/download of configuration data to panels on the network on site or remotely via a secured gateway
3. Each network node address shall be capable of storing Event equations. The event equations shall be used to activate outputs on one network node from inputs on other network nodes.
4. The high-speed Network shall utilize an IP based Ethernet technology adapted for long range use on wire media using VDSL technology.
5. The Network shall be compatible with multimode and single mode fiber optic media without the use of external converters.
6. The Network shall be fully capable of Class X operation.
7. The network shall be capable of communicating via wire (14-18AWG) or fiber optic medium. A wire network shall include a fail-safe means of isolating the nodes in the unlikely event of complete power loss to a node.
8. The high speed (HS-NCM) shall function as a network repeater to increase the twisted pair distance capability in 3,000 ft. increments. As an option, a HS-NCM shall be available for fiber optics that increases the fiber optic distance in dB increments stated in section 2.3.A.13. A mix (hybrid) fiber/wire network HS-NCM's shall also be supported. Systems that have distance limitations and have no available means to regenerate signals are not suitable substitutes.

C. Network Control Display

1. A Network Control Display (NCD) shall be provided to display all intelligent system points. The NCD shall be capable of displaying information for all events on a fully utilized network of at least 300,000 points. Network display devices that are capable of displaying only a subset of network points shall not be suitable substitutes.

2. The NCD screen shall include a full featured high definition 10-inch color 1024x600 resolution LCD with capacitive touch display, including audible and visible feedback, adjustable brightness solid-state LCD. It shall also include a graphical QWERTY-style keypad on the color, touchscreen display. The display shall have the ability to scroll events by type (i.e. Fire Alarm, Supervisory Alarm, Trouble, etc) using the touchscreen.

3. The NCD shall have the ability to display up to 3,000 events in order of priority and time of occurrence. Counters shall be provided to indicate the total number of events by type.

4. The NCD shall be capable of up to 2000 Boolean logic equations and up to 32 customizable soft key control buttons

5. The NCD shall mount in any of the network node Fire Alarm Control Units. Optionally, the network display may mount in a backbox designed for this use. The NCD shall connect to the network over either a wire or fiber interface.

    a. The NCD shall include touchscreen buttons for system-wide control of Acknowledge, Signal Silence, System Reset, Drill, and local Lamp Test.
    b. The NCD shall include indication of Fire Alarm, CO Alarm, Trouble, Supervisory, Signals Silenced, Disabled Points, and other (non-fire) events. The NCD will also include LEDs to indicate primary power status and any off-normal event.
    The NCD shall include a Master username and password and up to 49 additional usernames and passwords. Each password shall be up to 16 alpha-numeric characters in length.

2.8 SYSTEM COMPONENTS – ADDRESSABLE DEVICES

A. Addressable Devices – General

1. Addressable devices shall provide an address-setting means using rotary decimal switches. Addressable devices that require the address be programmed using a programming utility are not an allowable substitute.
2. Addressable devices shall use simple to install and maintain decade (numbered 0 to 15) type address switches. Devices which use a binary address or special tools for setting the device address, such as a dip switch are not an allowable substitute.
3. Detectors shall be Analog and Addressable and shall connect to the Fire Alarm Control Unit's Signaling Line Circuits.

4. Addressable smoke and thermal detectors shall provide dual (2) status LEDs. Both LEDs shall flash under normal conditions, indicating that the detector is operational and in regular communication with the control panel, and both LEDs shall be placed into steady illumination by the control panel, indicating that an alarm condition has been detected. If required, the flashing mode operation of the detector LEDs can be programmed via the fire control panel program.
5. The Fire Alarm Control Unit shall permit detector sensitivity adjustment through field programming of the system. Sensitivity can be automatically adjusted by the panel on a time-of-day basis.
6. Using software in the FACU, detectors shall automatically compensate for dust accumulation and other slow environmental changes that may affect their performance. The detectors shall be listed by UL as meeting the calibrated sensitivity test requirements of NFPA Standard 72, Chapter 7.
7. The detectors shall be ceiling mounted and shall include a separate twist-lock base which includes a tamper proof feature.
8. The following bases and auxiliary functions shall be available:

    a. Sounder base rated at 85 Db(high) and 75 Db (low)
    b. Form-C Relay base
    c. Isolator base
    d. Where required a Low Frequency 520 HZ

9. The detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated at the detector itself (by activating a magnetic switch) or initiated remotely on command from the control panel.
10. Detectors shall also store an internal identifying type code that the control panel shall use to identify the type of device (example: Duct, PHOTO, THERMAL).

Self-testing initiating devices shall be capable of providing both a functional test and smoke entry test using a self-test function. The detector shall transmit a wireless beacon activated only during self-test mode designed to communicate with the CLSS app to prove successful completion of a visual inspection.

1. Detector Sensitivity Level

ADJUST SENSITIVITY BELOW TO MEET PROJECT REQUIREMENTS. ONLY SELECT ONE SENSITIVITY LEVEL

High = 1.6% obs/m (0.5% obs/ft),

Enhanced = 4% obs/m (1.3% obs/ft)

Standard = 8% obs/m (2.5% obs/ft)

2. The detector shall have a test port per detection chamber to facilitate centralized smoke test under user control.

B. Addressable Manual Fire Alarm Box (manual station)

1. Addressable manual fire alarm boxes shall, on command from the control panel, send data to the panel representing the state of the manual switch and the addressable communication module status. They shall use a key operated test-reset lock and shall be designed so that after actual emergency operation, they cannot be restored to normal use except by the use of a key.
2. All operated stations shall have a positive, visual indication of operation and utilize a key type reset.
3. Manual fire alarm boxes shall be constructed of Lexan with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters, 1.75 inches (44 mm) or larger.

C. Addressable Wireless Devices

1. The system shall be capable of supporting intelligent addressable wireless detectors, modules, pull stations and AV devices with similar capabilities as wired addressable intelligent devices.
2. Intelligent wireless devices shall utilize a gateway device to communicate with the intelligent Fire Alarm Control Unit, so that the wireless devices report to the panel using the established SLC protocol.
3. Wireless devices shall be capable of co-existing on the same panel with wired devices, and shall be capable of participating in common control-by-event programming sequences.
4. Wireless devices (excepting the gateway) shall operate on batteries recommended by the manufacturer and shall be UL tested and listed for 2 years of system operation on one set of batteries.
5. Intelligent wireless devices shall use a UL approved Class A mesh communication protocol to provide redundant supervised wireless communication links.
6. Wireless AV systems shall offer synchronization within a single mesh network.
7. Available Wireless devices shall include:

    a. Intelligent wireless smoke detector (photoelectric technology)
    b. Intelligent wireless smoke/heat combo detector
    c. Intelligent wireless fixed temperature heat detector, 135 degrees F.
    d. Intelligent wireless rate of rise heat detector, 135 degrees F.
    e. Wireless monitor module
    f. Wireless relay module
    g. Wireless synchronization module
    h. Wireless AV base for use with wired AV devices
    i. Wireless pull station
    j. Wireless gateway

8. A program that supports qualification of potential wireless applications, configuration and installation, and diagnostics shall be available. This program shall be installed on a

Windows® PC, and shall be capable of communicating with wireless devices by use of a USB adapter that plugs into the computer.

D. Intelligent Photoelectric Smoke Detector

1. The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.

E. Intelligent Thermal Detectors

1. The intelligent thermal detectors shall be NOTIFIER FST- series addressable devices rated at 135 degrees Fahrenheit (58 degrees Celsius) and have a rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. A high heat thermal detector rated at 190 degrees Fahrenheit shall also be available. The thermal detectors shall connect via two wires to the fire alarm control panel signaling line circuit.

F. Self-Testing Photo Smoke Detector

1. Smoke detectors shall be intelligent addressable devices using photoelectric (light scattering) principal to measure smoke density. It shall connect via two wires to the Fire Alarm Control Unit signaling line circuit.
2. The detector shall comply with UL268 7th edition; operating at 24Vdc, nominal.
3. The self-test sensor shall generate a controlled amount of smoke into the chamber which will test the optics in response to a real smoke simulation.
4. The detector shall also measure the dilution of smoke within a set time frame to determine if there is masking that will prevent smoke from entering the chamber.
5. An alarm condition shall be generated upon smoke entering the chamber.
6. A trouble condition shall be generated if the testing chamber reveals it is being blocked.

G. Self-Testing Thermal Detector

1. Thermal detectors shall be intelligent addressable devices rated at 135°F (57.2°C) Fixed Temperature. It shall connect via two wires to the Fire Alarm Control Unit signaling line circuit.
2. The detector shall comply with UL521 and operating at 24VDC, nominal.
3. The self-test sensor shall generate energy into an internal thermistor to allow register heat to be identified.
4. The detector shall also measure the cooling of the heating element after it's cycle has been completed.
5. An alarm condition shall be generated upon the introduction of heat from the thermistor.
6. A trouble condition shall be generated if the thermistor does not detect heat.

H. Self-Testing Photo Thermal Detector

1. Photo Thermal detectors shall be intelligent addressable devices using photoelectric (light-scattering) principal to measure smoke density and rated at 135°F (57.2°C) Fixed Temperature. It shall connect via two wires to the Fire Alarm Control Unit signaling line circuit.

2. The detector shall comply with UL268 7th edition and UL521; operating at 24VDC, nominal.
3. The self-test sensor shall generate a controlled amount of smoke into the chamber which will test the optics in response to a real smoke simulation and shall generate energy into an internal thermistor to allow register heat to be identified.
4. The detector shall also measure the dilution of smoke within a set time frame to determine if there is masking that will prevent smoke from entering the chamber.
5. The detector shall also measure the cooling of the heating element after its cycle has been completed.
6. An alarm condition shall be generated upon smoke entering the chamber. and heat from the thermistor.
7. A trouble condition shall be generated if the testing chamber reveals its being blocked, or if the thermistor does not detect heat.

I. High Sensitivity Photo Smoke Detector

1. The intelligent high sensitivity photoelectric smoke detector shall include a smoke sensing chamber and patented optic block designed to amplify signals from smoke.
2. The intelligent LED photo detector shall have nine sensitivity levels and be sensitive to a minimum obscuration of 0.02 percent per foot.
3. The detector shall be listed to meet UL 268 requirements and UL268A for duct applications.
4. The intelligent High sensitivity photo detector shall support standard, relay, isolator and sounder detector bases.
5. The High sensitivity photo detector shall not require other cleaning requirements than those listed in NFPA 72. Replacement, refurbishment or specialized cleaning of the detector head shall not be required.

J. Multi-Criteria Smoke Detectors

1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire alarm control unit.
3. Automatically adjusts its sensitivity by means of drift compensation and smoothing algorithms. The detector shall send trouble alarm if it is incapable of compensating for existing conditions.
4. An operator at fire alarm control unit, having the designated access level, shall be able to manually access the following for each detector:

    a. Primary status.
    b. Device type.
    c. Present sensitivity selected.
    d. Sensor range (normal, dirty, etc.).

6. Categories of multicriteria detector should offer the following variants for different applications:
    - Fire / CO
    - PTIR (Photo, Thermal, Infrared)

- Photo/Thermal
- Photo/CO
- Each sensor shall be separately listed according to requirements for its detector type (Except IR).

K. Intelligent Duct Smoke Detector

1. The smoke detector housing shall accommodate intelligent photoelectric detector, of that provides continuous analog monitoring and alarm verification from the panel.
2. When sufficient smoke is sensed, an alarm signal is initiated at the FACU, and appropriate action taken to change over air handling systems to help prevent the rapid distribution of toxic smoke and fire gases throughout the areas served by the duct system.

L. Addressable Control Module

1. Addressable control modules shall provide supervised monitoring of wiring to load devices that require an external power supply to operate, such as horns, strobes, or bells. It shall be capable of Class B (Style Y) and Class A (Style Z) supervision. Upon command from the control panel, the control module shall be able to disconnect the supervision and connect the external power supply across the load device. The disconnection of the supervision shall provide verification to the panel that the control relay state changed. The external power supply shall always be relay isolated from the communication loop. The control module shall transmit full analog measurement of the supervised wiring back to the panel and can be used to detect impedance changes or other special test functions.
2. The modules shall provide address-setting means on the module using rotary switches. Because of the possibility of installation error, systems that use binary jumpers or DIP switches to set the module address are not acceptable. The modules shall also store an internal identifying code that the control panel shall use to identify the type of detector. Systems that require a special programmer to set the module address (including temporary connection at the panel) are labor intensive and not acceptable. Each module occupies any one-off at least 99 possible addresses on the signaling line circuit (SLC) loop. It responds to regular polls from the system and reports its type and status. The module shall have an LED that is controlled by the panel to indicate module status.

Coded signals, transmitted from the panel, can cause the LED to blink, latch on, or latch off. Refer to the control panel technical documentation for module LED status operation.

3. The module shall mount in a standard 4-inch square, 2-1/8" deep electrical box, surface mounted backbox listed, or compatible duct smoke detector housing. The notification appliance circuit (NAC) shall wire in a Class B (Style Y) or Class A (Style Z) fashion. Each control module shall support up to 1 amp of inductive or 2 amps of resistive audible/visual signals. Audio/visual power shall be provided by a separate supervised power loop from the main fire alarm control panel or from a supervised, UL listed remote power supply. The module shall use SEMS screws for easy wiring. Wiring terminals shall be easily accessible for troubleshooting while installed.

M. Addressable Relay Module

1. Addressable relay modules shall allow a compatible control panel to switch discrete contacts by code command. The relay module shall provide two isolated sets of Form-C contacts, which operate as a double pole double throw switch. The module shall allow the control panel to switch these contacts on command. The module shall not provide supervision for the notification appliance circuit (NAC). Module shall have both normally open and normally closed connections available for field wiring.
2. The modules shall provide address-setting means on the module using rotary switches. Because of the possibility of installation error, systems that use binary jumpers or dipswitches to set the module address are not acceptable. The modules shall also store an internal identifying code that the control panel shall use to identify the type of module. Systems that require a special programmer to set the module address (including temporary connection at the panel) are labor intensive and not acceptable. Each module occupies any one of at least 99 possible addresses on the SLC loop. It responds to regular polls from the system and reports its type and status. The module shall have an LED that is controlled by the panel to indicate module status. Coded signals, transmitted from the panel, can cause the LED to blink, latch on, or latch off.
3. The module shall mount in a standard 4-inch square, 2-1/8" deep electrical box or to a surface mounted backbox. The relay module contact ratings shall support up to 1 amp/30 VDC of inductive load or 2 amps/30VDC (coded) of resistive load (up to 3 amps in non-coded applications). The relay coil shall be magnetically latched to minimize wiring connection requirements and to ensure that 100% of all auxiliary relays may be energized simultaneously on the same pair of wires. The module will use SEMS screws for easy wiring. Wiring terminals shall be easily accessible for troubleshooting while installed.

N. Addressable Releasing Control Module

1. An addressable Flash-Scan releasing module shall be available to supervise and control compatible releasing agent solenoids.
2. The module shall operate on a redundant protocol for added protection.
3. The module shall be configurable for Class <A or B> and support one 24 volt or two 12-volt solenoids.

O. Isolator Module

1. Isolator modules shall automatically isolate wire-to-wire short circuits on a signaling line circuit (SLC) loop. The isolator module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC Loop.
2. If a wire-to-wire short occurs, the isolator module shall automatically open-circuit (disconnect) the SLC loop. When the short circuit condition is corrected, the isolator module shall automatically reconnect the isolated section of the SLC loop.
3. The isolator module shall not require any address-setting, and its operations shall be fully automatic. It shall not be necessary to replace or reset an isolator module after its normal operation. The module shall have an LED that is controlled by the panel to indicate module status.
4. Coded signals, transmitted from the panel, can cause the LED to blink, latch on, or latch off. Refer to the control panel technical documentation for module LED status operation.
5. The module shall mount in a standard 4-inch square, 2-1/8" deep electrical box, in a surface mounted backbox, or in the Fire Alarm Control Unit. The module shall use SEMS screws for easy wiring. Wiring terminals shall be easily accessible for troubleshooting while installed.
6. Meets Agency Standards:
    - ANSI/ UL 864- Control Units and Accessories for Fire Alarm Systems
    - ULC S527- Control Units for Fire Alarm Systems
    - FM- ANSI/NFPA 72- National Fire Alarm Code.

P. Serially Connected Annunciator Requirements

1. The annunciator shall communicate to the Fire Alarm Control Unit via an EIA 485 (multidrop) two-wire communications loop. The system shall support two 6,000 ft. EIA-485 wire runs. Up to 32 annunciators, each configured up to 96 points, may be connected to the connection, for a system capacity of 3,072 points of annunciation.
2. An EIA-485 repeater shall be available to extend the EIA-485 wire distance in 3,000 ft. increments. An optional version shall allow the EIA-485 circuit to be transmitted over Fiber optics. The repeater shall be UL864 approved.
3. Each annunciator shall provide up to 96 alarm and 97 trouble indications using a long-life programmable color LED's. Up to 96 control switches shall also be available for the control of Fire Alarm Control Unit functions. The annunciator will also have an "ONLINE" LED, local piezo sounder, local acknowledge and lamp test switch, and custom zone/function identification labels.
4. The annunciator may be field configured to operate as a "Fan Control Annunciator". When configured as "Fan Control," the annunciator may be used to manually control fan or damper operation and can be set to override automatic commands to all fans/dampers programmed to the annunciator.
5. Annunciator switches may be programmed for System control such as, Global Acknowledge, Global Signal Silence, Global System Reset, and on/off control of any control point in the system.
6. An optional module shall be available to utilize annunciator points to drive EIA-485 driven relays. This shall extend the system point capacity by 3,072 remote contacts.
7. The LED annunciator shall offer an interface to a graphic style annunciator and provide each of the features listed above.

Q. CO Detectors

1. The detector shall have the ability to detect Carbon Monoxide gases in compliance with UL 2075.
2. The detector shall automatically include drift compensation of CO cell.
3. If sounder base is used with the CO Detector, it should be capable of producing Temp 4 pattern for CO Alarm indication.
4. The sounder bases shall synchronize with it's native system.

R. Photoelectric CO detectors

1. The detector shall have dual functionality to detect Carbon Monoxide gases in compliance with UL 2075 use photoelectric principle to measure smoke density in accordance with UL268 7TH edition.
2. The detector shall automatically include drift compensation of CO cell.
3. Provide a 24 Volt with Integral Sounder base connected to the SLC Addressable Circuit. Sounder shall be capable of providing a Temp 4 pattern for CO Alarm indication and a Temp 3 for Fire conditions.
4. The sounder bases shall synchronize with its native system.

2.9 PC BASED GRAPHICAL FACILITIES MONITORING SYSTEM

A. Scope

1. The PC based graphical facilities monitoring system shall include, but not be limited to, optional touch screen or LCD wide screen monitor, one or more PC based graphical workstations, all input/output devices, network communications media, control equipment, auxiliary control devices, power supplies,
2. and wire / fiber optic media as shown on the drawings and specified herein.
3. A supervised interface to NOTIFIER Fire Alarm Control Units and NOTI-FIRE-NET shall be made available.
4. The system shall employ an advanced technology network to monitor and control various fire, security and other facility information over a network.
5. The system shall include an interface to digital alarm communicator receivers for wide area network monitoring.
6. The system shall include a device that allows remote viewing of the ONYX Works system via the Internet or an intranet.
7. The system shall include a redundant interface for NOTI-FIRE-NET network for survivability.
8. The system shall allow a mixture of different technologies and manufacturers' equipment to operate on the same network and provide the operator with a consistent look and operation for all monitored equipment.

9. The system shall support a variety of topologies and media and shall provide an industry standard open architecture transport layer protocol.
10. Using standard RS-232 ports on existing and future monitoring and control systems used by the facility, the system shall connect to and interpret status change data transmitted from the ports and provide graphic annunciation, control, history logging and reporting as specified herein.
11. The system shall be electrically supervised and monitor the integrity of all conductors.
12. The system shall provide E-Mail functions capability to send system information via an email server to an email account.
13. The system shall utilize Boolean logic for automatic event response.
14. The system shall have the facility to page directly from the workstation to any DVC installed on the network.

B. Workstation Performance

1. The network will interface and report the individually monitored system's status via a user-friendly Graphical User Interface (GUI) based software workstation.
2. The software shall operate under Microsoft® Windows® 10 , 64bit OS
3. The GUI based software must be capable of graphically representing each facility being monitored with floor plans and icons depicting the actual locations of the various systems; and / or sensors' locations as well as view the system events in text mode.
4. The software shall use a 1920 pixels X 1080 pixels GUI display capable of showing a large primary floor plan display, a key map representative of a larger view of the primary display and its relationship to the facility being monitored, the current operator, number of fire, supervisory, pre-alarms, troubles, and security events within the network as well as outstanding events and acknowledged events.
5. The software shall have the capacity of at least 1,000 screens / floor plans or as dictated by hard drive space and installed VIDEO and RAM memory for efficient operation.
6. The software shall have the ability to float and dock windows to support dual monitors' display.
7. The workstation shall have the ability to support graphic printing of all data including graphical floor plans, system activity, history, and guidance text. A Windows® compatible printer shall be supported for the graphics and report printer options.
8. The workstation software shall permit automatic navigation to the screen containing an icon that represents the system or sensor in the event of an off-normal condition.
9. The system/sensor icon shall indicate the type of off-normal condition, flash, and change to the color associated with the off-normal condition (e.g., RED for ALARM and YELLOW for TROUBLE).
10. The software shall allow the attachment of text (TXT) files, sound (WAV) files, image (BMP) files, and video (AVI) files to each system or sensor icon allowing additional information to be provided to the system operator for responding to the off-normal condition. The software must have the ability for an attachment for each major event type per device.
11. The software shall allow the importation of externally developed floor plans in Drawing Exchange Format (DXF), Windows Metafile (WMF), JPEG (JPG), Graphics Interchange Format (GIF) and Bitmap (BMP) format.
12. The software shall provide automatic navigation to the screen containing the icon of any system or sensor when an event is initially annunciated. In addition, operator navigation

to screens containing outstanding events shall be accomplished by "clicking on" the event from either the acknowledged or unacknowledged event.

13. History Manager:
    - The software shall contain a History Manager, which shall record all system events with a time and date stamp as well as the current system operator's name.
    - The system shall provide the ability to store all off-normal events experienced by the various sub-systems that are monitored by the system.
    - All events shall be recorded with a time and date stamp and the system operator shall be provided with the ability to log a pre-defined response or a custom comment for each off-normal event and have that comment stored in the history file with the time, date, and operator name.
    - Provide the ability to conduct searches and generate subsequent reports, based on all events for a single system / device address, a specific node, a specific type of off-normal condition and date range (mm/dd/yy to mm/dd/yy) or combinations of these search parameters. The number of entries in the history file that match the determined search criteria will be displayed.
    - The History Manager shall automatically back-up the history file at 2,500,000 events.
    - It shall be possible to pre-select data fields for reporting and then saving the report as a template. It shall also be possible to schedule the pre-defined report to print at a designated time.
    - The History Manager shall provide the operator the ability to select the number of days or number of months to back-up history.
14. Alarm Monitoring:
    - The system shall provide for continuous monitoring of all off-normal conditions regardless of the current activity displayed on the screen.
    - If an operator is viewing the history of a sub-system and an alarm condition should occur, the system shall automatically navigate to the graphic screen showing the area where the off-normal event is occurring.
    - The system shall prioritize all off-normal events as defined by National Fire Alarm Code® 72 into the following categories: fire alarms, troubles, supervisory alarms, pre-alarms and security alarms.
    - The system shall display a running count of all events by type in an alarm summary window. The alarm summary window shall include at least five counters, defaulted to Alarm, Pre-Alarm, Trouble, Security, and Supervisory events.
    - The system shall show a running list of all unacknowledged events and acknowledged events and allow the system operator to acknowledge an event by "double-clicking" on that event in the Unacknowledged Events box. The Unacknowledged and Acknowledged Events boxes shall contain an abbreviated description of the off-normal condition.
    - The details of the condition may be viewed by selecting event in the unacknowledged events box.
    - The system shall allow the attachment of user-definable text files, image files, video files, and sound files to each device / system monitored (for every event state) in order to facilitate the operators and response personnel's response to the off-normal condition.
    - The system shall record all events to the system's hard drive. A minimum of 2,500,000 events may be stored.

15. Reports & Logs:
    - The system shall provide for the ability to generate reports based on system history.
    - The system shall allow the system operator to enter custom comments up to 255 characters for each event and have those comments recorded in the system's history file
16. Boolean Logic
    - An automated event response application shall be provided to automatically perform actions across the entire system based on network activity.
    - event response application shall allow event responses (actions) based on predefined user conditions using simplified Boolean logic.
    - Actions shall be configured to be executed immediately or timed as required.
17. Control Aspects of System Software
    - The system shall have the ability to monitor and control the following NOTIFIER® Fire Alarm Panels using NOTI-FIRE-NET Network, ONYX® & N16 series control panels.
    - The system shall have the ability to monitor and control the NOTIFIER N16 Fire Alarm Panel
    - using a PC Network Card (NFN Gateway) installed in the workstation.
    - The Gateway interfaces shall have the ability to be constructed in a redundant configuration with either two NFN Gateway computers monitoring the same nodes, or by having multiple Embedded Gateways on the same network, monitored by multiple workstation clients.
    - The system shall provide an NFN Gateway interface for direct connections to the Notifier Network containing the following panels: AFP-1010, AM2020, AFP-200, and the AFP-300/400, ONYX® series and N16 control panels. The NFN Gateway and the Embedded Gateway will:
        i. Serves as a bridge between an ONYX Works® Workstation and a NFN network, and it uses that Workstation as the primary reporting station for the NFN network
        ii. Translates a NFN network's panel and device data into data that can be interpreted by the ONYX Works® Workstation software application
        iii. Monitors NFN networks using ARCNET network architecture.
        iv. The workstation shall provide configuration utilities for monitoring and control profiles. These profiles shall be user definable for distribution of monitoring and control allowances for operators per workstation.
        v. Under no condition shall any sub-system be required to rely on the network for any data processing required to perform its particular function. Each individual sub-system shall be in effect "stand-alone" as to insure its continued operation should a disruption in communication with the system be experienced.
    - The software shall be password protected and provide for the definition of security profiles for operator access control.
    - The software shall contain provision for defining monitoring profiles of pre-selected Nodes for monitoring. This shall include provision for status types within the selected NODES.
    - The software shall support sending real-time off-normal event notifications to designate email addresses.
    - The software shall support live voice paging for mass notification to NOTIFIER voice evacuation system over Internet Protocol (IP).

- The PC based graphical facilities monitoring system shall include a Configuration Tool that provides the following features:
  - i Allows operators the ability to create and edit graphics
  - ii Set up Gateway Connections and define their nodes
  - iii Set system operating mode
  - iv Add and edit objects on screens
  - v Configure colors and sounds for the status classes

C. Workstation Specification

1. The system shall be an ONYXWorks® Fire Systems Command Interface.
2. The system shall operate on no less than an IBM compatible UL listed Intel Quad Core processor operating at 2.4 GHz on the Microsoft® Windows® 10 64 bit OS platform.
3. The workstation shall be an industrial grade computer listed for UL Standards 864 (Control Units for Fire-Protective Signaling Systems) under category UUKL (Smoke Control Equipment). The workstation shall be capable of annunciation and control of all fire detection and smoke control points.
4. The workstation shall have no less than 16 Gigabytes of RAM, Solid-State Hard Drive with no less than 240 Gigabytes of storage space, a minimum of 64 megabytes of video RAM, internal supervisory CPU watchdog board with audible annunciator, 100 Base-T Ethernet NIC card, a 104 key keyboard, and a mouse type pointing device with a center wheel.
5. The workstation shall come equipped with all necessary gateway modules to allow connection to the network(s) it monitors as standard equipment. All workstations shall support Ethernet communications when multiple workstations are required.
6. The workstation shall support dual SVGA monitors and be supplied with a 22” or 42” flat screen LCD monitor with integrated speakers or an optional touch screen monitor.
7. The computer shall be capable of networking to additional computers and these computers shall be capable of operating as workstations and/or gateways for local area or wide area networks.
8. Alarm annunciation shall appear on all workstations and may be silenced at each local workstation.
9. Only one workstation and operator shall be in command of the system for global alarm acknowledgement at any time.

D. Printer

1. Support one or more Windows® compatible printers to be located and connected each workstation for graphics and report printing.
2. Support one model PRN-7, 80-column dot matrix tractor feed industrial grade printer for event and date-stamped printouts of off-normal events and status changes per workstation.

E. Notifier® Monitoring Network

1. The NOTIFIER® monitoring network shall consist of a network based on proven peer-to-peer technology and support standard NCM cards and High Speed NCM cards.
2. The network consisting of the standard NCM cards shall have the ability to use multi-mode fiber optic cable, wire (twisted pair copper media in a style 4 or style 7 configuration), or

combination wire/fiber communications with support of up to 103 nodes with a data communications rate of 312,500 BPS.

3. Wire networks shall support 12 AWG, 1 Pair Shielded to 24 AWG, 4 Pair Unshielded following the manufacturer's guidelines.
4. Fiber optic networks shall support 62.5/125µm cable (8dB limit) or 50/125µm cable (4.2dB limit), Wire to fiber conversions cards.
5. The network consisting of the High Speed NCM cards shall have the ability to use fiber optic cable (both multi-mode and single mode), wire (twisted pair copper media in a style 4 or style 7 configuration), or combination wire/fiber communications with support of up to 200 nodes with a data communications rate of 12MB (wire) or 100MB (fiber).
    a) Wire networks shall support 12 AWG, 1 Pair Shielded to 24 AWG, 4 Pair Unshielded following the manufacturer's guidelines.
    b) Fiber optic networks shall support 62.5/125µm cable (10dB limit), 50/125µm cable (6.5dB limit), or 9/125 µm cable (30dB limit).
    c) Wire to fiber conversions cards.

2.10 BATTERIES AND EXTERNAL CHARGER

Battery

a Shall be 12 volt, Gel-Cell type.

b Battery shall have sufficient capacity to power the fire alarm system for not less than <four/twenty-four> hours plus <five/fifteen> minutes of alarm upon a normal AC power failure.

c The batteries are to be completely maintenance free. No liquids are required. Fluid level checks refilling, spills and leakage shall not be required.

External Battery Charger

1. Shall be completely automatic, with constant potential charger maintaining the battery fully charged under all service conditions. Charger shall operate from a 120/240-volt 50/60 hertz source.
2. Shall be rated for fully charging a completely discharged battery within 48 hours while simultaneously supplying any loads connected to the battery.
3. Shall have protection to prevent discharge through the charger.
4. Shall have protection for overloads and short circuits on both AC and DC sides.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.

B. All conduit, junction boxes, conduit supports, and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the

system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.

C. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.

D. Manual Pull Stations shall be suitable for surface mounting or semi-flush mounting as shown on the plans, and shall be installed not less than 42 inches, nor more than 48 inches above the finished floor.

3.2 TYPICAL OPERATION

A. Actuation of any manual station, smoke detector heat detector or water flow switch shall cause the following operations to occur unless otherwise specified:

1. Activate all programmed speaker circuits.
2. Actuate all strobe units until the panel is reset.
3. Light the associated indicators corresponding to active speaker circuits.
4. Release all magnetic door holders to doors to adjacent zones on the floor from that the alarm was initiated.
5. Return all elevators to the primary or alternate floor of egress.
6. A smoke detector in any elevator lobby shall, in addition to the above functions, return all elevators to the primary or alternate floor of egress.
7. Smoke detectors in the elevator machine room or top of hoist-way shall return all elevators in to the <primary/ alternate> floor. Smoke detectors or heat detectors installed to shut down elevator power shall do so in accordance with ANSI A17.1 requirements and be coordinated with the electrical contractor.
8. Duct type smoke detectors shall, in addition to the above functions shut down the ventilation system or close associated control dampers as appropriate.
9. Activation of any sprinkler system low pressure switch or valve tamper switch shall cause a system supervisory alarm indication.

3.3 TEST AND INSPECTION REPORT

A. Only a factory-authorized service representative trained shall be allowed to test and inspect components, assemblies, and equipment installations, including connections.
B. All test and inspection shall be completed by using the CLSS platform.
C. Perform the following tests and inspections via the mobile app:

1. Visual Inspection: Conduct visual inspection prior to testing.

a. Inspection shall be based on completed record Drawings and system documentation that is required by the "Documentation" chapter in NFPA 72.

b. Comply with the "Visual Inspection" table in the "Inspection" section of the "Inspection, Testing, and Maintenance" chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.

2. Verification shall take place carrying out an automated self-testing process (without need of manual intervention or a smoke/ heat pole). The detectors shall be able to carry out the following;

    a. Functional test on heat or smoke
    b. Smoke entry test for smoke alarms
    c. Determine that the dust cover is in place during construction.
    d. Determine that the dust cover has been removed when the building becomes ready for occupation.
    e. Provide an automated summary report of above points.

3. The system will register real events from all initiating devices not in test mode after each test. Upon an alarm condition during the self-test process the system will be overwritten and initiate an alarm at the FACU.

4. System Testing: Comply with the "Testing" table in the "Testing" section of the "Inspection, Testing, and Maintenance" chapter in NFPA 72.

5. During inspection the software shall automatically comply and generate "Fire Alarm System Record of Completion" in the "Documentation" chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" section of the "Inspection, Testing, and Maintenance" chapter in NFPA 72.

D. 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. A report shall be automatically be generated from the mobile app upon completion and provide to applicable parties.

3.4 SYSTEM TEST

A. Provide the service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment to technically supervise and participate during all of the adjustments and tests for the system.

B. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

C. Close each sprinkler system flow valve and verify proper supervisory alarm at the FACU.

D. Open initiating device circuits and verify that the trouble signal actuates.

E. Open signaling line circuits and verify that the trouble signal actuates.

F. Open and short notification appliance circuits and verify that trouble signal actuates.

G. Ground initiating & Signaling device circuits and verify response of trouble signals.

H. Ground notification appliance circuits and verify response of trouble signals.

I. Check presence and audibility of tone at all alarm notification devices.

J. Check installation, supervision, &operation of intelligent smoke detectors during a walk test.

K. Each of the alarm conditions that the system is required to detect should be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FACU and the correct activation of the control points.

L. When the system is equipped with optional features, the manufacturer's manual should be consulted to determine the proper testing procedures. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality and similar.

3.5 FINAL INSPECTION

At the final inspection a factory trained representative of the manufacturer of the major equipment shall demonstrate that the systems function properly in every respect.

3.6 INSTRUCTION

A. Provide instruction as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.

B. The contractor and/or the systems manufacturer's representatives shall provide a typewritten "Sequence of Operation."

END OF SECTION 28 46 00

SECTION 32 13 13 PORTLAND CEMENT CONCRETE PAVEMENT

PART 1 GENERAL

1.01 Summary

A. Section Includes:
   1. Formwork and accessories
   2. Isolation Joints
   3. Concrete and Miscellaneous Materials

B. Related Requirements:
   1. Section 01 33 00 – Submittal Procedures
   2. Section 01 70 00 – Execution and Closeout Requirements
   3. Section 01 74 00 – Cleaning and Waste Management
   4. Section 06 10 00 – Rough Carpentry

1.02 References

A. Abbreviations and Acronyms:

F	Fahrenheit
psi	Pounds per Square Inch

B. Definitions:
   1. Section 01 42 16.

C. Reference Standards:
   1. American Concrete Institute (ACI) Publications:

a.	117 - 10	Specification for Tolerances for Concrete Construction and Materials
b.	211.1-91	Proportions for Normal, Heavy Weight and Mass Concrete
c.	214R-02	Evaluation of Strength Test Results of Concrete
d.	301-20	Specifications for Concrete Construction
e.	302.1 – 15	Guide to Concrete Floor and Slab Construction
f.	304 – 09	Guide for Measuring, Mixing, Transporting, and Placing Concrete
g.	304.2 – 17	Guide to Placing Concrete by Pumping Methods
h.	305	Guide to Hot Weather Concreting
i.	308.1 – 11	Specification for Curing Concrete
j.	347R-14; Errata 1-17	Guide to Formwork for Concrete

   2. American Hardboard Association (AHA) Publications:

a.	A135.4	Basic Hardboard

3. ASTM International (ASTM) Publications:

a.	C31/C31M – 21	Standard Practice for Making and Curing Concrete Test Specimens in the Field
b.	C33/C33M – 18	Standard Specification for Concrete Aggregates
c.	C39/C39M – 21	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
d.	C94/C94M – 20	Standard Specification for Ready- Mixed Concrete
e.	C143/C143M – 20	Standard Test Method for Slump of Hydraulic-Cement Concrete
f.	C150/C150M – 20	Standard Specification for Portland Cement
g.	C172/C172M – 17	Standard Practice for Sampling Freshly Mixed Concrete
h.	C309 – 19	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
i.	C494/C494M – 19	Standard Specification for Chemical Admixtures for Concrete
j.	C920 – 18	Standard Specification for Elastomeric Joint Sealants
k.	C1602/C1602M – 18	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
l.	D2103 – 15	Standard Specification for Polyethylene Film and Sheeting

4. U.S. General Services Administration (GSA) Publications:

a.	FS UU-B-790A	Building Paper, Vegetable Fiber: (Kraft, Waterproofed, Water)

5. National Institute of Standards and Technology (NIST) Publications:

a.	PS 1 - 09	DOC Voluntary Product Standard PS 1-07, Structural Plywood

1.03 Submittals

A. Conform to provisions of Section 01 33 00.

1.04 Action Submittals

A. Concrete Mixed Design
B. Manufacturer's Product Data and Installation Instructions:
   1. Biodegradable Form Release Agent
   2. Concrete Curing Materials
   3. Liquid Membrane-Forming Compound
   4. Concrete Curing Materials
   5. Integral Color
C. Integral Color Samples
   1. Color: 3 of each color

1.05 Closeout Submittals

A. Record Documentation
B. Section 01 70 00.

1.06 Quality Assurance

A. Concrete Mixed Design:
   1. Submit concrete mix design prepared by approved testing agency for each class of concrete.
   2. In lieu of design by testing agency:
      a. Mix design based on current materials previously evaluated by concrete producers.
      b. Quality control of concrete producer: ACI 214R.
   3. Certified test report showing results of tests for various materials, and results of 28-day compressive strength tests of concrete.
B. Mock-Ups for Paving and Flatwork Finishes and Joints:
   1. Provide 7 calendar days, minimum, prior to pouring concrete for paving and flatwork.
   2. Place near concrete work to be evaluated in a location mutually agreed upon by District Construction Manager, Architect, Landscape Architect and Contractor.
   3. Represent finish colors and textures, and types of joints.
   4. Review and Selection:
      a. Obtain Architect and Landscape Architect approval prior to review by District Construction Manager.

1.07 Delivery, Storage and Handling

A. General:
   1. Follow manufacturers instruction.
   2. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
   3. Store materials in a clean, dry area in accordance with manufacturer's instructions.

4. Protect materials during handling and application to prevent damage.

B. Cement:
   1. Store immediately upon receipt.
   2. Store cement in bags:
      a. In suitable weatherproof covering.
      b. As airtight as practicable.
      c. Elevate above ground distance sufficient to prevent absorption of moisture.
   3. Bags: stacked close together to reduce circulation of air.
   4. At time of use:
      a. Cement: Free flowing.
      b. Free of lumps.
   5. Cement stored longer than six months:
      a. Test by standard motor tests or other tests as deemed necessary by Architect and Landscape Architect to determine its suitability for use.
      b. Use requires approval of District Construction Manager, Architect, and Landscape Architect.

C. Aggregates:
   1. Store to prevent inclusion of foreign material.
   2. Different sizes: store in separate piles.
   3. Stockpiles of course aggregate:
      a. Build in such manner to minimize segregation.
      b. Should coarse aggregate become segregated, remix to conform to grading requirements.

D. Colored Admixtures:
   1. Store to prevent inclusion of foreign material and moisture.

PART 2 PRODUCTS

2.01 Formwork Materials

A. General:
   1. Material in contact with concrete: Lumber, plywood, tempered concrete-form-grade hardboard, plastic, or metal.
   2. Design formwork and shoring to:
      a. Support loads and comply with Building Code.
      b. Withstand pressure from placement.
      c. Maintain tolerances.
      d. Inhibit leakage of mortar.

B. Wood Forms:
   1. Lumber: Section 06 10 00.
      a. Square edged or tongue-and-groove boards.
      b. Free of raised grain, knotholes, and surface defects.
      c. Surface Location: Unexposed.

2. Plywood:
   a. NIST PS 1, B-B, high density concrete form panels, or better.
   b. Thickness: 5/8-inch, minimum.
   c. Free of raised grain, torn surfaces, worn edges, patches or other defects, which would impair texture of concrete surface.
   d. Surface Location: Exposed to view and requiring smooth form finish.
3. Hardboard:
   a. Smooth form lining.
   b. AHA A135.4

C. Plastic Forms
   1. Free from irregularities, dents, and sags.
   2. Capable of maintaining shape.

D. Steel Forms:
   1. Free from irregularities, dents, and sags.

2.02 Formwork Accessories

A. General: Use commercially manufactured formwork accessories.

B. Form Ties:
   1. Ends and end fasteners: Removable without damage to concrete.
   2. Breakback distance:
      a. Ferrous ties: ¾ inch, minimum. (ACI 301)
      b. Coated or corrosion-resistant ties: Less than ¾ inch.
   3. Plastic Forms: Connections and supports as part of manufacturer's plastic form system.

C. Biodegradable Form Release Agent:
   1. Colorless, biodegradable, water-based with low for zero VOC content.
   2. Reduces formwork moisture absorption.
   3. Does not:
      a. Bond with, stain, or adversely affect concrete surfaces.
      b. Impair subsequent treatments of concrete surfaces.
      c. Contain diesel fuel, petroleum-based lubricating oils, waxes, or kerosene.

2.03 Other Embedded Items:

A. Galvanized steel or PVC

2.04 Isolation Joint

A. Preformed joint material full depth of slab
B. Elastomeric Sealer: ASTM C920

2.05 Concrete Material

A. Cementitious Materials:
   1. Portland Cement: ASTM C150/C150M, Type I.

B. Water:
   1. For mixing and curing, including free moisture and water in aggregates:
      a. Fresh
      b. Clean

c. Potable
2. ASTM C1602/C1602M.
3. Minimize amount of water in mix.
   a. Improve workability by adjusting grading of aggregate and using admixture.

C. Aggregates:
1. Normal-Weight Aggregates:
   a. Obtain from same sources and contain same size range as aggregates used in concrete represented by submitted filed test records.
   b. Grading of coarse aggregates: ASTM C33/C33M, Table 2.
2. Sand:
   a. Washed fine aggregate.
   b. ASTM C33/C33M.
3. Store and handle:
   a. To avoid segregation.
   b. To prevent contamination by other materials, or other sizes of aggregate.

D. Admixtures:
1. Chemical Admixtures: ASTM C494/C494M.
2. Integral Color Admixture:
   a. Manufacturer:
      1) Bomanite
         P.O. Box 2649
         Fair Oaks, CA. 95628
         Phone: 303-369-1115
         Fax: 303-291-0282
         Website: www.bomanite.com

2.06 Miscellaneous Materials

A. Concrete Curing Materials:
1. ACI 301 Section 5 and ACI 308.1 Section 2.
2. Submit product data and manufacturer's instructions.
3. Waterproof Paper: FS UU-B-790A, Type 2, Grade E.
4. Liquid Membrane-Forming Compound:
   a. ASTM C309, Type 1, Class B.
   b. Comply with State of California Air Regulation Board Solvent Emission Standards.

B. Anchorage:
1. Items for anchoring work of other trades to concrete:
   a. Standard manufacture
   b. Types to engage with anchors provided
   c. Installed under other sections.

2.07 Concrete Mix Design

A. Performance Criteria:

1. Proportioning:
   a. Accomplish by weighing.
   b. Exception: As provided.
2. Contractor- Furnished Mix Design:
   a. Concrete:
      1) ACI 301.
      2) Maybe proportioned from additional data derived from ACI 211.1 and ACI 214R for assumed co-efficient of variation of 15 percent and test failure of "one test in 10," provided that mixed designs reflect actual concrete plant standard deviations and resulting production concrete conforms to specified requirements.
   b. Mix design:
      1) Based on aggregate data tested within past six months.
      2) In absence of such data, sample and test aggregates for conformance with ASTM C33/C33M.
   c. Aggregate:
      1) Test reports certified by laboratory:
         a) Accompany mix design.
         b) Include, but not be limited to, following test results:
            (1) Sieve analysis.
            (2) Specific gravity.
            (3) Deleterious substances.
            (4) Potential reactivity.

B. Design Criteria:
   1. Normal Concrete: Provide concrete conforming to Table 3.

Placement	28-Day Compressive Strength (psi)	Maximum Aggregate (inches)	Slump (inches)	Cement Type
Exterior Slab	3500	1	4	II
Sidewalks	3500	1	4	II

   2. Maximum water to cement ratio: 0.58.

C. Ready-Mixed Concrete:
   1. Requirements: ASTM C94/C94M.
   2. Delivery Tickets:
      a. Provide duplicate delivery tickets with each load.
      b. Information required by ASTM C94/C94M, plus:
         1) Type and brand of cement.
         2) Cement and supplementary cementitious materials content in 94-pound bags per cubic yard of concrete.
         3) Maximum size of aggregate.
         4) Amount and brand of admixtures.
         5) Total water content expressed by water cementitious material ratio.

PART 3 EXECUTION

3.01 Examination

A. Verification of Conditions:
   1. Substrates:
      a. Properly constructed.
      b. Level.
   2. Field Dimensions:
      a. Check.
      b. If dimensions vary from design dimensions and do not allow for proper installation:
         1) Notify District Construction Manager, Architect and Landscape Architect.
         2) Wait for instructions before beginning installation.
   3. Concrete Surface Finishing:
      a. Concrete curing duration complies with manufacturer's installation instruction.

B. Verification of Preinstallation Approvals:
   1. Concrete Mix Design
   2. Integral Colors

3.02 Preparation

A. General:
   1. Excess Concrete:
      a. Determine quantity of concrete needed.
      b. Minimize production of excess concrete.
      c. Divert waste from landfill by designating locations or uses for excess concrete before pour.
   2. Surface Preparation:
      a. Free of debris, loose material, standing water, ice, and other deleterious substances.
      b. Remove standing water.

B. Subgrade Under Foundations and Footings:
   1. Semi-porous and dry:
      a. Sprinkle surface with water to eliminate suction of concrete water at time concrete is deposited, or
      b. Seal by covering surface with vapor retarder.

C. Subgrade under slabs on ground:
   1. Verify pipes and conduits are installed and approved.
   2. Remove foreign materials.

D. Edge Forms and Screed Strips for Slabs:
   1. Set to obtain elevations and contours in finished slab surface.
   2. Strong enough to support screeds.

3. Align concrete surface to elevation of screed strips using strike-off templates, or approved compacting-type screeds.
4. Tolerances:
   a. 0.02-foot above, or 0.10-foot below required elevation.
   b. Verify and demonstrate compliance to District Construction Manager, Architect, and Landscape Architect.

E. Embedded Items:
1. Secure embedded materials in position.
2. Obtain inspection and approval from District Construction Manager, Architect and Landscape Architect before placing concrete.

3.03 Forms

A. General:
1. Provide forms for concrete placement.
   a. Set forms mortar-tight, and true to line and grade.
   b. Curves:
      1) Form smooth and continuous.
      2) Points and dents are not acceptable.
2. Concrete for footings:
   a. May be placed in excavations without forms.
   b. Tolerances:
      1) Dimensions of excavations in earth: 3 inches, minimum, outside of concrete lines.

B. Form work:
1. Provide formwork with clean-out openings to permit inspection and removal of debris before concrete is placed.
   a. Inspect and remove foreign material.
   b. Obtain inspection and approval from District Construction Manager.
2. Forms for continuous surfaces placed in successive units: Fit forms over completed surface to obtain accurate alignment of surfaces and to prevent leakage of mortar.
3. Construct panel forms to provide tight joints between panels.
4. Construct forms so they can be removed without damaging concrete.
5. Chamfer above grade exposed joints, edges, and external corners of concrete ¾-inch.
   a. Place chamfer strips in corners of formwork to produce beveled edges on permanently exposed surfaces.
   b. Do not bevel reentrant corners (inside corner forming an angle of 180 degrees, maximum), or edges of formed joints of concrete.
6. At construction joints:
   a. Lap form-facing materials over concrete of previous placement.
   b. Ensure formwork is placed against hardened concrete so offsets at construction joints conform to specified tolerances.
7. Provide positive means of adjustment (wedges or jacks) of shores and struts.

a. Do not adjust formwork after concrete has reached initial setting.
b. Brace formwork to resist lateral deflection and lateral instability.

8. Fasten form wedges in place after final adjustment of forms and before concrete placement.
9. Provide anchoring and bracing to control upward and lateral movement of formwork system.
10. Construct formwork for openings to facilitate removal and to produce opening dimensions within tolerances.
11. Position and support expansion joint materials, and embedded items to prevent displacement.
    a. Fill voids in sleeves, inserts, and anchor slots temporarily with removable material to prevent concrete entry into voids.
12. Clean surfaces of formwork and embedded materials of mortar, grout, and foreign materials before placing concrete.

C. Coating:
1. Formwork release agent:
    a. Before placing concrete, coat contact surfaces of forms.
    b. Apply to surfaces per manufacturer's recommendations.
    c. Remove excess by wiping with cloths.
    d. Prevent contact with cold joint of hardened concrete.
    e. Surfaces not exposed to view and when temperature is above 45 degrees F: Sheathing may be wetted thoroughly with clean water.
    f. Reused forms:
        1) Thoroughly clean contact surfaces.
        2) Previously coated surfaces: Give additional application of coating.

D. Tolerances and Variances:
1. Set and maintain concrete forms to ensure that, after removal of forms and prior to patching and finishing, no portion of concrete work will exceed tolerances.
2. Variations due to deflection resulting from concrete quality or curing using other than specified: Not acceptable.
3. ACI 347R.

E. Reused Forms:
1. Allowed if structural integrity and aesthetics of concrete are not compromised.
2. Wood forms:
    a. Not clogged with paste.
    b. Capable of absorbing high water-cementitious material ration paste.
3. Leaked mortar: Remove.

F. Forms Finish:
1. Surfaces: ACI 301, Section 5, SF-2.0.

G. Form Ties:
1. After removal of ends or end fasteners:

a. Repair tie holes.
b. ACI 301, Section 5.

H. Tolerances for Form Construction:
1. ACI 117.
2. Position embedded items.
3. Maintain elevation and thickness tolerances.
a. Install formwork to compensate for deflection.
b. Anticipate settlement during concrete placement.
c. Set formwork and intermediate screed strips for slabs to produce designated elevations, camber, and contour of finished surface.
d. Ensure edge forms and screed strips are strong enough to support vibrating screeds or roller pipe screeds.

I. Removal of Forms and Supports:
1. Leave formwork and shoring in place until in-place required strength of concrete is reached, and removal will not damage concrete or cause deflection.
a. Repair and finish surfaces if required.

J. Strength of Concrete Required for Removal of Formwork:
1. If removal is based on concrete reaching in-place strength:
a. Field-cure cylinders (ASTM C31/C31M).
b. Test (ASTM C39/C39M).

3.04 Joints

A. Isolation Joints:
1. Follow manufacturers' installation instructions.
2. Form joints straight and level.

B. Contraction Joints:
1. Tool edges 1/4 inch by 1/4 inch radius.

C. Cold Joints:
1. Tool edges 1/8 inch radius.

3.05 Other Embedded Items

A. Before Concrete Placement:
1. Place in position and secure embedded items, including anchors and bolts.
2. Position accurately and support against displacement.
3. Plumb anchor bolts and check location and elevation.

B. Other Contractors and Subcontractors:
1. Give ample notice to others to furnish and install embedded items.

3.06 Batching, Measuring, Mixing and Transporting Concrete

A. General:
1. ASTM C94/C94M, ACI 301, ACI 302.1, and ACI 304
2. Equipment Measurement Tolerances:
a. Cement: 1 percent
b. Water: 1 percent

c. Aggregate: 2 percent
d. Admixtures: 3 percent
3. Furnish batch ticket information for each load of ready-mix concrete.

B. Measuring:
1. Measure at intervals per paragraph Sampling and Testing.

C. Mixing:
1. ASTM C94/C94M, ACI 301, and ACI 304
2. Machine mix - mixing and placing limits:
a. Air temperature below 84 degrees F:
1) Begin mixing within 30 minutes, maximum, after cement is added to aggregates.
2) Place concrete within 90 minutes, maximum, after adding:
a) Water to cement and aggregates, or
b) Cement to aggregates.
b. Air temperature at or above 84 degrees F:
1) Reduce mixing time, and place concrete within 60 minutes, maximum.
2) Option using set retarding admixture:
a) Meet slump requirements, and place concrete within 90 minutes, maximum.
b) Dissolve admixture in mixing water and mix in drum to uniformly distribute throughout batch.
c. Additional Water may be added if the following conditions are met:
1) Specified maximum slump is not exceeded.
2) Water-cementitious material ratio is not exceeded.
3) Specified concrete strength is met.
4) Add 30 revolutions of mixer at mixing speed.
d. Reconstitution of concrete that has begun to solidify: Prohibited.

D. Transporting:
1. Transport concrete from mixer to forms as rapidly as practicable.
2. Prevent segregation or loss of ingredients.
3. Clean Transporting equipment thoroughly before each batch.
4. Aluminum pipe or chutes: Prohibited.
5. Remove and dispose of concrete segregated in transporting.

3.07 Placing Concrete

A. General:
1. ACI 301 Section 5.
2. Before concrete pours:
a. Select on-site area for cleaning out concrete mixing trucks.
1) Use area to be paved later in project.
b. Obtain District Construction Manager, Architect, and Landscape Architect approval.
3. Concrete Control:

a. Do not add water to mix at site.
b. Do not place concrete after there is evidence of initial set.
c. Place when weather conditions allow proper placement and consolidation.
d. Consolidate concrete by:
    1) Internal concrete vibrators.
    2) Supplement by hand spading, rodding, and tamping.
    3) Vibrating equipment: Adequate to thoroughly compact concrete.

4. Weather Conditions:
    a. Cold Weather
        1) ACI 301
        2) Concrete temperature: 50 degrees F, minimum.
        3) Ambient temperature: 40 degrees F, minimum.
        4) Do not pour if freezing temperatures are expected within 24 hours of pour.
        5) Remove and replace concrete damaged by freezing.
    b. Hot Weather
        1) ACI 301 and ACI 305, Figure 4.2.
        2) Concrete Temperature: 90 degrees F, maximum.
        3) Ambient temperature: 90 degrees F, maximum.
        4) Exposed concrete evaporation rate:
            a) 0.2 pound of water per square foot, maximum.
5. Placing Limitation:
    a. Do not place during periods of precipitation, or in water.
6. Pumping:
    a. ACI 304 and ACI 304.2.
    b. Permitted under following conditions:
        1) No separation or loss of materials.
        2) No interruptions sufficient to permit loss of plasticity between successive increments.
        3) Loss of slump in pumping equipment: 2 inches, maximum at discharge and placement.
        4) Do not convey concrete through pipe of aluminum or aluminum alloy.
        5) No rapid changes in pipe sizes.
        6) Size of aggregates to pipe diameter:
            a) Coarse aggregates: 33 percent, maximum.
            b) Well-rounded aggregates: 40 percent, maximum.

B. Bonding Fresh Concrete to Set Concrete:
1. Roughen and clean joints at set concrete:
    a. Roughen to expose aggregate.
    b. Remove laitance, coatings, loose particles, damaged concrete, and foreign matter.

2. Immediately before placing concrete:
    a. Dampen surface.
    b. Do not saturate.

C. Conveying Concrete:
1. Deposit concrete as nearly as practicable in its final position in forms.
    a. Avoid overworking to prevent segregation.
2. Free vertical drop of concrete: 3 feet, maximum, during conveying and before depositing in forms.
3. Equipment: Clean thoroughly before each run.
4. Concrete segregated in conveying:
    a. Remove and dispose.

D. Subgrades of Earth or Other Material:
1. Properly prepare.
2. If necessary, cover with heavy building paper, or other suitable material to prevent concrete from becoming contaminated.

E. Porous Subgrades:
1. Before placing concrete, dampen to prevent hydration water from being absorbed into subgrade.

F. Forms:
1. Clean of dirt, construction debris, water, snow, and ice.

G. Placing and Screeding Concrete:
1. Place, consolidate by tamping and immediately strike off to bring top surface of slab to proper contour, grade, and elevation.
2. May be followed immediately by darbying or bull floating of surface with wooden tools to correct unevenness.
3. Strike-off and darbying: Complete before bleed water appears on surface of freshly placed concrete.
4. No further work is permitted until concrete has attained set sufficient for floating and sufficient to support weight of finisher and equipment.
5. If bleed water has not disappeared by time floating of surface is to start:
    a. Remove excess water from surface.
    b. Do not use dry cement to absorb bleed water.

H. Consolidation of Concrete
1. Concrete slabs 4 inches or less in depth:
    a. Consolidate by wood or metal tampers, spading and settling with heavy leveling straight edge.

I. Isolation joints:
1. Clean after concrete has cured.
2. When dry, fill flush with joint sealing material.
    a. Concrete Walks, Slabs and Curbs:
        1) Spacing: Every 50 linear feet, maximum.

J. Tolerances:
1. Slabs and Pavement:

a. True planes with no deviation exceeding 1/8 inch when tested with 10-foot straightedge.
b. Surfaces:
    1) Pavement: Pitch to drain.
    2) Screed and float to required finish level with no coarse aggregate visible before finishing.
    3) After surface moisture has disappeared on floated surfaces:
        a) Trowel to a smooth, even, dense finish free from blemish, including trowel marks.

3.08 Finishing Concrete

A. Broomed Finish:
    1. Use on slabs and pavement on grade.
    2. ACI 301 Section 5.
    3. Tolerance: Match finishing quality of approved Mock-up Panels.
B. Forming Concrete Joints:
    1. General:
        a. Create using groovers (jointers) after surface is finished.
            1) Saw-cutting is not permitted.
        b. Use a straight (planed true) 1 by 8 or 1 by 10 board as a guide for jointing.
    2. Concrete Walks:
        a. Contraction Joints:
            1) Spacing: Every 5 linear feet, minimum.
            2) Depth: 1 inch deep, or ¼ slab thickness, whichever is deeper.
        b. Transverse Joints:
            1) Provide at changes in direction, and where sidewalk abuts curb, steps, rigid payment, or other structure.
            2) Slope: 1/48
            3) Tolerances:
                a) Cross section variation: ¼ inch in 5 feet, maximum.
    3. Curbs:
        a. Contraction Joints:
            1) Spacing: Every 10 linear feet, minimum.
            2) Depth: ¾ inch deep.
    4. Slabs on Ground
        a. Isolation Joints:
            1) Place at points of contact between slabs on ground and vertical surfaces.
        b. Clean groove of foreign matter and loose particles after surface has dried.

3.09 Curing and Protecting

A. General:
    1. Do not allow concrete surfaces to dry out from time it is placed until completion of curing period.

2. Protect from injury caused by sun, rain, flowing water, frost, and mechanical means.
3. Start curing when surface of fresh concrete is sufficiently hard to permit curing without damage.

B. Curing Temperatures:
1. Temperature of air next to concrete:
   a. Maintain at 40 degrees F, minimum, during curing periods.
2. Temperature of air next to concrete when placement is authorized below 40 degrees F (option):
   a. Maintain at 50 degrees F, minimum for 7 days after placing.
   b. 70 degrees F, minimum, for 3 days after placing, and 40 degrees F, minimum, for remainder of specified curing periods.
3. Heat concrete in place by (option):
   a. Vented heaters.
   b. Steam coils under canvas covers.
   c. Other suitable means.
4. Temperature within enclosures:
   a. Do not exceed 100 degrees F.
   b. Apply adequate moisture to concrete surface during heating period to prevent it from drying out.
5. Protect concrete against freezing for full curing period.

C. Moisture Curing:
1. Maintain moist concrete surfaces using methods such as:
   a. Liquid membrane curing compound.
      1) Do not use membrane-forming compound on surfaces where its appearance would be objectionable.
      2) Apply immediately after surface loses its water sheen and has dull appearance, and before joints are sawn.
      3) Apply in uniform coats by continuous operation with power- spraying equipment., or manufacturer's instructions.
   b. Impervious sheets.
      1) Wet concrete with fine spray of water.
      2) Lay sheets directly on concrete surface.
         a) Overlap ends 12 inches.
         b) Extend edges 18 inches beyond curing surface:
            (1) Weight down edges just outside of forms, and at overlaps.
   c. Burlap cover or permeable material.
      1) Fog spray to keep moist.
   d. Continuous wetting of concrete.
2. Maintain curing medium for 7 days, minimum.
   a. Repair or replace if damaged.
3. Vertical surfaces:
   a. Protect forms from direct sunlight.

b. Add water to top of structure once concrete is set.

3.10 Surface Finishes for Other Elements

A. Defects:
   1. Repair.
   2. ACI 301 Section 5.

3.11 Field Quality Control

A. Inspection and Observation:
   1. Formwork:
      a. Obtain review for conformance with Construction Documents by District Construction Manager, Architect and Landscape Architect.
      b. Obtain inspection and approval by District Construction Manager.
   2. Placing and Finishing Concrete:
      a. Notify District Construction Manager, Architect, and Landscape Architect 2 working days, minimum, prior to each pour.

B. Sampling by Testing Agency:
   1. Collect samples of fresh concrete for testing.
   2. Collection of Samples: ASTM C172/C172M.
   3. Making Test Specimens: ASTM C31/C31M.

C. Test Reports and Results:
   1. Certify and submit to District Construction Manager within 7 calendar days after test results are available.

D. Slump Test:
   1. Take concrete samples:
      a. At commencement of concrete placement.
      b. Each batch, minimum; or
      c. Every 20 cubic yards, maximum.
   2. ASTM C143/C143M
   3. Maximum Slump: Per Design Requirements.

E. Temperature Tests:
   1. Test concrete delivered and concrete in forms.
   2. Perform tests in Hot or Cold Weather conditions when ambient air is:
      a. Below 50 degrees F
      b. Above 80 degrees F
   3. Test Frequency:
      a. Until specified temperature is obtained:
         1) Each batch, minimum; or
         2) Every 20 cubic yards, maximum.
      b. Whenever test cylinders and slump tests are made.

F. Strength and Design Mix:
   1. Verify strength and design mix during concrete placement at intervals by testing standard cylinders of samples taken at job site.

2. Furnish necessary labor, materials, and facilities for molding samples handling and storing cylinders at site of work.
3. One set of three test cylinders:
   a. Make for each 50 cubic yards, or fraction thereof, or each class of concrete placed.
   b. Cure test specimens: ASTM C31/C31M.
4. For first 24 hours after molding cylinders:
   a. Keep moist in storage box.
   b. Construct and locate so interior air temperature will be between 60- and 80-degrees F.
5. At end of 24 hours: Transport cylinders to laboratory.

G. Compressive Strength Tests:
   a. Specimens:
      1) ASTM C39/C39M.
      2) Make at 7 and 28 days from time of molding:
         a) One test at 7 days.
         b) Two tests at 28 days.
      3) Results:
         a) Average of strength of two test specimen at 28 days.
         b) Exception: If one specimen instead of three shows evidence of improper sampling, molding, handling, or curing, use remaining specimen(s) for test results.
   b. Test Results:
      1) Evaluate at 28-day test results: ACI 214R.
      2) Equal to or exceed specified strengths:
         a) Average of two consecutive strength test results (four test cylinders).
      3) Individual strength test results:
         a) Less than specified strength by more than 500 psi is not acceptable.
      4) Tabulate and submit to District Construction Manager.
   c. Retesting:
      1) Perform on areas where Test Results from Specimens do not meet compressive strength requirements.
      2) Take and test core samples.
      3) Repair core holes with nonshrink grout.
         a) Match color and finish of adjacent concrete.
      4) Where retest results do not meet concrete compressive strength requirements:
         a) Submit a mitigation or remediation plan for review and approval by District Construction Manager, Architect, and Landscape Architect.

3.12 Cleaning and Waste Management

A. Concrete Surfaces:
   1. Sweep with ordinary broom to remove loose dirt.

2. Scrub using a neutral cleaner (2 ounces per gallon of water), and a stiff broom.
3. Flush surface with clean water.

B. Mixing Equipment:
1. Minimize water used to wash equipment.
2. Clean using preapproved wash area.

C. Collect and dispose of waste.

D. Comply with Section 01 74 00.

END OF SECTION

SECTION 32 14 13 PRECAST CONCRETE UNIT PAVING

PART 1 GENERAL

1.01 Summary

A. Section includes:
   1. Precast Concrete Unit Paving
   2. Paving Sealer
   3. Aggregate Base Layer
   4. Bedding Course
   5. Polymeric Jointing Sand

B. Related Requirements
   1. Section 01 25 00 – Substitutions Procedures
   2. Section 01 33 00 – Submittal Procedures
   3. Section 01 70 00 – Execution and Closeout Requirements
   4. Section 01 74 00 – Cleaning and Waste Management

1.02 References

A. Abbreviations and Acronyms

F	Fahrenheit
mm	Millimeters

B. Reference Standards
   1. ASTM International (ASTM) Publications:
      a. C33/C33M-18 — Standard Specification for Concrete Aggregates
      b. C144 – 18 — Standard Specification for Aggregate for Masonry Mortar
   2. California Department of Transportation (Caltrans) Publications:
      a. 26-1.02B — Standard Specification, 2018
         http://caltrans-opac.ca.gov/publicat.htm

1.03 Administrative Requirements

A. Preinstallation Meetings
   1. Attendees: District Construction Manager, Architect, Landscape Architect, Contractor, and Installer Field Supervisor.
   2. Agenda:
      a. Determine delivery and storage locations for aggregates and concrete paving unit bundles.
      b. Anticipated start date.
      c. Starting point(s) and direction(s) of paving.
      d. Methods for checking slopes and surface tolerances for smoothness and elevations.

1.04 Submittals

A. Section 01 33 00.

1.05 Action Submittals

A. Samples:
   1. Precast Concrete Paving Unit:
      a. 2 each color.
   2. Polymeric Jointing Sand: 2 each 3-gallon bucket, minimum

1.06 Informational Submittals

A. Product data:
   1. Cut sheet and product literature.
   2. Manufacturer's Installation Instructions.
B. Qualification Statements

1.07 Closeout Submittals

A. Record Documentation: Section 01 70 00.

1.08 Maintenance Material

A. Extra Stock Materials:
   1. Provide 10 percent of full-sized paving units. Deliver on pallet to location designated by District Construction Manager.
   2. Section 01 70 00.

1.09 Quality Assurance

A. Certifications:
   1. Minimum documented experience installing precast concrete unity paving and metal edging:
      a. Supervisor: 5 years
      b. Skilled workers: 3 years

1.10 Delivery, Storage and Handling

A. Delivery and Acceptance Requirements:
   1. Deliver materials in manufacturer's original, unopened, undamaged container packaging with identification tags on each bundle.
      a. Deliver bundles banded in steel or plastic, or wrapped in plastic capable of transfer by forklift or clamp lift. Unload to prevent damage to product and existing facilities.
B. Storage and Handling Requirements:
   1. Packaged material: Store on raised surface and protect from rain.
   2. Stockpile aggregates to prevent contamination and mixing with other materials.
      a. On exposed soil or grassed areas: Lay down geotextile prior to storing aggregates.

1.11 Site Conditions

A. Ambient Conditions:
   1. Base or subbase aggregates:

a. Do not place on frozen or water saturated soil subgrades.
2. Paving:
a. Do not install during rain events, or when jointing sand, bedding sand, base or subbase aggregates are frozen.
3. Jointing Sand:
a. Temperature: Above 32 degrees F for 48 hours following installation.

PART 2 PRODUCTS

2.01 Precast Concrete Unit Paving

A. Manufacturers
1. Acceptable Manufacturer:
a. Belgard Commercial
Tel: 877-235-4273
B. Performance/Design Criteria
1. Basis of Design: Belgard Concrete Products Pavers.
C. Model: Cambridge Cobble

2.02 Paving Sealer

A. Manufacturers
1. Acceptable Manufacturer:
a. Techniseal®
Phone: 800-465-7325
Website: www.Techniseal.com/Pavercare
2. No known equals.
3. Substitutions: Section 01 25 00.
B. Performance/Design Criteria:
1. Basis of Design:
a. Techniseal® iN Paver Sealer-Natural Look used for establishing quality, performance, appearance, including ease of installment, color, and texture.
C. Material:
1. Model: Techniseal® iN Paver Sealer-Natural Look
a. Penetrating – non-film forming
b. Finish: Matt
c. Look: Natural Look
d. Base Product: Water-based

2.03 Aggregate Base Layer

A. Class 2
1. Standard: Caltrans 26-1.02B

2.04 Bedding Course

A. Fine aggregate (washed concrete sand)
   1. Composed of natural sand, manufactured sand produced from larger aggregate, or a combination.
   2. Comply with ASTM C33 with less than 1 percent passing 0.080 mm.

2.05 Polymeric Jointing Sand

A. Manufacturer:
   1. Techniseal®
      Phone: 800-465-7325
      Website: www.Techniseal.com/Pavercare
   2. No known equals.
   3. Substitutions: Section 01 25 00.
B. Performance/Design Criteria:
   1. Basis of Design:
      a. Techniseal HP NextGel™ Jointing Sand used for establishing quality, performance, appearance, including layout, material, ease of installment, color, and texture. Product matches existing.
C. Material:
   1. Model: Techniseal HP NextGel™ Jointing Sand
      a. ASTM C144
      b. Color: Tan
      c. Warranty: 20 years

PART 3 EXECUTION

3.01 Examination

A. Verification of Conditions
   1. Verify that pavement area is graded, compacted, and ready to receive work.

3.02 Installation

A. Aggregate Base Layer:
   1. Place, level and compact aggregate base material.
B. Bedding Sand Layer:
   1. Place, spread and screed bedding sand to thickness.
   2. Water-settle and correct thickness.
   3. Tolerance for grade and surface smoothness: ¼ inch, maximum.
C. Paving Unit Placement:
   1. Remove foreign material from paving units and clean prior to installation.
   2. Install units by hand in pattern indicated.
   3. Start placement of units over undisturbed bedding layer. Install true to line and grade, and aligned with adjacent work.
      a. Joint Width: 1/8-inch.
         1) Tolerances: 1/16-inch, minimum; 3/16-inch, maximum.
      b. Unit Height: Flush with adjacent work.

1) Tolerances: ¼-inch, maximum above edge restraint.

4. Unfilled Gaps:
   a. Fill gaps between units, edges, and other items with a cut paving unit.
   b. Cut paving unit using a double-bladed stonecutter or diamond blade masonry saw.
   c. Cut units to maintain pattern.
   d. Tolerances: 2-inch, minimum size cut unit.
5. Seating Paving Units:
   a. Seat units in bedding sand by compacting with 3 passes, minimum, using a vibratory plate compactor.
6. Jointing Sand:
   a. Follow Manufacturer's Installation Instructions.
   b. Sweep sand into joints and vibrate using a vibratory plate or vibratory roller compactor. Continue process until joints are filled with sand and further sweeping and vibration cannot force additional sand into joints.
   c. Sweep excess sand off pavement.
7. Final Rolling:
   a. Roll finished paving unit surface with four passes of a vibratory or pneumatic roller.
8. Clean Surfaces:
   a. Sweep and wash down.
9. Apply Paving Sealer:
   a. Follow manufacturer's written instructions.

3.03 Field Quality Control

A. Site Inspections
   1. Smoothness and Grade Tolerances
      a. Smoothness: 3/8-inch from a 10-foot-long metal straightedge placed on surface; and high and low areas 5 feet, minimum apart.
      b. Unit Height: Flush or ¼-inch, maximum, higher than edges or other items.
      c. Grade: Within ½-inch of planned grade.
   2. Sand Level
      a. 1/8-inch below top of pavers, or to bottom of chamfer.

B. Non-Conforming Work
   1. In areas not meeting tolerances, remove paving units and sand, adjust aggregate base grade, and re-install units and sand.

3.04 Cleanup

A. Clean Surfaces
   1. Sweep paving surfaces.

B. Waste Management
   1. Remove excess sand, units and debris.
   2. Dispose of debris per Section 01 74 00.

END OF SECTION

SECTION 32 31 18 SECURITY LOUVERED FENCE AND GATES

PART 1 GENERAL

1.01 Summary

A. Section Includes:
   1. Fixed Louvered Fencing Panels, Posts, Gates and Hardware
B. Related Requirements:
   1. Section 01 25 00 – Substitution Procedures
   2. Section 01 33 00 – Submittal Procedures
   3. Section 01 74 00 – Cleaning and Waste Management
   4. Section 08 71 00 – Door Hardware

1.02 References

A. Reference Standards
   1. American Society for Testing Materials (ASTM) Publications:
      a. B117 - 19 — Standard Practice for Operating Salt Spray (Fog) Apparatus
      b. B211/B211M - 23 — Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire
      c. B221 - 21 — Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
      d. D822 - 23 — Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
      e. D2794 – 93 (2024) — Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
      f. D3363 - 22 — Standard Test Method for Film Hardness by Pencil Test
   1. American Welding Society (AWS) Publications:
      a. D1.2/D1.2M - 14 — Structural Welding Code - Aluminum

1.02 Submittals

A. Section 01 33 00.
B. Gate Hardware: Comply with Section 08 71 00.

1.03 Action Submittals

A. Shop Drawings and Manufacturer's Literature:
   1. Include layout, elevations and sections of panels, posts and gates.

2. Installation Instructions.
3. Certificates.

B. Sample: Color Finish

1.04 Closeout Submittals

A. Warranty Documentation
B. Record Documentation

1.05 Delivery, Storage and Handling

A. Deliver materials to site in undamaged condition.
B. Store materials off ground and covered.

1.06 Warranty

A. Hardware: Comply with Section 08 71 00, paragraph 1.8.

1.07 Commissioning

A. Hardware: Comply with Section 08 71 00, paragraph 1.9.

PART 2 PRODUCTS

2.01 Manufacturer

A. Manufacturers
   1. American Fence Company
      Website: https://palmshieldlouvers.com/products/louvers/
   2. Ametco Manufacturing;
      a. Website: www.ametcolcom
   3. Other Manufacturers:
      a. Submit substitution request in accordance with Section 01 25 00.
B. Performance/Design Criteria
   1. Basis of Design: American Fence Company products have been used for establishing quality, performance, appearance, including size, layout, color and finish.
   2. Model: American Fence Company – PalmSHIELD®
C. System Description
   1. Fixed Security Fence:
      a. Aluminum louver modular fencing panels and posts.
   2. Security Gates, Posts and Hardware:
      a. Aluminum louver modular gate panels.
      b. Steel posts.
      c. Hardware.

2.02 Fencing

A. Material Description:
   1. Sheet Aluminum: ASTM B211, Alloy 6063 – Temper T-6.
   2. Extruded Aluminum: ASTM B221, Alloy 6063 – Temper T-6.
B. Posts:
   1. Extruded tubular sections.
   2. Predrill holes for panel installation.

C. Post Caps:
   1. Solid aluminum.
D. Post Plates:
   1. Solid aluminum.
   2. Predrill holes for anchor bolts.
E. Panels:
   1. Louvers:
      a. Extended Flange; ½ inch overlap; 100 percent direct visual screening.
      b. Fixed Bars:
         1) Thickness: 0.1250 inch.
         2) Profile: 2 inches by 2.873 inches.
   2. Frame:
      a. Vertical: Angles mitered and welded solid; AWS D1.2.
      b. Horizontal Top and Bottom Cap: Angles.
      c. Predrill holes for fastening to posts.
   3. Ribs:
      a. Flat Bars.
   4. Material:
      a. Aluminum.
F. Screws:
   1. Stainless Steel
G. Post Anchor Bolts:
   1. Stainless Steel

2.03 Gates

A. Posts:
   1. Steel.
   2. Predrill holes for panel installation.
B. Post Caps:
   1. Steel.
C. Post Plates:
   1. Steel
   2. Predrill holes for anchor bolts.
D. Panels, Fittings and Accessories:
   1. As specified under Paragraph 2.02 Fencing.
E. Hardware:
   1. Latchset and Grab Handles: Stainless Steel
   2. Lockset: Mortice
   3. Stop Plate and Adjustable Keep: Aluminum
   4. Drop Rod: Schedule 40 Steel pipe.
   5. Slide Bolt Assembly and Strike.
   6. Hinges: Steel.
   7. Keying: Comply with Section 08 71 00, paragraph 2.8.
F. Screws:

1. Stainless Steel

G. Post Anchor Bolts:
   1. Galvanized Steel

2.04 Finish

A. Powder Coating: Polyester; electrostatically applied and heat cured
   1. Hardness: ASTM D3363 2H.
   2. Impact Resistance: ASTM D2794; 160 inch-pounds.
   3. Salt Spray Resistance: ASTM B117.
   4. Weatherability: ASTM D822.
   5. Color: Pantone 7600 C

PART 3 EXECUTION

3.01 Examination

A. Verification of Conditions
   1. Verify area is cleared, final graded, and ready to receive Work.
   2. Verify surface is level.
   3. Verify field fence dimensions and layout.
   4. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Protection of In-Place Conditions
   1. Protect existing construction.
B. Post Locations
   1. Mark location for each post.
   2. Determine highest elevation on site where system is to be installed to establish benchmark elevation for setting posts.
   3. Obtain review and approval from District Construction Manager and Architect.

3.03 Installation

A. General:
   1. Install fence and gates in accordance with manufacturer's installation instructions.
   2. Install fencing and gates plumb and level.
   3. Do not bend, bow or damage panels and finishes.
B. Posts:
   1. Set posts plumb and level bolting post plates to mounting surface.
C. Panels:
   1. Secure panels to posts using stainless steel screws.
      a. Ensure posts and panels are plum, level, and in-line.
      b. Ensure louvers are facing correct direct and panel is not upside down.
D. Gates and Hardware:
   1. Install gates and hardware.

2. Adjust hardware for smooth operation.
3. Comply with Section 08 71 00, Paragraphs 3.3, 3.4, and 3.5 for installing, adjusting and demonstrating.

3.04 Field Quality Control

A. Inspections:
   1. Post layout.
   2. Post and Panel Installation:
      a. Check that panels are oriented correctly.
      b. Check that posts and panels are plumb and securely fastened.

B. Non-Conforming Work
   1. Remove and replace.

C. Touch-up: Apply manufacturer's paint to chips and scratches to restore surfaces to original condition.

3.05 Cleaning

A. Dispose of waste.
   1. Comply with Section 01 74 00.

END OF SECTION

SECTION 32 31 19 METAL PICKET FENCE AND GATES

PART 1 GENERAL

1.01 Summary

A. Section Includes:
   1. Metal Picket Fencing Panels, Posts, Gates and Hardware
B. Related Requirements:
   1. Section 01 25 00 – Substitution Procedures
   2. Section 01 33 00 – Submittal Procedures
   3. Section 01 74 00 – Cleaning and Waste Management
   4. Section 08 71 00 – Door Hardware

1.02 References

A. Reference Standards
   1. American Society for Testing Materials (ASTM) Publications:
      a. B117 - 19 — Standard Practice for Operating Salt Spray (Fog) Apparatus
      b. D822 - 23 — Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
      c. D2794 – 93 (2024) — Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
      d. D3363 - 22 — Standard Test Method for Film Hardness by Pencil Test
   1. American Welding Society (AWS) Publications:
      a. D1.1/D1.1M - 20 — Structural Welding Code - Steel

1.02 Submittals

A. Section 01 33 00.
B. Gate Hardware: Comply with Section 08 71 00.

1.03 Action Submittals

A. Shop Drawings and Manufacturer's Literature:
   1. Include layout, elevations and sections of panels, posts and gates.
   2. Installation Instructions.
   3. Certificates.
B. Sample: Color Finish

1.04 Closeout Submittals

A. Warranty Documentation
B. Record Documentation

1.05 Delivery, Storage and Handling

A. Deliver materials to site in undamaged condition.
B. Store materials off ground and covered.

1.06 Warranty

A. Hardware: Comply with Section 08 71 00, paragraph 1.8.

1.07 Commissioning

A. Hardware: Comply with Section 08 71 00, paragraph 1.9.

PART 2 PRODUCTS

2.01 Material

A. Hot Dip Galvanized Steel

2.02 Fencing

A. Posts:
    1. Square tube.
B. Post Caps.
C. Post Anchor.
D. Panels:
    1. Top, Intermediate and Bottom Rails:
        a. Channel.
    2. Pickets:
        a. Square tube.
    3. Fasteners:
        a. Bracket and Screws.

2.03 Gates

A. Posts:
    1. Square Tube.
    2. Welded solid to Styles; AWS D1.1.
B. Post Caps:
C. Styles:
    1. Square Tube.
D. Panels:
    1. Top and Intermediate Rails:
        a. Channel.
    2. Pickets:
        a. Square tube.
E. Rails:
    1. Plate: Welded solid to Styles; AWS D1.1.
F. Hardware:
    1. Push Bar and Accessories.
    2. Latchset and Lever Handle.
    3. Lockset and Lever Handle.

4. Gate Cane Drop-Bolt:
   a. Size: ½ inch by 18 inches
   b. Non-removable.
   c. Receiver: Closed end galvanized steel pipe sleeve set in concrete.
   d. Mounting Hardware and Screws.
   e. Finish: Zinc-plating, Black finish chromate dip, and Black baked on enamel; or as selected by Architect.
5. Hinges: Heavy Duty.
6. Keying: Comply with Section 08 71 00, paragraph 2.8.

2.04 Finish

A. Powder Coating: Polyester; electrostatically applied and heat cured
   1. Hardness: ASTM D3363 2H.
   2. Impact Resistance: ASTM D2794; 160 inch-pounds.
   3. Salt Spray Resistance: ASTM B117.
   4. Weatherability: ASTM D822.
   5. Color: Pantone 7600 C

PART 3 EXECUTION

3.01 Examination

A. Verification of Conditions
   1. Verify area is cleared, final graded, and ready to receive Work.
   2. Verify surface is level.
   3. Verify field fence dimensions and layout.
   4. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Protection of In-Place Conditions
   1. Protect existing construction.
B. Post Locations
   1. Mark location for each post.
   2. Determine highest elevation on site where system is to be installed to establish benchmark elevation for setting posts.
   3. Obtain review and approval from District Construction Manager and Architect.

3.03 Installation

A. General:
   1. Install fencing and gates plumb and level.
   2. Do not damage finishes.
B. Posts:
   1. Set posts plumb and level.
C. Panels:
   1. Secure panels to posts using stainless steel screws.

a. Ensure posts and panels are plum, level, and in-line.

D. Gates and Hardware:
1. Install gates and hardware.
2. Adjust hardware for smooth operation.
3. Comply with Section 08 71 00, Paragraphs 3.3, 3.4, and 3.5 for installation, adjusting and demonstrating.

3.04 Field Quality Control

A. Inspections:
1. Post layout.
2. Post and Panel Installation:
a. Check that posts and panels are plumb and securely fastened.

B. Non-Conforming Work
1. Remove and replace.

C. Touch-up: Apply manufacturer's paint to chips and scratches to restore surfaces to original condition.

3.05 Cleaning

A. Dispose of waste.
1. Comply with Section 01 74 00.

END OF SECTION

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PRE-BID REQUEST FOR INFORMATION LOG

ARCHITECT'S PROJECT NO: **S2103400AR**
PROJECT NAME: **KCCD New Residence Hall**
DSA File No: **15-C1**
DSA App No: **03-122124**
Date: **April 11, 2024**

RFI #	Contr. #	DATE RECEIVED		CONTRACTOR / SUBCONTRACTOR TRADE	RESPONSE	TO	FROM	DATE RETURNED
1	1.01	03/07/24	Please provide Soils Report.	**S.C. Anderson Inc.**	Refer to Addednum No. 4	PBK		4/3/24
2	2.00	03/11/24	Provide all specifications for Division 33 Utilities as shown in the Table of Contents.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	
	2.01	03/11/24	Where are doors 211A, 211B, 211C, 211D, 211E, 211F, 211G, 211H, 211J, 250A 250B, 250C, 250D, 315A	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	
	2.02	03/11/24	Detail 1/AX3.1 shows a wood head and casing while door schedule calls out for hollow metal. Is there an alternate detail?	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	
	2.03	03/11/24	Detail 6/AX3.1 shows a wood head and casing while door schedule calls out for hollow metal. Is there an alternate detail?	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	
	2.04	03/11/24	Door 239B detail 7/AX3.1 shows a storefront head while door schedule calls out for hollow metal. Is there an alternate detail?	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	
	2.05	03/11/24	On Sheet A2.1 "Door Schedule_Units" columns/rows are not lining up.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK		
	2.06	03/11/24	On hollow metal frames will we need to figure welded corners only or a completely welded profile?	**S.C. Anderson Inc.**	Frames shall be welded at corners	PBK		4/3/24
	2.07	03/11/24	Per G0.02A, the plan sheet is missing Level 04 Overall Floor Plan.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	
	2.08	03/11/24	Per AS1.01 & C1: what paving material is scheduled for the parking spots at the building paving as there is no symbol hatching?	**S.C. Anderson Inc.**	Will be included in addendum sheets	SWANSON 4/3	SWANSON 4/8	
	2.10	03/11/24	Per C1: there are two legend symbol hatching calling for asphalt .2' o/ .55' o/ 12" native at 90%. Please clarify the difference between the two symbol hatching.	**S.C. Anderson Inc.**	Will be revised in addendum sheets	SWANSON 4/3	SWANSON 4/8	
	2.11	03/11/24	Per C1: the 'Pavers' hatch symbol references L1.0 how ever there is no L1.0 provided. Please clarify.	**S.C. Anderson Inc.**	Cleared up with Sierra, updated plans should address this	SWANSON 4/3	SWANSON 4/8	
	2.12	03/11/24	Provide site concrete paving / walks clarification. Which discipline is responsible for the concrete paving / walks design? Is agg base underneath concrete required? Please provide clarification.	**S.C. Anderson Inc.**	Cleared up with Sierra. Modified Civil note to say to see landscape architect plans	SWANSON 4/3	SWANSON 4/8	
	2.13	03/11/24	Per A1.12A: ADD ALT 01 Floor Plan shows walls and improvements in grey scale at multiple room locations (Rooms 101, 102, 105, etc.).	**S.C. Anderson Inc.**	Correct. Interior wall layouts shall be per sheets AU.1 trhough AU.7	PBK		4/3/24
	2.14	03/11/24	Per Sheets S251, S252, S261, and others: shear wall callouts missing from shear wall symbol on plans.	**S.C. Anderson Inc.**	The symbols in question indicate shear walls below per symbol legend on S101.	HOHBACH 3/25	HOHBACH 3/25	4/3/24
	2.15	03/11/24	Per C5: plans shows tying in the new 4" water line to an existing water line and to verify size. The as-built for the modular swing space indicate the water line to be tied into an existing 3" line. The new gym currently has a 3" line. Confirm the smaller 3" line will provide adequate flow and pressure for this project.	**S.C. Anderson Inc.**	Will clarify the required flow for the building, and modify if able to	SWANSON 4/3	SWANSON 4/8	
	3.01	03/11/24	SPEC SECTION013100.1.5.C.1.c.1 STATES" DEVELOP AND INCORPORATE COORDINATION DRAWING FILES INTO BUILDING INFORMATION MODEL ESTABLISHED FOR THE PROJECT." WILL THE ARCHITECT BE PROVIDING THE BIM MODEL FOR CLASH DETECTION / CONFLICT ANALYSIS?	**S.C. Anderson Inc.**	Yes. Contractors must submit the CAD/REVIT realese form prior to have access to the eletronic files. Form will be provided to awarded contractor	PBK		4/3/24
	3.02	03/11/24	SPEC SECTION013100.1.6.A STATES" SCHEDULE AND CONDUCT MEETINGS AND CONFERENCES AT THE PROJECT SITE UNLESS OTHERWISE INDICATED." ARE THESE PROJECT MEETINGS INTENDED TO BE BIM CLASH DETECTION MEETINGS?	**S.C. Anderson Inc.**	The standard OAC meetings will be the oprotunity to discuss any items related to the project construction. Reviit and Cad files will be furnished to the contractor as soon as they agree to the terms indicated in the CAD/REVIT Release form. Clash Detectioncan be part of the OAC Discussion.	PBK		4/3/24

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3	3.03	03/11/24	SPEC SECTION013100.1.6.A.2 STATES" ARCHITECT TO PREPARE MEETING AGENDA AND DISTRIBUTE TO ALL INVITED ATTENDEES." SPEC SECTION013100.1.6.A.3 STATES" ENTITY RESPONSIBLE FOR CONDUCTING MEETING WILL RECORD SIGNIFICANT DISCUSSIONS AND AGREEMENTS ACHIEVED. DISTRIBUTE THE MEETING MINUTES TO EVERYONE CONCERENED, INCLUDING OWNER AND THE ARCHITECT, WITHIN THREE DAYS OF THE MEETING." SINCE THE ARCHITECT IS PREPARING THE AGENDA, IS THE ARCHITECT THE ENTITY RESPONSIBLE FOR CONDUCTING THE MEETING AND RECORDING AND DITRIBUTING THE MINUTES? IF NOT, PLEASE PROVIDE THE SPECIFIC PURPOSE OF THE MEETINGS DESCIBED IN SPEC SECTION013100.1.6.A AND WHO SHOULD BE THE ENTITY RESPONSIBLE FOR CONDUCTING THE MEETINGS.	**S.C. Anderson Inc.**	Per KCCD's direction, the architect will generate and distribute the Agenda and Meeting Minutes. Contractors are respoonsible for keeping RFI, Submittal and COR logs.	PBK KCCD		3/20/24
4	4.01	03/11/24	Per A2.2: The first three windows shown are not identified with a window label. Please clarify.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	4.02	03/11/24	Per AX4.2: Plans call for 2-ply Modified Bitumen Membrane Roofing system which matches spec section 075200. Where does roofing spec section 075100 Built-up Bituminous Roofing system (4-ply) apply?	**S.C. Anderson Inc.**		PBK		
	4.03	03/11/24	Per A1.61: the plan shows a roof access hatch shown between gridlines 11 & 12 but there is no roof access ladder shown on the 4th Floor in the same area. Please clarify.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	4.04	03/11/24	Per A1.61/A1.62: the Legend shows 'Roof Trellis Alt. 1'. Please clarify what this alternate is.	**S.C. Anderson Inc.**	Roof trellis was deleted during the Value Engineering period. Roof trellis is no longer part of the project	PBK		4/3/24
	4.05	03/11/24	Per A2.1: no wood doors are shown on either of the Door Schedules but there is a spec provided for wood doors. Please revise schedule to show coorect door types.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	4.06	03/11/24	Per A2.32 thru A2.34: the Finish Schedule and Finish Plan do not match. For example, Room 226 calls for PC' but the the plan shows 'LVT'. Please correct finish plans and schedules to match.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	4.07	03/11/24	Per A2.3: General Notes 5, 6, and 7 mention Buildings 1000 and 2000. Where does this apply?	**S.C. Anderson Inc.**	Notes 5 and 6 shall apply to the Residence Hall project. Delete Note No. 7	PBK		4/3//24
	4.08	03/11/24	Per A3.10A: Alternate 1 reflected ceiling plan shows exposed ceilings in the Corridor. Is this correct?	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	4.12	03/11/24	Spec 23 00 01 Part 2.1.D states that "Kitchen Hood Exhaust Duct: Ductwork shall be galvanized steel all welded construction, ASTM A240." Would welded duct be required for these residential style range hoods?	**S.C. Anderson Inc.**	Yes.	PBK		4/3/24
6	5.01	03/14/24	Spec section 015000.1.2.B.1&2 indicates that temporary water, sewer and electric bills are to be paid by the contractors. In past and present projects at the BC campus, contractors have been able to tie into existing water, sewer, electric and telecom facilities for temporary use by the Project. The contractors paid the cost of connection and diconnections but did not have to pay monthly bills for the services. Please confirm if contractors will be responsible for paying monthly bills for warer, sewer, electric, and te telecom if tied into existing services on campus. If contractors will be responsible for paying monthly bills for temporary services, please confirm how the costs will be established.	**S.C. Anderson Inc.**	Contractor will be allowed to tap onto existing utility services on campus. Cost for connection shall by the contractor	PBK		4/3/24
	5.02	03/14/24	Typical unit finish plans show the bathrooms to have 12x24 porcelain tile floors however interior elevations show rubber topset base to be installed in the bathrooms. Please confirm rubber base is to be installed in the bathrooms.	**S.C. Anderson Inc.**	No. Contractor must provide tile baseat restrooms	PBK		4/3/24
	5.04	03/14/24	Per AU.1: Unit Plan General Note 42 references wall tile. Plans and finish schedule do not call for wall tile. Please confirm no wall tile in units.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	5.05	03/14/24	Per M4.01 & M4.02: Keynote 01 calls for EMS Temp Sensors. There is no mention of EMS in the specs nor controls sequences on the drawings. Is the Johnsons Controls Faculty Explorer system, which is currently being used by KCCD, the system that will be required for this project as well?	**S.C. Anderson Inc.**	Refer to addendum No 6	LEAF	11-Apr	11-Apr

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	5.06	03/14/24	The following spec sections are listed in the Project Manual's Table of Contents but are missing from the body of the manual: 1) 03 54 13 Gypsum Cement Underlayment 2) 07 42 16 Metal Soffit Panels 3) 07 97 23 Concrete and Masonry Coatings 4) 31 10 00 Site Clearing	**S.C. Anderson Inc.**	Refer to Addendum No. 3	PBK		4/3/24
	5.07	03/14/24	Provide Interior Elevations for the following rooms: 221, 239, 329-332, and 429-432.	**S.C. Anderson Inc.**	Painted Gyp walls with Rubber base	PBK	11-Apr	11-Apr
	5.09	03/14/24	Per Addendum No. 01, Item AD1-04: with the pre-qualification questionnaire deadline being March 25, 2024, when will the list of pre-qualified bidders be released? How does this pre-qualification affect the subcontractor listing? Does this apply to every subcontractor required to be listed per the Public Works Contract Code?	**S.C. Anderson Inc.**	Refer to addendum No. 2 for clarification on Pre-Qualification requirements	PBK		4/3/24
7		03/18/24	In the specification section 281300-3 Access Control System Part 2-Products calls out for the access control system as Open Options. Is the intent to move away from the existing campus AMAG access control system that is currently being used for the Bakersfield College campus?	**Johnson Controls Fire Protection LP**	Refer to addendum No 6	LEAF	11-Apr	11-Apr
8	1	03/18/24	Section 19 of the "Notice to Contractors Calling for Bids" indicates the project requires prequalification for the general contractor and mechanical, electrical, and plumbing subcontractors. Section 15 of the "Instructions to Bidders" indicates mandatory prequalification of general contractors and mechanical, electrical, and plumbing subcontractors is not required. Please clarify the prequalification requirements.	**Bernards**	NOT REQUIRED. REFER TO ADDENDUM No. 2	PBK		
	2	03/18/24	If prequalification is required, please advise on each of the following questions: - Please clarify when the "23-BACSH – Contractor Qualifications Questionnaire 1214" for the General Contractor is due. - Please confirm the MEP sub-contractors are the only sub-contractors required to complete the "23-BACSH – Contractor Qualifications Questionnaire 1214" and clarify the deadline for submission. - Please confirm a General Contractors bid will be deemed non-responsive if the bidding contractor and / or any of the listed Mechanical, Electrical, or Plumbing subcontractors are not on the District's Qualified Bidders List (QBL) AND have completed the project specific prequalification questionnaire. - Please confirm Sheet Metal contractors are not considered part of the Mechanical subcontractor prequalification requirement. - Please advise if Site Utility subcontractors are required to be prequalified. - Please advise if Fire Sprinkler subcontractors are required to be prequalified. - Please provide a final list of prequalified contractors (GC's & MEP Subs) once the project specific prequalification process is complete.	**Bernards**	Refer to addendum No. 2 for clarification on Pre-Qualification requirements	PBK		4/3/24
	3	03/18/24	Please consider a 1-2 week bid date extension due to the limited amount of time for the subcontractor community to bid this exciting project. This is in the Owners best interest to generate a competitive bidding environment.	**Bernards**	Bid Opening is schedule for April 4, 2024 at 2:00PM. No Extensions at this time	PBK/KCCD		3/20/24
	4	03/18/24	Reference Exterior Elevations A5.1 and A5.2. The Exterior Elevation Legend indicates that exterior cement plaster is to be painted (P1 thru P5). The specs call for EIFS. Please clarify and advise if the plaster color is going to be an integral factory mix or if it is to receive paint.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	5	03/18/24	There is no plan sheet available that designates where accent paint colors are going to be located at common areas. The finish schedules at common areas (A2.31, A2.32, A2.33 & A2.34) only call out ESP (Eggshell Paint). Please provide plan with accent color locations if applicable.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	6	03/18/24	The unit finish schedules do not provide paint colors for different rooms within a unit. They only call out ESP (Eggshell Paint) for the unit. Please provide paint colors at units and different rooms within the unit (living room, bedroom, kitchen, bath etc).	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	7	03/18/24	Reference Exterior Elevations A5.1 and A5.2. The Exterior Elevation Legend indicates Modular size 2-1/4" x 7-5/8", 1-2" Thick for the thin brick system. The Thin Brick Specs 042113.13-2.1.2 calls for a very wide range of sizes. There is great range in pricing with all the different sizes provided. The size of the job as well as brick area would dictate a utility size. Please clarify size(s) for accurate bidding purposes.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr

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	8	03/18/24	Please refer to specification 051213-1.5 for AISC Requirements. Please advise if the AISC Requirement for the Steel Fabricator can be waived.	**Bernards**	Not required.	HOHBACH 3/25	HOHBACH 3/25	
	9	03/18/24	Please provide specifications for all exterior improvements including, but not limited, to the following a.AC Pavement b.Pavement Markings c.Unit Pavers d.Steel Fences and Gates e.Chain Link Fences & Gates f.Site Concrete	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
9	.01	03/19/24	Please clarify the DVBE requirements.	**Bernards**	DVBE is **NOT** requird for this project	PBK KCCD		3/20/24
	.02	03/19/24	Please confirm the Builder's Risk Policy is By Owner. If required to be carried by the contractor, please confirm Earthquake, Flood, & Terrorism coverage is not required.	**Bernards**	Contractor must provide the Builder's Risk Policy as indicated in contract documents. Earthquake, Flood and Terrorism coverages are **NOT** required	PBK KCCD		3/20/24
	.03	03/19/24	Please confirm there are no allowances to be carried by the bidding contractors.	**Bernards**	Confirmed	PBK		
	.04	03/19/24	Please confirm City & State is sufficient for the location of each listed subcontractor on the "List of Subcontractors" form.	**Bernards**	Correct	PBK KCCD		4/3/24
	.05	03/19/24	Please confirm the list of documents noted below, referenced on the Pre-Bid Handout, are the only documents required to be submitted with the bid: Documents that are required to be submitted with the Bid: - Bid Form - Substitution Listing - Bid Bond - Non-Collusion Affidavit - Exclusion of Lead and Asbestos Products - Certificate of Attendance at Mandatory Job Walk - Contractor's Qualifications Questionnaire	**Bernards**	All documents listed are required with the exception of the Contractor's Qualification Questionnaire. Refer to addendum No. 2 for the Contractor's Qualification Requirements and deadline.	PBK KCCD		3/20/24
	.06	03/19/24	Please clarify what information the District is requesting for Question #8 on the Contractor's Qualifications Questionnaire.	**Bernards**	Bidder must provide the requested information for the staff member that attended the Pre-Bid Meeting that occurred on March 6, 2024 at 2:00PM	PBK KCCD		3/20/24
10	6.01	03/20/24	Per the 'Plant List' on L3.1: the following plant material is not grown in the spcified sizes: a) Hesperaloe p. Brakelights, 24" box b) Myoporum parvifolium, 15 gal. Please advise as to what would be desired plant material substitution for those plant sizes.	**S.C. Anderson Inc.**	a) Replace 24" box Hersperaloe p. Brakelights with 5 gallon b) Replace 15 gal Myoporum parvifolium with 5 gallon	SIERRA 4/3	SIERRA 4/5	
	6.02	03/20/24	Per notes #5 & #10 on L1.1: construction plans show sections of planting areas adjacent to retaining wall conditions. Per Structural setail 12/S506, it appears that these planters are to be received to finish grade. Please confirm this is the correct interpretation and no soil import is to be required for planting.	**S.C. Anderson Inc.**	Topsoil is required for all planters. Finished grade per civil. **See new detail 'M' attached (#2).**	SIERRA 4/3	SIERRA 4/5	
	6.03	03/20/24	AS1.00 from Addendum 1 indicates that the fire lane must remain accessible to first responders throughout the duration of the project. Sheet C43 has the storm drain and fire water installations directly under the fire lane. First responders vehicles will not be able to pass during utility installation and final grading and paving. Please confirm if it is acceptble to use an alternate construction entrance for first responders while construction activities take place in the designate fire lane. Also, are knox boxes required at all construction entrance gates?	**S.C. Anderson Inc.**	Contractor shall Contractor shall provide a Logistics plan indicating the alternative route while the scope of work along the fire access lane is under construction.	PBK KCCD		3/20/24
	6.06	03/20/24	Per 05 51 13 Metal Pan Stairs: This spec references cast-in-place concrete treads but details 6,8,10,20 on AX5.1 call for precast treads. Please clarify if stair treads are to be cast-in-place or precast.	**S.C. Anderson Inc.**	The structural design of the stairs was based on precast concrete treads.	HOHBACH 3/25	HOHBACH 3/25	4/3/24
	6.08	03/20/24	Per 05 12 00 Structural Steel: section 1.2, B calls for AISC certification. Is this certification a requirement for the contractors performing the structural steel scope or are there other certifications that will suffice in lieu of the AISC cert?	**S.C. Anderson Inc.**	Section 1.2.B is a reference to the specifications applicable to steel building, it is not a requirement for certification.	HOHBACH 3/25	HOHBACH 3/25	4/3/24
	6.09	03/20/24	Per Sheet E0.02: please confirm underground conduit is existing at Telecom pathway POC at Building 020 to MV Switch	**S.C. Anderson Inc.**	Refer to addendum No 6	LEAF	11-Apr	11-Apr

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11	6.10	03/20/24	Per Sheet E0.02: please confirm underground conduit is existing at Fire Alarm Pathway POC at Building 121 to existing pull boxes.	**S.C. Anderson Inc.**	Refer to addendum No 6	LEAF	11-Apr	11-Apr
	6.11	03/20/24	Per Sheet E0.02: please confirm electrical service will be stupped to existing pull boxes at new conduit tie-in.	**S.C. Anderson Inc.**	Refer to addendum No 6	LEAF	11-Apr	11-Apr
	.2	03/20/24	Reference Sheet A2.1. The Door Schedule is missing finish call outs at many of the HM Doors and Frames. Finish General Note 4 says that all HM Doors and Frames (Including Door Edging) on Exterior Side Shall be Painted per KCCD Standards and Per Finish Schedule. Please confirm all HM Doors and Frames listed on A2.1 are to be painted.	**Bernards**	Yes.	PBK		4/3/24
	.3	03/20/24	Reference Color Schedule on A2.3 The Schedule Lists Epoxy Terrazzo. Please provide specification and locations for Terrazzo if applicable to the project.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	.4	03/20/24	Reference Plan Sheet A2.3 General Note 13 which calls for Interior Solid Core Doors to be Plastic Laminate Veneer PL-1. Please clarify where Solid Core Doors Occur.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
12	.1	03/21/24	Please confirm if anti-graffiti coating will be applied at the site retaining wall and stepped site retaining wall.	**Bernards**	Correct.	PBK		4/3/24
	.2	03/21/24	Please confirm if anti-graffiti coating will be applied at exterior walls of the building. Location for anti-graffiti is not shown on drawings	**Bernards**	Correct. Anti Grafitti coating to be applied up to 12'-0" AFF	PBK		4/3/24
14	.02	03/22/24	On sheets A2.31 and A2.31A, Room 120 (Fire Riser) is called out as sealed concrete on the finish schedule, however it is marked as polished concrete on the floor plan. Please confirm the correct finish.	**Bernards**	Clean flooring from ay construction marks and provide a seal coat.	PBK		4/3/24
	.03	03/22/24	On sheet A2.33, Room 327 (Storage) is called out as sealed concrete on the finish schedule, however it is marked as luxury vinyl tile on the floor plan. Please confirm the correct finish.	**Bernards**	Clean flooring from ay construction marks and provide a seal coat.	PBK		4/3/24
	.04	03/22/24	Spec Section 033543 Polished Concrete Finish lists 4 different levels of sheen. Please confirm which sheen level is required for this project and specify locations if different levels of sheen are required.	**Bernards**	Level 2 finish is required.	PBK		4/3/24
	.05	03/22/24	On sheet A2.31 and A2.31A, Room 121 (Corridor) is called out as luxury vinyl tile on the finish schedule, however it is marked as polished concrete on the floor plan. Please confirm correct finish.	**Bernards**	Polished concrete	PBK		4/3/24
	.06	03/22/24	On sheet A2.32 and A2.33, Rooms 226, 227, 228, 233, 326, 334 and 335 are called out as polished concrete on the finish schedule, however they are marked as luxury vinyl tile on the floor plan. Please confirm correct finish.	**Bernards**	Luxury Vynil Tile	PBK		
	.07	03/22/24	On sheet A2.34, Rooms 426, 434 and 441 are called out as polished concrete on the finish schedule, however there is no call out on the floor plan. Please confirm correct finish.	**Bernards**	Luxury Vynil Tile	PBK		
	.08	03/22/24	Is sealed concrete and/or polished concrete required in the base bid (level 1 shell space) and add alt? Or is it only required in the add alt?	**Bernards**	1st floor add alternate flooring finish is not required. Concrete slab must be leveled per specification requirements and clean from any markings or debris.	PBK		4/3/24
	.09	03/22/24	Spec Section 102613 calls out corner guards as one piece, surface mounted with flat head screws. However, on detail 4/AX6.1, it shows corner guards with top trim caps and round head screws. Please confirm the correct specs for corner guards.	**Bernards**	Trim caps and round head screws are required.	PBK		4/3/24
	.10	03/22/24	Specification 062000-1.5.B calls out for Millwork Contractors to have Woodworking Institute Certification. Please advise if Millwork contractors need a WI Cert or if it is acceptable to simply meet Woodwork Institute standards.	**Bernards**	Meet the requirements set forth by the Woodworking Institute	PBK		4/3/24
	.15	03/22/24	Please provide Specification Division 33: Utilities per the table of contents	**Bernards**	Refer to addendum No. 6	SIERRA 4/3	SIERRA 4/5	4/11/24
	.20	03/22/24	There are (2) different Hand Dryers listed in spec 102813-2.1.I Model RA5-974 by World Dryer and another under the schedule is called out as TA-13(a) Model B-750. If Hand Dryers are applicable please clarify which model is to be used and provide locations.	**Bernards**	102813-2.1.I Model RA5-974 by World Dryer is the correct one.	PBK		4/3/24
	.37	03/22/24	Please provide detail for 5G vines per legend on sheet L3.1.	**Bernards**	**See attached, detail 'L' (#1).**	SIERRA 4/3	SIERRA 4/5	

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	.38	03/22/24	The legend rock mulch on sheet L3.1 shows 2"+ crushed rock, but section 2.04/329400 shows 3/4" crushed granite gravel. Please clarify.	**Bernards**	Use 2" + crushed rock on slopes exceeding 20%, use ¾" on all other areas.	SIERRA 4/3	SIERRA 4/5	
	.39	03/22/24	Reference to detail G on sheet L5.1, the linear root barrier shall be installed at all trees within 5' from trunk, to paving & DG walk. However, the plan view in this detail shows 8' distance. Please clarify.	**Bernards**	Install root barrier at all trees within 8' of trunk and all locations shown on plan. Disregard the reference to redbuds in the note.	SIERRA 4/3	SIERRA 4/5	
	.40	03/22/24	Reference to sheet L3.1, please clarify each size of boulder per symbol and provide material.	**Bernards**	Install (24) boulders: (8) 3/4 ton to 1 ton - (8) 1 ton to 1 1/2 ton - (8) 1 1/2 ton to 2 ton Total weight of 30 tons	SIERRA 4/3	SIERRA 4/5	
	.41	03/22/24	Reference to legend on sheet L2.1, remote control valve shows Rainbird manufacturer, model PESBIVM series. However, specs 328401/part 2/1.09C shows Hunter manufacturer, model ICV series. Please clarify.	**Bernards**	Use Rainbird PESBIVM series	SIERRA 4/3	SIERRA 4/5	
	.42	03/22/24	Reference to sheet L2.1, please provide the location of controller and quantity of controller station.	**Bernards**	Locate the controller in the maintenance yard in the corner next to the rain sensor. **See attachment (#3)**.	SIERRA 4/3	SIERRA 4/5	
	.43	03/22/24	Sheet A2.3 Color Schedule mentions different colors for Epoxy and Polished Concrete however neither are called out on the plans. Please clarify.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	.44	03/22/24	Level 2 and 3 Corridors call out for Polished Concrete on the Finish Schedule but the Finish Plans are showing LVT. Please advise which is correct.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	.45	03/22/24	It appears that many of the materials called out on Color Schedule A2.3 are not shown/called out in the drawings. Please reconcile all materials on A2.3 with the drawings. Please confirm which products apply to this project and provide all locations/callouts/quantities/specs etc.	**Bernards**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	.46	03/22/24	Please confirm temporary field offices for the Owner / IOR / Architect are not required to be provided by the Contractor. There is no mention of these requirements in Temporary Facilities & Controls spec 015000	**Bernards**	No. Contractor must provide a separate lockable office (within the job trailer or a separate one) for the DSA inspector and the District Staff	PBK		
	7.01	03/22/24	Provide the soils / geotechnical report.	**S.C. Anderson Inc.**	Refer to addendum No. 4.	PBK		
	7.06	03/22/24	Sheet C3 – Detail 22: There is no Concrete Channel referenced on the drawings. Please confirm this detail is applicable to this project.	**S.C. Anderson Inc.**	Detail 22 is on plan, and channel is called out. SW corner of site.	SWANSON 4/3	SWANSON 4/8	
	7.07	03/22/24	Sheet L1.2 – Detail A: Site layout differs from what is shown on civil drawing C1 and C6. Especially as it relates to the counters and benches. Please confirm which is correct?	**S.C. Anderson Inc.**	Refer to Landscape plans for counter, bench locations and pedestrian paving.	SIERRA 4/3	SIERRA 4/5	
15	7.09	03/22/24	The counters and benches shown on landscape drawing L6.5 are not "buildable". Please note the rebar passing through the 3/4" plate steel. Please confirm if precast countertops and bench seats are acceptable in lieu of poured in place.	**S.C. Anderson Inc.**	HOHBACH 4/4: These landscape feature are outside of structural scope. If it is decided to stay with the option presented on the drawings, we can make suggestions on how to pass reinforcing through the steel plate (thru drilled holes in the plate). Otherwise, we have no input to provide whether these are cast-in-place or precast. SIERRA 4/5: **See detail 'F', attached (#4).** A substitution request can be submitted for precast. Must include connections for countertop and calculations.	SIERRA HOHBACH 4/3	HOHBACH 4/4 SIERRA 4/5	
	8.03	03/25/24	Per L3.1: provide detail for the Evergreen Clematis vines.	**S.C. Anderson Inc.**	**See attached, detail 'L' (#1).**	SIERRA 4/3	SIERRA 4/5	
	8.04	03/25/24	Per L3.1: the rock mulch is called to be 2"+ crushed rock, but spec section 329400, 2.04 calls for 3/4" crushed granite gravel. Which do we use? Please clarify.	**S.C. Anderson Inc.**	Use 2" + crushed rock on slopes exceeding 20%, use ¾" on all other areas.	SIERRA 4/3	SIERRA 4/5	
	8.05	03/25/24	Reference to detail G on sheet L5.1, the linear root barrier shall be installed at all trees within 5' from trunk, to paving & DG walk. However, the plan view in this detail shows 8' distance. Please clarify.	**S.C. Anderson Inc.**	Install root barrier at all trees within 8' of trunk and all locations shown on plan. Disregard the reference to redbuds in the note.	SIERRA 4/3	SIERRA 4/5	
	8.06	03/25/24	Per L3.1: please clarify each size of boulder per symbol and provide material.	**S.C. Anderson Inc.**	Install (24) boulders: (8) 3/4 ton to 1 ton - (8) 1 ton to 1 1/2 ton - (8) 1 1/2 ton to 2 ton Total weight of 30 tons	SIERRA 4/3	SIERRA 4/5	
17	8.07	03/25/24	Per L2.1: remote control valve shows Rainbird manufacturer, model PESBIVM series. However, spec section 328401/part 2/1.09C shows Hunter manufacturer, model ICV series. Please clarify.	**S.C. Anderson Inc.**	Use Rainbird PESBIVM series	SIERRA 4/3	SIERRA 4/5	
	8.08	03/25/24	Per L2.1: please provide the location of controller and quantity of controller station.	**S.C. Anderson Inc.**	Locate the controller in the maintenance yard in the corner next to the rain sensor. **See attachment (#3)**.	SIERRA 4/3	SIERRA 4/5	
	8.15	03/25/24	Per spec 081113, 1.4, H & I Wind Loads and Hurricane Test Performance: Are deferred approved submittal's, wind load calculations and Hurricane Resistance Testing Required for the hollow metal doors and frames on this project as listed in the specifications?	**S.C. Anderson Inc.**	No. Only for the curtain wall system	PBK		4/3/24
	8.16	03/25/24	See attached Michael Surface Solutions, Inc. Request for Information dated 3/22/2024, Items 1 thru 10 for clarification.	**S.C. Anderson Inc.**	N/A	PBK		4/3/24
18	.09	03/26/24	Please provide a specification for decking at stair landings (16/S702).	**Bernards**	A specification section for the steel deck forms at the stair landings is not needed. All pertinent construction information is shown on the drawings.	HOHBACH 4/3	HOHBACH 4/4	
	9.01	03/26/24	C9 - Demolition Plan: Please reference removal of 48" RCP pipe on Demolition Legend.	**S.C. Anderson Inc.**	Begin/End of Demo called out. Will add add'l note.	SWANSON 4/3	SWANSON 4/8	

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20	9.02	03/26/24	C9 - Demolition Plan: Please confirm if 48" RCP to be removed can be reused at new Storm Drain Line.	**S.C. Anderson Inc.**	No, (e) 48" RCP is not to be re-used.	SWANSON 4/3	SWANSON 4/8	
	9.03	03/26/24	C3 Details: D16 Storm Drain Junction Boxes called out for depths not accepted by City of Bakersfield plate standard. Please confirm if manholes will be an acceptable alternate.	**S.C. Anderson Inc.**	Will be updating plan	SWANSON 4/3	SWANSON 4/8	
	9.04	03/26/24	C5 Site Utility Plan-West: New 10" fire line tie-in to existing 6" line. Please confirm if friction loss calculations have been figured into the required amount of flow needed for the fire sprinkler system.	**S.C. Anderson Inc.**	Fire water is shown as a placeholder. Updated plan will be issued once required information is obtained.	SWANSON 4/3	SWANSON 4/8	
	9.05	03/26/24	Door Schedule remark says see spec, please confirm where is this spec located.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	9.06	03/26/24	Exterior hollow metal doors show to have a steel stiffened core. I could not find what type of core is to be used for the interior hollow metal doors. Please advise	**S.C. Anderson Inc.**		PBK		
	9.07	03/26/24	Door openings 234A/235A show detail 11/AX3.1 which is an interior aluminum frame. I cannot find a spec for interior type aluminum frames-please advise	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	9.08	03/26/24	Door schedule calls for either hollow metal or aluminum types only. Detail 1/AX3.1 looks like a wood type frame and is shown at multiple locations on door schedule-building and door schedule-units. Please advise what type of frame is intended. Detail 6/AX3.1 shows a 90min Ferche Millwork type frame at multiple locations and door schedule calls for hollow metal frames. Please advise what type of frame is intended.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	9.09	03/26/24	Opening labeled U2 on door schedule-units does not show a hardware set. Please advise	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	9.10	03/26/24	Storage Room 242 shows a door but I cannot find it on the door schedule. Please advise	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	9.11	03/26/24	Frame type H shows hollow metal on the door schedule and has detail 20/AX3.1 which is a wood type opening. Please advise	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	9.12	03/26/24	Opening 239B shows hollow metal on the door schedule and has a storefront type detail 20/AX3.1. Please advise if this is a hollow metal opening or a storefront opening.	**S.C. Anderson Inc.**	Refer to addendum No 6	PBK	11-Apr	11-Apr
	9.13	03/26/24	Please clarify which waterproofing system we are to use at below grade vertical concrete surfaces. Both specs 07 14 16 Cold Fluid Applied Waterproofing and 07 16 00 Below Grade Waterproofing refer to below grade concrete surfaces. Please clarify which specification we are to use.	**S.C. Anderson Inc.**	Use cold fluid applied waterproofing for retaining walls.	PBK / SIERRA 4/3		11-Apr
21		03/27/24	See attached marked up Sheet G0.01 Sheet Index with noted discrepancies, please provide direction: a. Site Plans – Sheets AS1.00-AS2.01 are provided twice each, one group with DSA stamp, dated 8/6/22 and labeled "for plan review only", and one group dated 2/27/24 without DSA stamp and including additional sheet AS.02 Site Details. Please confirm which sheets are to be used for bidding purposes. b. Structural Plans – Sheets S270, S271, S437, S438, and S439 are listed in the Sheet Index but are not provided. Please provide sheets or confirm they are not used. c. Energy Compliance Plans – Sheet EC1.16 is listed in the Sheet Index but not provided. Please provide sheet or confirm it is not used. d. Level 05 Sheets – Please confirm the following sheets listed in the Sheet Index are not used: i. Fire Protection – FS1.52, FS1.53. ii. Plumbing – P1.51, P1.52, P1.53. iii. Electrical – E1.51, E1.52, E1.53, E1.54. iv. Mechanical – M1.51, M1.52, M1.53. v. Technology – T1.51, T1.52. vi. Fire Alarm – FA1.51, FA1.52.	**Bernards**	HOHBACH 4/4: The five structural sheets listed are no longer used. SIERRA 4/9: not referred to Landscape	PBK / SWANSON HOHBACH LEAF SIERRA 4/3	HOHBACH 4/4	11-Apr
	.10	04/01/24	Refer to sheet C-4 for the 48" Storm Drain. Please advise if the installation of the 48-inch CLIII RCP reroute is a design for using any pipe of the existing system, or if 48" pipe is new.	**Bernards**	No, (e) 48" RCP is not to be re-used. (RFI 20-9.02)	SWANSON 4/3	SWANSON 4/8	11-Apr
	.11	04/01/24	The storm drain junction boxes call out for depths not accepted per City of Bakersfield plate standard. Please advise if manholes will be an acceptable alternate for installation.	**Bernards**	Will be updating plan (RFI 20-9.03)	SWANSON 4/3	SWANSON 4/8	11-Apr
	.12	04/01/24	The new fire line tie in location shows a new 10 inch line on the existing 6 inch system. Please advise if the friction loss calculations have been figured into the required amount of flow needed for the sprinkler system.	**Bernards**	Fire water is shown as a placeholder. Updated plan will be issued once required information is obtained. (RFI 20-9.04)	SWANSON 4/3	SWANSON 4/8	11-Apr
	.13	04/01/24	Please confirm whether there is imported topsoil for all planting area because all planting areas were previously parking lot areas.	**Bernards**	Import topsoil is needed for planting areas	SIERRA 4/3	SIERRA 4/5	11-Apr

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34	.14	04/01/24	Reference 329100/3.03, planting areas exceeding 86 percent compaction shall be fracture a minimum 24" depth in turf areas, 26" depth in shrub areas. However, per detail F/L5.1 indicates fracturing planting beds when compaction is 85% or greater with 4' depth. Please clarify and provide location shall be compacted 85% and greater.	**Bernards**	Fracture 36" deep in shrub areas (26" is a typo); See civil for compaction requirements under paving, all landscape areas to be 85 percent compaction.	SIERRA 4/3	SIERRA 4/5	11-Apr
	.15	04/01/24	Refer to detail E/L6.3, please provide material for sand and aggregate base.	**Bernards**	Use washed plaster sand and class II aggregate base	SIERRA 4/3	SIERRA 4/5	11-Apr
	.16	04/01/24	Refer to legend E on sheet L1.2, please provide size for unit pavers.	**Bernards**	See L1.3 Paving 'E'	SIERRA 4/3	SIERRA 4/5	11-Apr
	.17	04/01/24	Based on plant list on sheet L3.1, Arbutus 'Marina' - multi has two sizes: 36" box and 48" box. Please confirm we can bid 50% of 36" box and 50% of 48" box or advise otherwise	**Bernards**	Arbutus 'Marina': Per plans 36" box; 4 each / 48" box; 8 each Remaining 3 unlabeled 48" box	SIERRA 4/3	SIERRA 4/5	11-Apr
	.18	04/01/24	According to sleeve legend on sheet L2.1 it shows schedule 40. However, section 328401/1.04 shows PVC Schedule 40 for 4 inches or less and Class 200 for 4 inches or above. Please clarify.	**Bernards**	1 - 3 inches or less: PVC Schedule 40. 4 inches or above: PVC 1120 SDR 21, Class 200	SIERRA 4/3	SIERRA 4/5	11-Apr
	.19	04/01/24	Legend on sheet L2.1 shows filter shall be 2". However, 328401/1.07/B shows 2.5"size. Please clarify.	**Bernards**	Use 2.5" size	SIERRA 4/3	SIERRA 4/5	11-Apr
	.20	04/01/24	Refer to detail E/L6.3. 60"box tree at tree well shall be installed with rootball fixing system. Please confirm 36"box tree at tree well shall also be installed with rootball fixing system.	**Bernards**	Yes, use the same detail for 36" box at tree well	SIERRA 4/3	SIERRA 4/5	11-Apr
	.21	04/01/24	Please confirm application rate schedule in section 329100 shall be applied for shrub & tree and application rate schedule in section 329200 shall be applied for sod areas.	**Bernards**	Application Rates are as shown in the Specifications for bidding purposes, and may be adjusted via Change Order during construction based on Article 1.02 Price and Payment Procedures, Sub-Article A. Measurement and Payment. An analysis and review of the import soil will determine the final application rates. (same answer applies for 32 91 00 - Soil Preparation and 32 92 00 - Turf & Grasses)	SIERRA 4/3	SIERRA 4/5	11-Apr
	.22	04/01/24	Refer to legend in sheet L5.1. Root barrier shall be Vespro 24", but section 2.08/329300 shows VDPP 24"x24". Please clarify.	**Bernards**	Use Villa Root Barriers 24"	SIERRA 4/3	SIERRA 4/5	11-Apr
35	10.01	04/01/24	1 on S430 - Please confirm column shown at grid line A & 9 is HSS4x4x5/16.	**S.C. Anderson Inc.**	Please clarify question. There is no Gridline A & 9 on 1/S430.	HOHBACH 4/3	HOHBACH 4/4	11-Apr
	10.02	04/01/24	Fixture Schedule on E6.04 calls for fixture type P1 & P2. Please provide manufacturer and model number.	**S.C. Anderson Inc.**		LEAF 4/3		11-Apr
	10.03	04/01/24	Civil drawings show domestic water and sanitary sewer being installed under the existing practice football field. The soil to be removed will contain rocks and cobbles stones. A. Please confirm if clean topsoil should be used to backfill the top section of the utility lines or if existing soil can be used as backfill. B. Please confirm if finish surface should be hydroseed or sod. C. Please confirm if clean topsoil should be used to finish grade at planters on the main project site and provide a minimum depth of clean topsoil.	**S.C. Anderson Inc.**	SWANSON 4/8: A. Backfill to conform to detail 10, C2, and Util backfill info on page 10 of soil report. SIERRA 4/9: B. 1. Use hydroseed.Improved bermuda grass, exact species blend to be selected & approved by school district M&O prior to purchase. Include hydroseed in planting submittal package. 2. Grading at hydroseed. Finish grade to match existing grade. Prior to seeding fill all settled areas w/ topsoil, remove all ridges, & uneven areas. SIERRA 4/9: C. Import topsoil is needed for planting areas. Topsoil is required for all planters. Finished grade per civil. **See new detail 'M' attached (#2).**	SWANSON 4/3 SIERRA 4/9	SWANSON 4/8 SIERRA 4/9	11-Apr
	10.05	04/01/24	Sheets FS0.03 and C4 show a water check valve being installed on the fire line under the fire lane pavement. Please confirm I this valve is require to be accessible and if so, please provide a detail for a valve box in the pavement.	**S.C. Anderson Inc.**		LEAF 4/3		11-Apr
	10.11	04/01/24	Soil Preparation specification 329100 - 3.03, planting areas exceeding 86 percent compaction shall be fractured a minimum 24" depth in turf areas and 26" depth in shrub areas. However, detail F on sheet L5.1 indicates fracturing planting beds when compaction is 85% or greater with 3-4' depth. Please clarify which is correct and reference all areas to be compacted 85% and greater.	**S.C. Anderson Inc.**	Fracture 36" deep in shrub areas (26" is a typo); See civil for compaction requirements under paving, all landscape areas to be 85 percent compaction.	SIERRA 4/3	SIERRA 4/5	11-Apr
	10.12	04/01/24	Detail E on sheet L6.3 - Please provide material specification for sand and aggregate base.	**S.C. Anderson Inc.**	Use washed plaster sand and class II aggregate base	SIERRA 4/3	SIERRA 4/5	11-Apr
	10.13	04/01/24	Legend item E on L1.2 - Please confirm size of unit pavers.	**S.C. Anderson Inc.**	See L1.3 Paving 'E'	SIERRA 4/3	SIERRA 4/5	11-Apr
	10.14	04/01/24	Sheet L2.1 sleeve legend shows schedule 40, however, specification section 328401 - 1.04 calls for sched 40 up to 4" and Class 200 PVC for 4" or above. Please confirm which is correct.	**S.C. Anderson Inc.**	1 - 3 inches or less: PVC Schedule 40. 4 inches or above: PVC 1120 SDR 21, Class 200	SIERRA 4/3	SIERRA 4/5	11-Apr
	10.15	04/01/24	Legend on sheet L2.1 shows filter to be 2", however, specification section 328401 - 1.07-B calls for 2.5". Please confirm which is correct.	**S.C. Anderson Inc.**	Use 2.5" size	SIERRA 4/3	SIERRA 4/5	11-Apr
	10.16	04/01/24	Detail E on sheet L6.3 calls for 60" box trees to be installed with root ball fixing system. Please confirm if this is typical for all trees i.e. 36", 48", etc. installed in tree wells.	**S.C. Anderson Inc.**	Use the same detail for 36" box at tree well	SIERRA 4/3	SIERRA 4/5	11-Apr

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	10.17	04/01/24	Please confirm if application rate schedule in specification section 32 91 00 shall be applied to shrub & trees and application rate schedule in section 32 92 00 shall be applied for sod areas.	**S.C. Anderson Inc.**	Application Rates are as shown in the Specifications for bidding purposes, and may be adjusted via Change Order during construction based on Article 1.02 Price and Payment Procedures, Sub-Article A. Measurement and Payment. An analysis and review of the import soil will determine the final application rates. (same answer applies for 32 91 00 - Soil Preparation and 32 92 00 - Turf & Grasses)	SIERRA 4/3	SIERRA 4/5	11-Apr
	10.18	04/01/24	Legend on sheet L5.1 calls for Vespro 24" root barrier, however, specification section 32 93 00 - 2.08 calls for VDPP24x24. Please confirm which is correct.	**S.C. Anderson Inc.**	Use Villa Root Barriers 24”	SIERRA 4/3	SIERRA 4/5	11-Apr