

Tustin Unified
School District

TUSD

LOMA VISTA ELEMENTARY SCHOOL

04-11-2024



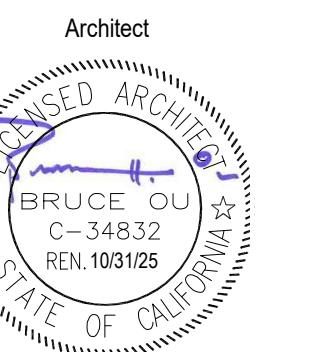
LOMA VISTA ELEMENTARY SCHOOL

PROJECT ADDRESS:
13822 Prospect Ave
Santa Ana, CA 92705

DSA APP# NO.: xxxxx DSA FILE NO.: xxxxx



Tustin Unified
School District



OWNER

Tustin Unified School District
19251 Dodge Ave
Santa Ana, CA 92705
t: (949) 293-4850
Contact: Tom Rizzuti

ARCHITECT

PBK Architects
2400 E Katella Avenue, Suite 950
Anaheim, CA 92806
t: (949) 548-5000
Contact: Bruce Ou

CIVIL ENGINEER

FPL and Associates, Inc.
30 Corporate Park, Suite 401
Irvine, CA. 92606
t: (949) 252-1688
Contact: RON CANEDY

MEP ENGINEER

LEAF Engineers
2400 E Katella Avenue, Suite 950
Anaheim, CA 92806
t: (949) 548-5000
Contact: Rex Wang

COVER SHEET

GO.00

GENERAL NOTES

1. THESE DRAWINGS DO NOT CONTAIN THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
2. LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID INTERCEPTING EXISTING PIPING OR CONDUITS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HEREON OR NOT AND TO PROTECT THEM FROM DAMAGE. THE ARCHITECT IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT SHOULD ANY UNIDENTIFIED CONDITIONS BE DISCOVERED. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THIS WORK.
3. THESE DOCUMENTS AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF WLC ARCHITECTS, INC. AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF WLC ARCHITECTS, INC.
4. THE WORK SHOWN ON THESE DRAWINGS AS EXISTING CONDITIONS WAS PREPARED FROM INFORMATION FURNISHED BY THE OWNER. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, WLC ARCHITECTS, INC. IS NOT RESPONSIBLE FOR THE ACCURACY OR ADEQUACY OF ANY WORK SHOWN AS EXISTING NOR IS WLC ARCHITECTS, INC. RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.
5. EACH BIDDER SHALL POSSESS AT THE TIME OF BID A CLASS B OR THE APPROPRIATE CLASS C CONTRACTOR'S LICENSE PURSUANT TO PUBLIC CONTRACT CODE SECTION 3300 AND BUSINESS AND PROFESSIONS CODE SECTION 7028.15. THE SUCCESSFUL BIDDER MUST MAINTAIN THE LICENSE THROUGHOUT THE DURATION OF THIS CONTRACT.
6. ENACT ALL MEASURES TO PROTECT AND SAFEGUARD ALL EXISTING ELEMENTS TO REMAIN FROM BEING DAMAGED. REPLACE OR REPAIR EXISTING ELEMENTS DAMAGED BY THE EXECUTION OF THIS CONTRACT TO EQUAL OR BETTER CONDITION
7. CUTTING, BORING, SAWCUTTING OR DRILLING THROUGH THE EXISTING OR NEW STRUCTURAL ELEMENTS SHALL NOT BE STARTED UNTIL THE DETAILS HAVE BEEN REVIEWED AND APPROVED BY THE ARCHITECT, AND STRUCTURAL ENGINEER OF RECORD.
8. VERIFY DIMENSIONS AND EXISTING CONDITIONS BEFORE COMMENCING WORK. REPORT DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING WITH AFFECTED WORK.
9. DIMENSIONS NOTED AS "FIELD VERIFY" SHALL BE CHECKED AT THE SITE BY THE CONTRACTOR AND REVIEWED WITH THE ARCHITECT BEFORE INCORPORATING INTO THE WORK.
10. NOTES OR DIMENSIONS LABELED "TYPICAL" SHALL APPLY TO SITUATIONS THAT ARE THE SAME OR SIMILAR.
11. ALL SPACES WITH FLOOR DRAINS TO HAVE FINISHED FLOORS SLOPED TO DRAIN NOT TO EXCEED ONE IN FIFTY.
12. ALL FLOORS FINISH CHANGES SHALL OCCUR AT THE CENTERLINE OF DOORS UNLESS NOTED OTHERWISE. ALL FLOOR FINISH CHANGES SHALL HAVE THRESHOLDS OR REDUCER STRIPS.
13. COORDINATE HOUSEKEEPING PAD DIMENSIONS AND LOCATIONS WITH EQUIPMENT TO BE INSTALLED.
14. ALL DOORS IN INTERIOR GYP. BD STUD WALLS SHALL BE SET 4" OFF THE PERP. ADJ. WALL ON THE HINGE SIDE OF THE DOOR UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL CONTACT THE ARCHITECT IF ANY CONFLICTS OCCUR.
15. UNLESS OTHERWISE NOTED, ALL ELECTRICAL AND MECHANICAL OPERABLE DEVICES SHALL BE MOUNTED WITH THE HIGHEST OPERABLE CONTROL AT MAX. OF 42" AFF.
16. FIRE SAFETY DURING CONSTRUCTION
A. GENERAL: FIRE SAFETY DURING CONSTRUCTION SHALL COMPLY WITH CALIFORNIA FIRE CODE (CFC) CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 9, CHAPTER 5 AND CHAPTER 33.
B. ACCESS ROADS: FIRE DEPARTMENT ACCESS ROADS SHALL BE ESTABLISHED AND MAINTAINED IN ACCORDANCE WITH CHAPTER 5, SECTION 501.4 AND CHAPTER 33, SECTION 3310.
C. WATER SUPPLY: WATER MAINS AND HYDRANTS SHALL BE OPERATIONAL IN ACCORDANCE WITH CHAPTER 5, SECTION 501.4 AND CHAPTER 33, SECTION 3312.
D. BUILDING ACCESS: ACCESS TO BUILDINGS FOR THE PURPOSE OF FIREFIGHTING SHALL BE PROVIDED. CONSTRUCTION MATERIAL SHALL NOT BLOCK ACCESS TO BUILDINGS, HYDRANTS, OR FIRE APPLIANCES.
E. ALTERATIONS OF BUILDINGS: SHALL COMPLY WITH APPLICABLE PROVISIONS OF CHAPTER 33.
F. DEMOLITION OF BUILDINGS: SHALL COMPLY WITH APPLICABLE PROVISIONS OF CHAPTER 33.
G. FIRE WATCH: MAINTAIN FIRE WATCH WHEN REQUIRED BY THE BUILDING OFFICIAL AND WHEN EXISTING FIRE PROTECTION SYSTEMS ARE SHUT DOWN FOR ALTERATIONS IN ACCORDANCE WITH CHAPTER 33, SECTION 3304.5. FIRE WATCH SHALL REMAIN IN EFFECT UNTIL EXISTING FIRE PROTECTION SYSTEMS ARE RETURNED TO SERVICE OR AS ALLOWED BY THE BUILDING OFFICIAL.
17. PENETRATIONS TO FIRE RATED MATERIALS OR ASSEMBLIES SHALL BE RESTORED TO EQUAL RATING. FIRE STOP SYSTEMS AS LISTED BY UNDERWRITERS LABORATORIES SHALL BE INSTALLED PER FIRE RESISTANCE DIRECTORY. FIRE STOP SYSTEMS SHALL BE AS SPECIFIED.

18. NONRESIDENTIAL ENERGY STANDARDS COMPLIANCE STATEMENT (TITLE 24, PART 6):
THE DESIGN INDICATED HEREIN COMPLIES WITH THE REQUIREMENTS OF THE ENERGY CONSERVATION STANDARDS OF TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS. THE PROPOSED BUILDING(S) WILL BE IN COMPLIANCE WITH THE ENERGY CONSERVATION STANDARDS PROVIDED IT (THEY) IS (ARE) BUILT ACCORDING TO THESE DRAWINGS AND SPECIFICATIONS AND PROVIDED ANY FUTURE IMPROVEMENTS ARE COMPLETED ACCORDING TO THE REQUIREMENTS OF TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS. THESE PLANS AND SPECIFICATIONS HAVE BEEN PREPARED TO INCLUDE ALL SIGNIFICANT ENERGY CONSERVATION FEATURES REQUIRED FOR COMPLIANCE WITH THE STANDARDS. BUILDING AREAS THAT ARE UNCONDITIONED AND/OR NOT SUBJECT TO THE STANDARDS ARE INDICATED ON THE PLANS.
ENVELOPE MANDATORY MEASURES:
A. INSTALLED INSULATING MATERIALS SHALL HAVE BEEN CERTIFIED BY THE MANUFACTURER TO COMPLY WITH THE CALIFORNIA QUALITY STANDARDS FOR INSULATING MATERIAL.
B. ALL INSULATING MATERIALS SHALL BE INSTALLED IN COMPLIANCE WITH THE FLAME SPREAD RATING AND SMOKE DENSITY REQUIREMENTS OF TITLE 24, PART 2, CALIFORNIA CODE OF REGULATIONS, SECTIONS 720 AND 2803.
C. ALL EXTERIOR JOINTS AND OPENINGS IN THE BUILDING ENVELOPE THAT ARE POTENTIAL AND OBSERVABLE SOURCES OF AIR LEAKAGE SHALL BE CALKED, GASKETED, WEATHERSTRIPPED, OR OTHERWISE SEALED.
D. SITE CONSTRUCTED DOORS, WINDOWS, AND SKYLIGHTS SHALL BE CALKED BETWEEN THE UNIT AND THE BUILDING, AND SHALL BE WEATHERSTRIPPED (EXCEPT FOR UNFRAMED GLASS DOORS AND FIRE DOORS).
E. MANUFACTURED DOORS AND WINDOWS INSTALLED SHALL HAVE AIR INFILTRATION RATES CERTIFIED BY THE MANUFACTURER IN ACCORDANCE WITH TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS, SECTION 110.6.
F. MANUFACTURED FENESTRATION PRODUCTS IN THE ENVELOPE OF THE BUILDING, INCLUDING, BUT NOT LIMITED TO, WINDOWS, SLIDING GLASS DOORS, FRENCH DOORS, SKYLIGHTS, CURTAIN WALLS, AND GARDEN WINDOWS MUST BE LABELED FOR U-VALUE & SHGC IN ACCORDANCE WITH THE (NFR) NATIONAL FENESTRATION RATING COUNCIL'S INTERIM U-VALUE & SHGC RATING PROCEDURE.
19. INSPECTOR OF RECORD REQUIREMENTS
A. ONE OR MORE INSPECTORS EMPLOYED BY THE OWNER IN ACCORDANCE WITH THE REQUIREMENTS OF TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS WILL BE ASSIGNED TO THE WORK. THE INSPECTOR'S DUTIES ARE SPECIFICALLY DEFINED IN SECTION 4-342 OF SAID TITLE 24, PART 1 AND IN ADDITION SHALL BE AS STIPULATED IN INTERPRETATION OF REGULATION DOCUMENT IR A-3.
B. INSPECTOR SHALL BE CERTIFIED AS A CLASS 3 INSPECTOR THROUGH THE DIVISION OF THE STATE ARCHITECT INSPECTOR EXAMINATION PROGRAM. INSPECTOR SHALL ALSO BE SPECIFICALLY APPROVED BY THE DIVISION OF THE STATE ARCHITECT FOR THIS PROJECT AT LEAST 10 DAYS PRIOR TO THE START OF ANY WORK FOR THIS PROJECT.
20. ALL WORK SHOWN ON THESE DRAWINGS SHALL COMPLY WITH THE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
21. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY TITLE 24, CCR, PART 1, SECTION 4-338.
22. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
23. DRINKING WATER SHALL COMPLY WITH ALL LOCAL HEALTH DEPARTMENT REQUIREMENTS.
24. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ADDITION, ALTERATION OR RECONSTRUCTION IS IN COMPLIANCE WITH THE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY CONDITION SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT IDENTIFIED BY THE CONTRACT DOCUMENTS WHEREIN THE FINAL WORK WOULD NOT COMPLY WITH THE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE ARCHITECT OF THE CONDITION IN WRITING. NECESSARY INFORMATION REQUIRED TO CORRECT THE CONDITIONS ENCOUNTERED WILL BE ISSUED BY THE ARCHITECT. A CHANGE ORDER MAY BE ISSUED TO ADJUST THE CONTRACT SUM OR TIME COMMENSURATE WITH THE AMOUNT OF ADDITIONAL WORK REQUIRED, IF ANY. THE CHANGE ORDER SHALL BE APPROVED BY THE DIVISION OF THE STATE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK REQUIRED BY THE CHANGE ORDER.
25. ALL SLOPE AND CROSS SLOPE OF ACCESSIBLE ROUTE PAVING INDICATED ON THESE DRAWINGS WAS DESIGNED IN COMPLIANCE WITH THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 2, CHAPTER 11B OF THE CALIFORNIA CODE OF REGULATIONS (CCR). STRICT EXECUTION OF THE SLOPE AND CROSS SLOPE OF ACCESSIBLE ROUTE PAVING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SHOULD A CONDITION PRESENT ITSELF THAT WOULD RESULT IN AN INSTALLATION OTHER THAN WHAT IS INDICATED IN THESE DRAWINGS, WLC ARCHITECTS, INC. SHALL BE NOTIFIED IN WRITING AND A COMPLAINT RESOLUTION WILL BE FORMULATED.
26. FEMA NOTES:
FEMA FIRM PANEL #06059C0164J
EFFECTIVE DATED: 12/02/2009
FLOOD ZONE DESIGNATION: 0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE, ZONE X

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 (Application No. _____ File No. _____)

The drawings or sheets listed on the cover or index sheet (see asterisk *) This drawing, page of specifications/calculations have 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) design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
2) 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 Sections 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 certify that: The drawings or sheets listed on the cover or index This drawing or page
is/are in general conformance and have been coordinated
Signature Date APRIL 5, 2024
Architect or Engineer designated to be in general responsible charge BRUCE OU
Print Name C34832 OCTOBER 31, 2025
License Number Expiration Date
is/are in general conformance and have been coordinated
Signature Date
Architect or Engineer delegated responsibility for this portion of the work
Print Name
License Number Expiration Date

SCOPE OF WORK

RELOCATION OF (1) 24'X40' MODULAR CLASSROOM BUILDING FROM STOCKPILE (#A04-122805, SRL #C232618A & C232651B, ASSOCIATED BUILDING WORK INCLUDES LOW VOLTAGE, AND FIRE ALARM. ASSOCIATED SITE WORK INCLUDES UNDERGROUND UTILITIES, PAVING, FENCING, ACCESSIBLE PARKING, MANUFACTURED RAMPS (#A04-121419)

NOTE

FIRE SAFETY DURING DEMOLITION AND/OR CONSTRUCTION SHALL COMPLY WITH 2022 CFC CHAPTER 33

CODES & STANDARDS

PARTIAL LIST OF APPLICABLE CODES
2022 California Administrative Code (CAC) (Part 1, Title 24, CCR)
2022 California Building Code (CBC) (Part 2, Title 24, CCR)
2022 California Electrical Code (CEC) (Part 3, Title 24, CCR)
2022 California Mechanical Code (CMC) (Part 4, Title 24, CCR)
2022 California Plumbing Code (CPC) (Part 5, Title 24, CCR)
2022 California Energy Code (CEC) (Part 6, Title 24, CCR)
2022 California Fire Code (CFC) (Part 8, Title 24, CCR)
2022 California Existing Building Code (CEBC) (Part 10, Title 24, CCR)
2022 California Green Building Standards Code (CAL Green) (Part 11, Title 24, CCR)
2022 California Referenced Standards Code (Part 12, Title 24, CCR)
Title 19 CCR, Public Safety, State Fire Marshal Regulations
2019 ASME A17.1/CSA B44-13 Safety Code For Elevators and Escalators (per 2022 CBC Part 2, Ch 35)
Note: Cal/OSHA Elevator Unit enforces CCR Title 8 and uses the 2004 ASME A17.1 by adoption
PARTIAL LIST OF APPLICABLE STANDARDS
NFPA 13 Automatic Fire Sprinkler Systems (2022 Edition)
NFPA 14 Standpipes and Hose Systems (2019 Edition)
NFPA 17 Dry Chemical Extinguishing Systems (2021 Edition)
NFPA 17a Wet Chemical Extinguishing Systems (2021 Edition)
NFPA 20 Stationary Pumps for Fire Protection (2019 Edition)
NFPA 24 Standard for the Installation of Private Fire Service Mains & their Appurtenances (CA amended) (2019 Edition)
NFPA 25 Standard for Inspection, Testing and Maintenance of Water-Based Fire Protection Systems (CA amended) (2013 Edition)
NFPA 72 National Fire Alarm & Signaling Code (CA amended) (2022 Edition)
NFPA 80 Fire Doors and Other Opening Protectives (2019 Edition)
NFPA 92 Standard for Smoke Control Systems (2018 Edition)
NFPA 99 Critical Risk Areas of Floor Covering Systems (2018 Edition)
NFPA 2001 Clean Agent Fire Extinguishing Systems (CA amended) (2018 Edition)
ICC 300 ICC 300 Series on Bladders, Folding and Telescoping Sealing and Grand stands (2017 Edition)
UL 300 Fire Testing of Fire Extinguishing Sys for Protection of Restaurant Cooking Areas (2006 RFP10)
UL 464 Audible Signal Appliances (2003 Edition)
GTT
UL 521 Heat Detectors for Fire Protective Signaling Systems (1999 Edition)
For a complete list of applicable NFPA standards refer to 2022 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.

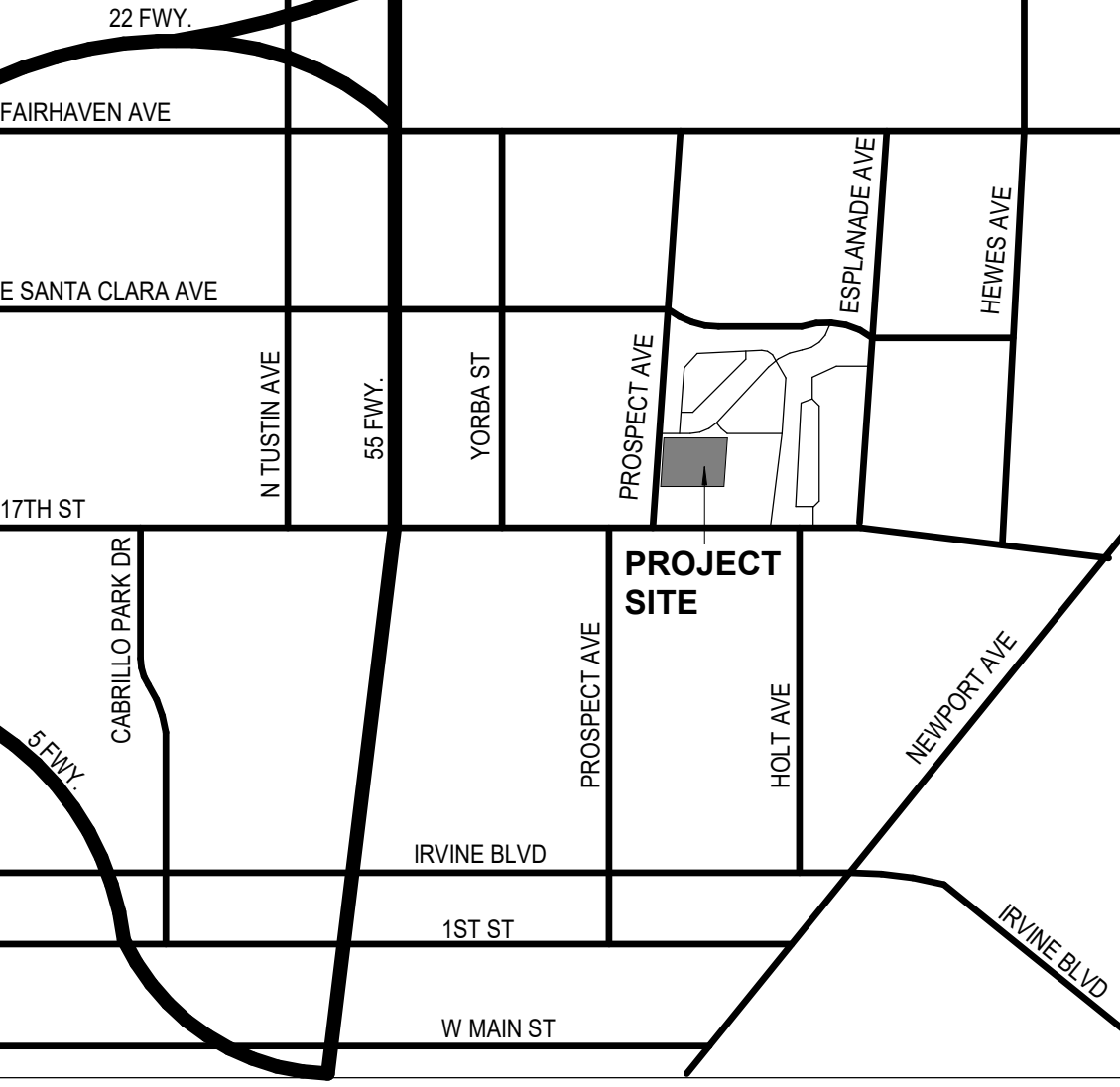
PROJECT DATA

PROJECT ADDRESS: 13822 Prospect Ave, Santa Ana, CA 92705

DSA NOTES

- 1. ALL WORK SHALL CONFORM TO 2022 EDITION TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
2. 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 1, TITLE 24, CCR
3. 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 4-32, PART 1, TITLE 24, CCR, CLASS _3_

VICINITY MAP



ABBREVIATIONS

Table of abbreviations including: AREA DRAIN, AMERICANS WITH DISABILITIES ACT, ABOVE FINISH GRADE, AIR CONDITIONING, ACUSTICAL PANEL, ACUSTICAL TILE, ADJUSTABLE, ALTERNATE, ALUMINUM, ASPHALT, ANGLE, BUILT-UP ROOF, BOARD, BUILDING BLOCK, BEAM, CHANNEL, CONTROL JOINT, CONCRETE MASONRY UNIT, COLD WATER, CABINET, COLD FORMED METAL, FRAMING, CENTERLINE, CEILING, CLEAR, COLUMN, COMPRESSIBLE, CONCRETE, CONDITION, CORNER, CARPET (ED), CERAMIC TILE, CLEAR TEMPERED GLAZING, COUNTER SINK, DRYER, DRINKING FOUNTAIN, DAMPROOFING, DOWN SPOUT, DIAMETER, DIMENSION, DETAIL, DRAWING, EXPANSION JOINT, EQUAL, EACH, ELECTRIC DRINKING FOUNTAIN, ELEVATION (HEIGHT), ELECTRICAL, ELEVATION (DRAWING), EQUIPMENT, EXISTING, EXPANSION, EXTERIOR, FIRE EXTINGUISHER, FIRE EXTINGUISHER CABINET, FIRE HOSE CABINET, FACE BRIDGE, FLOOR DRAIN, FINISH (ED), FIXTURE, FLOOR (ING), FLASHING, FLUOR, GRAB BAR, GALVANIZED IRON, GAUGE, GALVANIZED, GLAZED CONCRETE MASONRY UNIT, GENERAL, GENERAL, GLASS / GLAZING, GLASS, GRADE, GLAZED TILE PAVER, GYPSUM DRYWALL, HOT WATER, HOLLOW METAL FRAME, HORIZONTAL, HEIGHT, INSIDE DIAMETER, IRON PIPE SIZE, INSULATION (ED), (ION), INTERIOR, INTERNATIONAL SYMBOL OF ACCESSIBILITY, JOINT, LIGHT POLE, LAMINATE (D), LAVATORY, LIGHT, LIGHTWEIGHT, MASONRY OPENING, MASONRY, MATERIAL (S), MAXIMUM, MARKER BOARD, MECHANICAL, MEMBRANE, MEMBRANE, MECHANICAL ELECTRICAL AND PLUMBING, MEZZANINE, MANUFACTURE (R), MANHOLE, MINIMUM, MISCELLANEOUS, MODULAR, METAL, METAL TOILET PARTITION, NAPKIN DISPOSAL, NOT IN CONTRACT, NOT RATED, NOT TO SCALE, NAPKIN VENDOR NUMBER, ON CENTER (S), ON CENTER EACH WAY, OUTSIDE DIAMETER, OWNER FURNISHED, CONTRACTOR INSTALLED, OPPOSITE HAND, OPENING, OPPOSITE, PLASTIC LAMINATE, PRECAST, PAPER HOLDER, PROPERTY LINE, POWER POLE, PREFINISHED WALL BOARD, PLATE, PLUMBING, PLYWOOD, POLISHED, PAIR

DRAWING INDEX

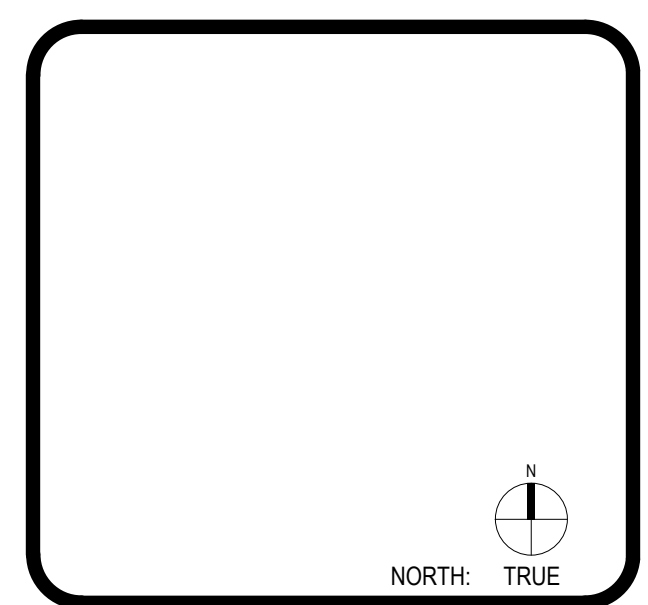
Table of drawing index including: GENERAL: COVER SHEET, SHEET INDEX / GENERAL NOTES, FIRE ACCESS SITE PLAN, CIVIL: SITE DEMOLITION PLAN, GRADING PLAN, DETAIL SHEET, ARCHITECTURAL: OVERALL SITE PLAN, ENLARGED SITE PLAN, ENLARGED PLANS, ENLARGED PARKING PLANS AND DETAILS, SPECIALTY DETAILS, ELECTRICAL: ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES, ELECTRICAL TITLE 24, ELECTRICAL SITE PLAN, ELECTRICAL DETAILS, FIRE ALARM: FIRE ALARM SYMBOLS, LEGENDS & GENERAL NOTES, FIRE ALARM SPECIFICATION, FIRE ALARM SITE PLAN, FIRE ALARM ENLARGED SITE PLAN, FIRE ALARM DETAILS, TECHNOLOGY: TECHNOLOGY COVER SHEET, TECHNOLOGY SITE PLAN, TECHNOLOGY ENLARGED SITE PLAN, TECHNOLOGY RISER DIAGRAM AND SCHEDULES, TECHNOLOGY DETAILS, #A04-122805 (MODULAR CLASSROOM BUILDING): 24X40 FLOOR PLAN, WOOD FOUNDATION NOTES SCHED FOR BLDG W 50+15, WOOD FOUNDATION PLAN 24X40 BLDG W 50+15, MODLINE 'B' W/ EXTERIOR WALLS BACK-TO-BACK 100 PSF, STRUCTURAL DETAILS (FLOOR), ROOF PERIMETER TRUSS, #A04-122805 (MODULAR CLASSROOM BUILDING): MODULE PLAN AND NOTES (COVER SHEET), RAMP AND LANDING PLAN, RAMP AND LANDING FRAMING, FOUNDATION PLAN, RAMP AND LANDING / STAIR FRAMING ELEVATION, RAMP DETAILS, RAMP DETAILS, STAIR CORN

Not for permitting or construction



ARCHITECT ANAHEIM PRK Architects, Inc. 2400 East Katella Ave, Suite 950 Anaheim, CA 92806 P:949-548-5000

LOMA VISTA ELEMENTARY SCHOOL



Consultant

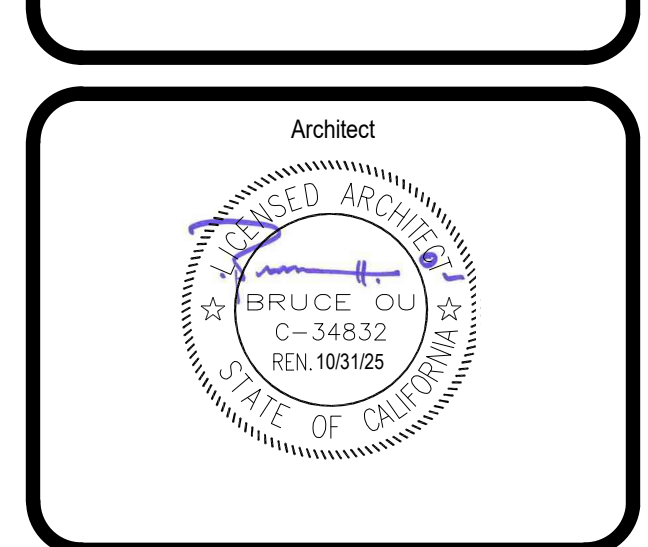
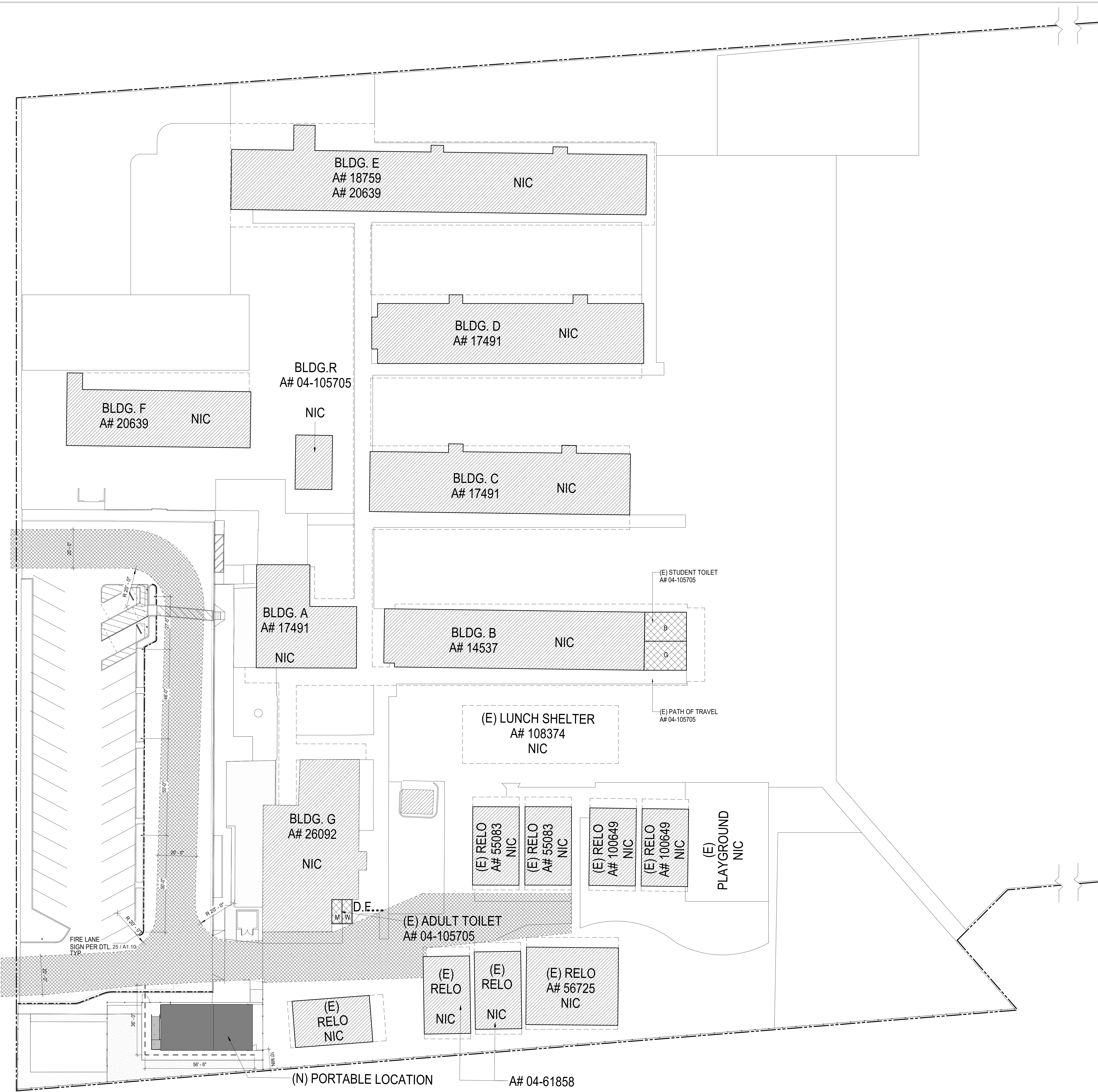


Table with columns: CLIENT (TUSD), DATE (04-11-2024), PROJECT NUMBER (230381), REVISIONS (No., Description, Date)

SHEET INDEX / GENERAL NOTES

G0.01

This document is for plan review only



SITE PLAN LEGEND

- (E) FIRE LANE A# 04-111300
- PROPOSED RELOCATABLE BUILDINGS
- (E) BUILDING NIC
- PROPERTY LINE
- FIRE HOSE PULL
- PAINT FIRE LANE PER DETAIL 1 / A1.10

BUILDING FIRE FLOW DATA

BUILDING E101 AND E201	3,840 S.F.
FIRE FLOW REQUIRED (CFC 105.1)	1,750 GPM
MIN. NUMBER OF HYDRANTS REQUIRED	1

DSA 810
FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects involving construction of a new complex, construction of new buildings, additions to existing buildings, and site alternate design means for fire department emergency vehicle access, and fire suppression water supply information associated with compliance items 1 through 3 below is to be provided for all project types indicated above. Information associated with items 4 through 6 is to be completed when an alternate means is utilized. Acknowledgment by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

The Project Information and Fire & Life Safety Information sections are to be completed for all projects and stamped onto the fire access site plan. When an alternate design/means is proposed, all sections on pages 1 and 2 are to be completed and stamped on the fire access site plan.

For additional information refer to the instructions at the end of this form and DSA Policy PL 09-01: Fire Flow for Buildings.

PROJECT INFORMATION

School District/Owner:	TUSTIN UNIFIED SCHOOL DISTRICT
Project Name/School:	LOMA VISTA ELEMENTARY
Project Address:	13822 Prospect Ave, Santa Ana, CA 92705

FIRE & LIFE SAFETY INFORMATION

1. Has a fire hydrant flow test been performed within the past 12 months?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
2. If yes, provide a copy of the test data.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
3. Was the hydrant flow test performed as part of the LFA survey?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
4. Is the project located within a designated fire hazard severity zone (FHSZ) as established by Cal Fire? (If yes, indicate FHSZ classification below.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Refer to the following website for FHSZ locations: https://ghg.ca.gov/fhsz/	Moderate <input type="checkbox"/>	High <input type="checkbox"/>	Very High <input type="checkbox"/>
Wildland Interface Area (WIFA) (If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)	WIFA <input type="checkbox"/>		

DSA DSA Referred Legend DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 1 of 2

FIRE FLOW TEST

SoCal Flow Testing
 3741 Rose Dr, Yorba Linda, CA 92886
 714-261-5716
 email: info@socalfloctest.com

Hydrant Flow Test Report

Project: Loma Vista Elementary School Test date: 11/6/23
 Address: 13822 Prospect Ave Test time: 09:00
 City: Santa Ana State: CA File no:

Test hydrant location: 1" hydrant north of 17th St on east side of Prospect Ave
 Hydrant #: Elev (ft +/-): Grade:
 Flow hydrant location: 1" hydrant north of 17th St on west side of Prospect Ave
 Hydrant #: Elev (ft +/-): Grade:

Static Pressure	54	PSI	Report Date	8/9/23
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Outlet	C-value	Diam	Flow	Volume
A	0.9	2.0	0	0
B	0.9	2.5	29	904
C	0.9	3.0	0	0
D	0.93	4.0	0	0

Residual Pressure: 52 PSI at an observed volume of 904 GPM
 Projected Pressure: 20 PSI calculates to a volume of 4173 GPM

Although the results are accurate for the date and time given, they may not accurately reflect higher or lower readings which vary due to seasonal conditions and time of day.
 Per NFPA 24-10, Table C.4.10.1(a), note 1, C=0.94 $C=0.97^{1.79}$
 Per NFPA 24-10, Paragraph C.4.10.1.2, $Q = C \cdot d \cdot (h)^{0.45}$

Test by: HISEBRANDT
 Witness: Dave Wallace
 Title: Witness
 (714) 573-3379
 Client: Tom Rippl
 Yustin Unified School District
 (949) 263-4850

cc: mreed@tustinca.org
 tizuri@tustin.k12.ca.us

Not for permitting or construction. This document is for plan review only.

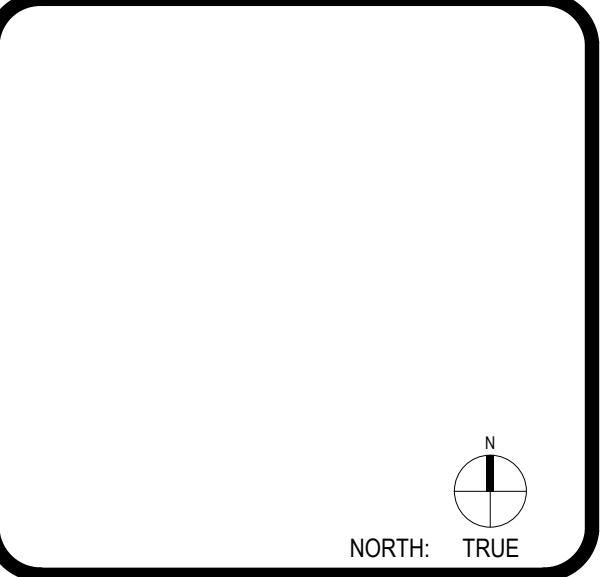


ARCHITECT ANAHEIM PBK Architects, Inc.
 2400 East Katella Ave, Suite 950
 Anaheim, CA 92806
 P 949-548-5000

LOMA VISTA ELEMENTARY SCHOOL

PROJECT ADDRESS:
 13822 Prospect Ave
 Santa Ana, CA 92705

DSA APPL. NO. XXXX DSA FILE NO. XXXX



Consultant

Architect



CLIENT TUSD

DATE	04-11-2024	PROJECT NUMBER	230381
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REVISIONS

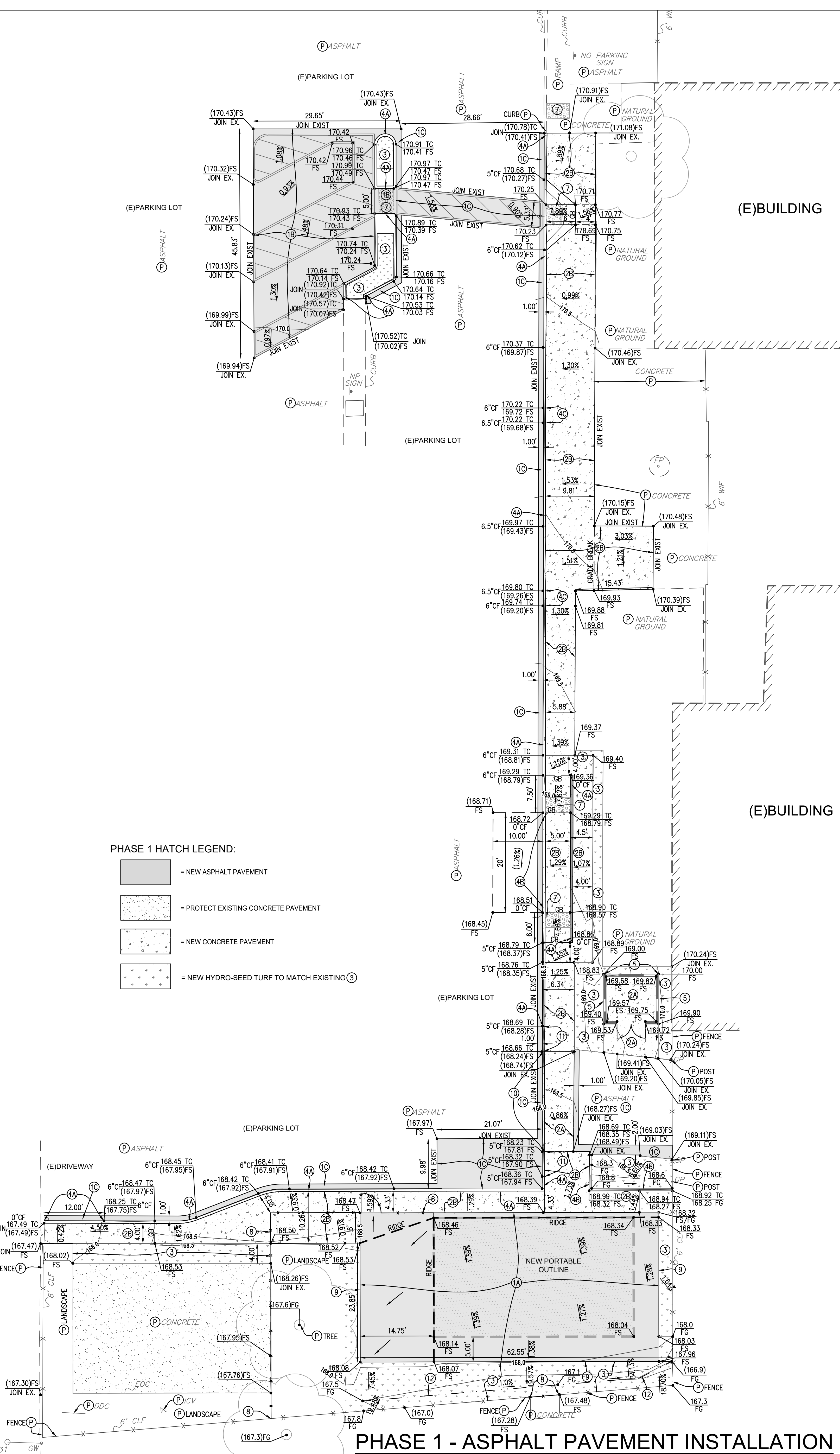
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FIRE ACCESS SITE PLAN

Plot Date: 3/25/2024 2:20:07 PM Last Save By: ron.canedy Login: Jessica Zia S:\Jobs\2777 - PBK\2777\ppp - Tustin USD Portables\2777\ppp4 - Loma Vista ES\Civil\Loma Vista ES C2.00 Grading Plan.dwg

PHASE 1 HATCH LEGEND:

	= NEW ASPHALT PAVEMENT
	= PROTECT EXISTING CONCRETE PAVEMENT
	= NEW CONCRETE PAVEMENT
	= NEW HYDRO-SEED TURF TO MATCH EXISTING (3)



PHASE 1 - ASPHALT PAVEMENT INSTALLATION

GENERAL NOTES TO CONTRACTOR

- THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 7-10, PUBLIC CONVENIENCE AND SAFETY OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK), IN REGARDS TO SAFETY ORDERS.
- SCOPE OF WORK:
 - PROVIDE ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT & FACILITIES NECESSARY TO FURNISH, FABRICATE, DELIVER, STORE AND INSTALL ALL WORK NOTED ON THE DRAWINGS.
 - THE CONTRACTOR SHALL FURNISH & INSTALL ALL WORK NECESSARY TO MAKE A COMPLETE SYSTEM WHETHER OR NOT SUCH DETAILS ARE MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE PLANS, BUT WHICH ARE OBVIOUSLY NECESSARY TO MAKE A COMPLETE SYSTEM, EXCEPTING ONLY THOSE PORTIONS THAT ARE SPECIFICALLY MENTIONED HEREIN OR PLAINLY MARKED ON THE ACCOMPANYING DRAWINGS AS BEING INSTALLED UNDER ANOTHER SECTION OF THE SPECIFICATION.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY AVAILABLE SPACES FOR INSTALLING THE WORK.
- COORDINATION: THE DRAWINGS ARE DIAGRAMMATIC & INTENDED TO SHOW SCOPE, CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES TO PROVIDE BEST ARRANGEMENT OF ALL DUCT, PIPES, CONDUIT, ETC.
- WORKMANSHIP: THE WORK SHALL BE ACCOMPLISHED BY THE USE OF COMPETENT MECHANICS SKILLED IN THEIR TRADE. THE ENGINEER AND ARCHITECT SHALL HAVE THE RIGHT TO INTERPRET COMPLIANCE OF WORKMANSHIP WITH THE CONTRACT DOCUMENTS.
- MATERIALS: ALL MATERIALS, APPLIANCES & EQUIPMENT SHALL BE NEW & THE BEST OF THEIR RESPECTIVE KIND, FREE FROM ALL DEFECTS AND OF THE MAKE, BRAND, AND QUANTITY SPECIFIED.
- CLEAN-UP: UPON COMPLETION OF THE WORK UNDER THIS SECTION THE CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIALS, EQUIPMENT & DEBRIS INCIDENTAL TO THIS WORK & LEAVE THE PREMISES CLEAN AND ORDERLY TO THE SATISFACTION OF THE ARCHITECT / OWNER.

NEW PORTABLE BUILDING EXCAVATION NOTE:
 EXCAVATION FOR THE NEW PORTABLE BUILDINGS FOOTPRINT SHALL EXTEND A MINIMUM 2 FEET BELOW THE EXISTING GRADE. LATERAL LIMITS OF EXCAVATION SHALL EXTEND A MINIMUM 3 FEET BEYOND THE OUTER EDGES OF THE NEW BUILDING PERIMETER.

THE EXTENT AND DEPTHS OF ALL REMOVAL SHOULD BE EVALUATED BY A GEOTECHNICAL REPRESENTATIVE IN THE FIELD BASED ON THE MATERIALS EXPOSED. SHOULD EXCAVATIONS EXPOSE SOFT SOILS OR SOILS CONSIDERED UNSUITABLE FOR USE AS FILL BY A GEOTECHNICAL REPRESENTATIVE, ADDITIONAL REMOVALS MAY BE RECOMMENDED. FOR EXAMPLE, DEEPER REMOVAL MAY BE REQUIRED IN AREAS WHERE SOFT, SATURATED, OR ORGANIC MATERIALS ARE ENCOUNTERED.

THE EXPOSED EXCAVATION BOTTOM SHOULD BE EVALUATED AND APPROVED BY A GEOTECHNICAL ENGINEER. THE BOTTOM SHOULD THEN BE SCARIFIED TO A MINIMUM DEPTH OF 8 INCHES AND MOISTURE CONDITIONED TO ACHIEVE GENERALLY CONSISTENT MOISTURE CONTENTS WITHIN APPROXIMATELY 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT. THE SCARIFIED BOTTOM SHOULD BE COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION IN ACCORDANCE WITH THE LATEST VERSION OF ASTM TEST METHOD D1557 AND THEN EVALUATED AND APPROVED BY A GEOTECHNICAL ENGINEER. HOWEVER, THE SCARIFICATION AND RE-COMPACTION ARE NOT REQUIRED, IF THE BOTTOM IS FIRM AND UNDISTURBED AND THE RELATIVE COMPACTION IS TESTED AT LEAST 90% IN WHICH CASE, THE BOTTOM SHOULD BE ROLLED, AND MEASURES SHOULD BE TAKEN TO PREVENT SUBGRADE DISTURBANCE.

EARTHWORK NOTICE TO CONTRACTOR: NO EARTHWORK ANALYSIS HAS BEEN COMPLETED WITH RESPECT TO VOLUMES OF SOILS TO BE EXCAVATED, PLACED, OR IMPORTED IN ORDER TO PROVIDE THE FINISHED GRADES SHOWN ON THE PLANS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE EARTHWORK QUANTITIES NECESSARY TO COMPLETE THE PROJECT.

CONSTRUCTION STORM WATER NOTE: GRADING WORK ASSOCIATED WITH THIS PROJECT WILL DISTURB LESS THAN 1 ACRE OF SOIL AND THIS SHALL NOT BE SUBJECT TO COMPLY WITH THE STATE'S GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES (GENERAL PERMIT) ORDER WQ 2022-0057-DWG.

GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

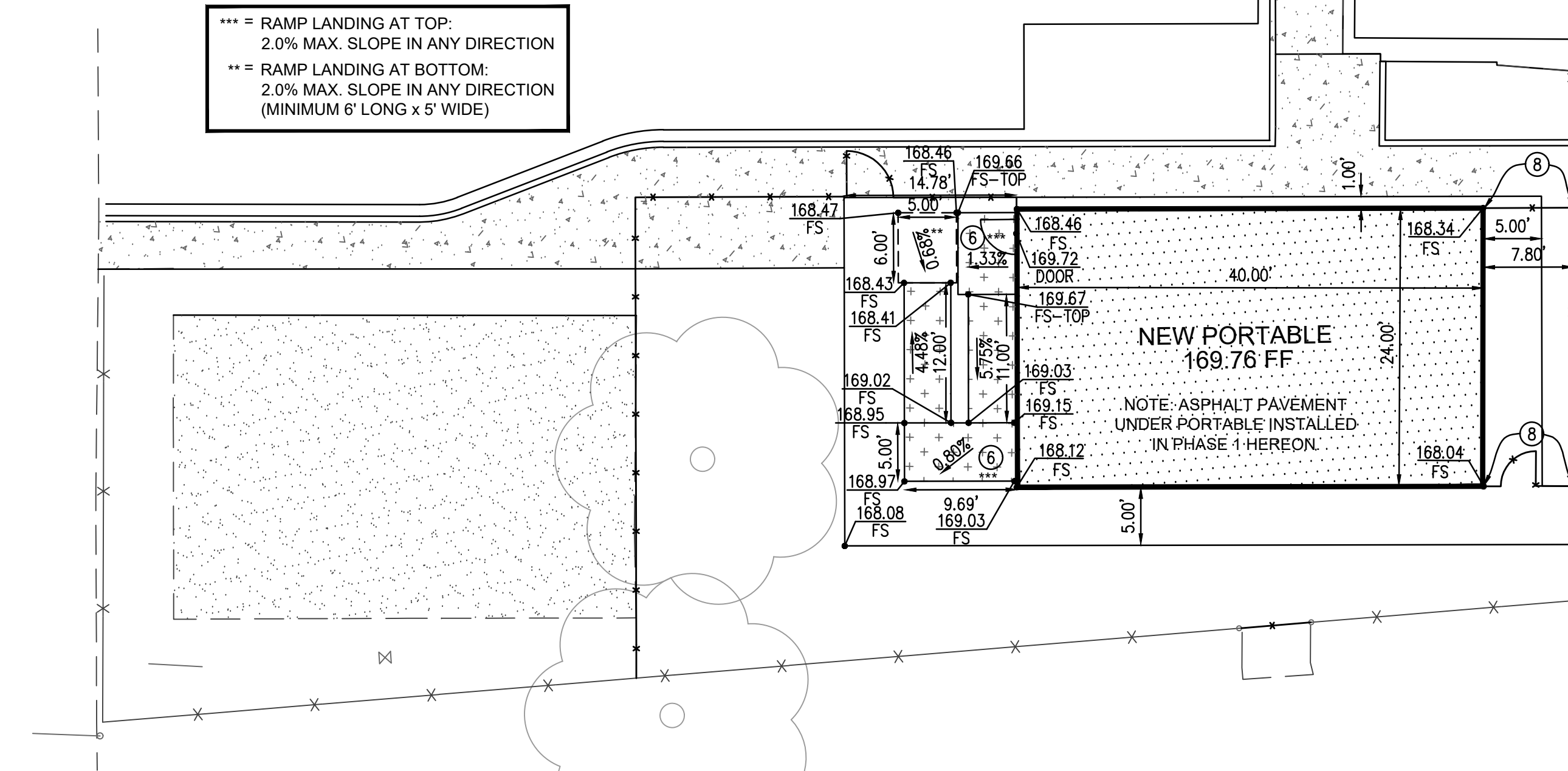
NOTE TO CONTRACTOR: BEFORE DEMOLITION OR TRENCHING OCCURS, THE CONTRACTOR SHALL COMPLETE AN UNDERGROUND UTILITY MAPPING SURVEY OF THE ENTIRE LIMITS OF WORK TO DETERMINE WHERE EXISTING UTILITIES ARE AND WHERE POSSIBLE UNDERGROUND CONFLICTS MAY OCCUR. PROVIDE SURVEY TO OWNER.

GENERAL NOTES FOR GRADING

- ALL WORK SHALL CONFORM WITH THE "GREENBOOK" STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SPWC), 2021 EDITION AND THE LATEST REVISIONS THERETO, THE WORK AREA TRAFFIC CONTROL HANDBOOK (W.A.T.C.H. MANUAL), A.D.A. TITLE 24 REQUIREMENTS, AND 2022 C.B.C. UNLESS SPECIFIED OTHERWISE IN THE CONTRACT SPECIFICATIONS.
- A COPY OF THE DIVISION OF STATE ARCHITECT APPROVED PLANS MUST BE IN THE POSSESSION OF A RESPONSIBLE PERSON AND AVAILABLE AT THE JOB SITE AT ALL TIMES.
- THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, UNTIL FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL KEEP THE WORK SITE CLEAN AND FREE FROM RUBBISH AND DEBRIS. THE CONTRACTOR SHALL ALSO ABATE DUST NUISANCE BY CLEANING, SWEEPING AND SPRINKLING WITH WATER AND USING DUST PREVENTION OR OTHER METHODS AS DIRECTED BY THE CONSTRUCTION MANAGER OR FIELD INSPECTOR THROUGHOUT THE CONSTRUCTION OPERATION AND SHALL INCORPORATE IN BASE BID.
- THE CONTRACTOR SHALL KEEP A STRICT RECORD OF ALL CHANGES THAT OCCUR DURING CONSTRUCTION PRACTICES AND SUBMIT THIS RECORD TO THE SCHOOL DISTRICT & DSA CERTIFIED AS "RECORD DRAWING" PLANS.
- ALL DAMAGE CAUSED TO PUBLIC STREETS, INCLUDING HAUL ROUTES, ALLEYS, SIDEWALKS, CURBS OR STREET FURNISHINGS, OR TO PRIVATE PROPERTY SHALL BE REPAIRED AT THE SOLE EXPENSE OF THE CONTRACTOR TO THE ENGINEER'S SATISFACTION.
- THE CONTRACTOR SHALL REMOVE AND REPLACE ANY BROKEN OR DAMAGED SIDEWALK, CURB, GUTTER OR ASPHALT PAVING AND TURF (PATCH, REPAIR OR OVERLAY) CAUSED BY THEIR WORK ON THIS PROJECT AT THE DIRECTION OF THE OWNER.
- ALL UNDERGROUND SEWER, STORM DRAIN, AND WATER PIPELINES, ELECTRIC POWER, TELEPHONE OR CABLE TV CONDUITS AND CABLE AND GAS PIPELINES SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF CURBS, GUTTERS, SIDEWALKS AND PAVEMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING STORM DAMAGE PREVENTION MEASURES OR EROSION CONTROL DEVICES AND/OR TO PERFORM CERTAIN GRADING TO PREVENT SOIL OR EXCESS RUNOFF FROM FLOWING INTO PUBLIC STREETS OR ADJACENT PROPERTIES. IN THE EVENT OF SUCH AN OCCURRENCE, CLEANUP SHALL COMMENCE IMMEDIATELY. SHOULD CITY FORCES OR THE CITY CONTRACTOR PERFORM ANY CLEANUP RESULTING FROM THIS DEVELOPMENT, THE CONTRACTOR SHALL PAY THE COST INCURRED WITHIN TEN (10) WORKING DAYS UPON RECEIPT OF BILLING.
- EITHER WATER OR DUST PALLIATIVE, OR BOTH, MUST BE APPLIED FOR THE ALLEVATION OR PREVENTION OF EXCESSIVE DUST RESULTING FROM THE LOADING OR TRANSPORTATION OF EARTH FROM OR TO THE PROJECT SITE OR PRIVATE AND PUBLIC ROADWAYS.
- NO PERSON SHALL, WHEN HAULING ANY EARTH, SAND, GRAVEL, ROCK, STONE OR OTHER EXCAVATED MATERIAL OR DEBRIS OVER ANY PUBLIC STREET, ALLEY OR OTHER PUBLIC PLACE, ALLOW SUCH MATERIAL TO BLOW OR SPILL OVER UPON SUCH STREET, ALLEY OR PUBLIC PLACE OR ADJACENT PRIVATE PROPERTY OR ANY WATER BODIES, CREEKS OR STREAMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ANY CONSTRUCTION OR SOILS MATERIALS DEPOSITED ON THE PUBLIC RIGHT-OF-WAY, PUBLIC WATERS OR ADJACENT PRIVATE PROPERTY.

CONSTRUCTION NOTES

- (P) PROTECT EXISTING IMPROVEMENT IN PLACE.
- (1A) CONSTRUCT TYPE 1A ASPHALT PAVEMENT PER DETAIL 1A/C3.00.
- (1B) CONSTRUCT TYPE 1B ASPHALT PAVEMENT PER DETAIL 1B/C3.00.
- (1C) CONSTRUCT TYPE 1C ASPHALT PAVEMENT PER DETAIL 1C/C3.00.
- (2A) CONSTRUCT HEAVY DUTY CONCRETE PAVEMENT SECTION PER DETAIL 2A/C3.00.
- (2B) CONSTRUCT LIGHT DUTY CONCRETE PAVEMENT SECTION PER DETAIL 2B/C3.00.
- (3) HYDRO-SEED TURF TO MATCH EXISTING AND ADJUST IRRIGATION AS REQUIRED.
- (4A) CONSTRUCT CONCRETE CURB PER DETAIL 4A/C3.00 AND GRADES HEREON.
- (4) CONSTRUCT 0" HIGH CONCRETE CURB PER DETAIL 4B/C3.00 AND GRADES HEREON.
- (5) CONSTRUCT TRASH ENCLOSURE PER ARCHITECTURAL PLANS.
- (6) CONSTRUCT PORTABLE BUILDING LANDING AND RAMP PER GRADES HEREON OVER ASPHALT PAVEMENT INSTALLED IN PHASE 1.
- (7) CONSTRUCT TRUNCATED DOMES PER ARCHITECTURAL PLANS.
- (8) CONSTRUCT FENCE AND GATE PER ARCHITECTURAL PLANS.
- (9) CONSTRUCT REDWOOD HEADER PER DETAIL 9/C3.00.
- (10) CONSTRUCT CONCRETE ROLLED CURB PER DETAIL 10/C3.00.
- (11) CONSTRUCT CONCRETE ROLLED CURB TRANSITION PER DETAIL 11/C3.00.
- (12) CONSTRUCT GRASS SWALE PER GRADES HEREON.



PHASE 2 - PORTABLE BUILDING INSTALLATION

HORIZONTAL CONTROL

A CAD GEOMETRIC ELECTRONIC FILE SHALL BE MADE AVAILABLE TO THE CONTRACTOR UPON REQUEST FOR THE CONTRACTOR'S SURVEYOR TO LAYOUT THE CONSTRUCTION STAKING OF THE PROJECT. THE SURVEYOR OR CONTRACTOR WILL NEED TO SIGN A WAIVER FORM BEFORE RELEASE OF ANY CAD ELECTRONIC DRAWINGS.

BENCHMARK

O.C.S. VERTICAL CONTROL 3C-27-15
 FOUND MONUMENT IS SET IN KNOWN SUBSIDENCE ZONE AND MAY NOT FIT ADJACENT BENCHMARKS. DESCRIBED BY OCS 2015 - FOUND 4" OCS ALUMINUM DISK, STAMPED "3C-27-15", SET IN SWLY CORNER OF A 5' X 8' CATCH BASIN. MONUMENT IS LOCATED 40' SLY OF THE CENTERLINE OF 17TH STREET, 150' WLY OF THE CENTERLINE OF HEVES AVENUE AT THE 18692 17TH STREET ADDRESS.

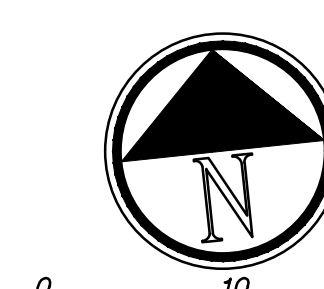
ELEVATION=192.943 FT NGVD89 YEAR LEVELED 2015

BASIS OF BEARINGS

HORIZONTAL CONTROL BASED ON THE FOLLOWING CONTROL POINTS WITHIN THE ORANGE COUNTY SURVEYOR HORIZONTAL CONTROL NETWORK, CALIFORNIA COORDINATE SYSTEM, CCS83, ZONE VII. THE BASIS OF BEARINGS FOR THIS SURVEY IS O.C.S. HORIZONTAL COORDINATE SYSTEM (NAD83), ZONE 6, AS DETERMINED LOCALLY BY THE LINE BETWEEN GPS#6065 & GPS#6011. THE BEARING OF SAID LINE BEING N86°23'49"W BETWEEN SAID STATIONS.
 GRID TO GROUND SCALE FACTOR 1.0000217969 @ PT#5000

PHASE 2 HATCH LEGEND:

	= NEW PORTABLE BUILDING		= PROTECT EXISTING CONCRETE PAVEMENT
	= PORTABLE RAMP AND LANDING		= CONCRETE PAVEMENT INSTALLED IN PHASE 1



SCALE: 1" = 10'

PLANS PREPARED BY:

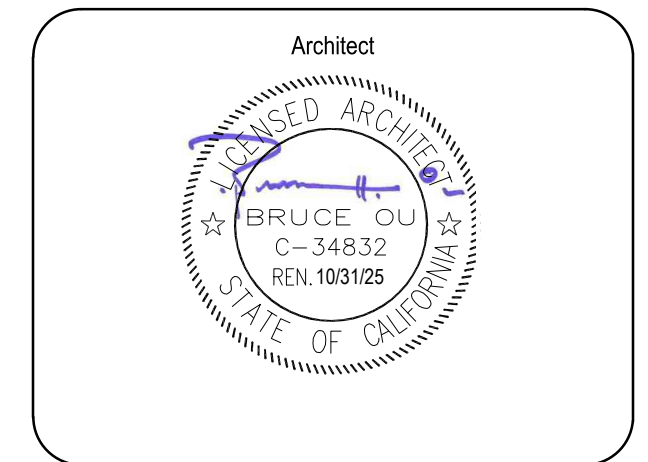
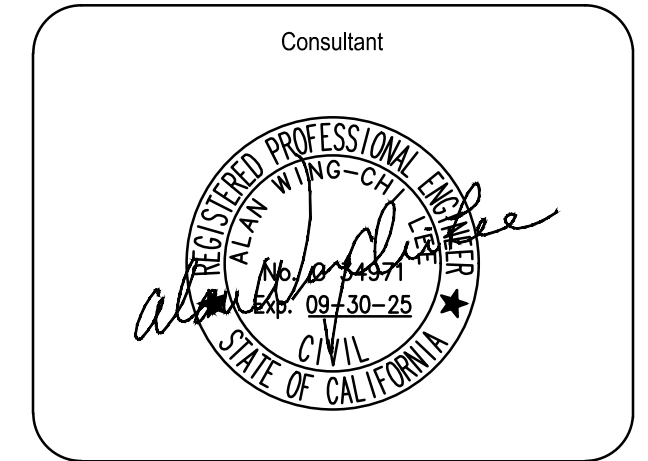
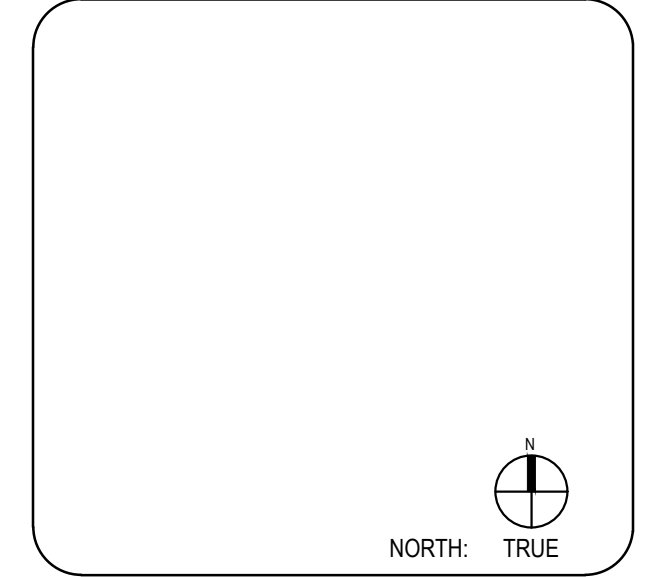
FPL FPL and Associates, Inc.
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 30 Corporate Park, Suite 401
 Irvine, CA 92606
 Phone: 949-252-1688



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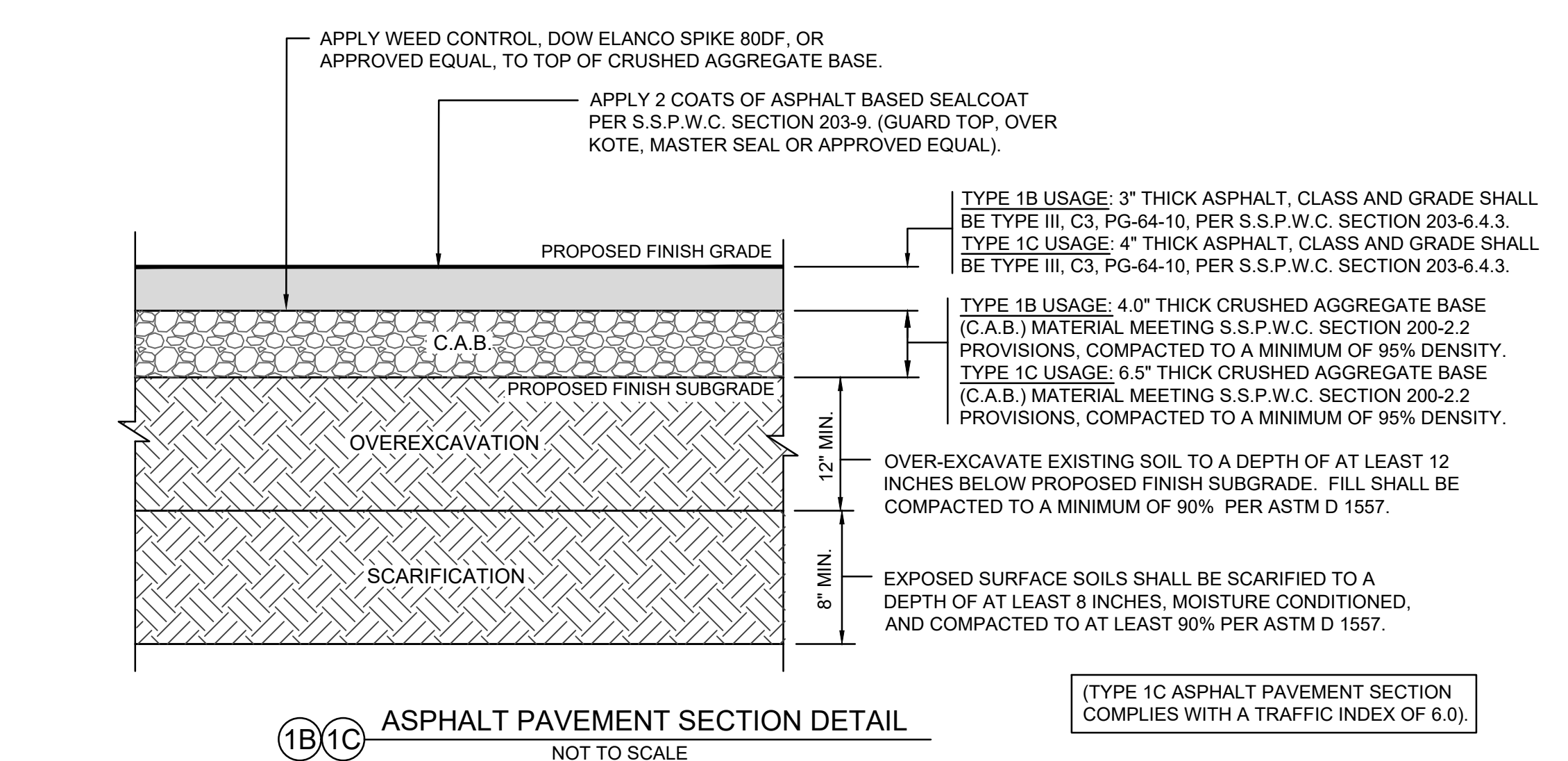


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DATE	PROJECT NUMBER

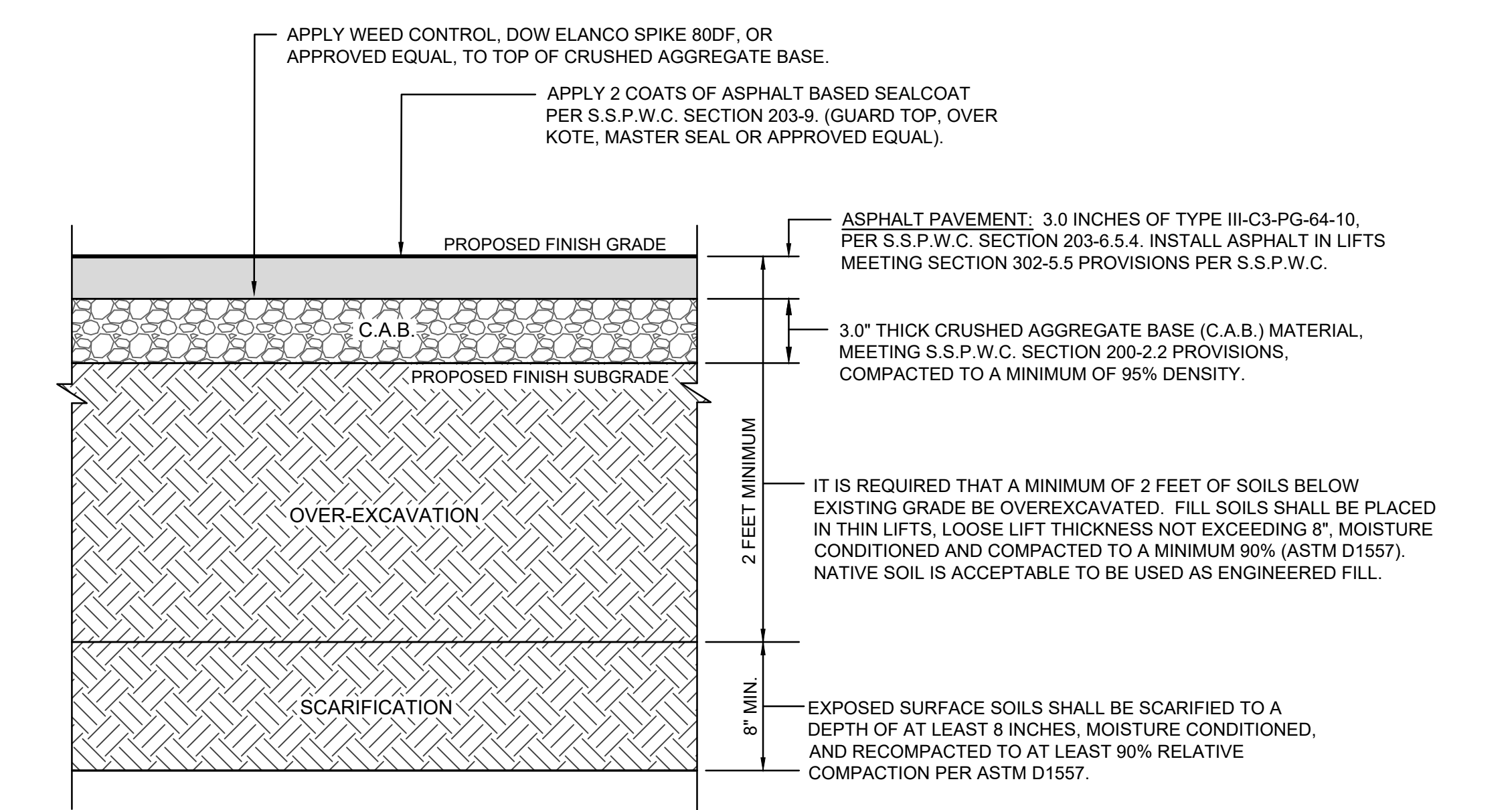
REVISIONS	

GRADING PLAN

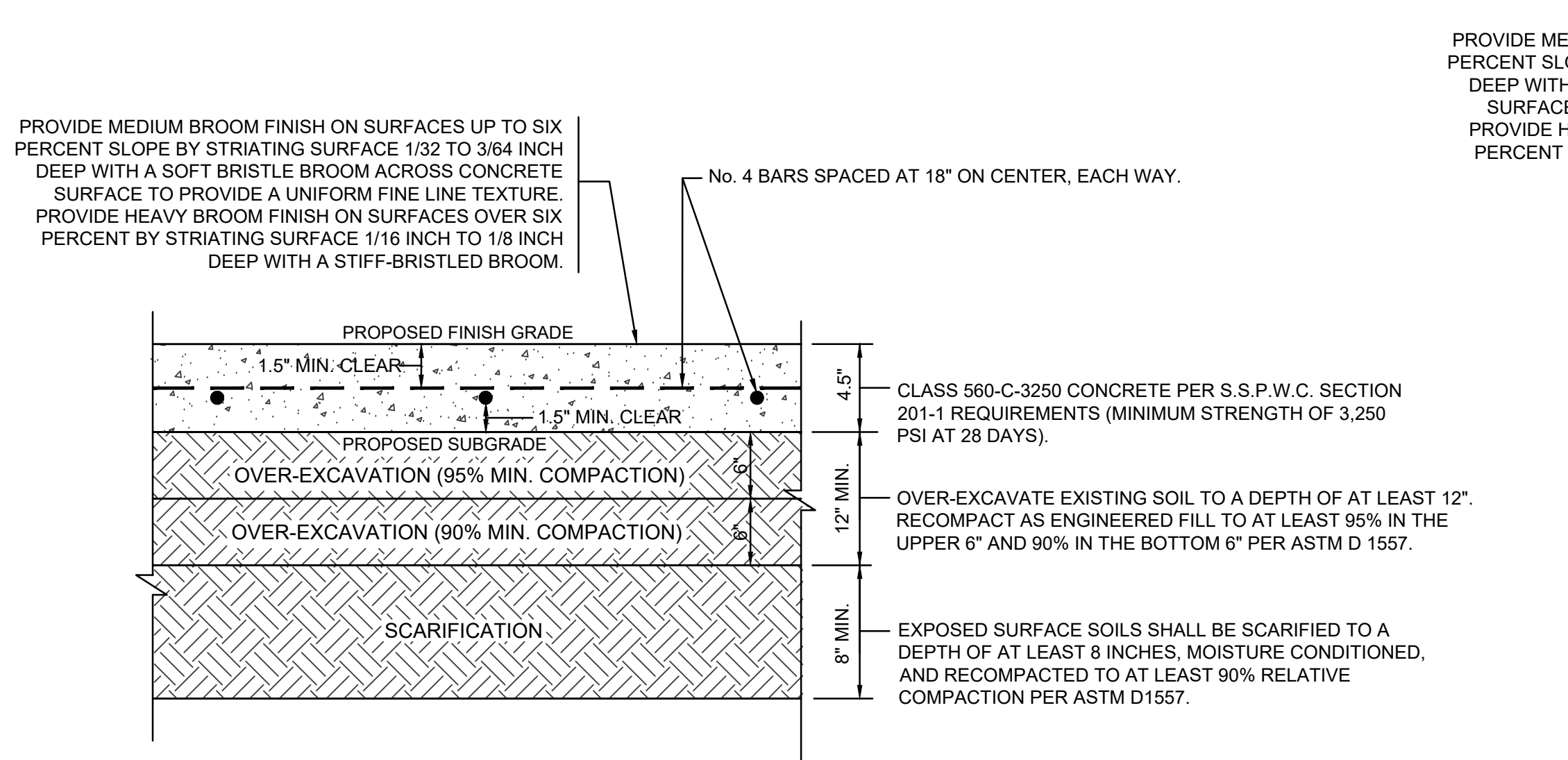
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FLOOD TEST NOTE:
BEFORE ACCEPTANCE, ALL NEW ASPHALT SHALL BE WATER TESTED TO ENSURE PROPER DRAINAGE AS DIRECTED BY THE INSPECTOR. THE CONTRACTOR SHALL PROVIDE WATER FOR THIS PURPOSE. THE FLOODING SHALL BE DONE BY WATER TANK TRUCK. DEPRESSIONS WHERE THE WATER PONDS TO A DEPTH OF MORE THAN 0.01 FOOT SHALL BE FILLED WITH TYPE E ASPHALT MIX OR THE SLOPE CORRECTED TO PROVIDE PROPER DRAINAGE. THE EDGES OF THE FILL SHALL BE FEATHERED AND SMOOTHED SO THAT THE JOINT BETWEEN THE FILL AND THE ORIGINAL SURFACE IS INVISIBLE. PRACTICAL FIELD MEASUREMENT: 0.01 FOOT = TWO QUARTERS STACKED, NO STANDING WATER SHALL REMAIN AFTER 60 MINUTES ON A 70 DEGREE F (OR WARMER) DAY. INSTALL FIRST COAT OF SEAL COAT ON ASPHALT BEFORE FLOOD TESTING OCCURS.

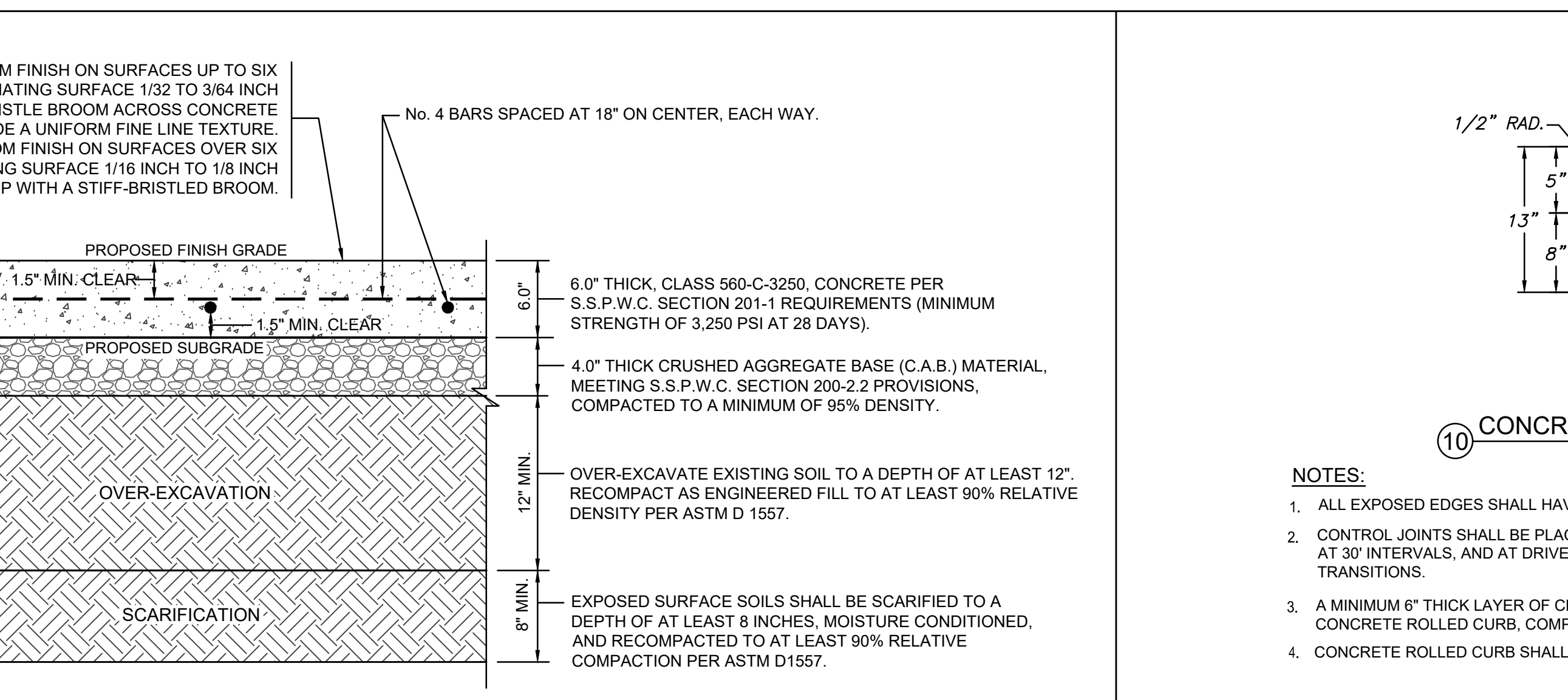
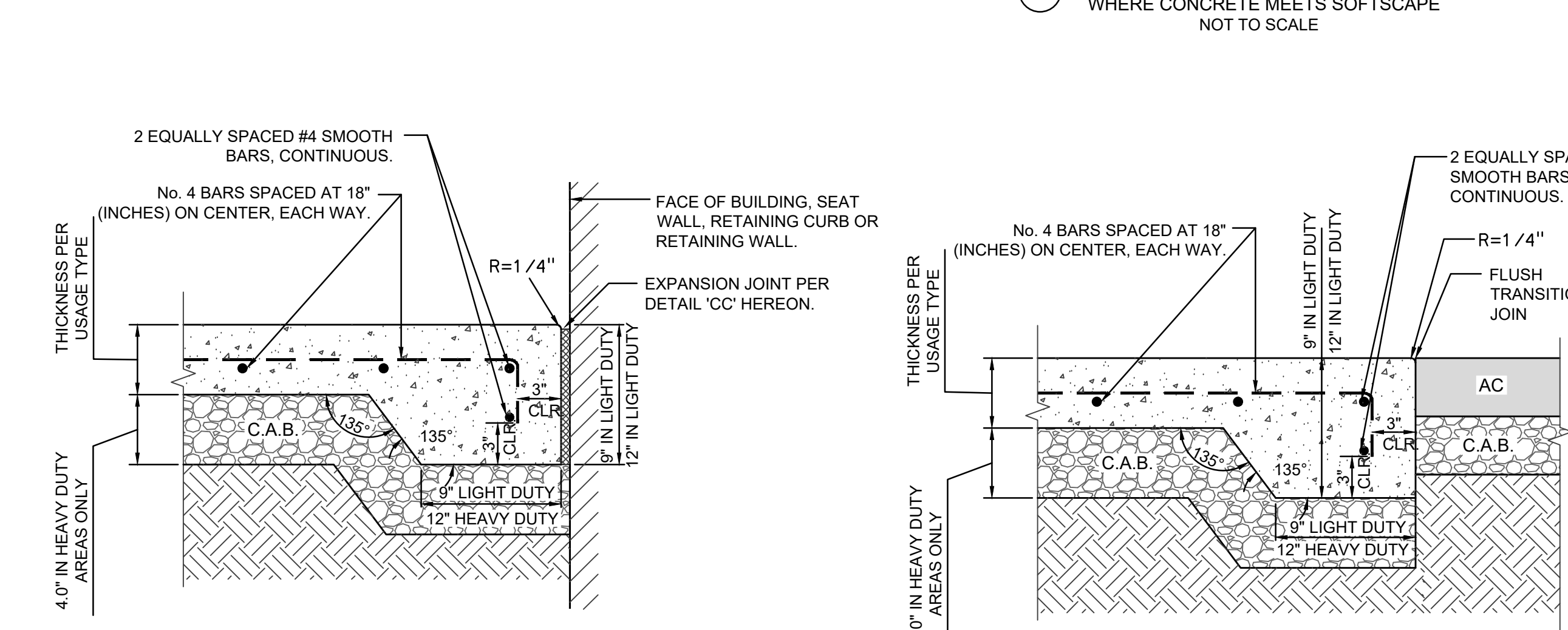
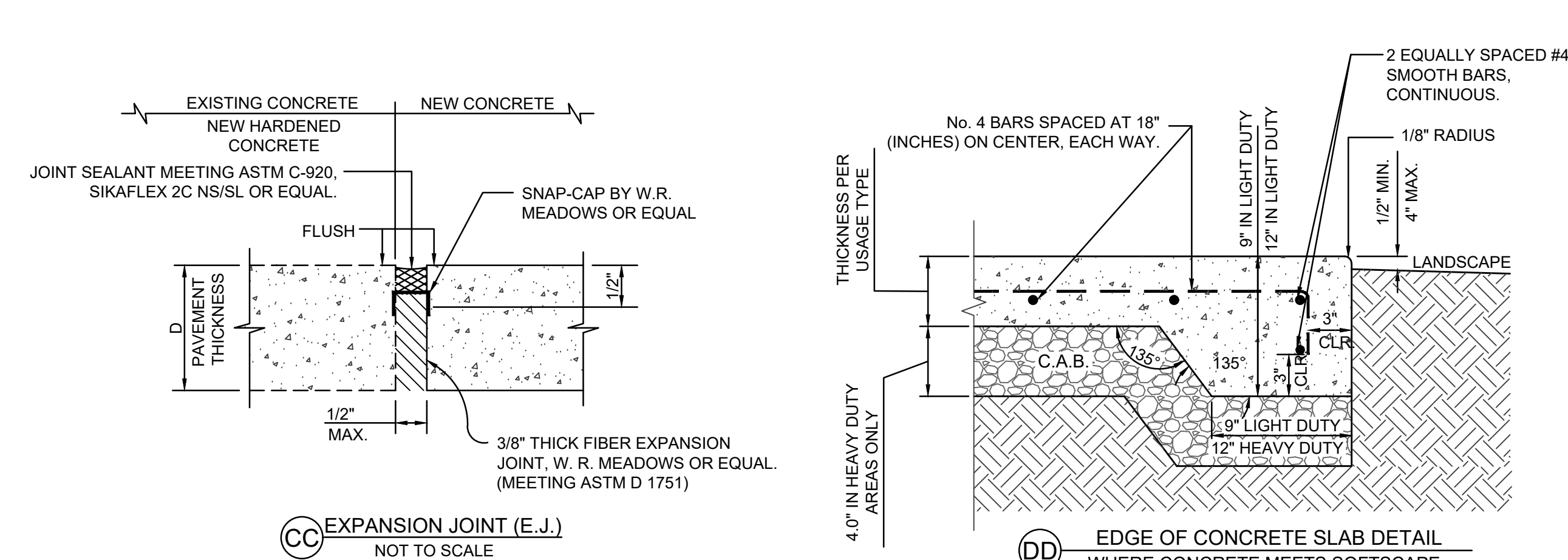
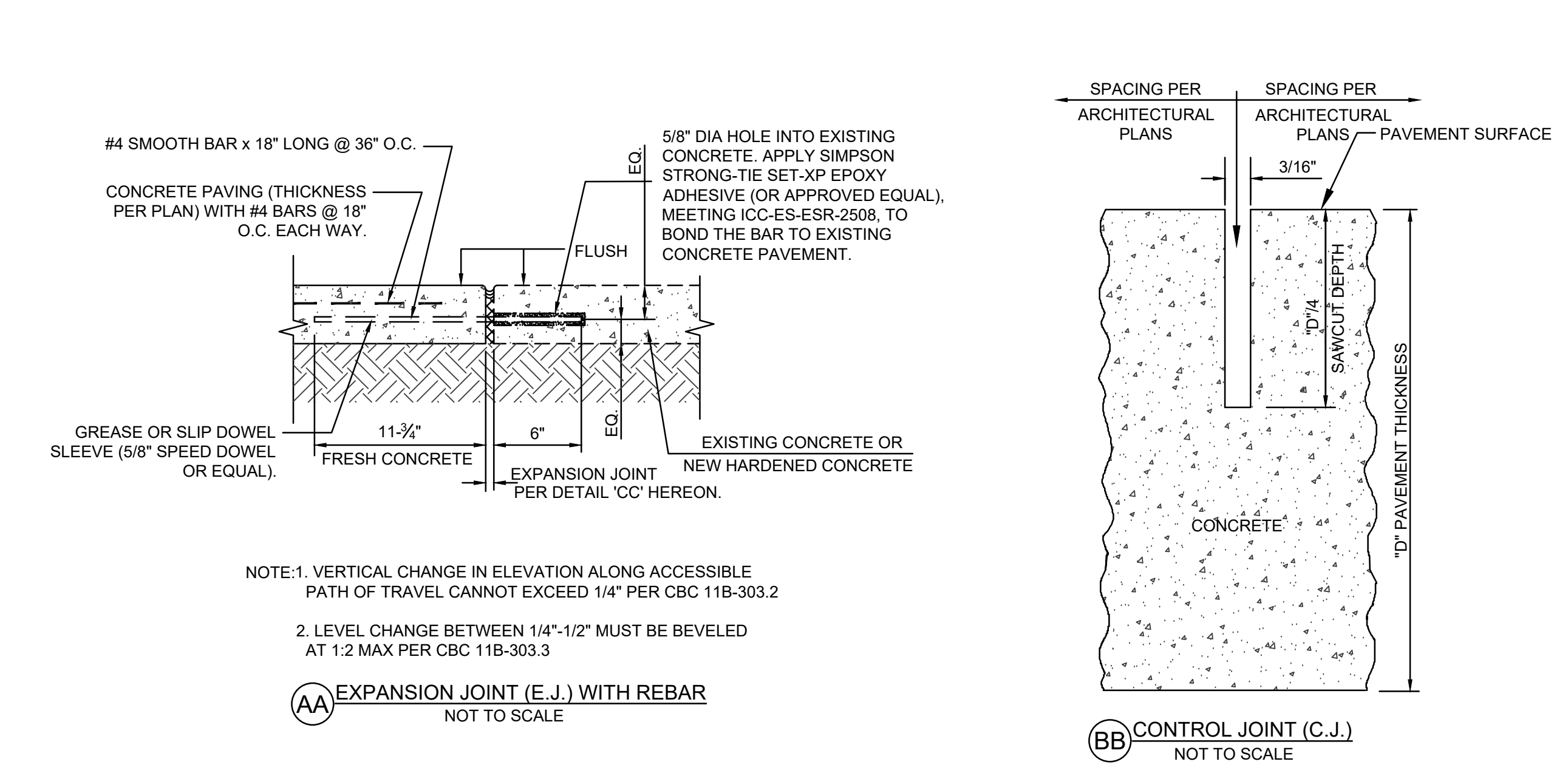


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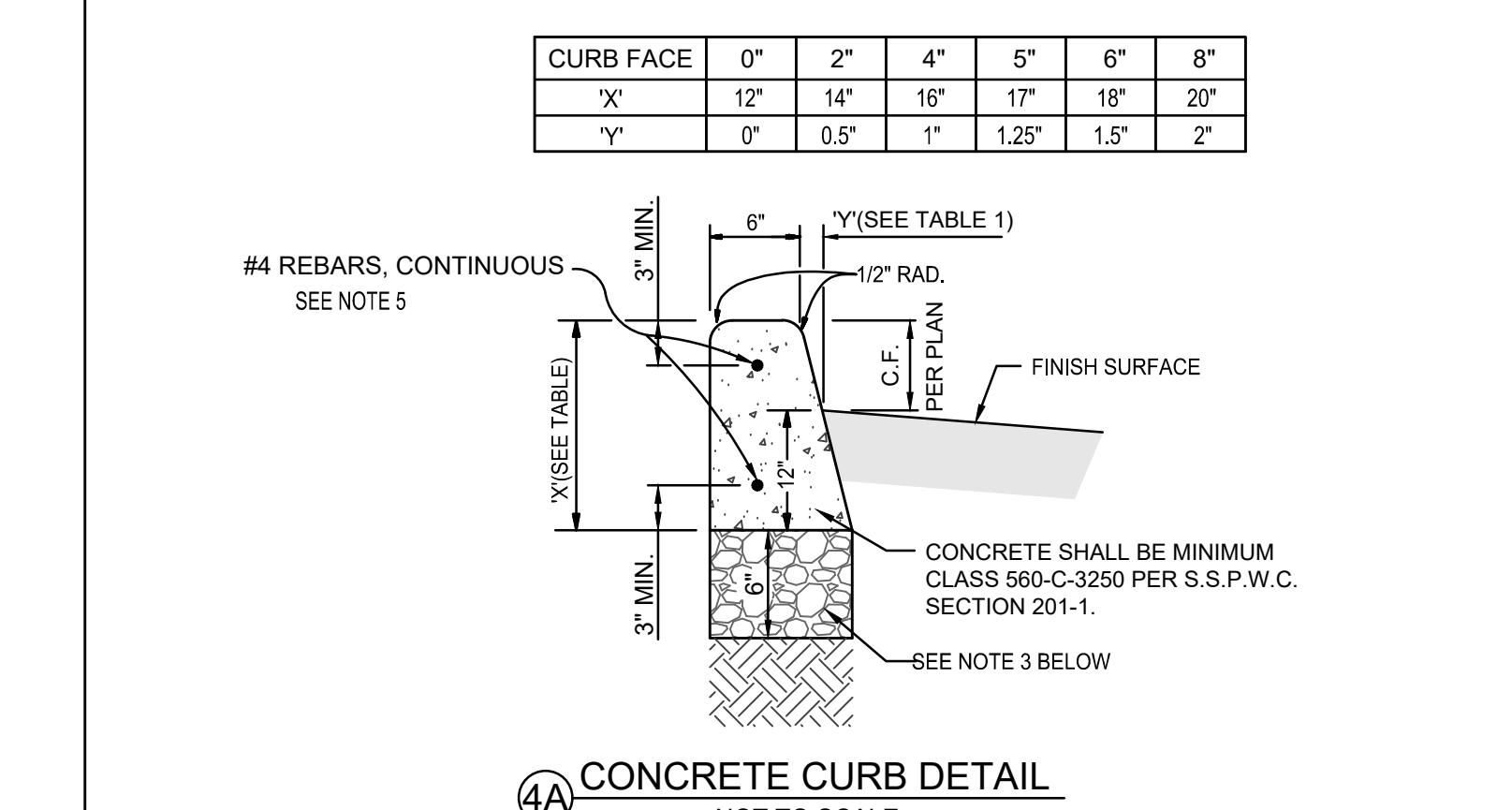
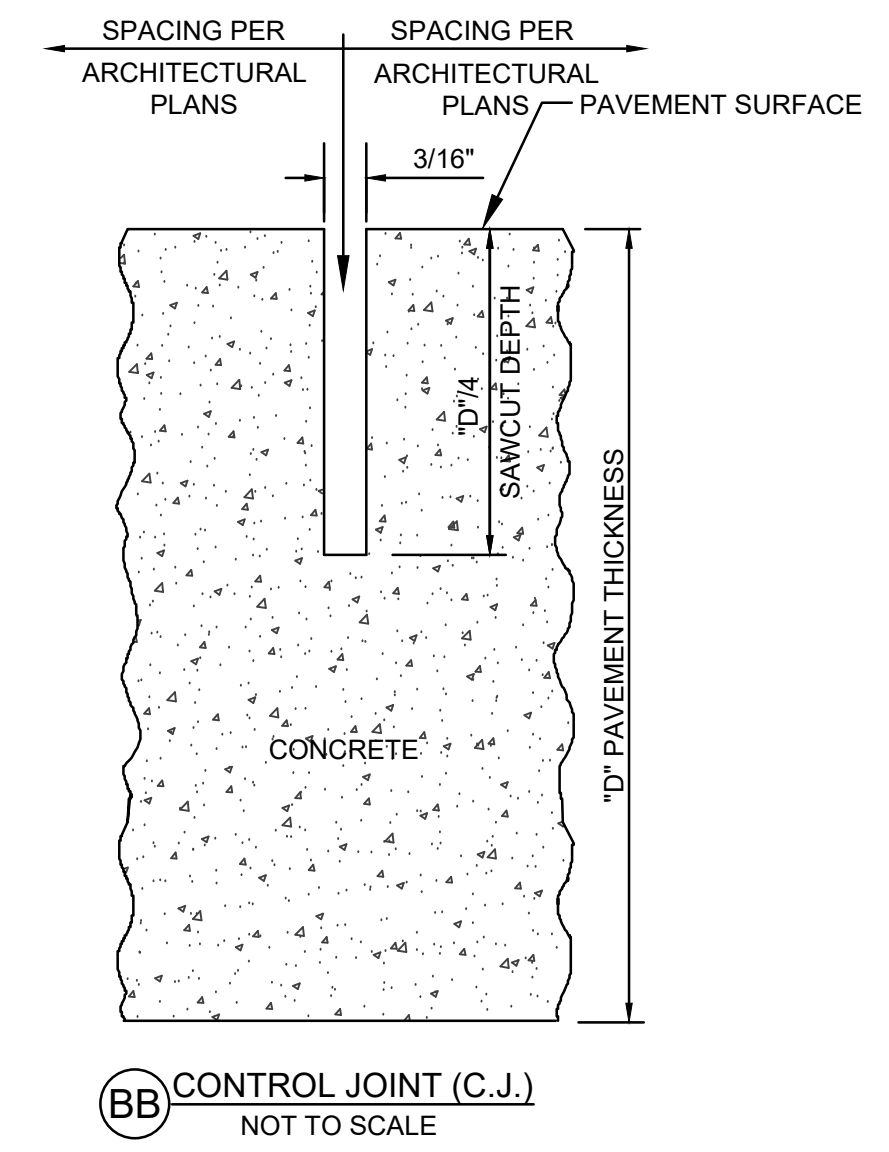
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NOTE TO CONTRACTOR:
A. THE CONTRACTOR SHALL INSTALL EXPANSION AND CONTROL JOINTS IN CONCRETE FLATWORK PER DETAILS 'AA' THRU 'CC' HEREON. EXPANSION JOINTS IN CONCRETE SHALL NOT EXCEED 30 FEET ON CENTER.
B. CONTRACTOR SHALL FOLLOW DETAILS 'DD' THRU 'FF' HEREON WHEN CONSTRUCTING CONCRETE FLATWORK EDGE TREATMENTS.



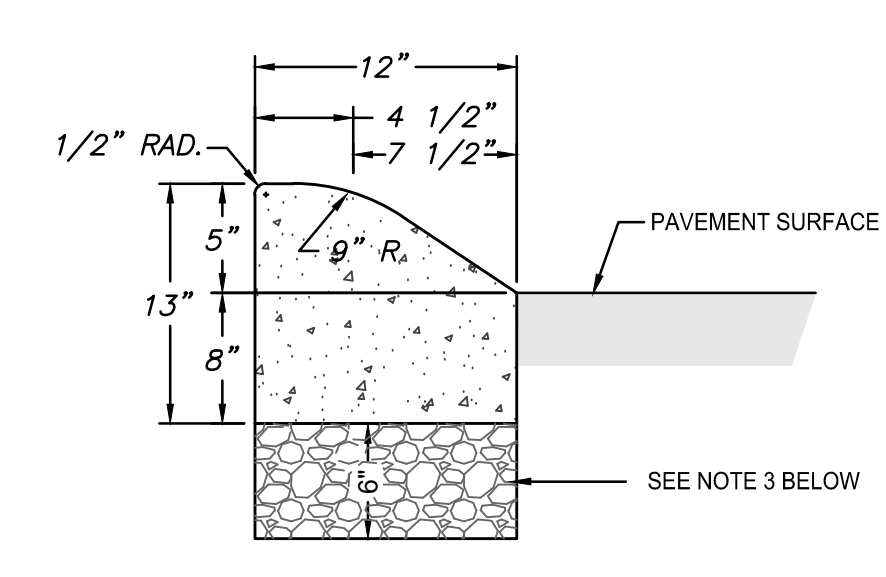
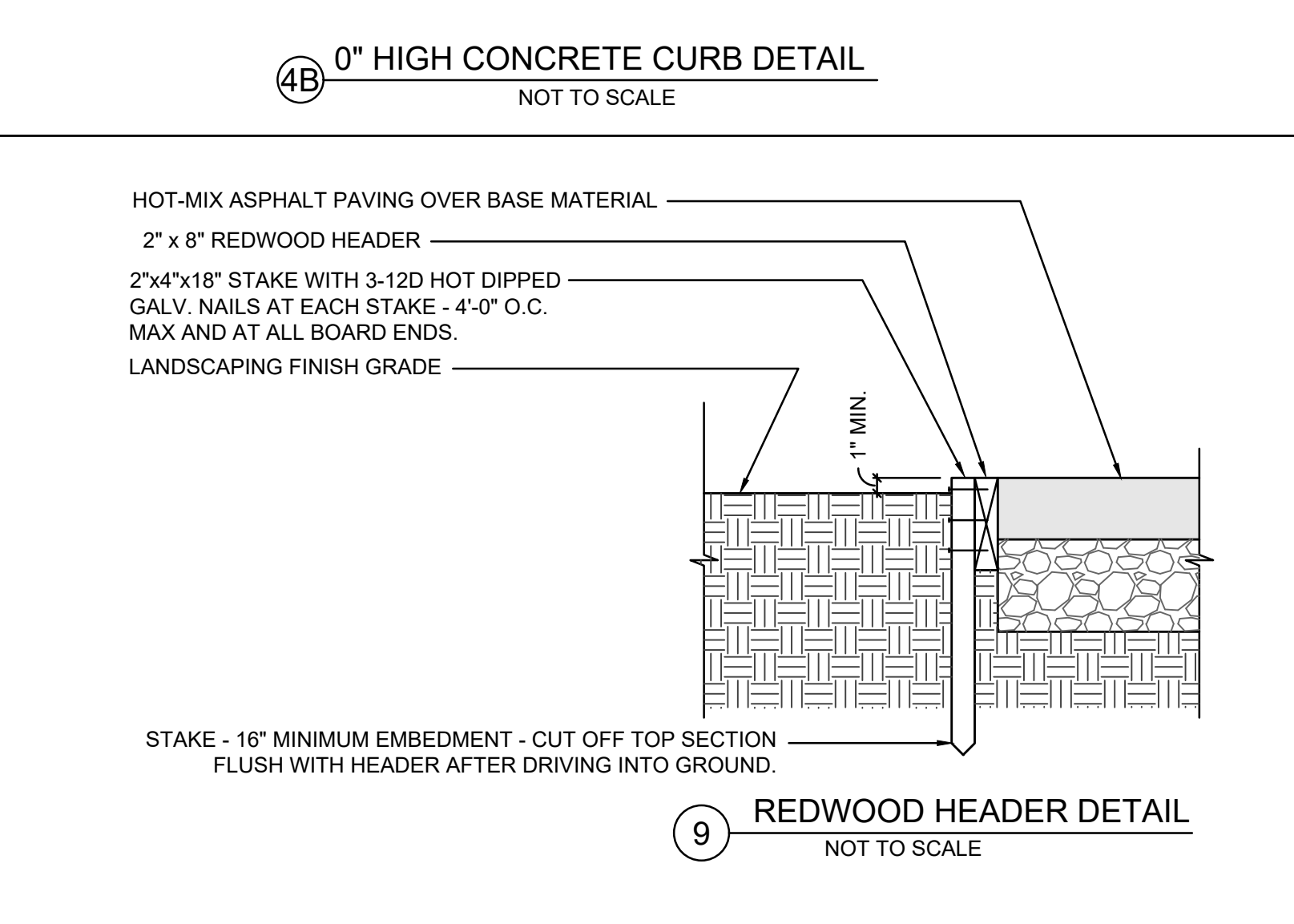
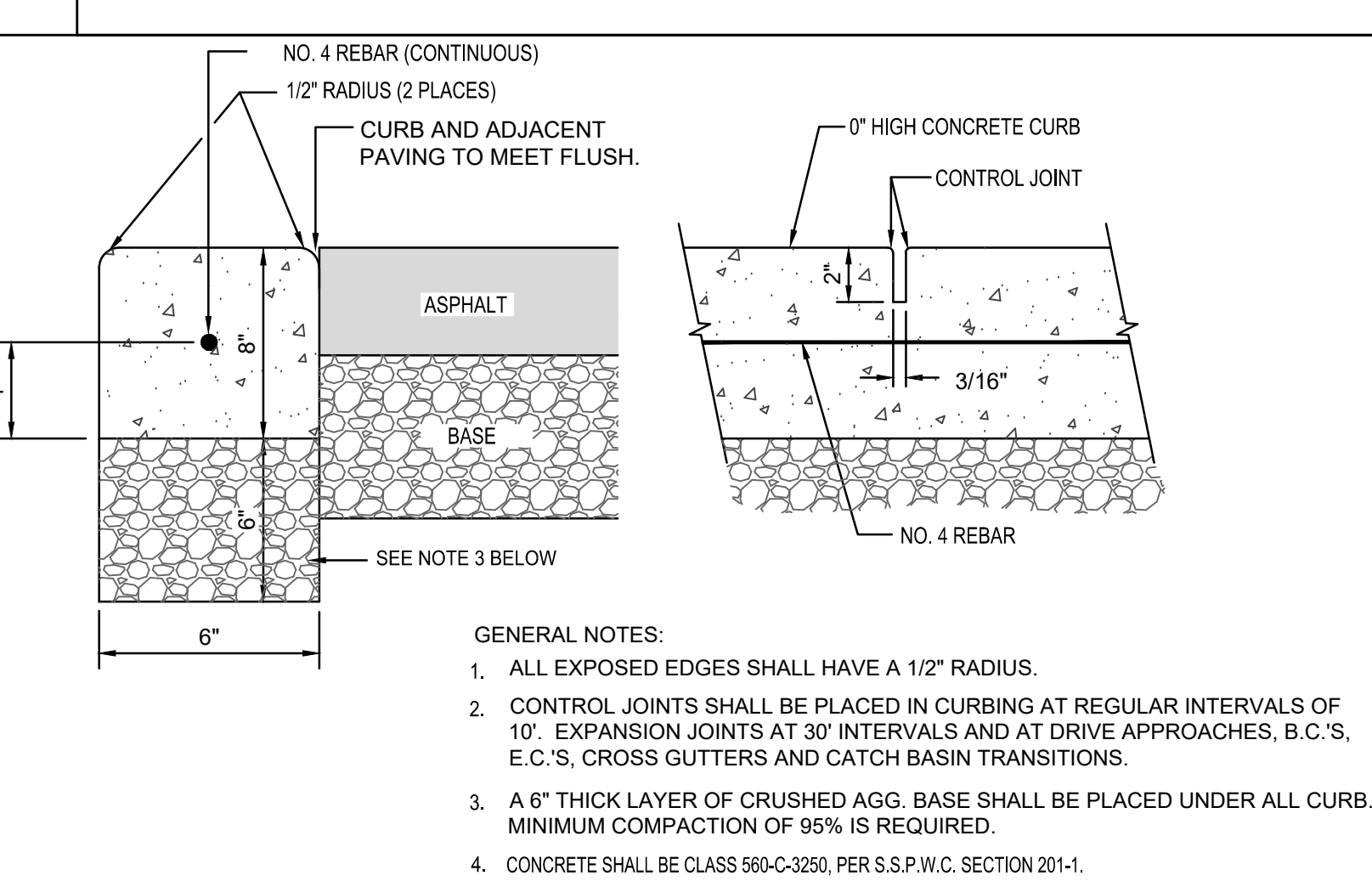
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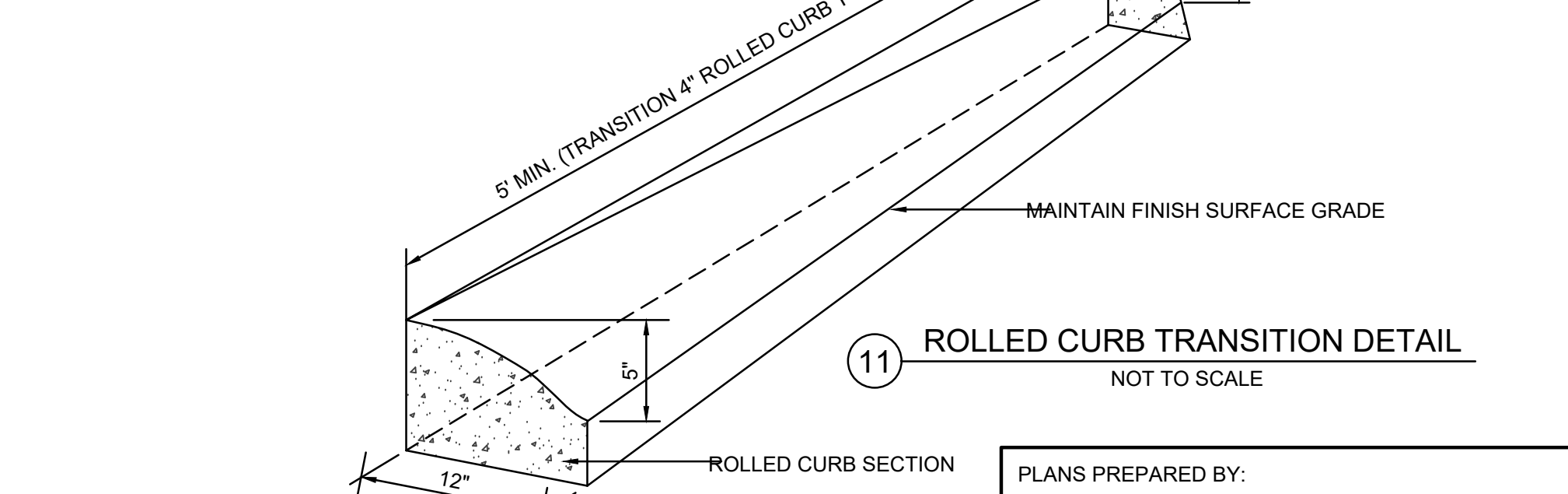
CURB GENERAL NOTES:

- ALL EXPOSED EDGES SHALL HAVE A 1/2" RADIUS.
- CONTROL JOINTS SHALL BE PLACED IN CURBING AT REGULAR INTERVALS OF 10'. EXPANSION JOINTS AT 30' INTERVALS, AND AT DRIVE APPROACHES, B.C.'S, E.C.'S, CROSS GUTTERS AND CATCH BASIN TRANSITIONS PER JOINT DETAILS BELOW.
- A 6" THICK LAYER OF CRUSHED AGGREGATE BASE SHALL BE PLACED UNDER ALL CURB MINIMUM COMPACTION OF 95% RELATIVE DENSITY UNLESS WAIVED BY CIVIL ENGINEER.
- CONCRETE CURB SHALL BE MINIMUM CLASS 560-C-3250 PER S.S.P.W.C. SECTION 201-1.
- PLACE NO. 4 REBARS 3" MINIMUM FROM TOP AND BOTTOM OF CURB.



NOTES:

- ALL EXPOSED EDGES SHALL HAVE A 1/2" RADIUS.
- CONTROL JOINTS SHALL BE PLACED IN CURBING AT REGULAR INTERVALS OF 10'. EXPANSION JOINTS AT 30' INTERVALS, AND AT DRIVE APPROACHES, B.C.'S, E.C.'S, CROSS GUTTERS AND CATCH BASIN TRANSITIONS.
- A MINIMUM 6" THICK LAYER OF CRUSHED MISC. BASE SHALL BE PLACED UNDER ALL CONCRETE ROLLED CURB, COMPACTED TO A MINIMUM 95% RELATIVE DENSITY.
- CONCRETE ROLLED CURB SHALL BE MINIMUM 4,000 PSI PER S.S.P.W.C. SECTION 203-6.

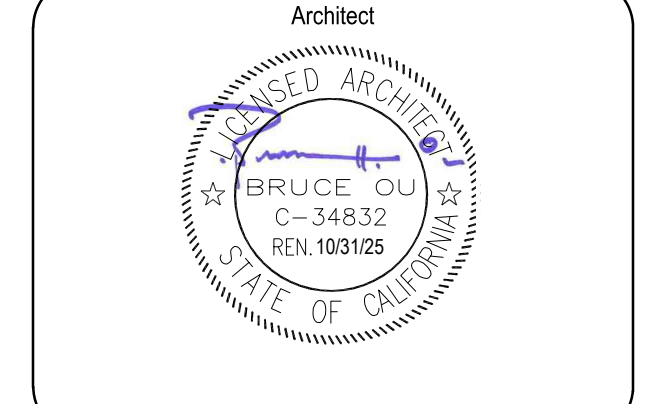
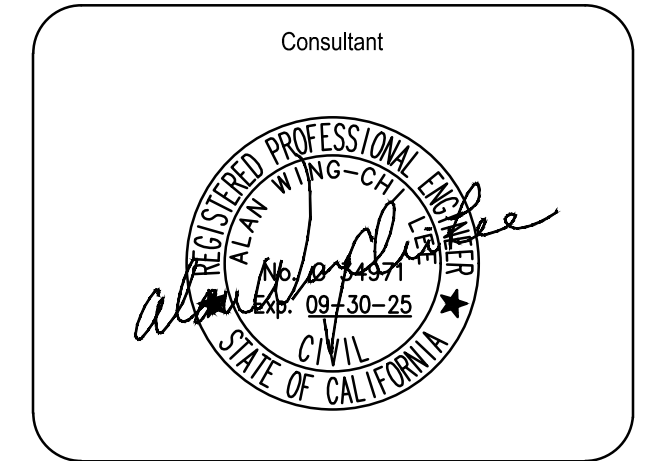
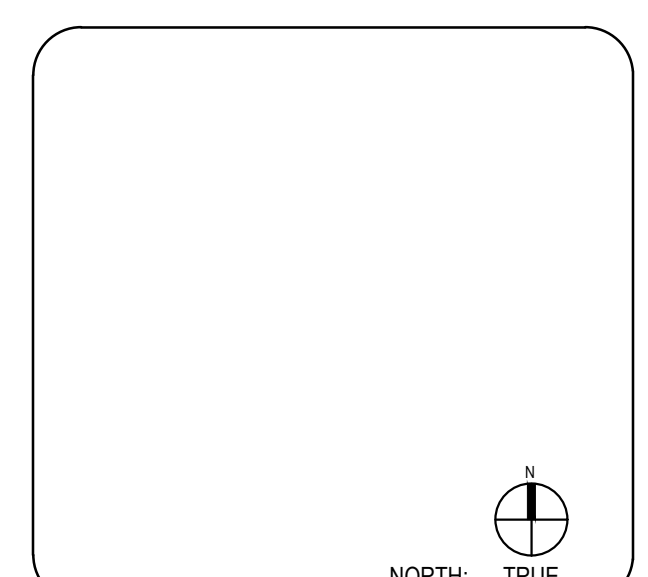


PLANS PREPARED BY:
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LOMA VISTA ELEMENTARY SCHOOL



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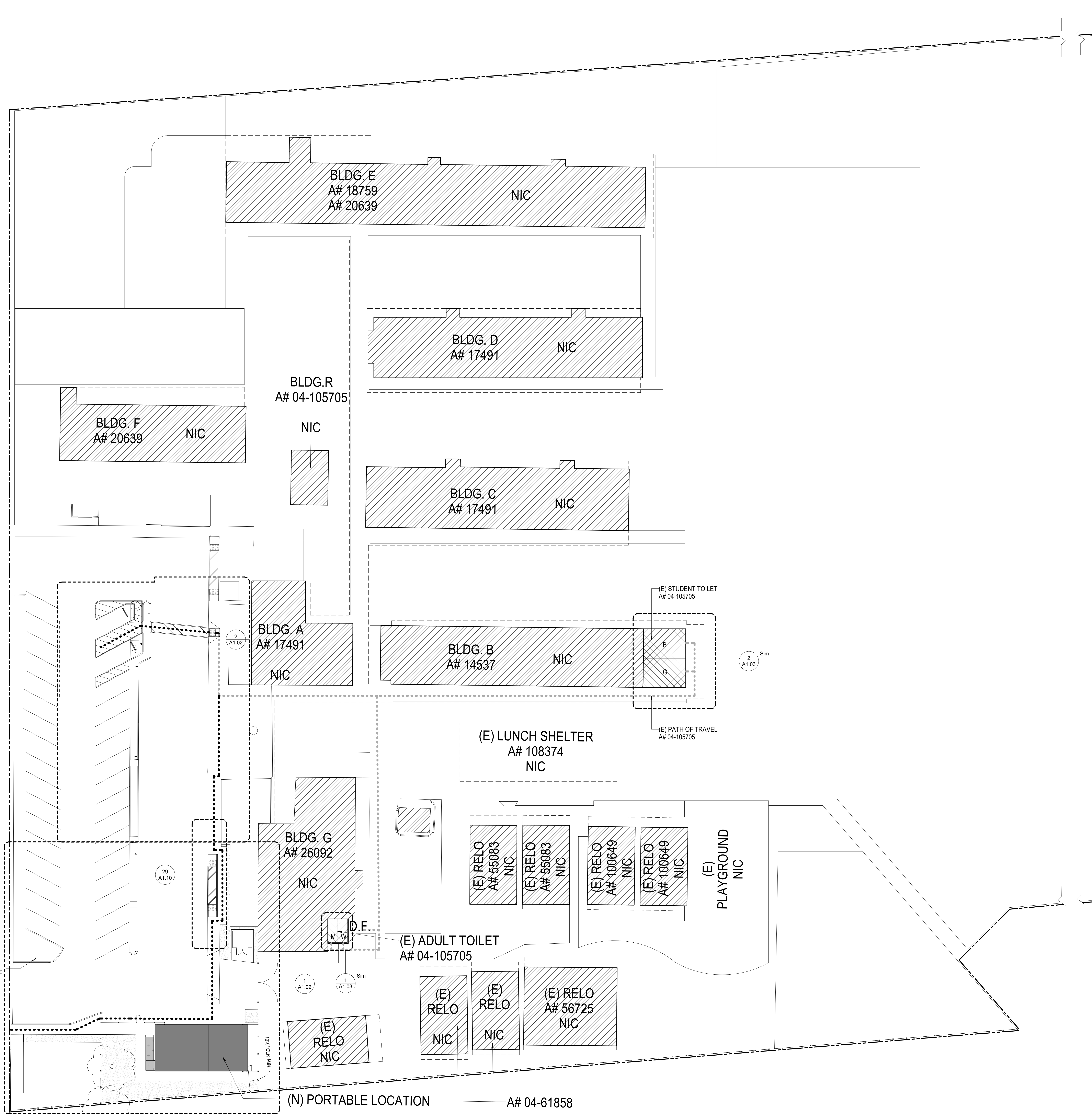
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REVISIONS

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DETAIL SHEET

C3.00



SITE GENERAL NOTES

- SEE CIVIL FOR TOPOGRAPHIC DATA, GRADING, DRAINING, AND UTILITY INFORMATION.
- SEE CIVIL FOR DIMENSIONS, DETAILS AND INFORMATION OF ALL FLATWORK.
- ALL NEW WALK SURFACES IN P.O.T. SHALL HAVE FLUSH TRANSITION TO ALL ADJACENT NEW OR EXISTING CONCRETE/PAVING, U.N.O.
- FOR GRATING OR STRAINERS LOCATED IN THE SURFACE OF ANY PEDESTRIAN WAY INCLUDING P.O.T. GRATE OR STRAINER TO HAVE A MAXIMUM OPENING NOT TO EXCEED 1/2" IN THE DIRECTION OF TRAFFIC FLOW WHERE NO DOMINANT DIRECTION OF TRAVEL IS DEFINED, 1/2" MAX OPENINGS IN ALL DIRECTIONS IS REQUIRED.
- CONTRACTOR TO VERIFY EXISTING DOORS COMPLY WITH THE FOLLOWING:
 - THE OPENING FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE 5 POUNDS MAXIMUM PER CBC 11B-404.2.9.
 - HARDWARE SHALL UNLATCH WITH 5 POUNDS MAXIMUM FORCE PER CBC 11B-309.4.

PATH OF TRAVEL

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT:
THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS AS PART OF THE DESIGN OF THIS PROJECT. THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON-COMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

PATH OF TRAVEL TECHNICAL REQUIREMENTS FOR ACCESSIBLE ROUTE:
ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/2" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM AND SLIP-RESISTANT. CROSS-SLOPE SHALL NOT BE STEEPER THAN 1:48 AND SLOPE IN THE DIRECTION OF TRAVEL SHALL NOT BE STEEPER THAN 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM THE WALL, ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

UPDATE ALL EXISTING DOOR ALONG THE PATH OF TRAVEL TO COMPLY WITH THE FOLLOWING:

- CLEAR OPENING WIDTH FOR A DOOR SHALL BE 32 INCHES MINIMUM. CBC SECTION 11B-404.2.3.
- HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERABLE PARTS ON ACCESSIBLE DOORS SHALL COMPLY WITH CBC 11B-309.4. THE OPERABLE PARTS OF SUCH HARDWARE SHALL BE 34" MINIMUM AND 48" MAXIMUM. CBC SECTION 11B-404.2.1.
- THE LEVERS OF LEVER ACTUATED LATCHES OR LOCKS FOR DOORS ARE ACCESSIBLE GATES SHALL BE CURVED WITH A RETURN TO WITHIN 12 INCHES OF THE GATE SURFACES TO PREVENT CATCHING ON THE CLOTHING OR PERSONS PER CALIFORNIA REFERENCED STANDARDS CODE, 1-24 PART 12, SECTION 12-10-202, ITEM (F).
- THE FORCE OF PUSHING OR PULLING OPEN A DOOR SHALL BE PER CBC SECTION 11B-404.2.9, 5 POUNDS ((2.2 N) MAXIMUM, 15 POUNDS ((6.7 N) MINIMUM, 5LB. MAX. FORCE FOR DOOR OPERATION.
- THE FORCE REQUIRED FOR ACTIVATING ANY OPERABLE PARTS SUCH AS LEVER HARDWARE, OR DISENGAGING OTHER DEVICES SHALL BE 5 POUNDS ((2.2 N) MAXIMUM PER CBC SECTION 11B-309.4.
- DOOR CLOSING SPEED SHALL BE PER CBC SECTION 11B-404.2.8. CLOSER SHALL BE ADJUSTED SO THAT THE REQUIRED TIME TO MOVE A DOOR FROM AN OPEN POSITION OF 90 DEGREES TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM. SPRING HINGES SHALL BE ADJUSTED SO THAT THE REQUIRED TIME TO MOVE A DOOR FROM OPEN POSITION OF 70 DEGREES TO CLOSED POSITION IS 1.5 SECONDS MINIMUM.
- THRESHOLDS SHALL COMPLY WITH CBC SECTION 11B-404.2.5.
- FLOOR STOPS SHALL NOT BE LOCATED IN THE PATH OF TRAVEL AND 4" MAXIMUM FROM THE WALLS.
- 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. (SUCH CONDITIONS MUST BE CLEARLY DEMONSTRATED AND INDICATED IN THE SPECIFICATIONS).
 - 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).
- SWING DOORS AND GATE SURFACES WITHIN 10" OF THE FINISH FLOOR OR GROUND SHALL HAVE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN THESE SURFACES SHALL BE WITHIN 1/16" OF THE SAME PLANE AS THE OTHER AND BE FREE OF SHARP OR ABRASIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED. CBC SECTION 11B-404.2.10.

CODE ANALYSIS

BUILDING DESIGNATION:	BLDG E 101
OCCUPANCY GROUP:	GROUP E
CONSTRUCTION TYPE:	V-B
ALLOWABLE FLOOR AREA:	9,500 SQ FT
ACTUAL FLOOR AREA:	960 SQ FT
TOTAL FLOOR AREA BLDG E 100 & (5) (E) BLDGS:	5,760 SQ FT
BASIC ALLOWABLE AREA 9,500 SF:	5,760 SF = 9,500 SF = OKAY
ALLOWABLE HEIGHT / NO OF STORIES:	55'-0" / TWO
ACTUAL HEIGHT / NO OF STORIES:	12'-0" / ONE
SPRINKLER SYSTEM:	NONE

SITE PLAN LEGEND

- PROPERTY LINE
- (E) 5'-0" HIGH CHAIN LINK FENCING PER DETAIL 13 / A1.10
- (N) 5'-0" HIGH CHAIN LINK FENCING PER DETAIL 13 / A1.10
- (E) BUILDING, NOT IN SCOPE
- SCOPE OF WORK
- (N) RELOCATABLE BLDGS
- RESTROOM
- (N) PATH OF TRAVEL
- (E) PATH OF TRAVEL A# 55083, 04-100649, 04-105705

D.F.	DRINKING FOUNTAIN PER	5 / A1.11
M	MEN RESTROOM (AGES 13 & ABOVE) PER	1 / A1.03
W	WOMEN RESTROOM (AGES 13 & ABOVE) PER	1 / A1.03
B	BOYS RESTROOM (AGES 5 THROUGH 8) PER	2 / A1.03
G	GIRLS RESTROOM (AGES 5 THROUGH 8) PER	2 / A1.03

PARKING CALCULATION

(N) LOMA VISTA ELEMENTARY SCHOOL PARKING LOT

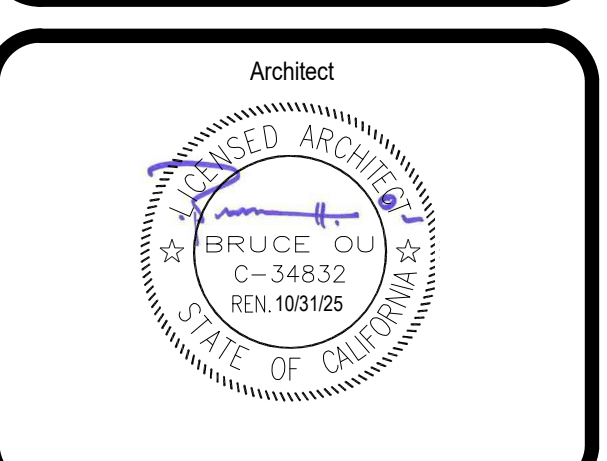
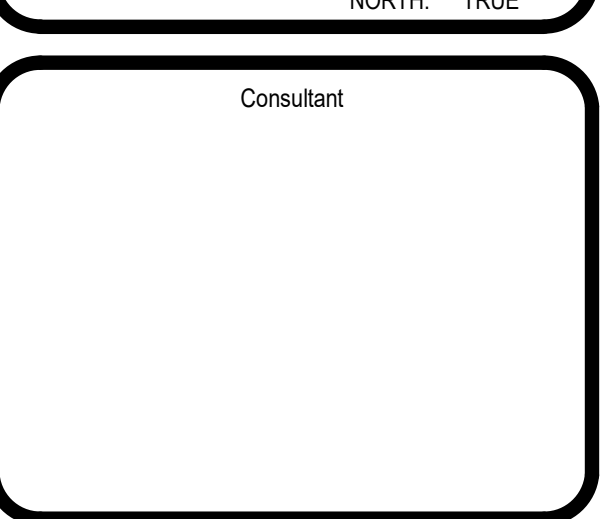
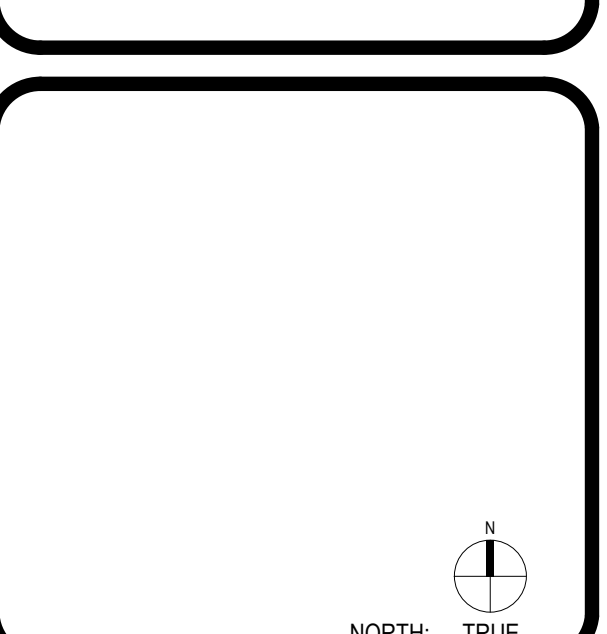
STANDARD STALLS	31
ACCESSIBLE STALLS (1 VAN ACCESSIBLE)	2
TOTAL PARKING STALLS	33

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LOMA VISTA ELEMENTARY SCHOOL

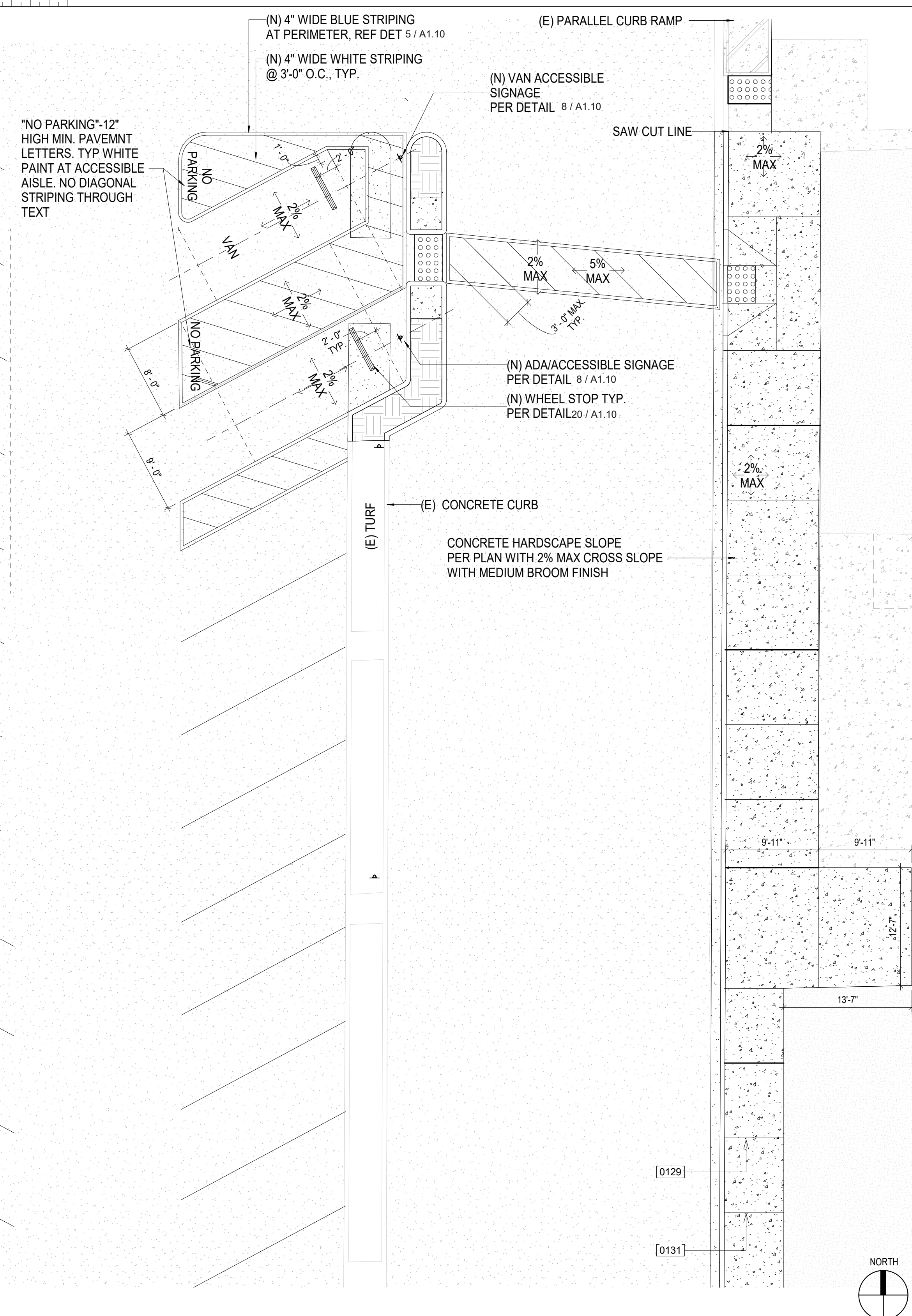


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DATE 04-11-2024	PROJECT NUMBER 230381	
No.	Description	Date

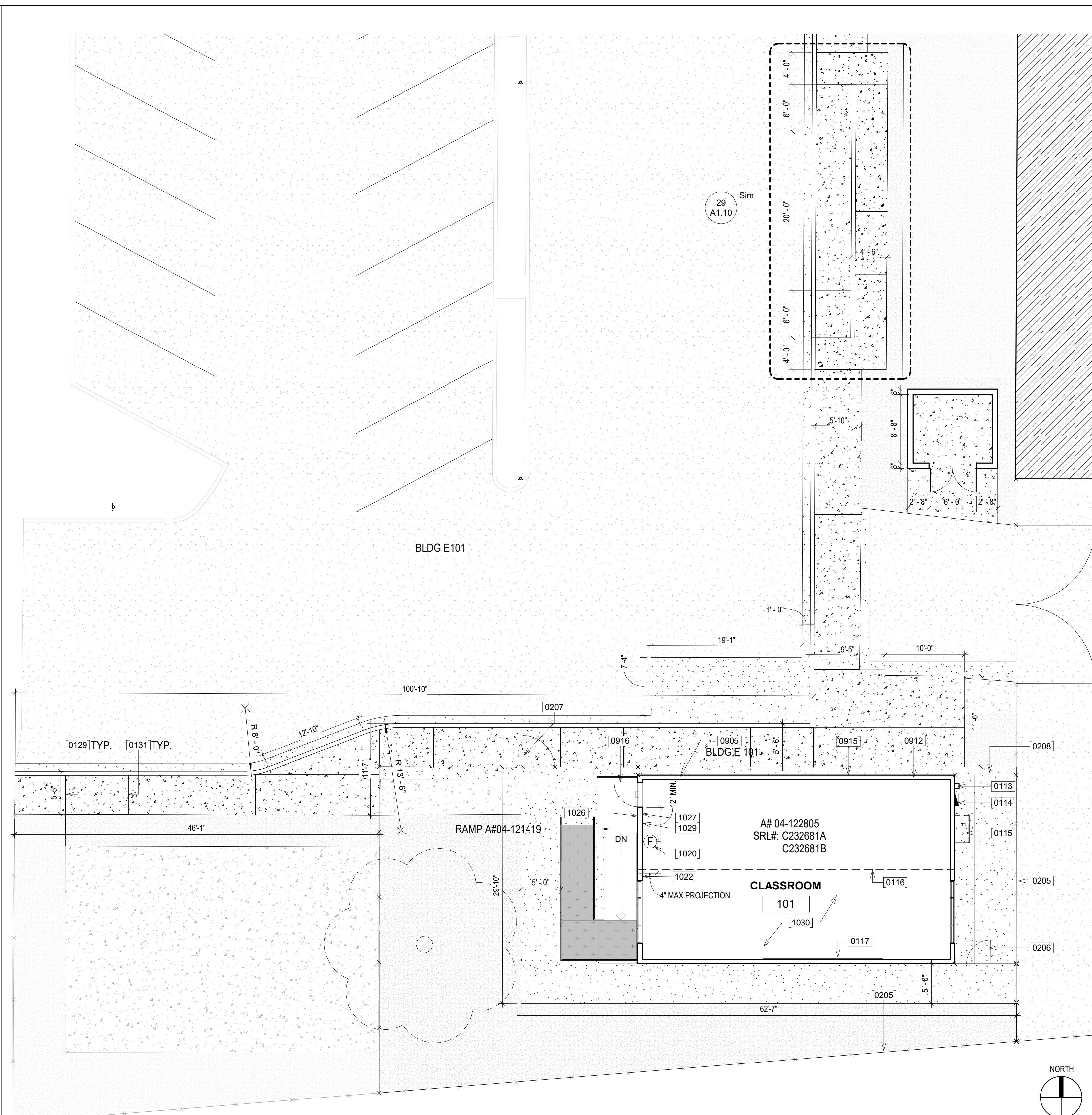
OVERALL SITE PLAN

A1.01

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(E) ENLARGED ADA PARKING 2
1/8" = 1'-0"



ENLARGED SITE PLAN 1
1/8" = 1'-0"

GENERAL NOTES

- ALL FINISH MATERIALS MUST MEET THE FLAME SPREAD RATINGS PER THE BUILDING CODE.
- REFER TO INTERIOR ELEVATIONS FOR SPECIFIC MATERIAL LOCATIONS.
- PAINT ALL EXPOSED DUCTWORK, CONDUIT, ELECTRICAL EQUIPMENT, ETC TO MATCH ADJACENT SURFACES.
- PAINT ALL NONFACTORY FINISHED EXPOSED METAL.
- REFER TO TYPICAL FLOORING TRANSITION DETAILS FOR ALL FLOORING MATERIALS.
- FLOORING TRANSITIONS AT DOORS SHOULD BE LOCATED UNDER THE DOOR IN THE CLOSED POSITION, UNLESS NOTED OTHERWISE.
- CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING FINISHED FLOORING SURFACES FROM DAMAGE DURING ALL CONSTRUCTION PHASES.
- PROVIDE BULLNOSE TRIM AT TRANSITIONS FROM CERAMIC WALL TILE TO OTHER MATERIAL, UNLESS NOTED OTHERWISE.
- REFER TO REFLECTED CEILING PLANS FOR CEILING HEIGHTS.
- ALL ELECTRICAL DEVICE COVERS ARE TO BE WHITE UNLESS NOTED OTHERWISE.
- CARPET PATTERNS TO RUN PARALLEL TO CORRIDOR, UNLESS NOTED OTHERWISE.
- ALL HOLLOW METAL DOOR FRAMES TO BE PAINTED TO MATCH ADJACENT WALL COLOR.
- IF PC DOOR HARDWARE FOR ANY OF THE 2 STOODLES PORTABLE ACCESS DOOR IS NOT LOCKABLE FROM INSIDE PER CBC 1010.1.11, THEN CONTRACTOR IS TO PROVIDE AND INSTALL NDT/PS RHO (RHODES) CLASSROOM SECURITY LEVEL LOCK, 026 FINISH, THE PC DOOR HARDWARE IS TO BE REMOVED AND RETURNED TO THE OWNER.
- CONTRACTOR TO VERIFY ALL WINDOWS ARE SCREWED SHUT AND NON-OPERABLE.
- CONTROL JOINT (CJ) SPACING SHALL NOT EXCEED 8'-0" ON CENTER AND EXPANSION JOINTS (EJ) ARE PLACED AT EVERY 360' CONTROL JOINT PER C4.02.

KEYNOTES

#	Description
0113	FIRE ALARM BOX A# 04-122805
0114	ELECTRICAL PANEL A# 04-122805
0115	MECHANICAL UNIT PER A# 04-122805
0116	MOD LINE A# 04-122805
0117	MARKER BOARD A# 04-122805
0129	EXPANSION JOINT (E.J.) PER C4.02.00
0131	CONTROL JOINT (C.J.) PER B4.03.00
0205	(E) CHAINLINK FENCE & GATES, PROTECT IN PLACE
0206	(N) 5'-0" HIGH 3'-0" WIDE GATE, PER DETAIL 15 / A1.10
0207	(N) 5'-0" HIGH 4'-0" WIDE GATE PER DETAIL 15 / A1.10 - VON DURPIN PANIC AXIPA BAR 98/99 SERIES, & KNOX PADLOCK
0208	(N) 5'-0" CHAIN LINK FENCE PER DETAIL 13 / A1.10
0905	PROVIDE BUILDING IDENTIFICATION ON EXTERIOR OF BUILDING. PAINT 12" HIGH LETTERING OF CONTRASTING COLOR TO BACKGROUND
0912	PAINT EXTERIOR WALLS, VISTA PAINT, VP24-19072 (flw)
0915	PAINT EXTERIOR TRIMS, VISTA PAINT, VP24-19072 (semi-gloss)
0916	PAINT EXTERIOR DOOR, VISTA PAINT, VP24-19071 (semi-gloss)
1020	SURFACE MOUNTED FIRE EXTINGUISHER PER DTL. 3/5/8 A5.2
1022	OCCUPANCY SIGN PER DTL. 2/A0.1
1026	ROOM I.D. SIGN WITH ISA IDENTIFICATION PER DTL. 4/A0.2
1027	EXIT SIGNAGE TO READ "EXIT RAMP DOWN" PER DTL. 14 / A1.11
1029	ASSISTIVE LISTENING SIGN PER DTL.
1030	PROVIDE ASSISTIVE LISTENING SYSTEM DEVICES OF 4% OF OCCUPANTS. TYP. OF CLASSROOMS. DEVICES TO BE KEPT IN OFFICE ADMIN BUILDING. A PROVIDE 1 TRANSMITTERS AND 2 RECEIVERS TO SERVE ALL CLASSROOMS IN THE BUILDING. PROVIDE ADDITIONAL TRANSMITTERS AND RECEIVERS BASED ON OCCUPANCY OF OTHER ASSEMBLY SPACES I.E. MPR, CONFERENCE ROOMS, ETC.

SITE PLAN LEGEND

- (N) PATH OF TRAVEL
 - PROPERTY LINE
 - (E) 5'-0" HIGH CHAIN LINK FENCING PER DETAIL
 - (N) 5'-0" HIGH CHAIN LINK FENCING PER DETAIL
 - DEMO CHAIN LINK FENCING
 - (C.J.) CONTROL JOINT
 - (E.J.) EXPANSION JOINT
- (E) CONC. PAVING
 - (N) CONC. PAVING PER CIVIL
 - (E) TURF
 - (N) TURF PER CIVIL
 - (E) ASPHALT PAVING
 - (N) ASPHALT PAVING PER CIVIL
 - (N) ASPHALT PAVING TRANSITION PER CIVIL

Not for permitting or construction

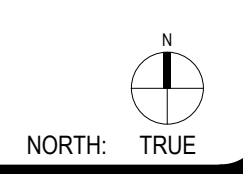


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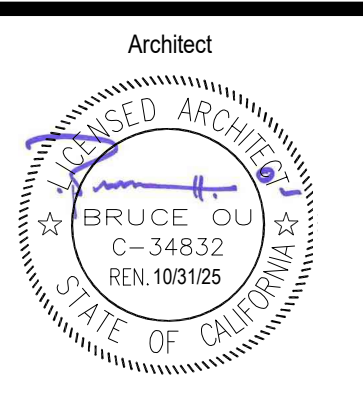
LOMA VISTA ELEMENTARY SCHOOL

PROJECT ADDRESS:
13822 Prospect Ave
Sanita Area, CA 92705

DSA FILE NO. XXXX



Consultant



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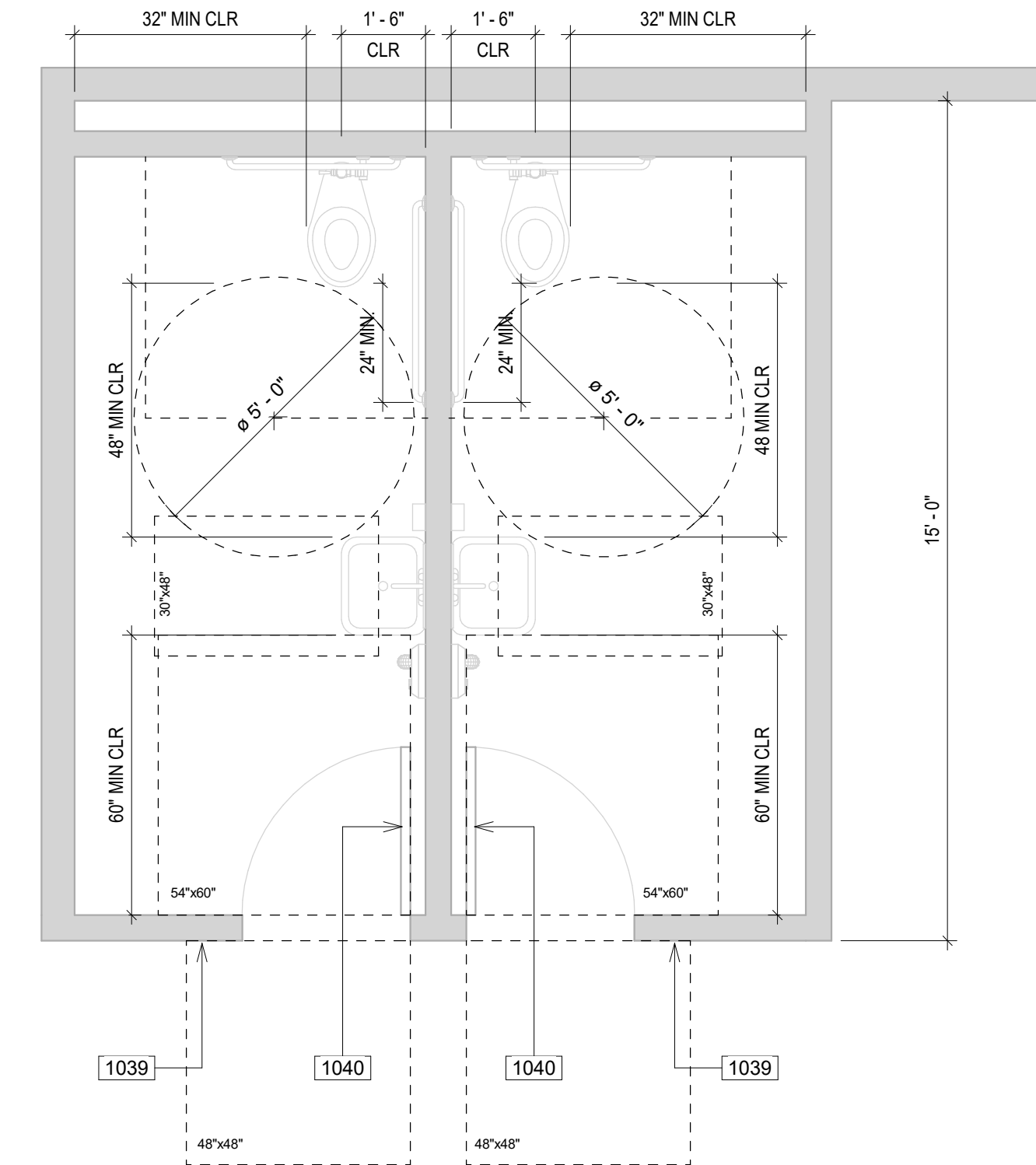
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No.	Description	Date

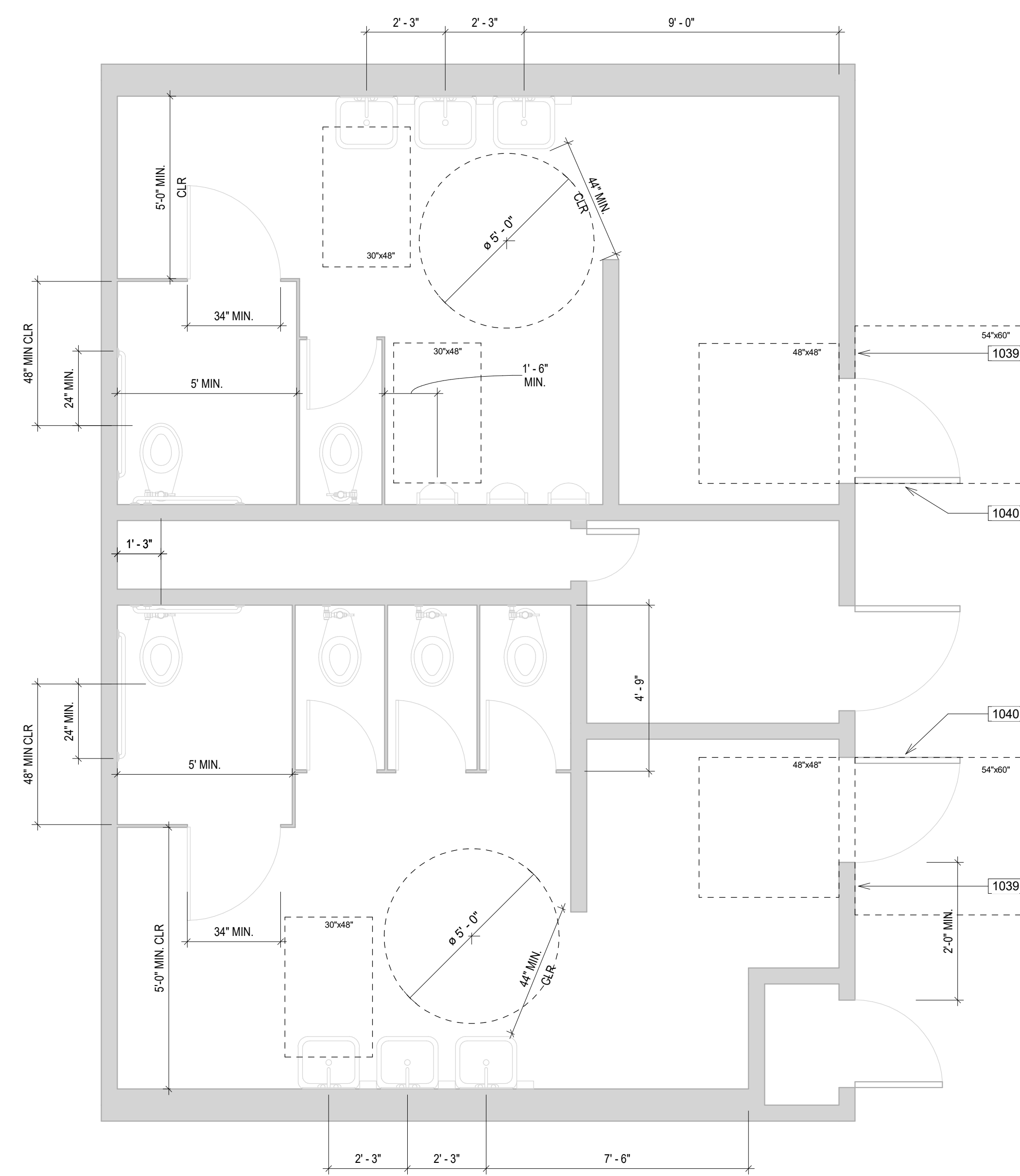
ENLARGED SITE PLAN

A1.02

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BLDG. G (E) MEN AND WOMENS RESTROOM
3/8" = 1'-0" 1



BLDG. B (E) BOYS AND GIRLS RESTROOM
3/8" = 1'-0" 2

GENERAL NOTES

- ALL FINISH MATERIALS MUST MEET THE FLAME SPREAD RATINGS PER THE BUILDING CODE.
- REFER TO INTERIOR ELEVATIONS FOR SPECIFIC MATERIAL LOCATIONS.
- PANT ALL EXPOSED DUCTWORK, CONDUIT, ELECTRICAL EQUIPMENT, ETC TO MATCH ADJACENT SURFACES.
- PANT ALL NON-FACTORY FINISHED EXPOSED METAL.
- REFER TO TYPICAL FLOORING TRANSITION DETAILS FOR ALL FLOORING MATERIALS.
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- ALL ELECTRICAL DEVICE COVERS ARE TO BE WHITE UNLESS NOTED OTHERWISE.
- CARPET PATTERNS TO RUN PARALLEL TO CORRIDOR, UNLESS NOTED OTHERWISE.
- ALL HOLLOW METAL DOOR FRAMES TO BE PAINTED TO MATCH ADJACENT WALL COLOR.
- IF PC DOOR HARDWARE FOR ANY OF THE 2 STOCKPILES PORTABLES ACCESS DOOR IS NOT LOCKABLE FROM INSIDE PER CBC 1010.1.11, THEN CONTRACTOR IS TO PROVIDE AND INSTALL NORSIPS RHO RHODES) CLASSROOM SECURITY LEVEL LOCK, 628 FINISH, THE PC DOOR HARDWARE IS TO BE REMOVED AND TO BE PROTECTED AND RETURNED TO THE OWNER.
- CONTRACTOR TO VERIFY ALL WINDOWS ARE SCREWED SHUT AND NON-OPERABLE.
- CONTROL JOINT (CJ) SPACING SHALL NOT EXCEED 8'-0" ON CENTER AND EXPANSION JOINTS (EJ) ARE PLACED AT EVERY 360" CONTROL JOINT PER C-102.

LEGEND

- 24" @ EXT
18" MIN CLR
DOOR AND TAG, TYP - SEE DOOR SCHEDULE
- 101
12" MIN CLR
REQUIRED CLEARANCES AT ALL DOORS, TYP
- (E) REINFORCED BRICK WALL TO REMAIN
- (E) NON-RATED WALL
- FE • (E) SURFACE-MOUNTED FIRE EXTINGUISHER, REF 7/A5.01
- EP (E) ELECTRICAL PANEL, SEE ELECTRICAL DWGS
- (E) PLUMBING FIXTURE, SEE PLUMBING DWGS
- DEMO (E) TOILET ACCESSORY
- 30" X 48" CLEAR FLOOR SPACE
- 60" DIAMETER CLEAR FLOOR SPACE

KEYNOTES

#	Description
1039	(E) RESTROOM WALL SIGN, REF
1040	(E) RESTROOM DOOR SIGN, REF

Not for permitting or construction

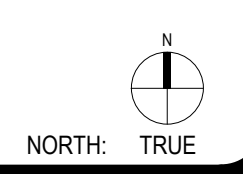


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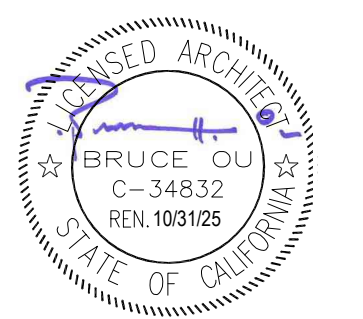
PROJECT ADDRESS:
13822 Prospect Ave
Santa Ana, CA 92705

DSA-APPL. NO.: XXXX DSA-FILE NO.: XXXX



Consultant

Architect



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TUSD

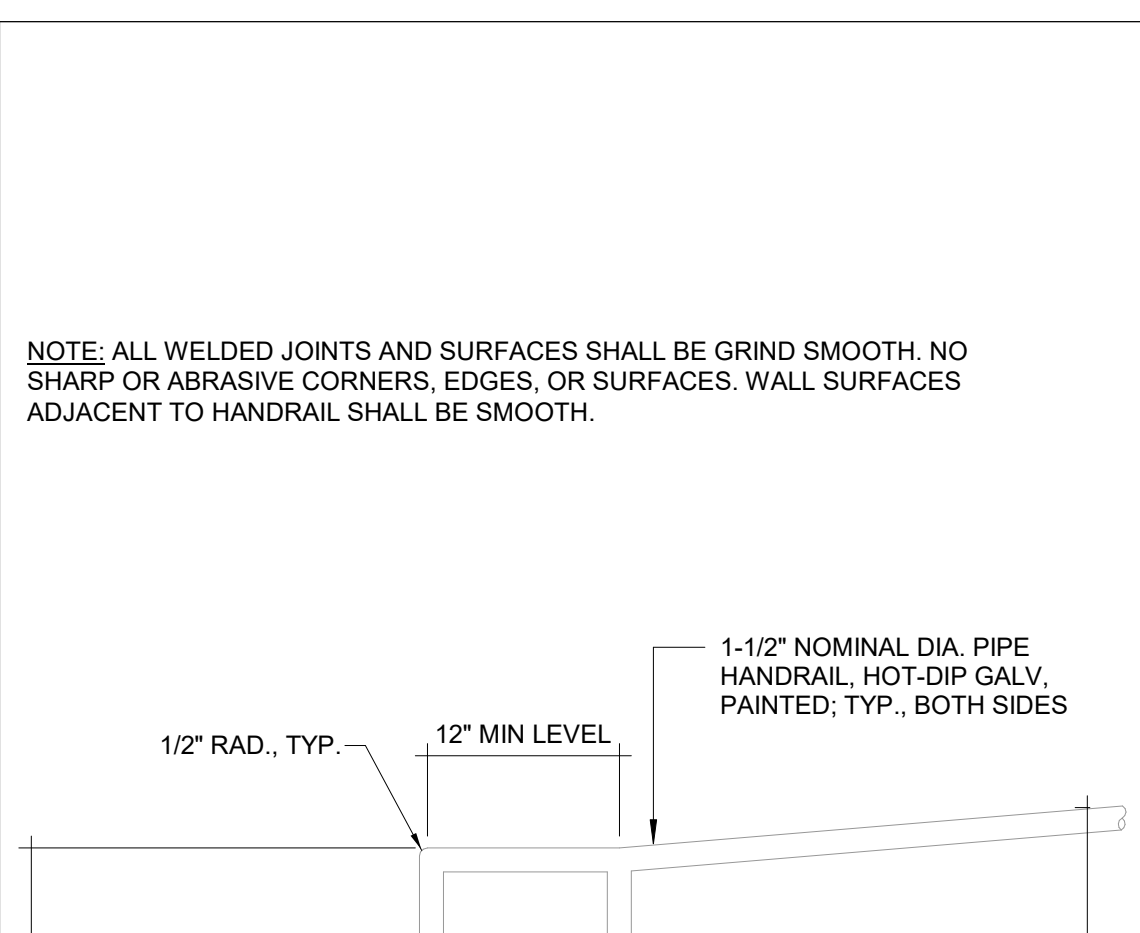
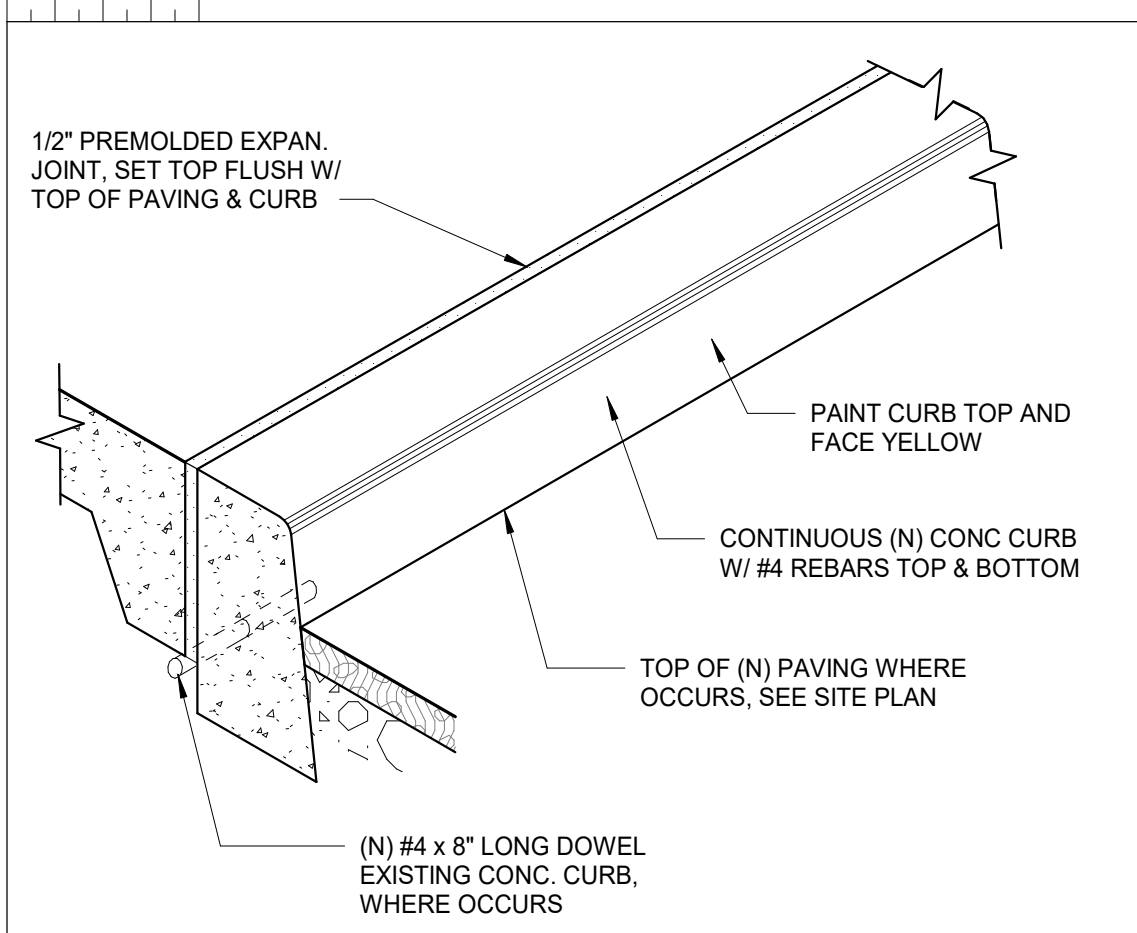
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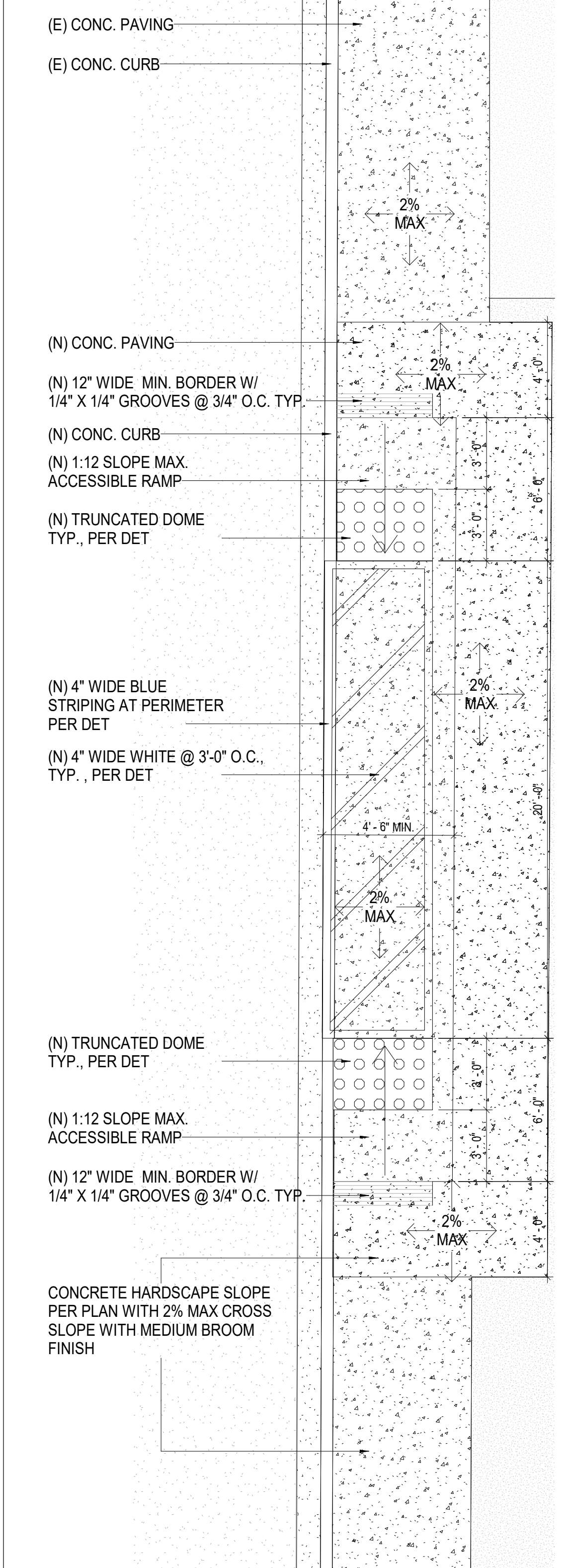
ENLARGED PLANS

A1.03

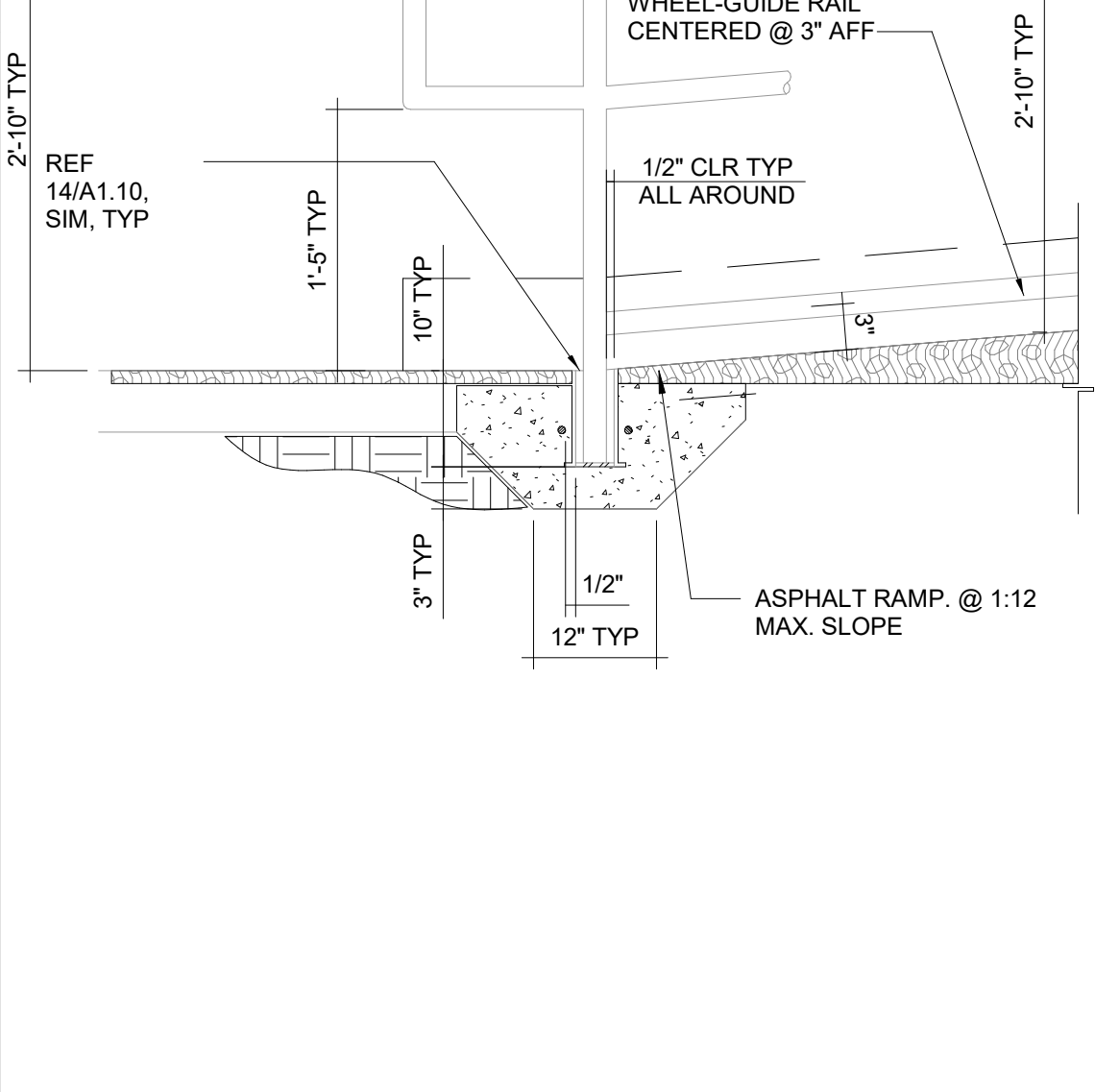
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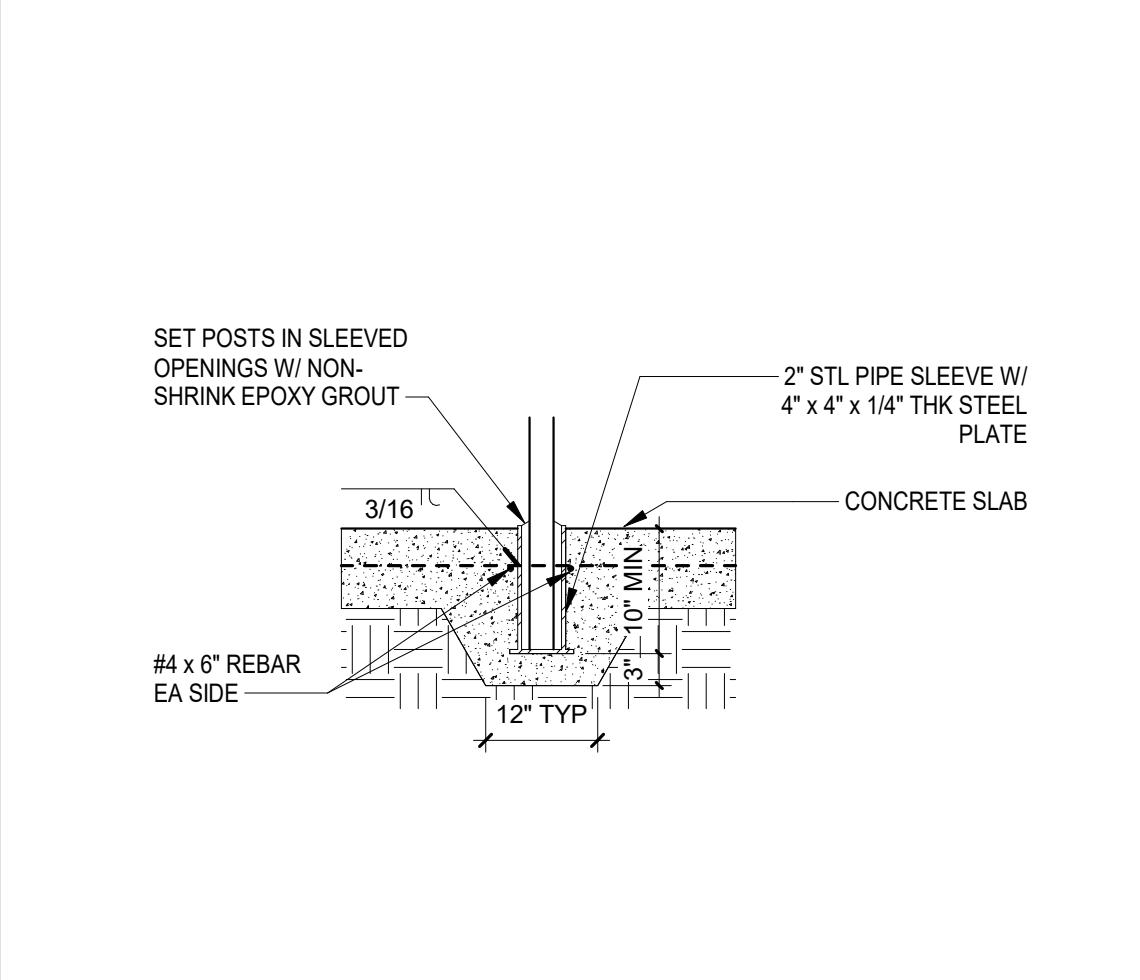
DROP OFF CURB
1 1/2" = 1'-0" **3**



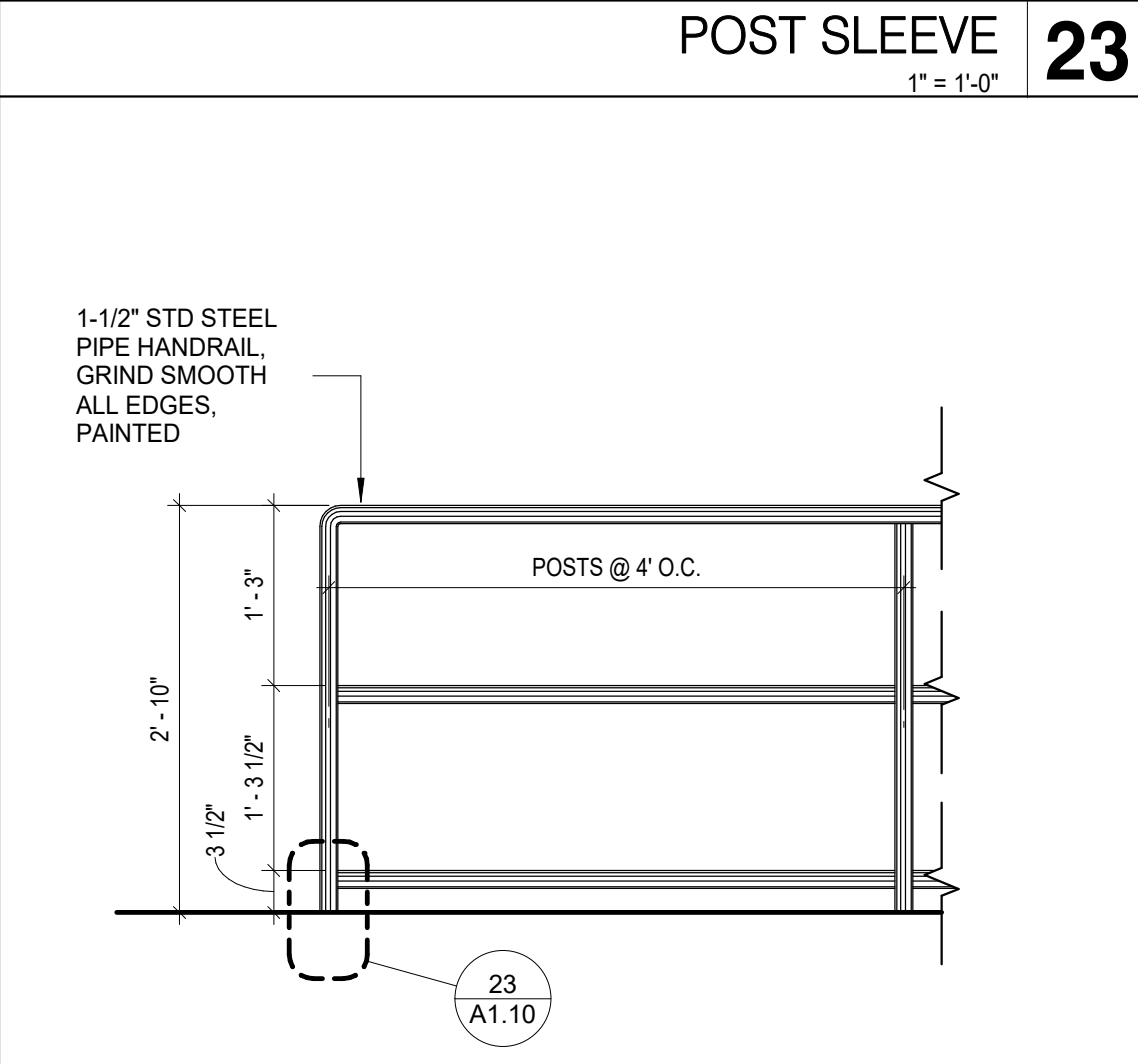
ENLARGED (N) DROP OFF ZONE
1/4" = 1'-0" **29**



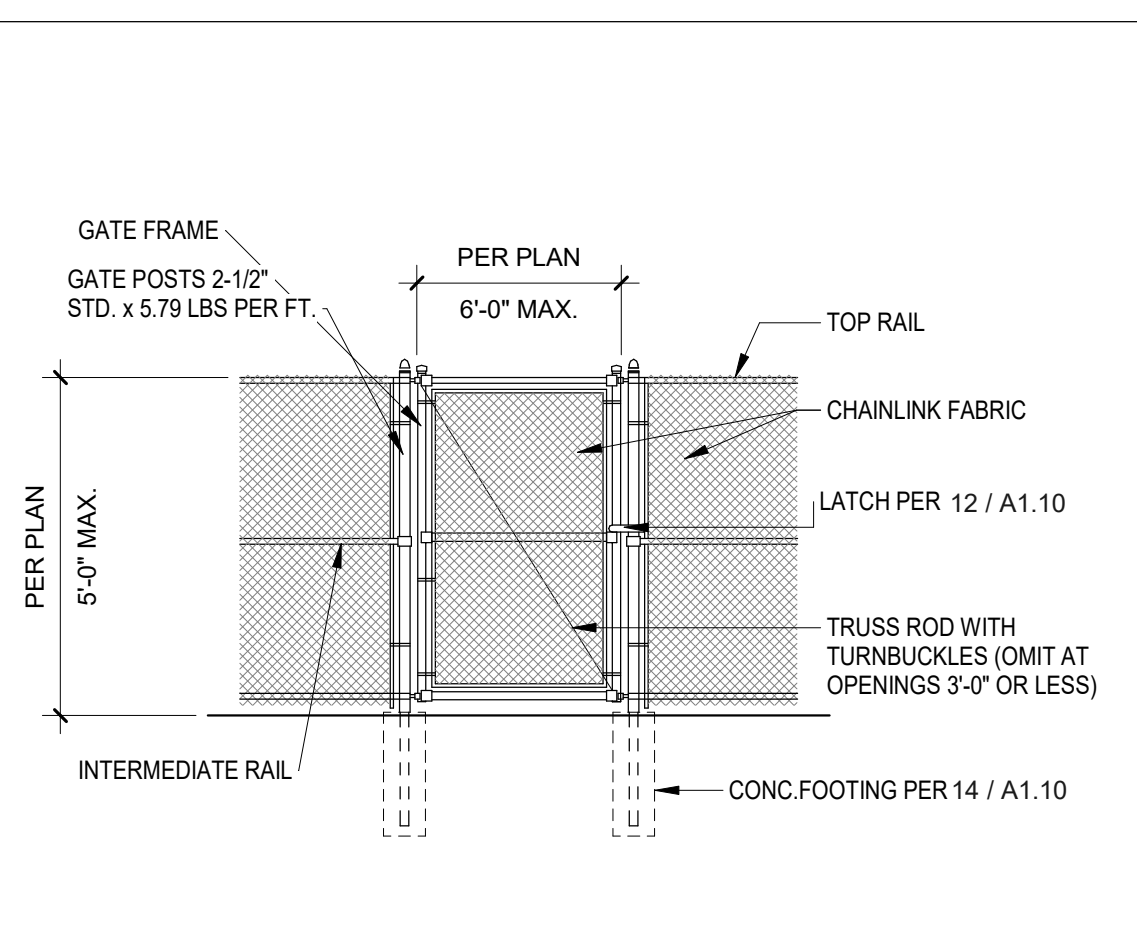
RAILING AT ASPHALT RAMP
1" = 1'-0" **22**



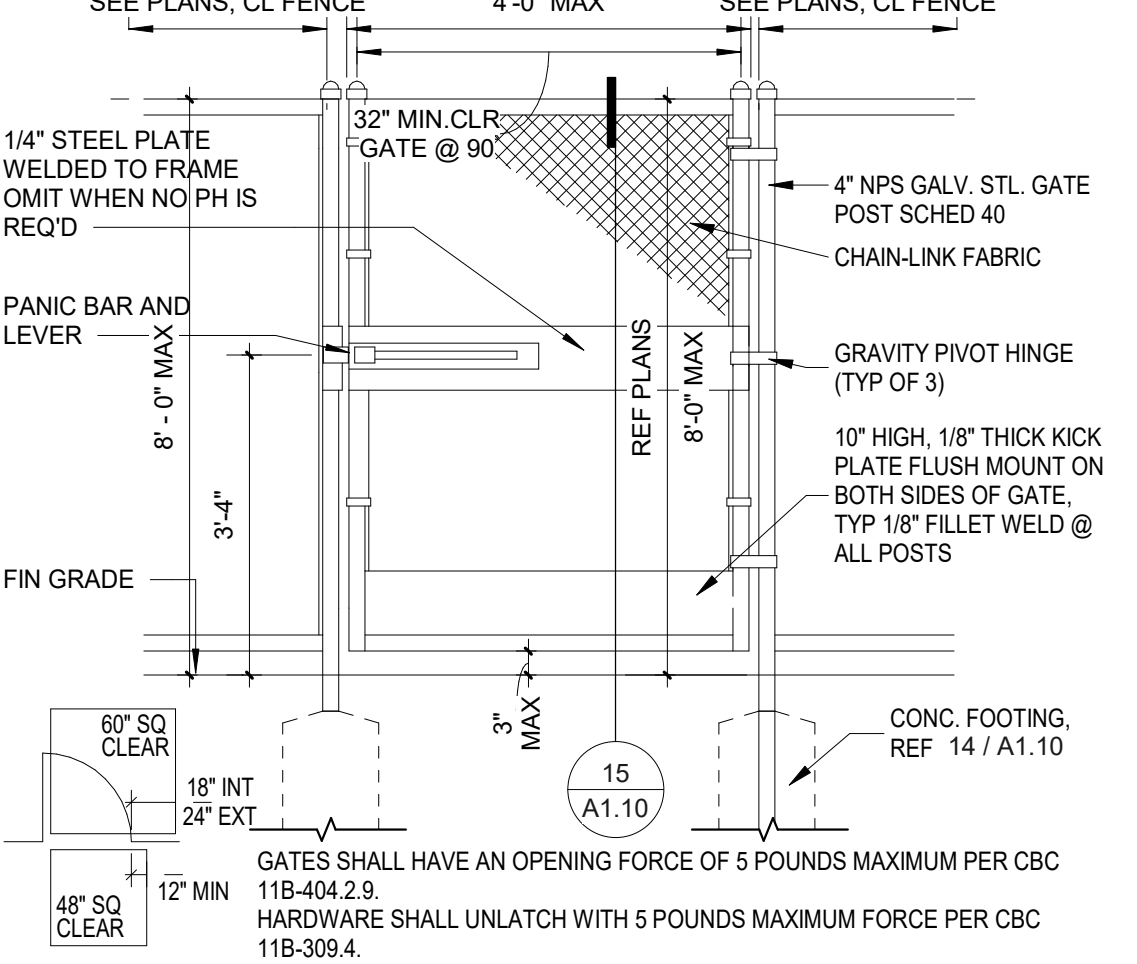
POST SLEEVE
1" = 1'-0" **23**



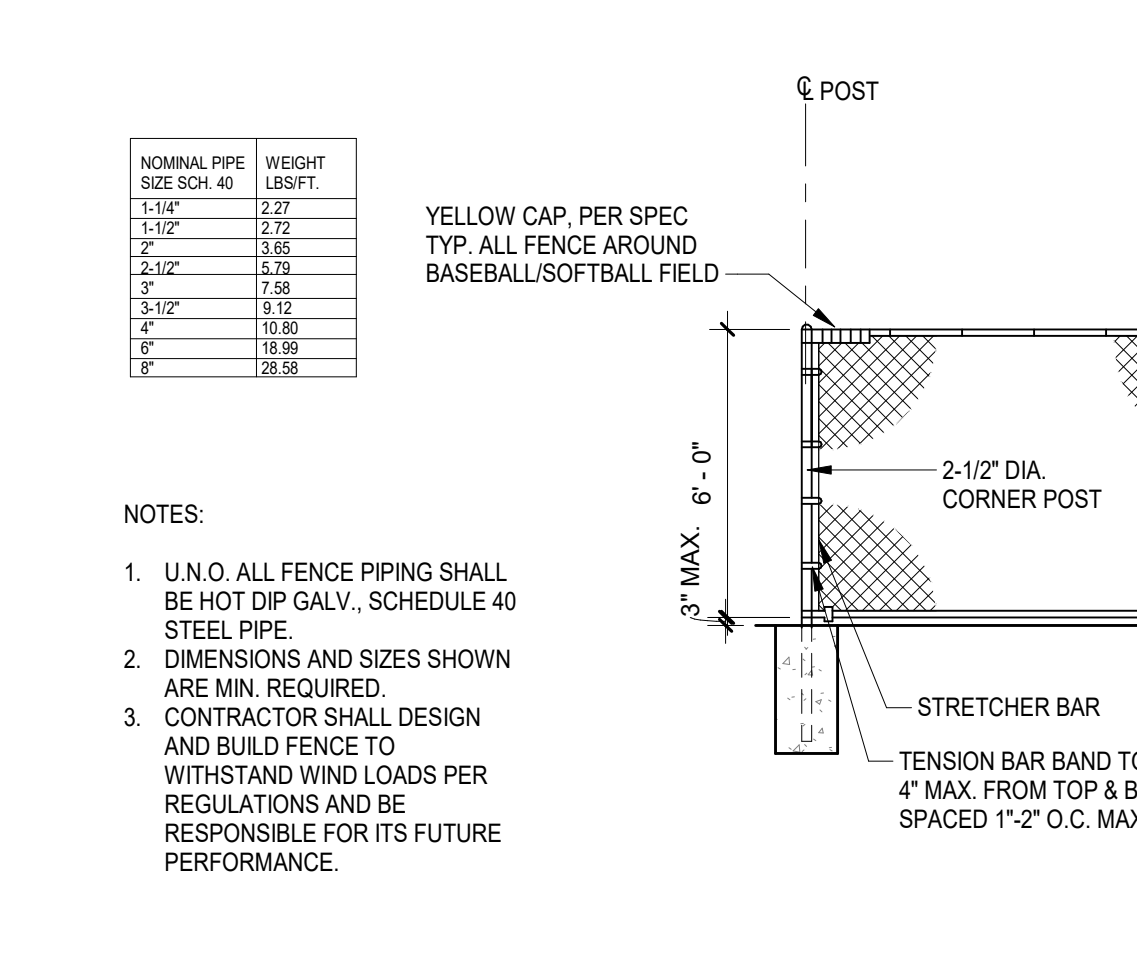
RAILING DETAIL
3/4" = 1'-0" **24**



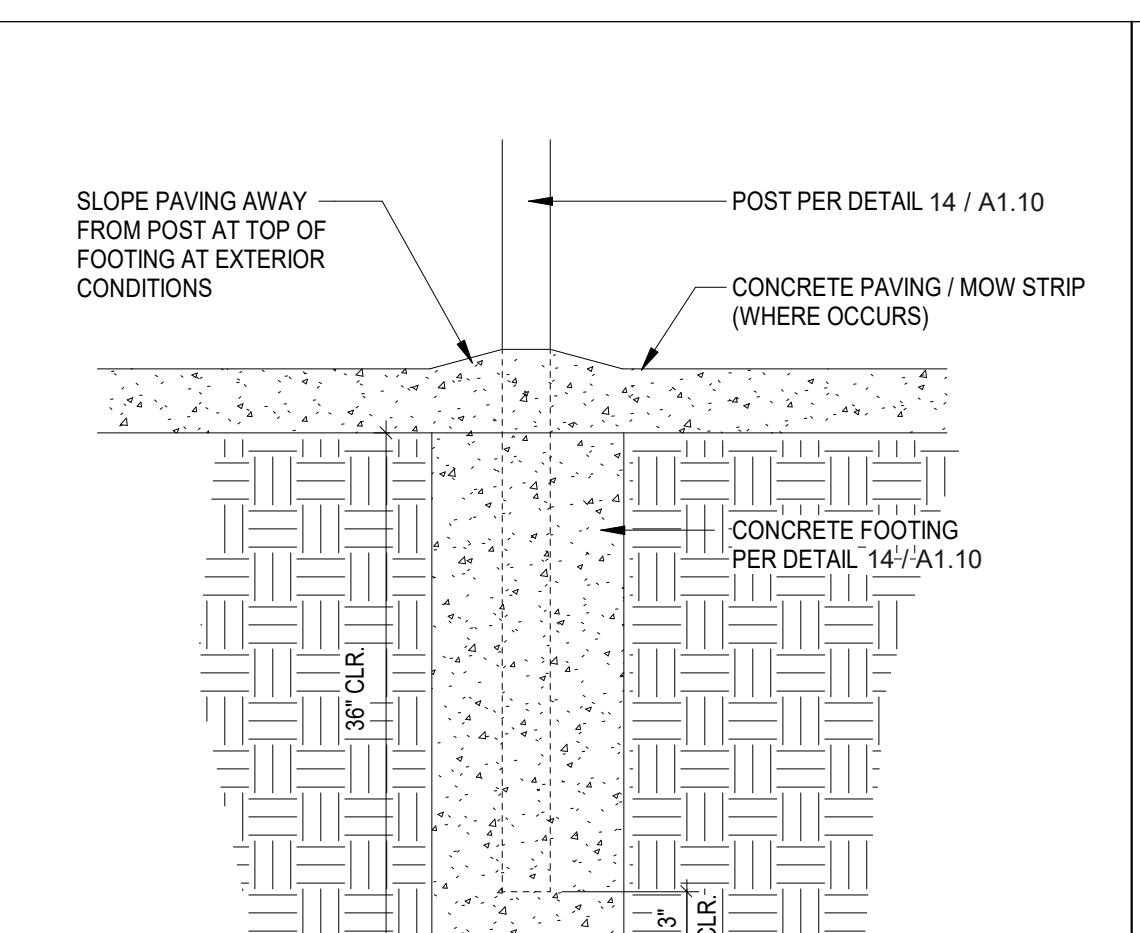
CHAIN LINK SINGLE GATE
NOT TO SCALE **16**



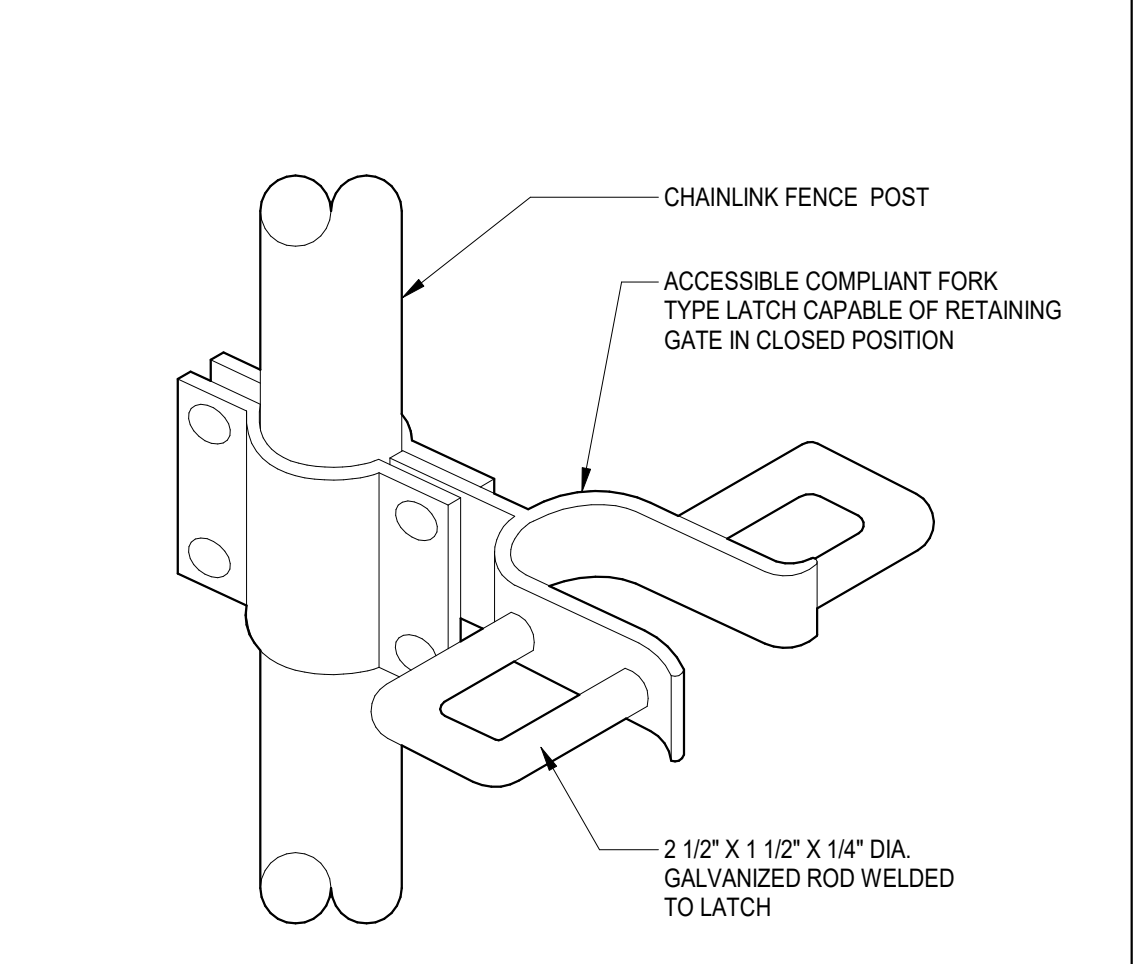
ACCESSIBLE CL GATE
1/2" = 1'-0" **17**



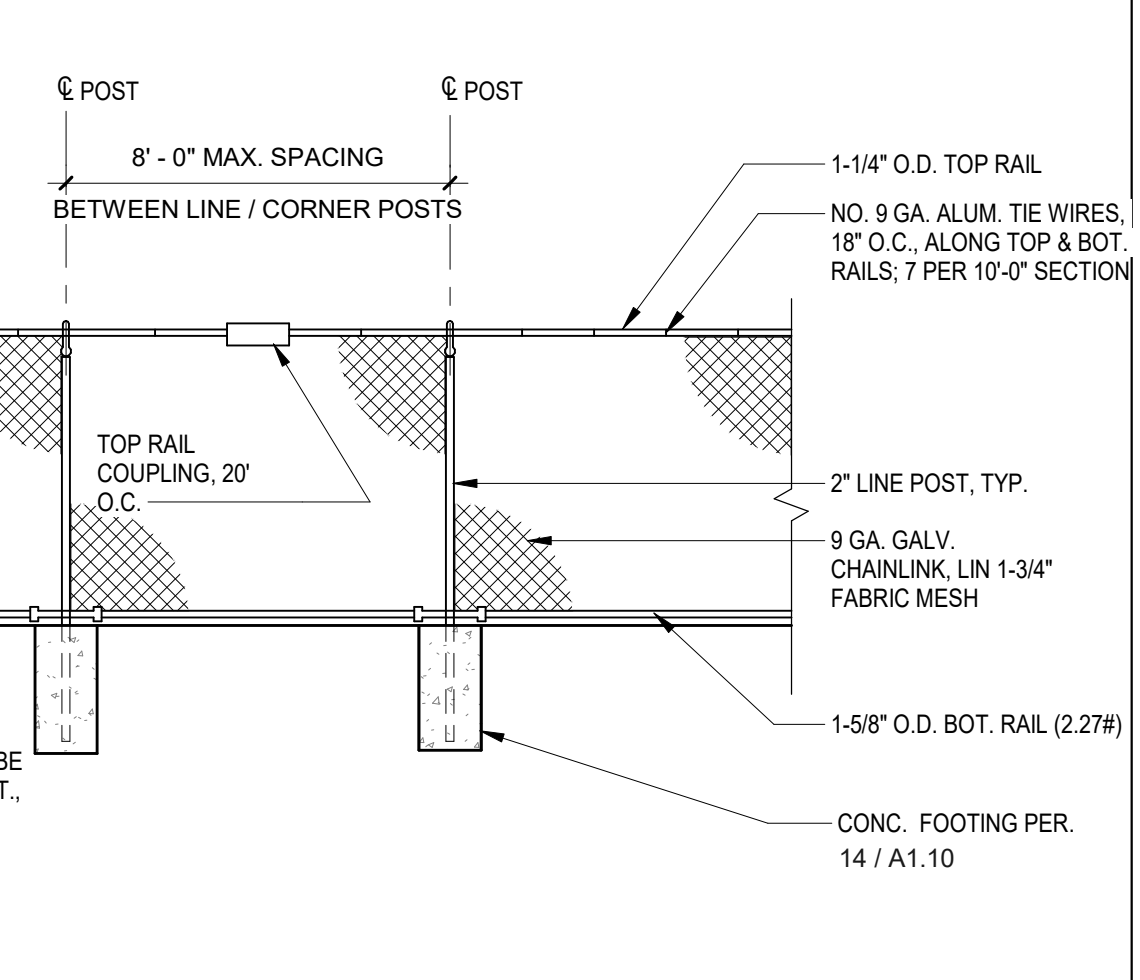
PARKING BUMPER / WHEEL STOP
1" = 1'-0" **20**



POST FOOTING
1" = 1'-0" **11**



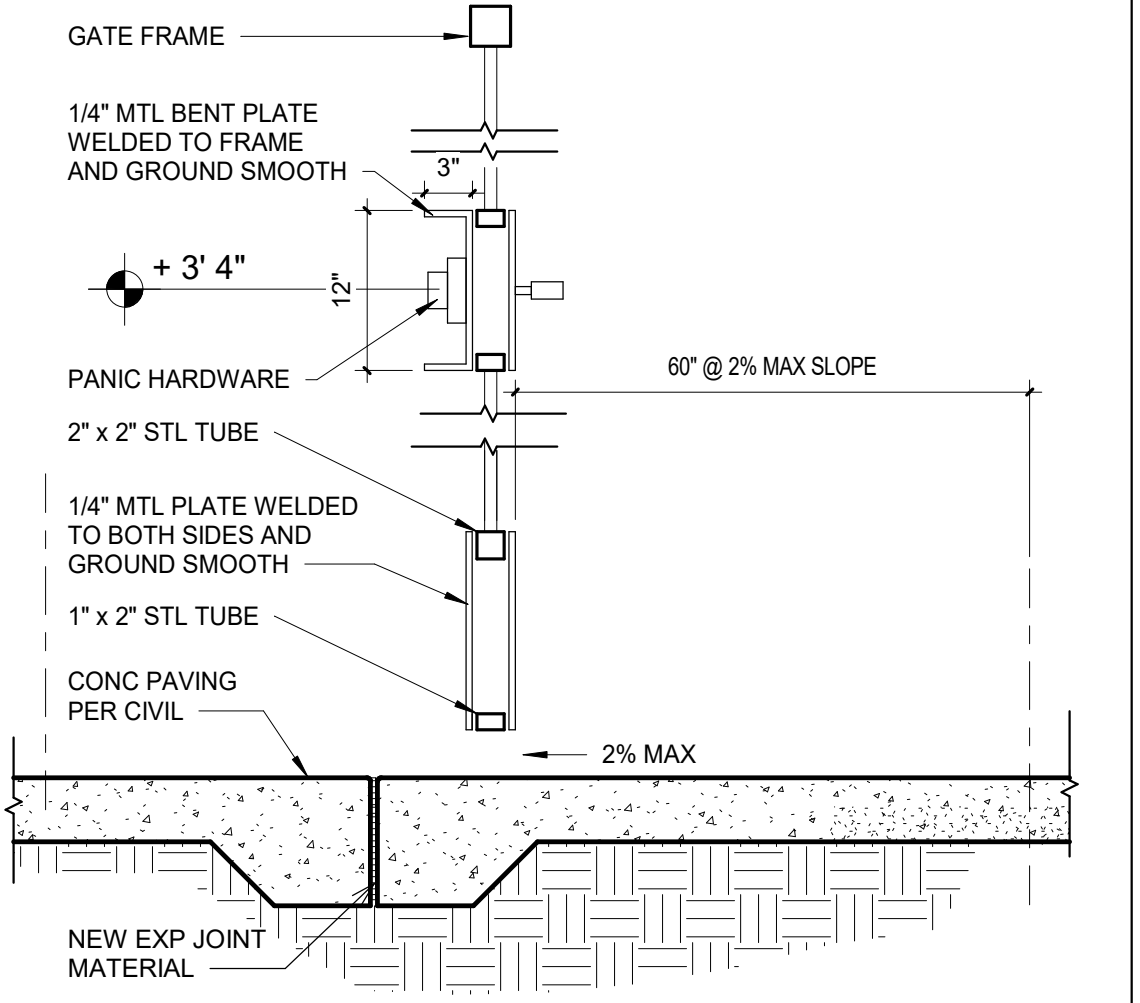
FORK TYPE LATCH
1/2" = 1'-0" **12**



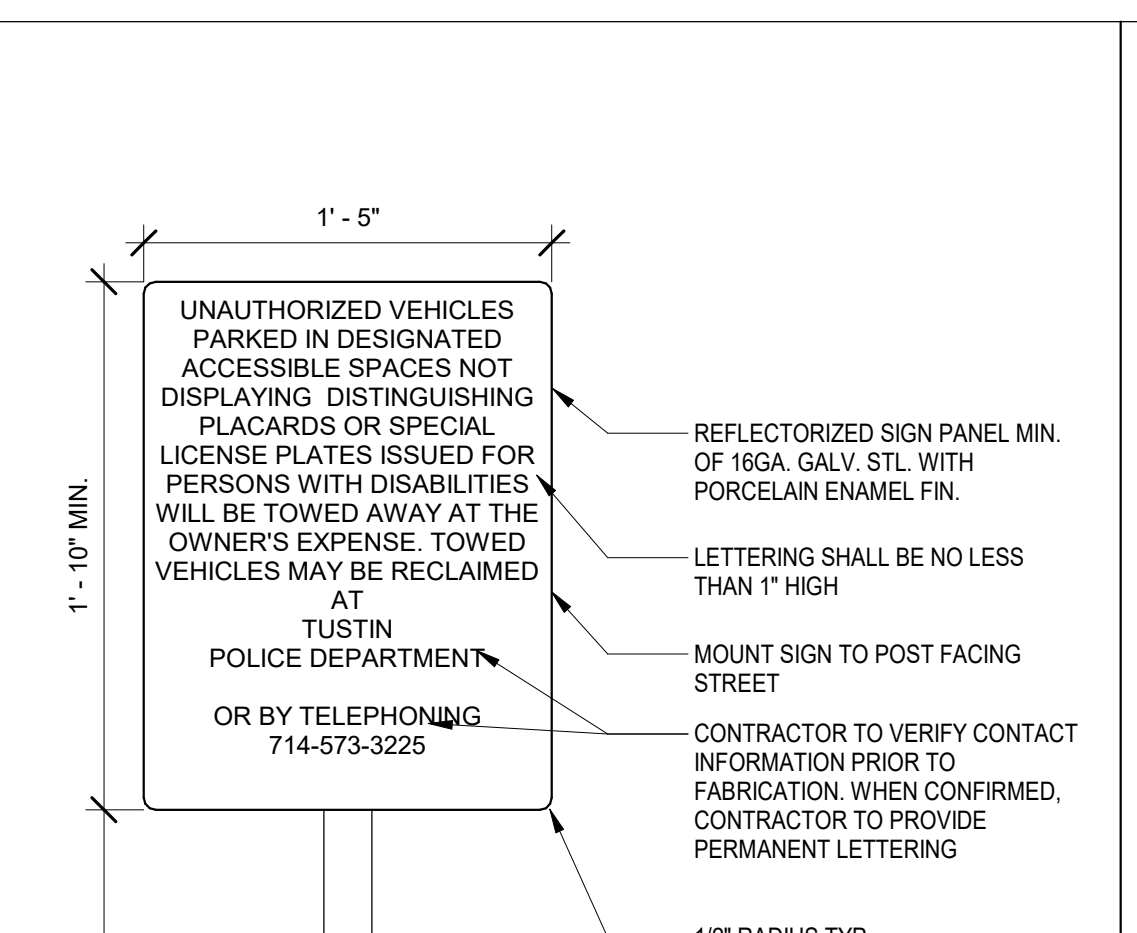
5'-0" TALL CHAINLINK FENCE
1/4" = 1'-0" **13**

Item	Height	Nominal Pipe Size (Inches)	Outside Diameter (Inches)	Weight (pounds per foot)	Footings Diameter (Inches)	Depth (Inches)	
Top Rail, Brace Rails and Transom Rails	Up to 10'-0"	1-1/4	1.660	2.27	N/A	N/A	
	10'-1" to 16'-0"	1-1/2	1.900	2.72	N/A	N/A	
	Up to 6'-0"	2	2.375	2.65	12	36	
Line Posts	6'-1" to 8'-0"	2	2.375	2.65	12	48	
	8'-1" to 10'-0"	2-1/2	2.875	5.79	12	48	
	10'-1" to 16'-0"	3	3.500	7.58	14	60	
	Up to 8'-0"	2-1/2	2.875	5.79	12	36	
Terminal, Corner, Angle & Pull Posts	8'-1" to 10'-0"	2-1/2	2.875	5.79	14	42	
	10'-1" to 16'-0"	3	3.500	7.58	14	60	
	Up to 8'-0"	2-1/2	2.875	5.79	14	36	
Pedestrian Gate Posts	Gate Frames	Up to 8'-0"	1-1/2	1.900	2.72	N/A	
	Driveway Double-Leaf Swing Gate Posts: Opening	Up to 17'-5-1/2"	Up to 8'-0"	3-1/2	4.000	9.11	16
		17'-4" to 20'-3-1/2"	Up to 8'-0"	3-1/2	4.000	9.11	16

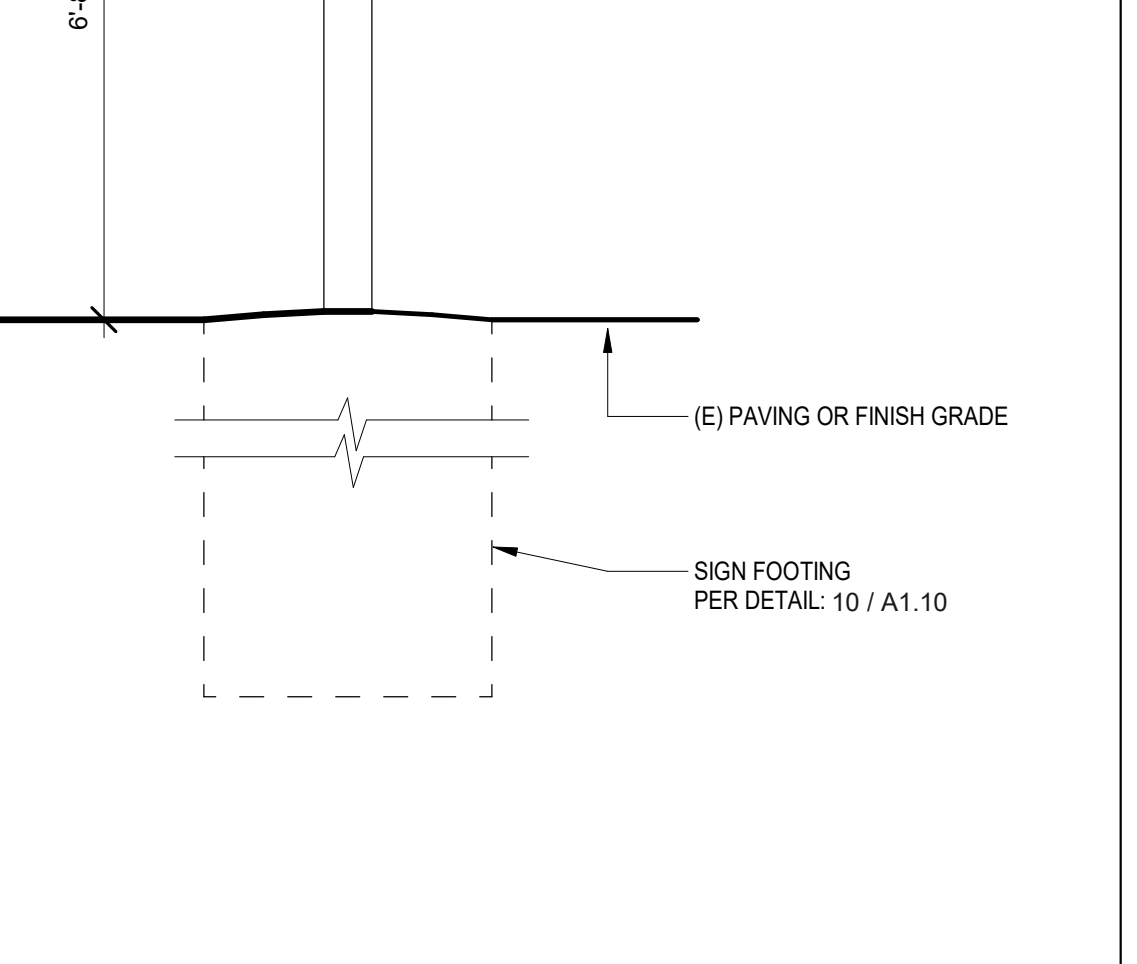
CHAINLINK & FENCE SIZING SCHEDULE
3" = 1'-0" **14**



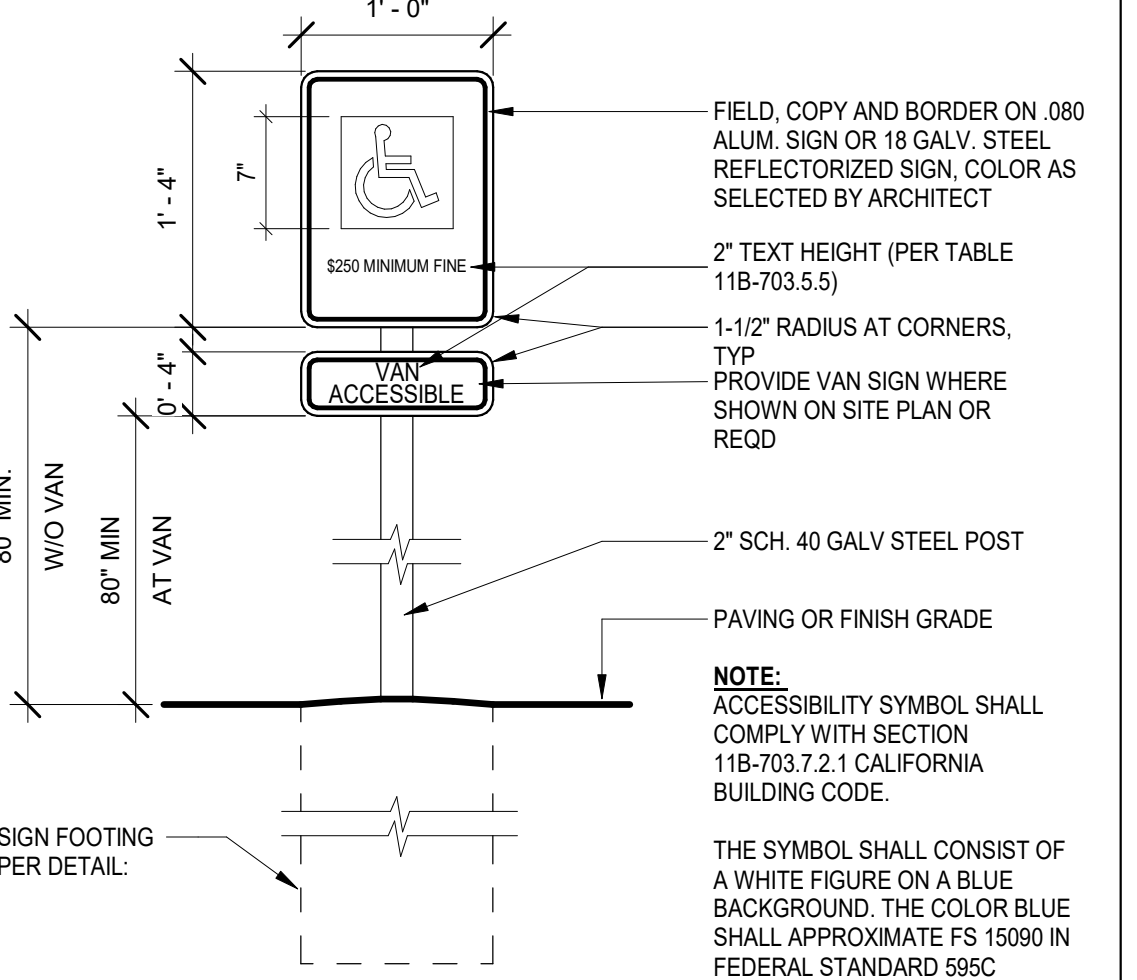
ACCESSIBLE CL GATE SECTION
1" = 1'-0" **15**



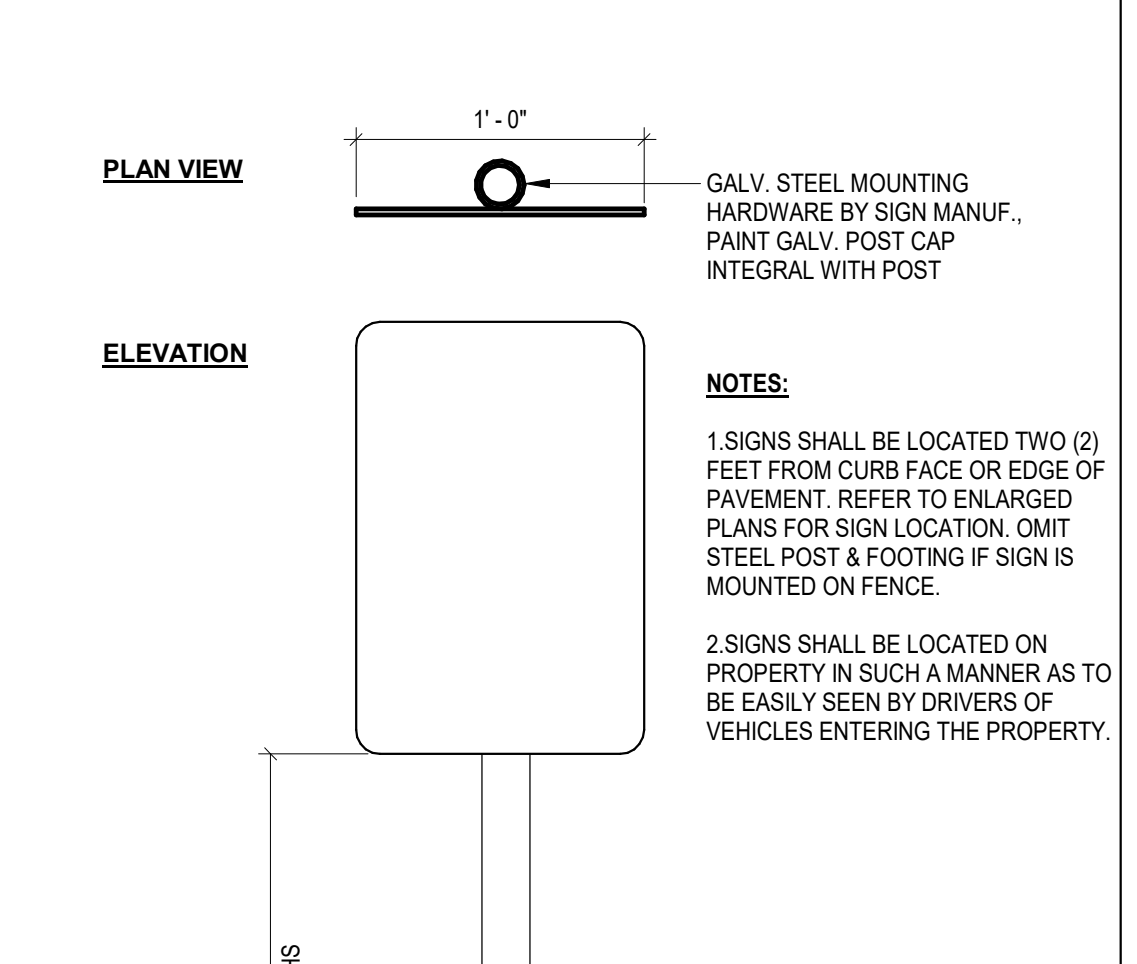
TOW AWAY SIGN
1 1/2" = 1'-0" **7**



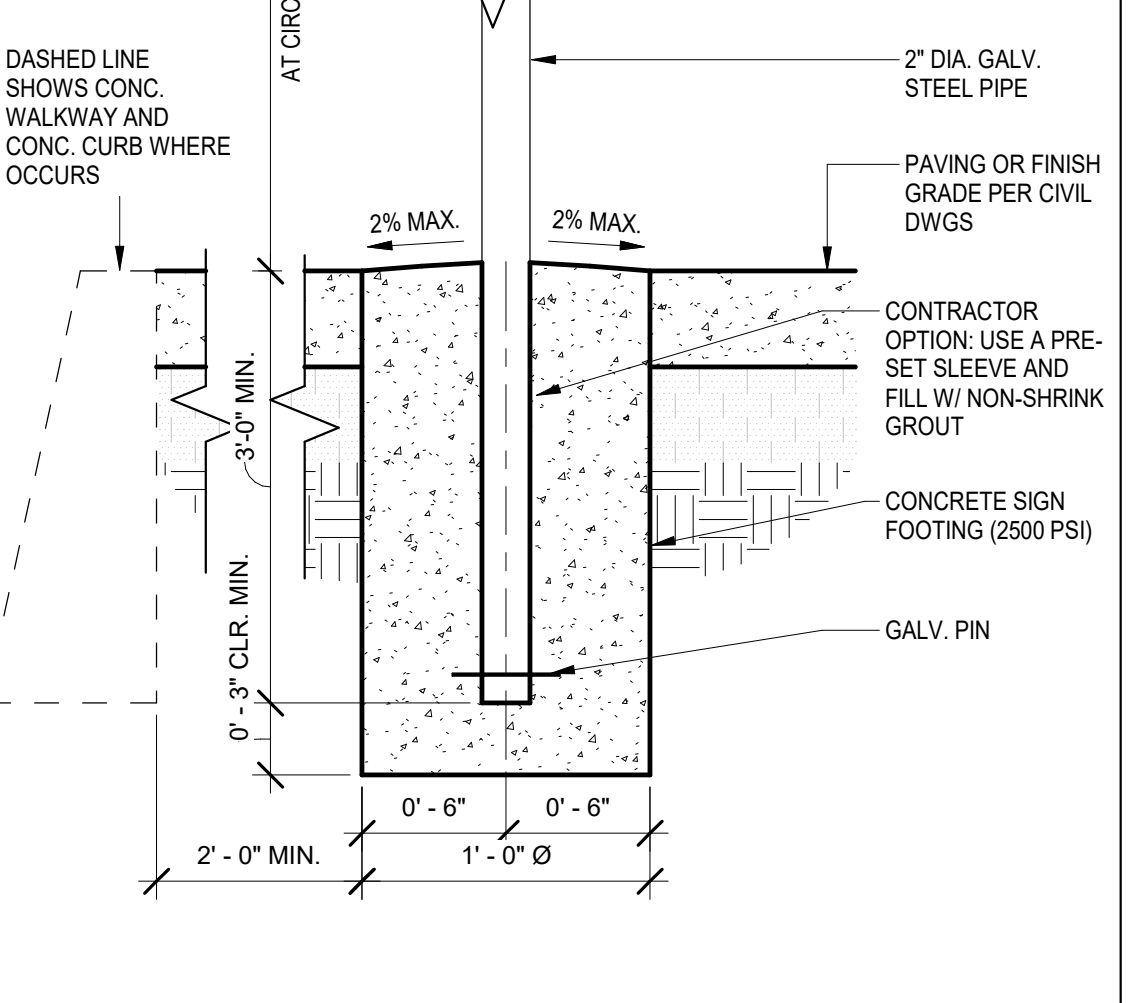
ACCESSIBLE PARKING SIGN
1" = 1'-0" **8**



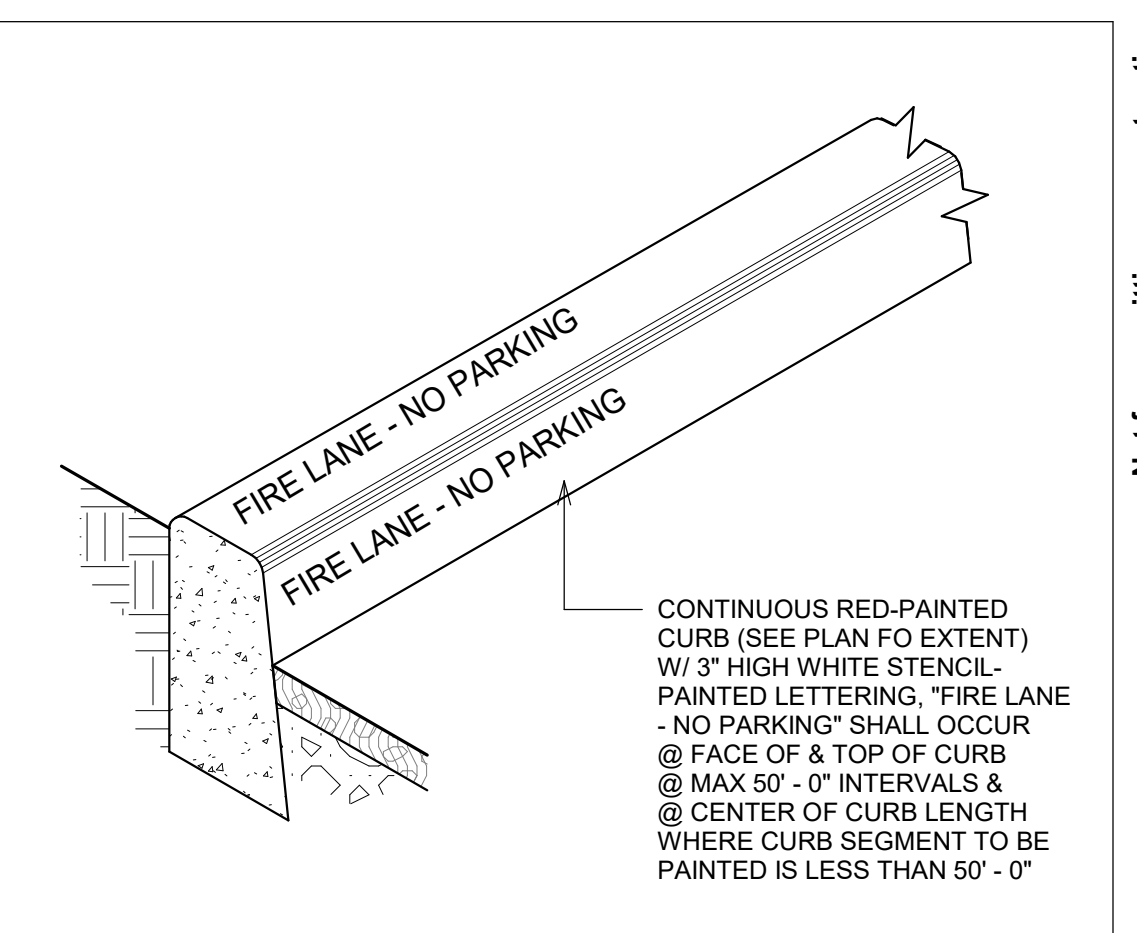
TRUNCATED DOMES
3" = 1'-0" **4**



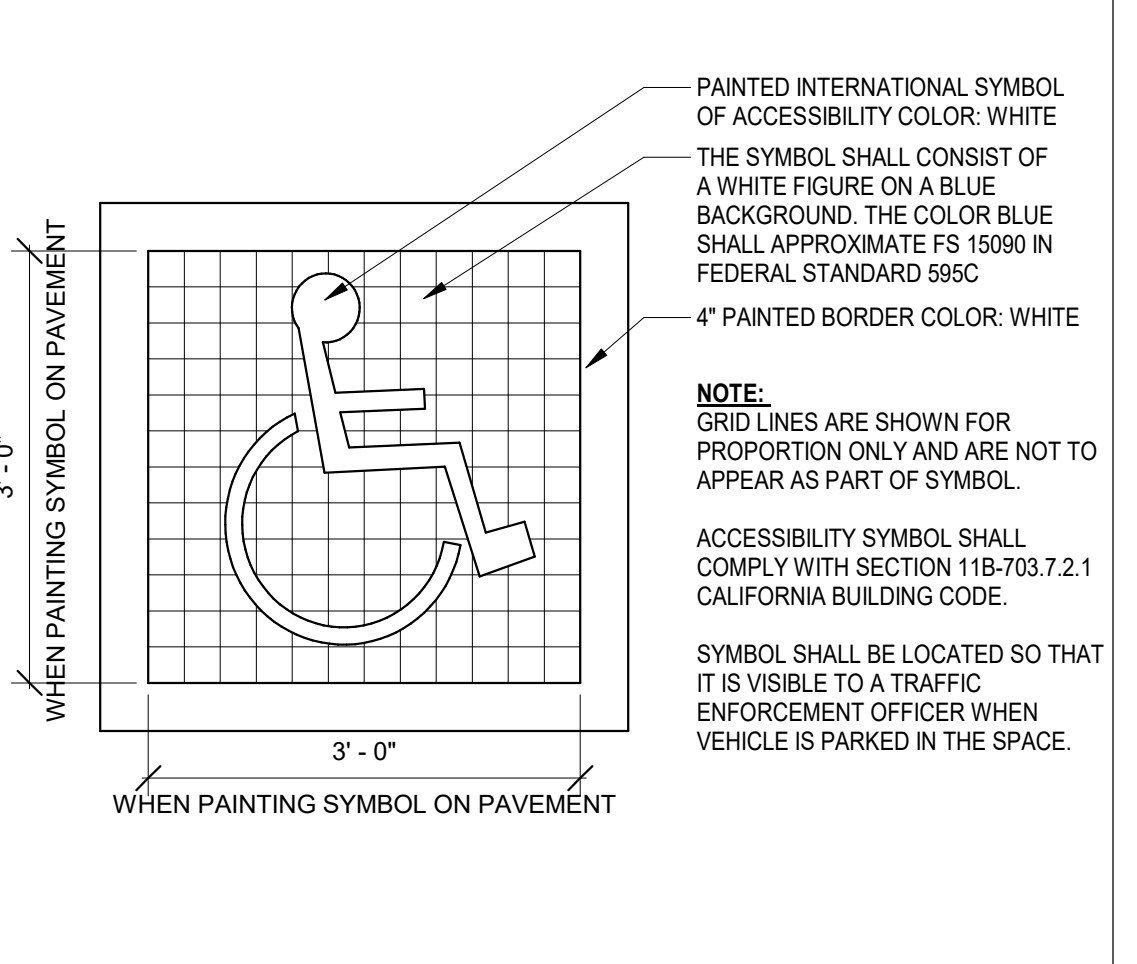
TYPICAL MOUNTED SIGN DETAIL
1 1/2" = 1'-0" **10**



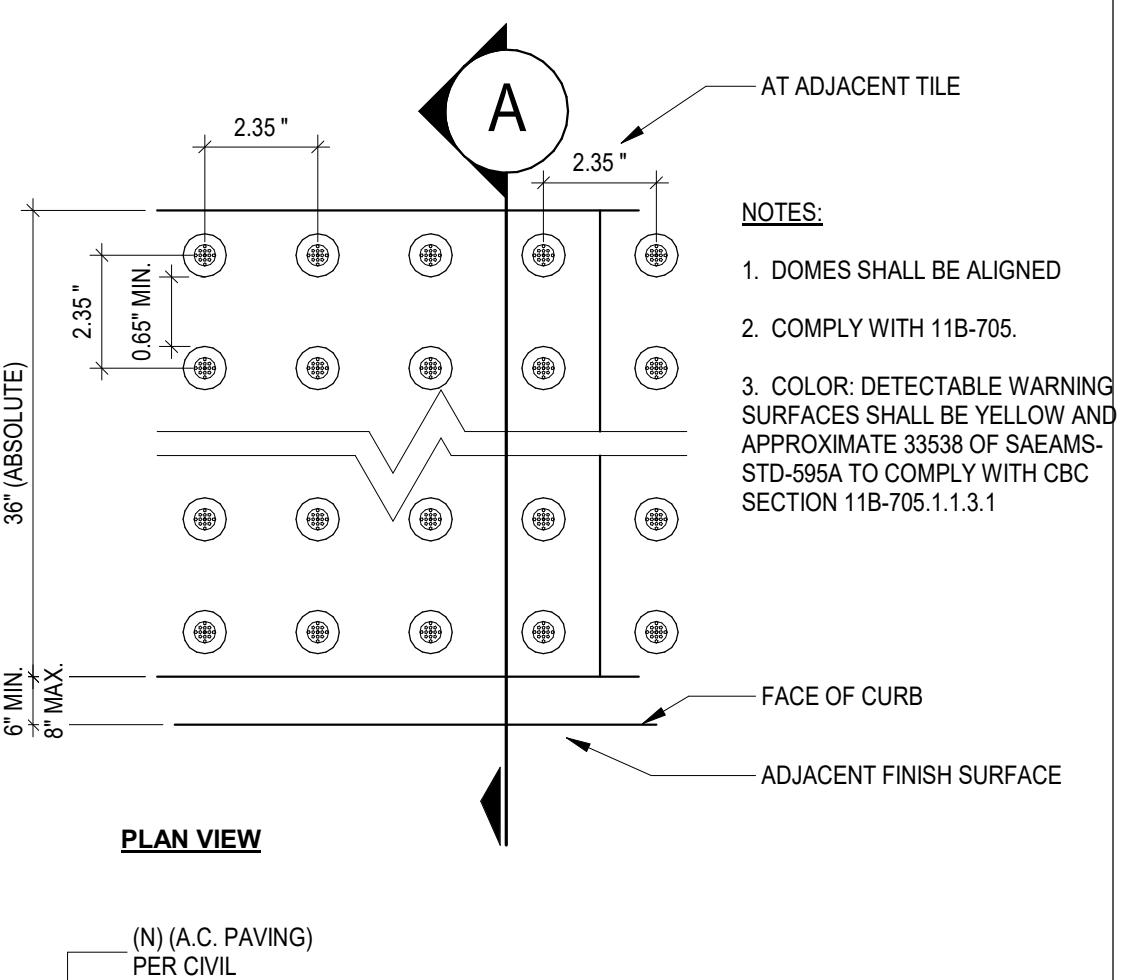
ACCESS AISLE STRIPING
1/2" = 1'-0" **5**



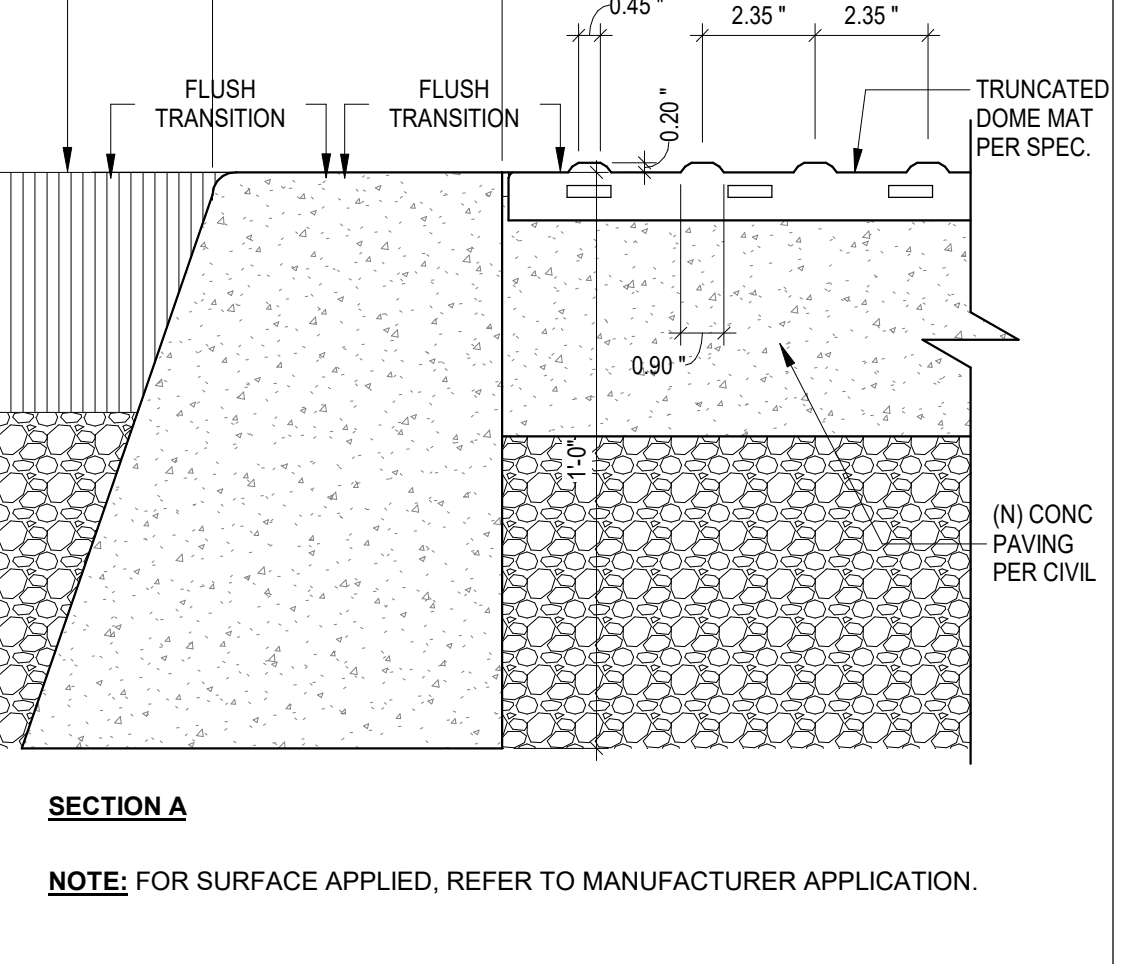
FIRE LANE CURB
1 1/2" = 1'-0" **1**



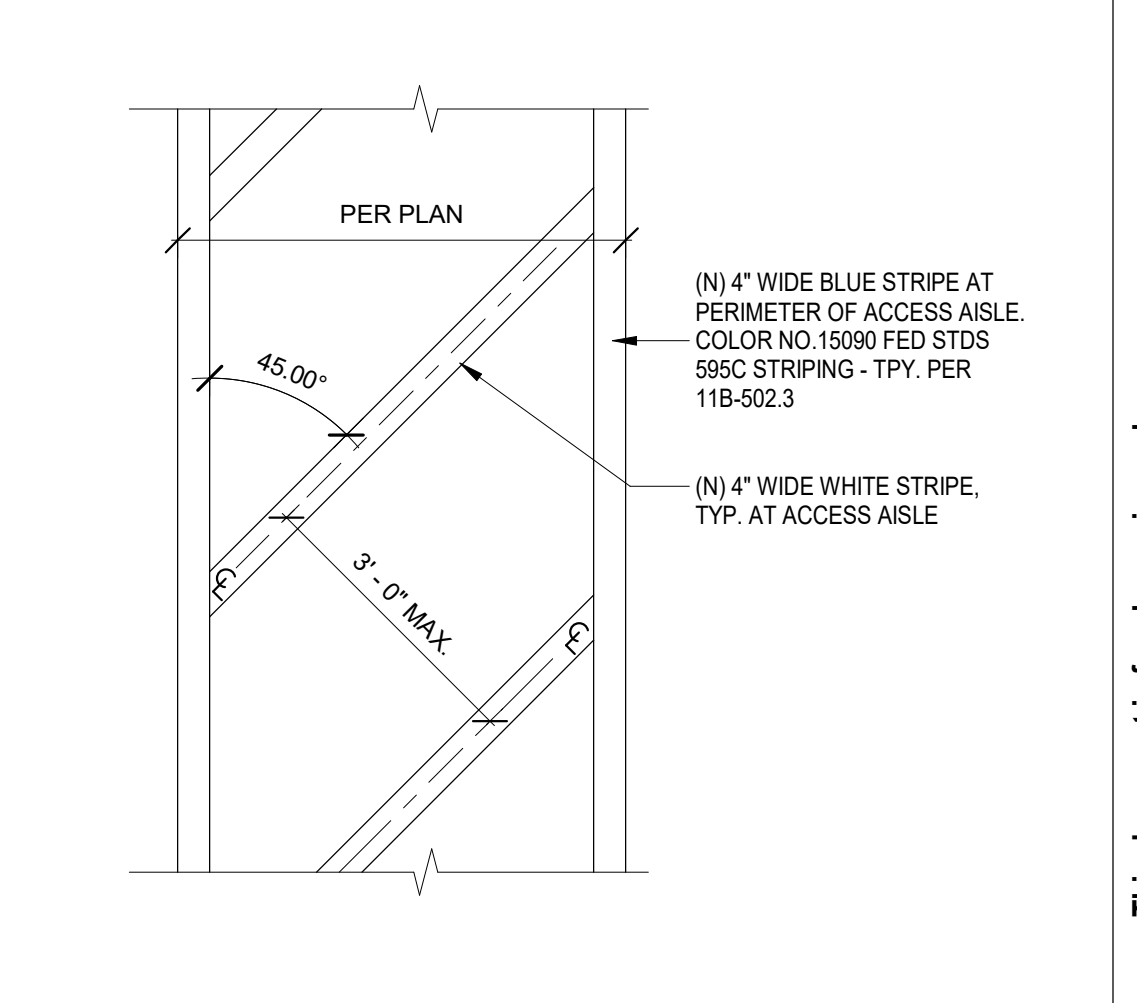
ACCESSIBLE PARKING SYMBOL
3/4" = 1'-0" **2**



ACCESSIBLE PARKING SIGN
1" = 1'-0" **8**



TRUNCATED DOMES
3" = 1'-0" **4**



ACCESS AISLE STRIPING
1/2" = 1'-0" **5**



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Consultant

Architect

APPROVED ARCHITECT
BRUCE CO
C-34832
REL 103125
STATE OF CALIFORNIA

CLIENT TUSD
DATE 04-11-2024 PROJECT NUMBER 230381

No.	Description	Date

ENLARGED PARKING PLANS AND DETAILS

A1.10

ELECTRICAL SYMBOL LEGEND

1. EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON DRAWINGS.

LIGHTING

LED LIGHTING FIXTURE, LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL, NUMBER INDICATES CIRCUIT, CROSS HATCHING INDICATES FIXTURE ON EMERGENCY SYSTEM, FOR SOLID CIRCLE WITHIN FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL.

EXIT LIGHT FIXTURE, LETTER INDICATES TYPE, NUMBER INDICATES CIRCUIT, NUMBER AND LOCATION OF SHADED TRIANGLE SECTIONS INDICATE NUMBER OF EXIT SIGN FACES AND DIRECTION OF EACH FACE. PROVIDE CHEVRON DIRECTIONAL INDICATORS AS SHOWN ON DRAWINGS

CONTROL

SWITCH, SMALL LETTER INDICATES FIXTURES CONTROLLED, "P" INDICATES PILOT LIGHT, "WP" INDICATES WEATHER-PROOF, "K" INDICATES KEY OPERATED, "MO" INDICATES SPOT MOMENTARY CONTACT, "Z" INDICATES SPOT, "3" INDICATES 3-WAY, "4" INDICATES 4-WAY, "M" INDICATES MANUAL MOTOR STARTER, CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

WALL BOX DIMMER SWITCH, "MARK" INDICATES WATTAGE IF OTHER THAN 600, "3D" INDICATES 3-WAY DIMMER

PHOTOELECTRIC CONTROL

WALL MOUNT OCCUPANCY SENSOR

DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR

POWER OUTLETS

20A-125V DUPLEX RECEPTACLE

20A-125V GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE, "WP" INDICATES WEATHER PROOF DEVICE

20A-125V DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP, REFER TO ARCHITECT FOR EXACT HEIGHT ABOVE COUNTER

20A-125V FOURPLEX RECEPTACLE, SAME SYMBOLOGY AS DUPLEX RECEPTACLE

CIRCUIT DESIGNATION NEXT TO RECEPTACLE DEVICES INDICATES BRANCH CIRCUIT NUMBER, SEE PANEL SCHEDULES FOR INFORMATION.

REMODEL

EQUIPMENT WITH "E" ADJACENT IS EXISTING TO REMAIN.

EXISTING EQUIPMENT WITH "R" ADJACENT IS TO BE COMPLETELY DISCONNECTED AND REMOVED.

EXISTING EQUIPMENT WITH "RR" ADJACENT IS TO BE DISCONNECTED, REMOVED AND RELOCATED TO NEW LOCATION AND RECONNECTED AS REQUIRED.

EQUIPMENT WITH "ER" ADJACENT IS RELOCATED EQUIPMENT SHOWN IN NEW LOCATION.

NO TAG INDICATES NEW EQUIPMENT.

CIRCUIT DESIGNATION WITH PREFIX "E" DENOTES EXISTING CIRCUIT AND EQUIPMENT IS TO REMAIN.

GENERAL NOTES

- 1. THE CONTRACTOR SHALL VISIT THE SITE INCLUDING ALL AREAS INDICATED ON THE DRAWINGS. HE SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND BY SUBMITTING A BID, ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS AND ADDENDA (DRAWINGS AND SPECIFICATIONS) HE SHALL CHECK THE CONTRACT DOCUMENTS OF THE OTHER TRADES AND DETERMINE HIS RESPONSIBILITIES. FAILURE TO DO SO, SHALL NOT RELEASE THE CONTRACTOR FROM COMPLETING ALL RESPONSIBLE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. THE CONTRACTOR SECURE AND PAY FOR ALL PERMITS, FEES, CHARGES, AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENT AGENCIES.
4. ALL ELECTRICAL WORK REFERENCED HEREIN SHALL BE COORDINATED WITH OTHER TRADES AND SITE CONDITIONS. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE CONTRACT DOCUMENTS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATION. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
5. PROVIDE TEMPORARY POWER FACILITIES AND CONNECTIONS FOR ALL FEEDERS, BRANCH CIRCUITS OR SIGNAL AND COMMUNICATIONS SYSTEMS BEING DISCONNECTED IN ORDER TO MAINTAIN SYSTEMS IN OPERATION.
6. ALL INTERRUPTION OF ELECTRICAL POWER SHALL BE KEPT TO A MINIMUM. HOWEVER WHEN AN INTERRUPTION IS NECESSARY, THE SHUTDOWN MUST BE COORDINATED WITH THE OWNER AND ENGINEER 14 DAYS PRIOR TO THE OUTAGE AND OVERTIME PAY SHALL BE INCLUDED IN THE CONTRACTOR'S BID. WORK IN EXISTING SWITCHBOARDS OR PANEL BOARDS SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVING ACCESS PANELS OR DOORS.
7. AFTER ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNERS WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.
8. FURNISH A ONE YEAR WRITTEN GUARANTEE OF MATERIALS AND WORKMANSHIP FROM THE DATE OF PUNCH LIST COMPLETION.
9. ALL FINAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT SHALL BE MADE BY THE CONTRACTOR.
10. EXACT METHOD AND LOCATION OF CONDUIT PENETRATION AND OPENINGS IN CONCRETE OR MASONRY WALLS, GRADEBEAMS, FLOORS OR STRUCTURAL STEEL MEMBER SHALL BE AS DIRECTED BY THE STRUCTURAL ENGINEER. PERFORM CORING, SAWCUTTING, PATCHING AND REFINISHING OF WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR OR CEILING EXACT METHOD AND LOCATION OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS SHALL BE UL APPROVED.
11. FINAL CONNECTIONS TO VIBRATING EQUIPMENT AND AT SEISMIC SEPARATIONS SHALL BE FLEXIBLE STEEL CONDUIT IN DRY INTERIOR LOCATIONS, AND LIQUID-TIGHT FLEXIBLE STEEL CONDUIT IN AREAS EXPOSED TO WEATHER, DAMP LOCATIONS, CONNECTIONS TO TRANSFORMER ENCLOSURES, AND FINAL CONNECTIONS TO MOTORS.
12. EQUIPMENT OUTLETS, LIGHTING FIXTURES, CONDUIT, WIRE AND CONNECTION METHODS IN HVAC AIR-PLenums SHALL BE APPROVED FOR USE IN PLENUMS AND SHALL CONFORM TO THE CALIFORNIA ELECTRICAL CODE.
13. ROUTE EXPOSED CONDUIT AND CONDUIT ABOVE ACCESSIBLE CEILING SPACES PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING, ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.
14. CONDUIT SHALL NOT BE INSTALLED IN ANY FLOOR SLAB. CONDUIT SHALL BE INSTALLED CONCEALED IN THE CEILING SPACE, CONCEALED WALLS, OR 2" MINIMUM BELOW SLAB ON GRADE UNLESS NOTED OTHERWISE.
15. LOCATE ELECTRICAL EQUIPMENT AND BOXES IN ACCESSIBLE CEILING SPACE OR PROVIDE AN ACCESS PANEL FOR INACCESSIBLE CEILING SYSTEMS. ACCESS DOORS SHALL BE A MINIMUM DIMENSION OF 24" x 24" ACCESS DOOR LOCATIONS SHALL SUIT ACCESSIBILITY AND CONSTRUCTION CONDITIONS. ACCESS DOORS SHALL HAVE A FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.
16. COORDINATE REQUIRED ACCESS DOORS IN NON-ACCESSIBLE CEILING TO SUIT FIELD CONDITIONS. THE EXACT SIZES AND PHYSICAL LOCATIONS OF ACCESS DOORS IN NON-ACCESSIBLE CEILING CONDITIONS. ACCESS DOORS SHALL BE PROVIDED IN OTHER SECTIONS OF THE SPECIFICATIONS. ACCESS DOORS SHALL HAVE A FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.
17. WHENEVER A DISCREPANCY OF ANY SYSTEM AND/OR EQUIPMENT ARISES ON THE CONTRACT DOCUMENTS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ARCHITECT/ENGINEER.
18. STRAIGHT FEEDER BRANCH CIRCUIT AND CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS.
19. PANEL SCHEDULES SHALL BE REVISED TO REFLECT FINAL ROOM NAMES AND NUMBERS USING OWNER'S ROOM NAMES AND NUMBERS DESIGNATIONS. CONTRACTOR TO PROVIDE FINAL PANEL SCHEDULE TO EOR AT COMPLETION OF PROJECT.
20. WHERE OUTLETS OCCUR AT TACKABLE WALL PANELS OR OTHER WALL FINISHES, PROVIDE EXTENSION RINGS AS REQUIRED SO THAT NO SPACE WILL EXIST BETWEEN DEVICE PLATE AND BACKBOX PER CALIFORNIA ELECTRICAL CODE 314.20 SEE ARCHITECTURAL ELEVATIONS FOR WALL FINISHES AND LOCATIONS.
21. COORDINATE LOCATIONS OF ALL SEISMIC SEPARATIONS.

- 22. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF ALL LOW VOLTAGE / TECHNOLOGY SYSTEMS SHALL BE A DEDICATED CIRCUIT AND ON EMERGENCY POWER WHEN AVAILABLE. CABLING CONTRACTOR SHALL COORDINATE ALL 120V POWER REQUIREMENTS AND LOCATIONS WITH ELECTRICAL CONTRACTOR FOR ALL EQUIPMENT.
23. SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AS ESTABLISHED BY THE EIA AND THE CEC.
24. ALL AC POWER CABLES ARE TO BE INSTALLED WITH A MINIMUM OF 12 INCHES OF SEPARATION FROM TECHNOLOGY LOW VOLTAGE CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.
25. CONTRACTOR SHALL PROVIDE AND INSTALL ALL SLEEVES REQUIRED TO INSTALL COMMUNICATION CABLING THROUGH RATED WALLS. ALL TECHNOLOGY SYSTEM CONDUIT SLEEVES SHALL HAVE PROTECTIVE BUSHING ON BOTH ENDS, BE DEDICATED FOR TECHNOLOGY SYSTEMS ONLY AND SHALL NOT SHARE WITH OTHER BUILDING TRADES.
26. CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.
27. ALL CONDUCTORS SHALL BE UL LISTED, COPPER #12 MINIMUM SIZE, TYPE THHN/THWN THERMOPLASTIC, 600 VOLT, 75 DEGREES CELSIUS WET AND 90 DEGREES CELSIUS DRY, UNLESS NOTED OTHERWISE.
28. ALL CABLING SHALL BE ROUTED IN CONDUIT. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH MAXIMUM 40% CABLE FILL. MINIMUM CONDUIT SIZE SHALL BE 3/4" INTERIOR & 1" EXTERIOR.
29. ALL CONDUIT STUB OUTS AND SLEEVES SHALL HAVE PROTECTIVE BUSHINGS TO PREVENT CABLE DAMAGE. BUSHING TO BE INSTALLED PRIOR TO CABLE INSTALLATION. CUTTING BUSHING AND INSTALLING AFTER CABLE IS INSTALLED WILL NOT BE ACCEPTED.

DRAWING INDEX

Table with 2 columns: SHEET, DESCRIPTION. Rows include E0.00 ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES, E0.01 ELECTRICAL SPECIFICATIONS, E1.01 ELECTRICAL SITE PLAN, E5.01 SINGLE LINE DIAGRAM & DETAILS.

DIAGRAMMATIC NOTE

DRAWINGS ARE DIAGRAMMATIC AND DO NOT INDICATE DETAILED CONDUIT ROUTING OR LENGTHS REQUIRED FOR COMPLETE INSTALLATION. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR BUT SHALL BE IN STRICT COMPLIANCE WITH STRUCTURAL REQUIREMENTS, CONTRACT DOCUMENTS AND SPECS UNLESS OTHERWISE NOTED. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES. DO NOT SCALE THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL, ARCHITECTURAL, STRUCTURAL AND/OR MECHANICAL ITEMS OR FEATURES. REFER TO ARCHITECTURAL AND STRUCTURAL CONTRACT DOCUMENTS FOR FEATURES. REFER TO ARCHITECTURAL AND STRUCTURAL CONTRACT DOCUMENTS FOR DIMENSIONS.

DEVICE LOCATIONS NOTE

THE LOCATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECTURAL ELEVATIONS, DETAILS, OR SECTIONS PRIOR TO INSTALLATION. ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE RECESSED IN WALLS UNLESS OTHERWISE NOTED. OUTLETS NOT INDICATED ON ARCHITECTURAL ELEVATIONS SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO ROUGH-IN, UNLESS OTHERWISE NOTED. ELECTRICAL DEVICES SHALL BE MOUNTED PER ACCESSIBLE DEVICE MOUNTING HEIGHT DETAIL.

COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT SUPPLY POWER AND MAKE CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON THE SINGLE LINE DIAGRAM, ELECTRICAL DRAWINGS, AND DRAWINGS OF OTHER TRADES. REVIEW THE DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT, DISCONNECT SWITCHES, STARTERS, WIRING, CONTROLS, AND CONDUIT FOR MECHANICAL AND PLUMBING OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGHING IN ALL CONDUIT TO THIS EQUIPMENT.

UTILITY PENETRATIONS NOTE

UTILITY PENETRATIONS OF ANY KIND IN FIRE AND SMOKE PARTITIONS AND CEILING ASSEMBLIES SHALL BE FIRESTOPPED AND SEALED WITH AN APPROVED UL LISTED SYSTEM OR MATERIAL.

STEEL ELECTRICAL OUTLET BOXES WHICH DO NOT EXCEED 16 SQUARE INCHES IN AREA, NEED NOT BE PROTECTED IN ONE-HOUR OR TWO-HOUR FIRE RATED WALLS, PARTITIONS, CEILING, OR AREA SEPARATION UNLESS THEY:

- 1. OCCUR ON OPPOSITE SIDES OF THE WALL WITHIN 24 INCH HORIZONTAL DISTANCE OF ONE ANOTHER. IN THIS CASE, ONLY ONE OUTLET BOX NEEDS TO BE PROTECTED BY AN APPROVED FIRESTOP MATERIAL OR DETAIL TO CORRECT THIS CONDITION.
2. OCCUR IN COMBINATION WITH OUTLET BOXES OF ANY SIZE SUCH THAT THE AGGREGATE AREA OF UNPROTECTED OUTLET BOXES EXCEEDS 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL AREA. IN THIS CASE, ONLY A SUFFICIENT NUMBER OF OUTLET BOXES NEED TO BE PROTECTED BY AN APPROVED MATERIAL OR DETAIL TO DECREASE THE AGGREGATE AREA OF UNPROTECTED UTILITY BOXES TO LESS THAN 100 SQUARE FEET OF WALL.

STEEL ELECTRICAL OUTLET BOXES WHICH EXCEED 16 SQUARE INCHES IN AREA, AND ALL OTHER STEEL UTILITY OUTLET BOXES REGARDLESS OF SIZE, SHALL BE PROTECTED BY AN APPROVED FIRESTOP MATERIAL AS LISTED OR EQUAL.

FIRESTOPPING MATERIAL:

MPP-1 MOLDABLE PUTTY PADS
3M CONTRACTOR PRODUCTS FLAMESAFE FSP 1077 FIRESTOP PADS
MINNEAPOLIS, MN 3M TEST REPORT NO. 1167 OAKHURST, NJ DATED AUGUST 21, 1987

FSP FIRESTOP PUTTY PADS
HEVI-DUTY NELSON PRODUCTS TULSA, OK

STEEL UTILITY BOXES WHICH EXCEED 100 SQUARE INCHES IN AREA SHALL BE PROTECTED BY ENCASEMENT.

UTILITY AND ELECTRICAL OUTLETS OR BOXES SHALL BE SECURELY FASTENED TO THE STUD FRAMING OF THE WALL, PARTITION OR CEILING ASSEMBLY. THE OPENING IN THE GYPSUM BOARD FACING SHALL BE CUT SO THAT THE CLEARANCE BETWEEN THE BOX AND THE GYPSUM BOARD DOES NOT EXCEED 1/8 INCH IN SMOKE WALLS OR PARTITIONS, THE 1/8 INCH CLEARANCE SHALL BE FILLED WITH AN APPROVED FIRE-RATED SEALANT.

APPLICABLE CODES

- LIST OF APPLICABLE CODES
2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (FC), PART 9, TITLE 24 CCR
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS
FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 36 AND CPC CHAPTER 80.

EQUIPMENT ANCHORAGE NOTES

MEP COMPONENT ANCHORAGE NOTES:

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 2022 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 2022 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., HCA OPM FOR2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOB SITE 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 & DETAILS.

MP [] MD [] PP [] E [] OPTION 2: SHALL COMPLY WITH THE APPLICABLE QSPHD PRE-APPROVAL (OPM #) #

UL LISTINGS NOTE

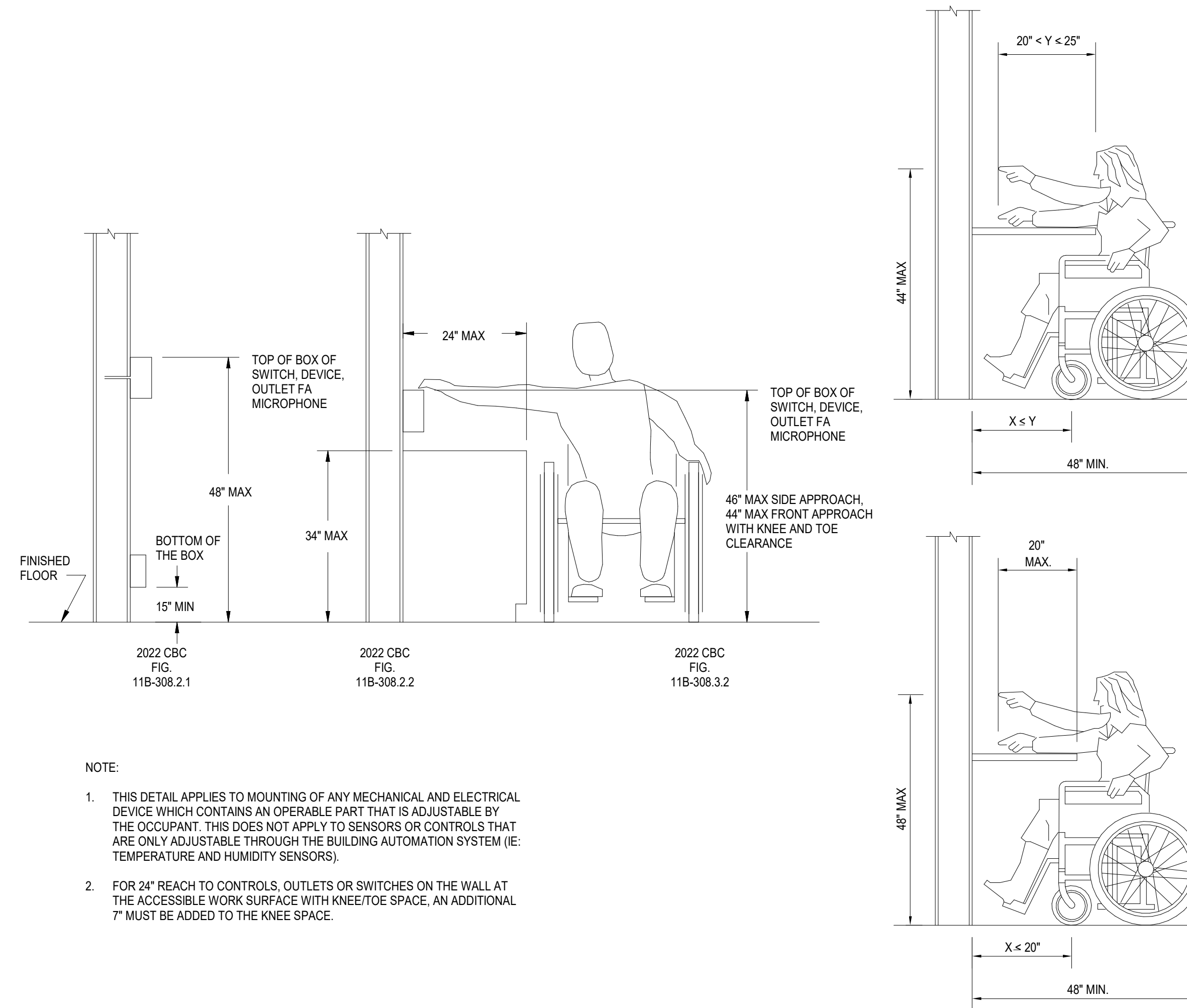
ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY.

ALL EQUIPMENT/DEVICES INSTALLED RECESSED IN FIRE RATED CEILING OR WALLS SHALL BE ENCLOSED WITH AN APPROVED UL LISTED ENCLOSURE CARRYING THE SAME FIRE RATING AS THE CEILING OR WALL.

STRUCTURAL NOTE

UNLESS SPECIFICALLY SHOWN ON THESE PLANS, STRUCTURAL MEMBERS SHALL NOT BE CUT, DRILLED, OR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

MOUNTING OVER OBSTRUCTION DETAILS

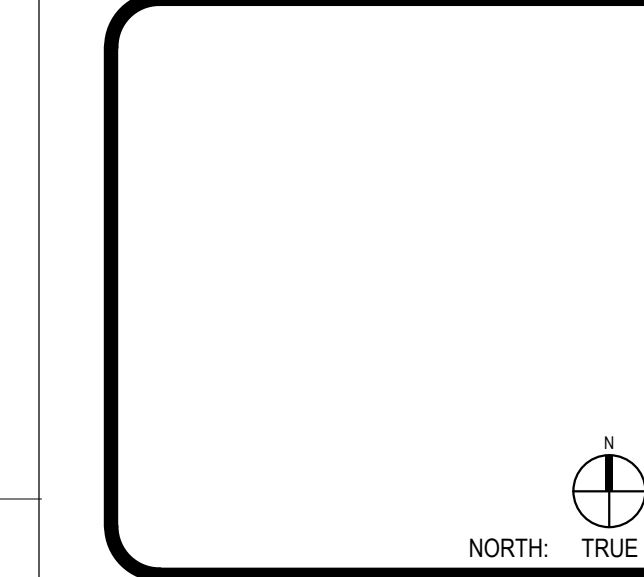


- NOTE:
1. THIS DETAIL APPLIES TO MOUNTING OF ANY MECHANICAL AND ELECTRICAL DEVICE WHICH CONTAINS AN OPERABLE PART THAT IS ADJUSTABLE BY THE OCCUPANT. THIS DOES NOT APPLY TO SENSORS OR CONTROLS THAT ARE ONLY ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM (IE: TEMPERATURE AND HUMIDITY SENSORS).
2. FOR 24" REACH TO CONTROLS, OUTLETS OR SWITCHES ON THE WALL AT THE ACCESSIBLE WORK SURFACE WITH KNEE/TOE SPACE, AN ADDITIONAL 7" MUST BE ADDED TO THE KNEE SPACE.



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Consultant

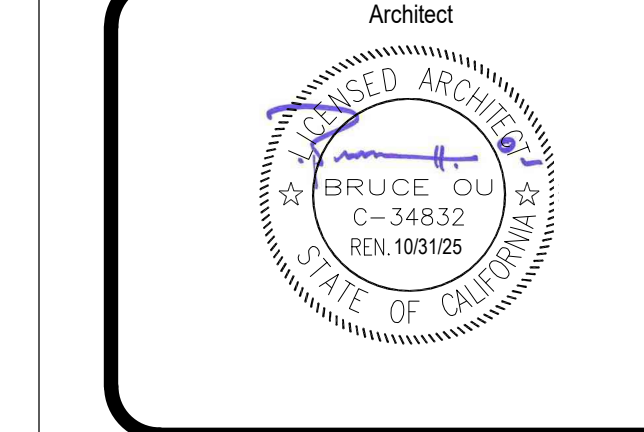
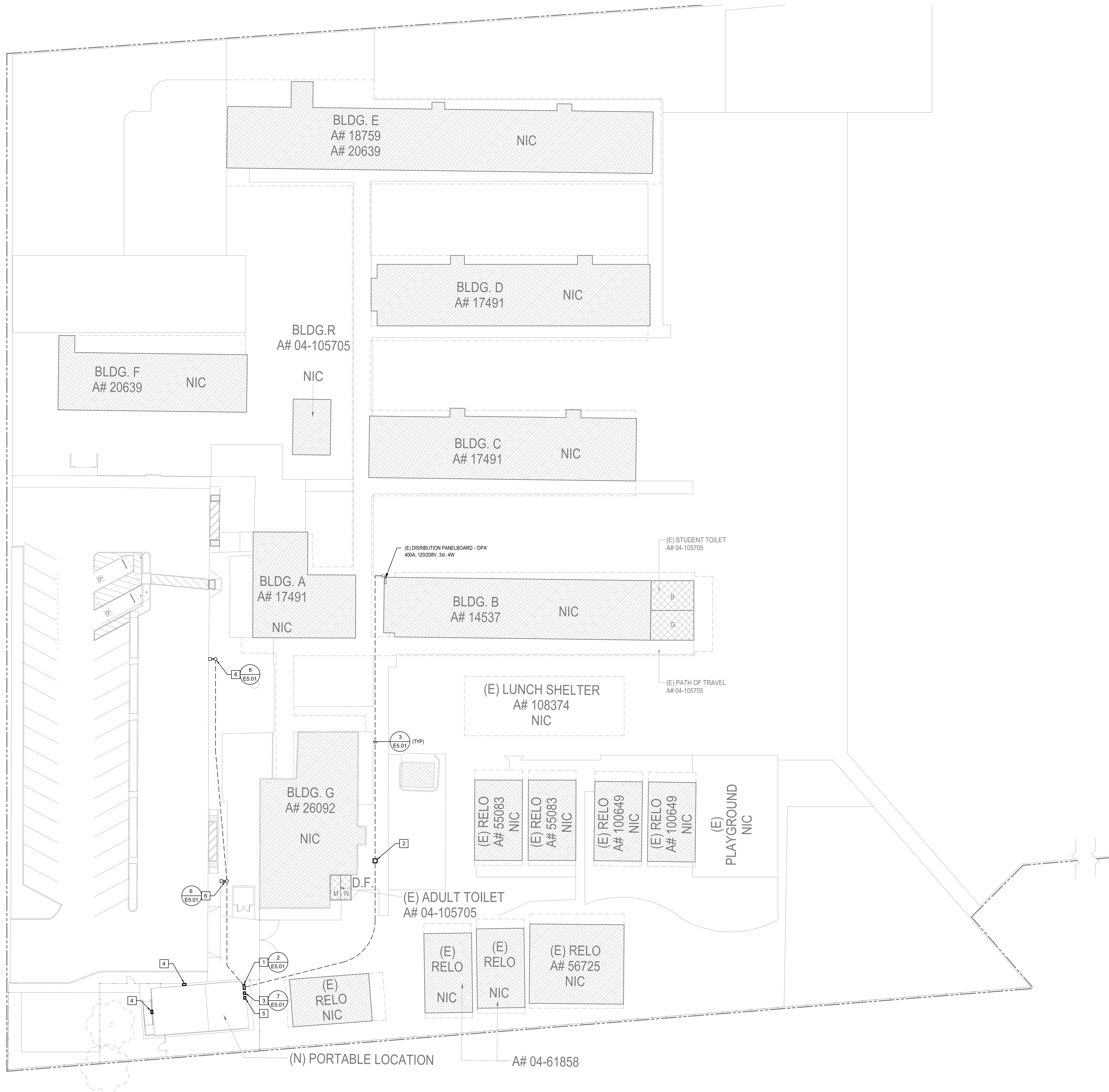


Table with columns: No., Description, Date. Includes CLIENT TUSD, DATE 01-12-2024, PROJECT NUMBER 230381.

ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES



GENERAL NOTES

- ELECTRICAL ENGINEERING FOR THIS PROJECT IS BASED ON EXISTING DRAWINGS OF THE ELECTRICAL SYSTEM. IN CASE OF ANY DISCREPANCIES WITH EXISTING FIELD CONDITIONS, ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT DIFFERENCES AND NOTIFY THE ELECTRICAL ENGINEER FOR POSSIBLE REVISION TO THESE DOCUMENTS.
- COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
- UNLESS NOTED OTHERWISE, ALL UNDERGROUND CONDUIT SHOWN ON THIS PLAN TO BE MINIMUM 1" IN SIZE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.
- ALL PANELBOARDS ARE PRE-INSTALLED BY PORTABLE MANUFACTURER. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND QUANTITY PRIOR TO ROUGH-IN.
- PATHWAY IS APPROXIMATE. CONTRACTOR SHALL VERIFY PROPER PATHWAY PRIOR TO INSTALLATION.
- REFER TO SINGLE LINE DIAGRAM ON 4/E5.01 FOR FEEDER SIZING.

KEY NOTES

- 100A, 120/208V, 3PH, 4W PANEL TO BE PROVIDED WITH NEW PORTABLE BUILDING PANEL TO BE FED AS SHOWN ON SINGLE LINE DIAGRAM ON E5.01 CONTRACTOR TO FIELD VERIFY CIRCUITS ARE OPEN TO USE.
- PROVIDE 2' X 3' PULLBOX WITH STEEL COVER, ENGRAVED "POWER".
- PROVIDE NEW LIGHTING INVERTER AT LOCATION SHOWN (MYERS ILLUMINATOR LVM-260-G). CONTRACTOR TO CONNECT NEW PORTABLE WALLPACK LIGHT FIXTURES AND NEW POLE LIGHT FIXTURE TO NEW INVERTER. PROVIDE 120V POWER TO NEW INVERTER FROM PORTABLE PANEL.
- PROVIDE NEW LED WALL PACK LIGHTING AT LOCATION SHOWN (ELUCENT WALL PACK WPDS-40-40-120-64). CONTRACTOR TO CIRCUIT NEW WALLPACKS INTO NEW MYERS INVERTER. CONTRACTOR TO VERIFY EXACT LOCATION OF LIGHTING.
- PROVIDE 365-DAYS ASTRONOMICAL TIME CLOCK SWITCH - NEMA 3R WITH PHOTOCELL SENSOR AT ROOF LEVEL, FACING NORTH.
- INSTALL NEW POLE FIXTURE MOUNTED @ 15'-0" LITHONIA - DSX2 LED P2 40X 70CRI TFTM MVOLT SPA PIR DDBXD WITH POLE 385 XXFT 4C MOUNTING DDBXD. ROUTE CIRCUIT THROUGH MYERS INVERTER LOCATED IN BLDG E.

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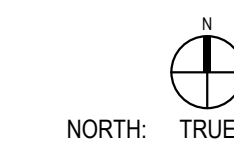


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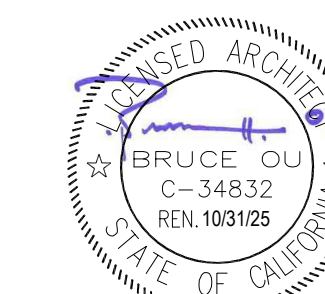
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Architect



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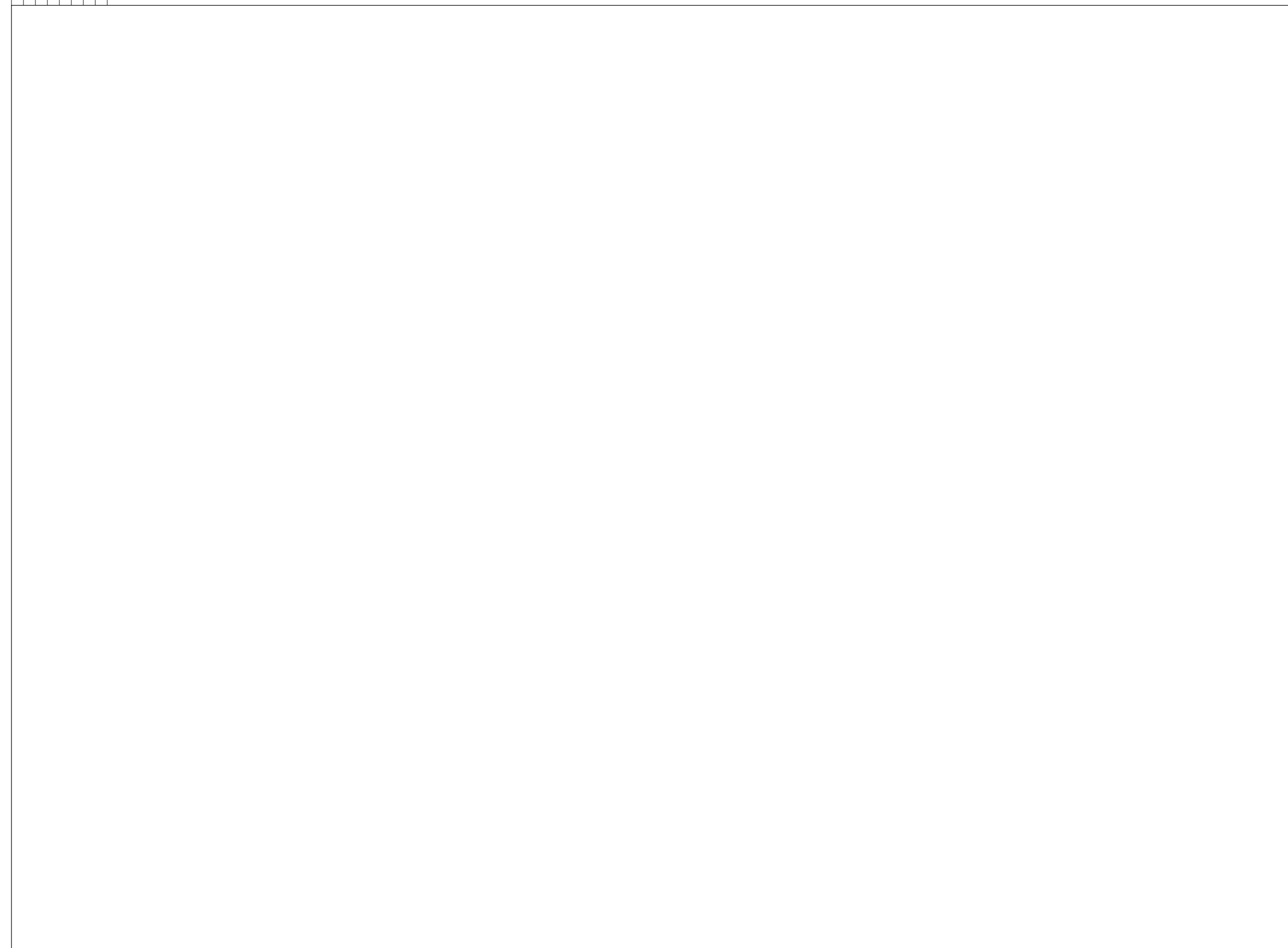
DATE 01-12-2024 PROJECT NUMBER 230381

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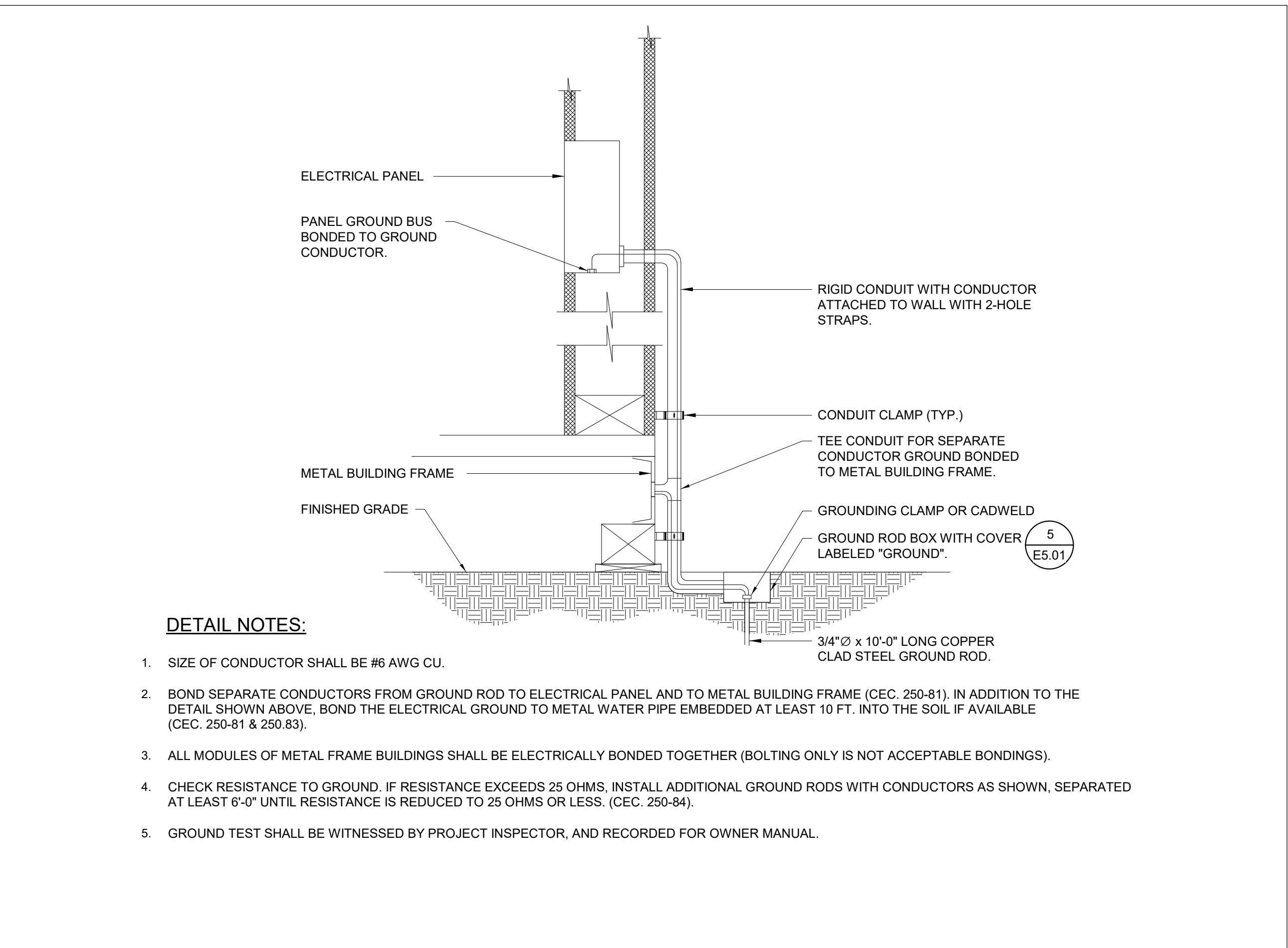
ELECTRICAL SITE PLAN



6 LIGHTING POLE MOUNTED DETAIL
NOT TO SCALE

- HANDHOLE IN BASE OF POLE COMPLETE WITH GASKETED COVER.
- BOND GROUND WIRE/CONDUIT TO POLE. POLE BASE WITH WASHERS AND NUTS ON TOP AND BOTTOM AND FULL BASE COVER.
- GROUT AROUND POLE BASE AFTER LEVELING.
- RAISED CONCRETE BASE WITH EASED TOP EDGE 1/2" RADIUS CORNERS. SACK AND PATCH SURFACE TO ACHIEVE A SMOOTH UNIFORM FINISH.
- PLACE THREE #3 TIES IN TOP 5" BASE. MOW STRIP SHALL BE FLUSH WITH SIDEWALK.
- FINISHED GRADE.
- THREE 3/4" CONDUITS - ONE FOR LIGHTING, ONE FOR POWER & ONE FOR SIGNAL.
- TYPICAL OF FOUR 1" x 48" GALVANIZED THREADED RODS WITH NUTS DOUBLED STEEL GRADE FOR ANCHOR BOLTS. SHALL BE F15554 GRADE 36 STEEL (YIELD STRESS 36KSI).
- FOUR #4 VERTICAL REBAR WITH #4 TIES ON 9" CENTER TO FORM CAGE.
- CONCRETE BASE. CONCRETE TO BE MIN. 3000 PSI. IN 28 DAYS. POURED IN NATURALLY COMPACTED EARTH HOLE. FREE OF LOOSE DIRT OR DEBRIS.
- PLASTIC WARNING TAPE MARKED "ELECTRICAL" 6" ABOVE CONDUIT.
- TYP. 18" DIAMETER ROUND STEEL CAGE.
- TYP. 10" DIAMETER ROUND CAGE WITH 9.5" BOLT CIRCLE.
- CONCRETE BASE.
- #4 VERTICAL REBAR, TYPICAL OF FOUR FOR EACH STEEL CAGE.
- BOLT WITH #3 TIE, TYP.

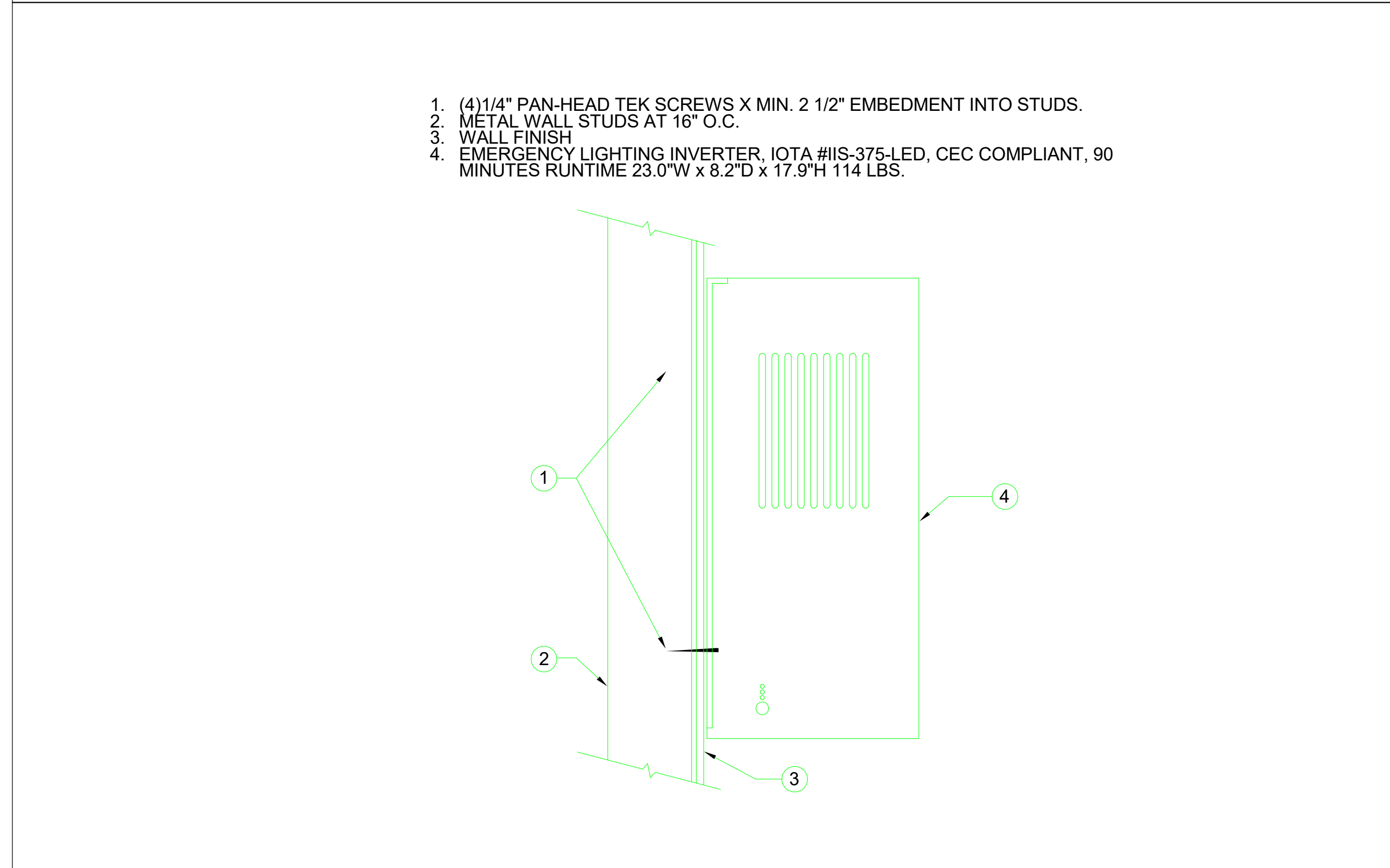
NOTE:
REFER TO FIXTURE SCHEDULE FOR POLE AND FIXTURE TYPES.



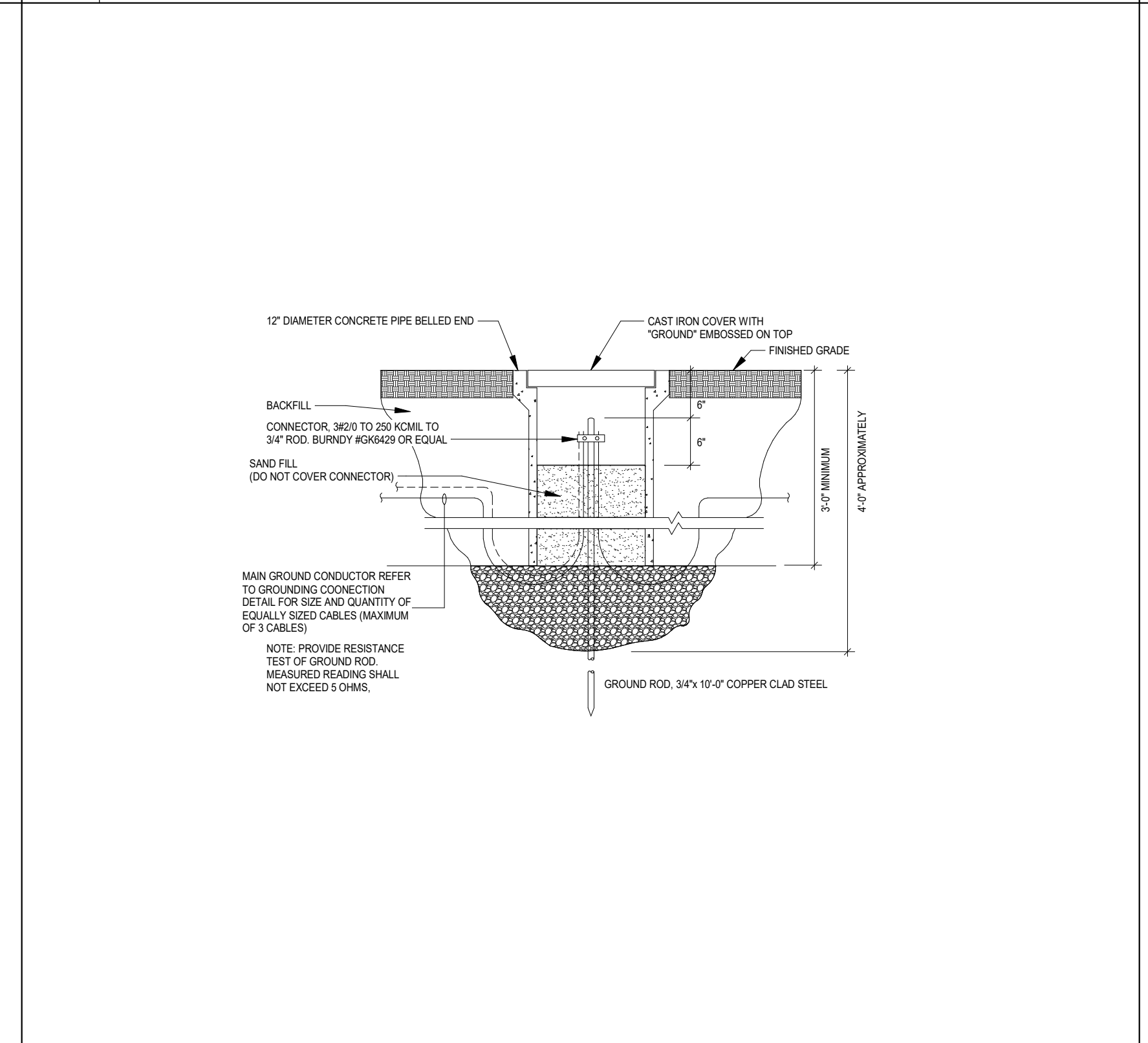
DETAIL NOTES:

- SIZE OF CONDUCTOR SHALL BE #6 AWG CU.
- BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL BUILDING FRAME (CEC. 250-81). IN ADDITION TO THE DETAIL SHOWN ABOVE, BOND THE ELECTRICAL GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FT. INTO THE SOIL IF AVAILABLE (CEC. 250-81 & 250.83).
- ALL MODULES OF METAL FRAME BUILDINGS SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDINGS).
- CHECK RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS WITH CONDUCTORS AS SHOWN, SEPARATED AT LEAST 6'-0" UNTIL RESISTANCE IS REDUCED TO 25 OHMS OR LESS. (CEC. 250-84).
- GROUND TEST SHALL BE WITNESSED BY PROJECT INSPECTOR, AND RECORDED FOR OWNER MANUAL.

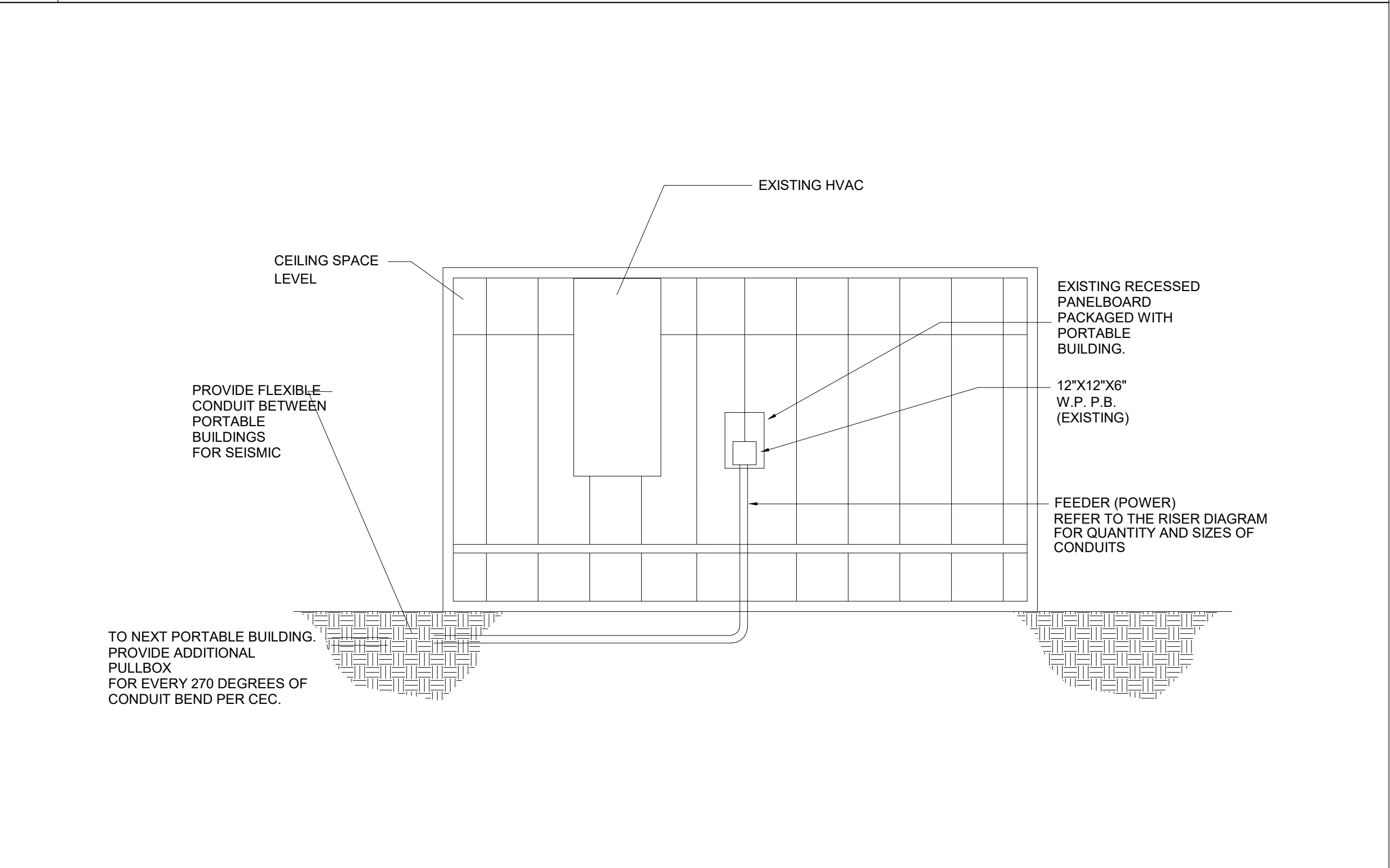
1 PORTABLE BUILDING GROUNDING DETAIL
NOT TO SCALE



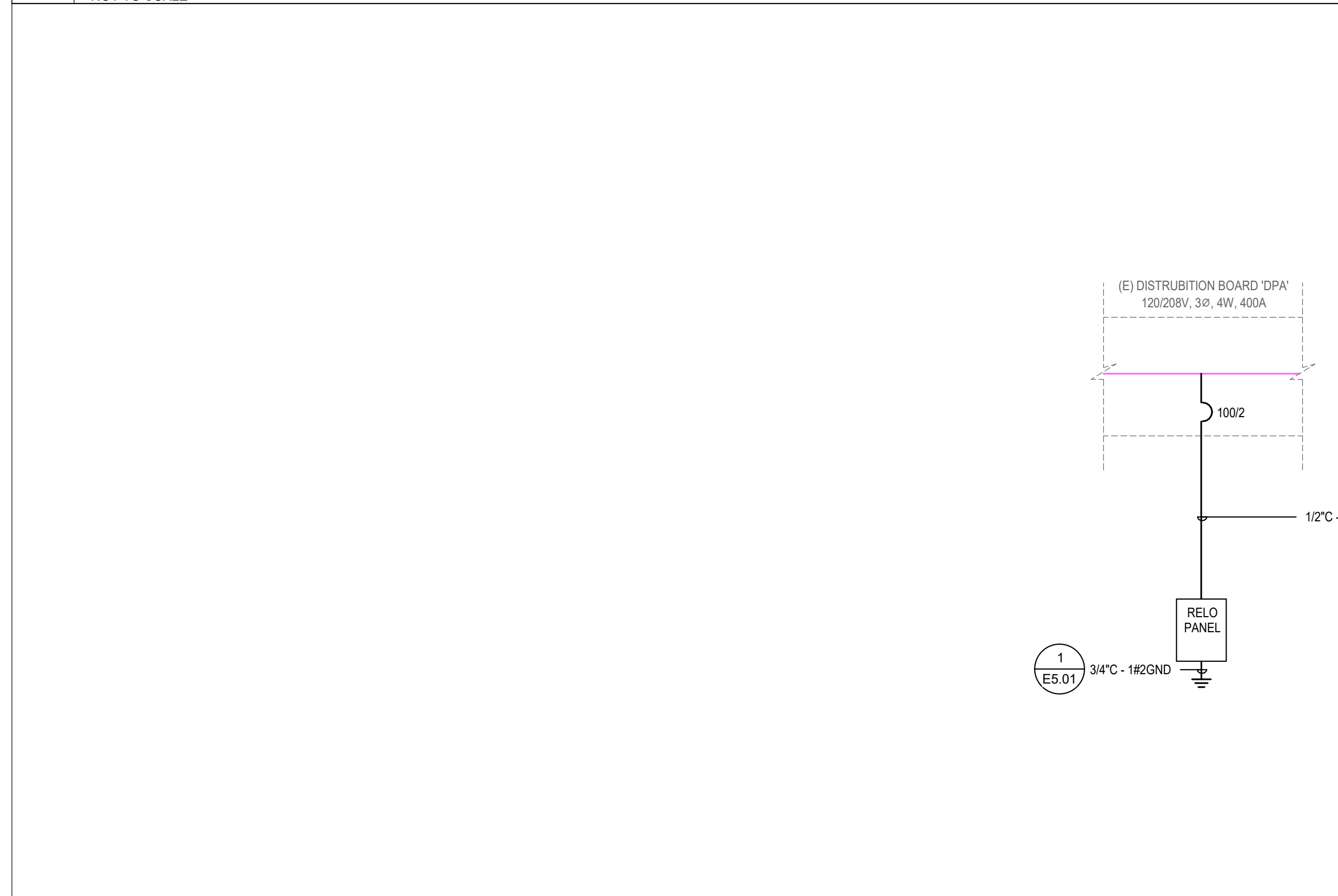
7 LIGHTING INVERTER WALL MOUNTING DETAIL
NOT TO SCALE



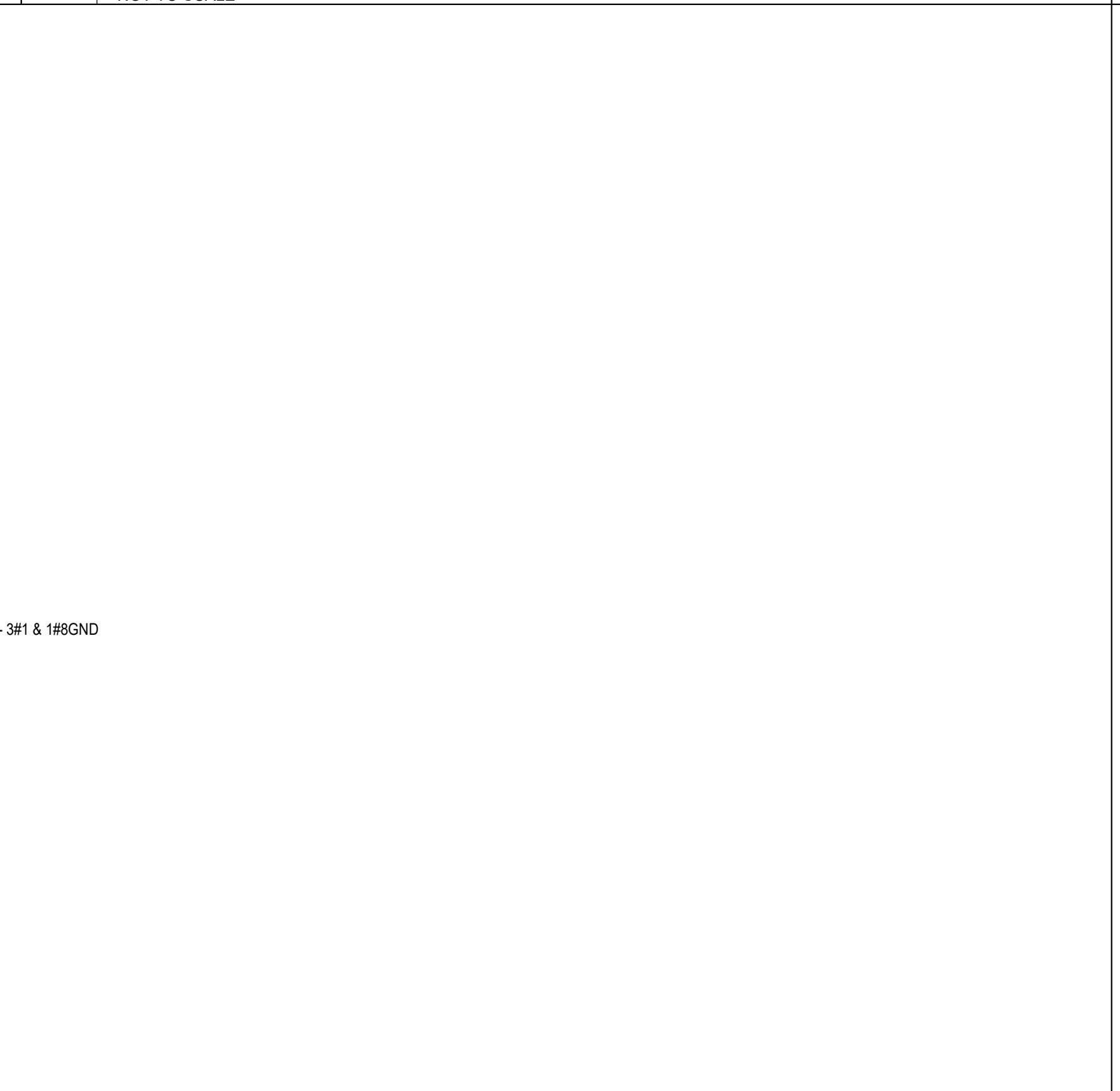
5 GROUND WELL ASSEMBLY
NOT TO SCALE



2 PORTABLE BUILDING POWER CONNECTION DETAIL
NOT TO SCALE



4 SINGLE LINE DIAGRAM
NOT TO SCALE



3 TRENCH DETAIL
NOT TO SCALE

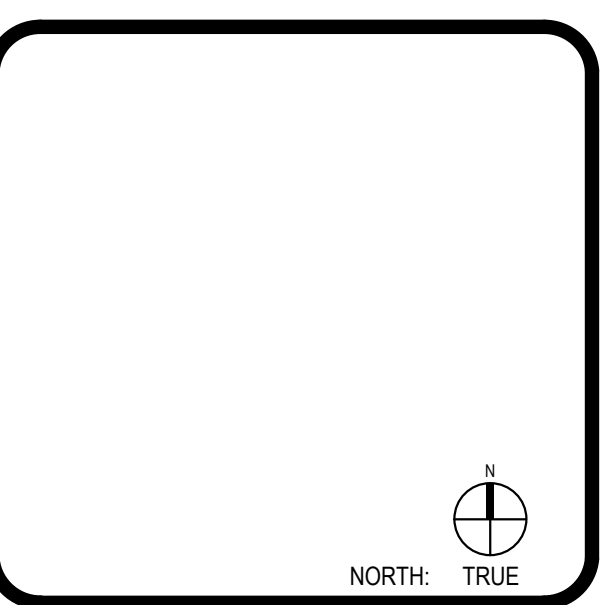
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No.	Description	Date

CLIENT	TUSD
DATE	01-12-2024
PROJECT NUMBER	230381

SINGLE LINE DIAGRAM & DETAILS

E5.01

TECHNOLOGY PLAN GENERAL NOTES

- 1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF THE TELECOMMUNICATION, NETWORK AND VIDEO EQUIPMENT SHALL BE A DEDICATED CIRCUIT AND ON EMERGENCY POWER WHEN AVAILABLE. CONTRACTOR SHALL COORDINATE AND INSTALL ALL 120V POWER REQUIREMENTS AND LOCATIONS AS REQUIRED FOR ALL EQUIPMENT (TYPICAL).

INTERCOM SYSTEM'S GENERAL NOTES

- 1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND ON EMERGENCY POWER WHEN AVAILABLE. THE INSTALLING CONTRACTOR OF EACH SYSTEM SHALL BE RESPONSIBLE FOR PROVIDING THEIR OWN 120V POWER REQUIREMENTS FOR ALL REMOTE POWER SUPPLIES. THE INSTALLING CONTRACTORS LICENSED ELECTRICAL SUBCONTRACTOR SHALL COORDINATE ELECTRICAL PANEL LOCATIONS AND AVAILABLE SPACE DEDICATED FOR THE CONTRACTOR'S SYSTEM REQUIREMENTS (TYPICAL). PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER TO MAIN CONTROL PANELS AND ALL HEAD END EQUIPMENT. SYSTEM INSTALLERS SHALL COORDINATE LOCATION AND CONNECTION OF CONTROL PANEL AND HEAD END POWER WITH THE PROJECTS ELECTRICAL CONTRACTOR.

TECHNOLOGY SYMBOL LIST

Table with columns: SYMBOL, DESCRIPTION, NOTE. Includes symbols for WAP, Information Outlet, Public Address Speaker, Underground Pull Box, Conduit, and Fire Rated Pathway Sleeve System.

DRAWING INDEX

Table with columns: SHEET, DESCRIPTION. Lists sheets T0.00 through T6.01 and their corresponding descriptions.

TECHNOLOGY ABBREVIATION KEY

Table with columns: ABBR, DESCRIPTION. Lists abbreviations for floor types, conduit, construction manager, electrical contractor, etc.

APPLICABLE CODES

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2022. Includes California Administrative Code (CAC), California Building Code (CBC), California Electrical Code (CEC), etc.

PARTIAL LIST OF APPLICABLE STANDARDS. Includes NFPA 72 National Fire Alarm and Signaling Code, NFPA 720 Standard for the Installation of Carbon Monoxide Detection and Warning Equipment, etc.

AUDIO & VIDEO GENERAL NOTES

- 1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND ON EMERGENCY POWER WHEN AVAILABLE. THE INSTALLING CONTRACTOR OF EACH SYSTEM SHALL BE RESPONSIBLE FOR PROVIDING THEIR OWN 120V POWER REQUIREMENTS FOR ALL REMOTE POWER SUPPLIES.

TECHNOLOGY SCOPE OF WORK

- 1. PROVIDE COMPLETE TECHNOLOGY SYSTEMS EQUIPMENT WITH INSTALLATION AS REQUIRED FOR A COMPLETE WORKING SYSTEM PER DESIGN DRAWINGS AND SPECIFICATIONS FOR COMMUNICATIONS ROOM 109, AND OTHER SPACES REQUIRED.

GENERAL NOTES:

- 1. ALL SYMBOLS LISTED ABOVE ARE FOR REFERENCE ONLY. REFER TO PLANS AND LINE TYPE KEY FOR NEW, EXISTING TO REMAIN AND TO BE REMOVED ITEMS FOR ADDITIONAL INFORMATION.

TECHNOLOGY SYMBOL LIST NOTES:

- 1. "M" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. SYMBOL SUBSCRIPT INDICATES DEVICE TYPE.

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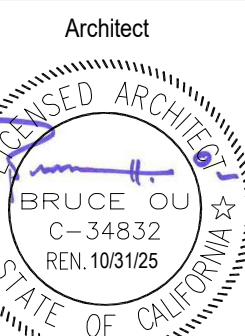
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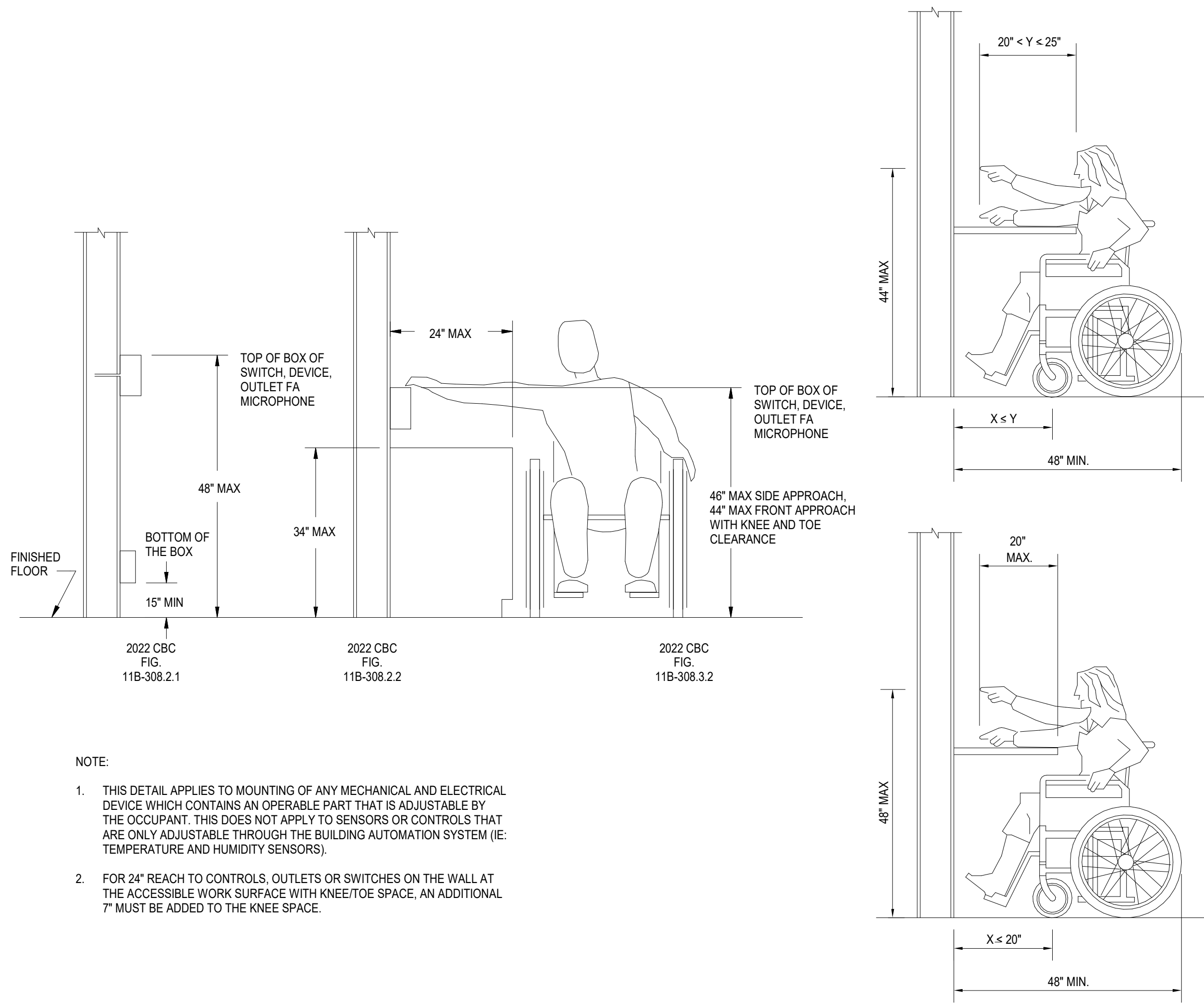
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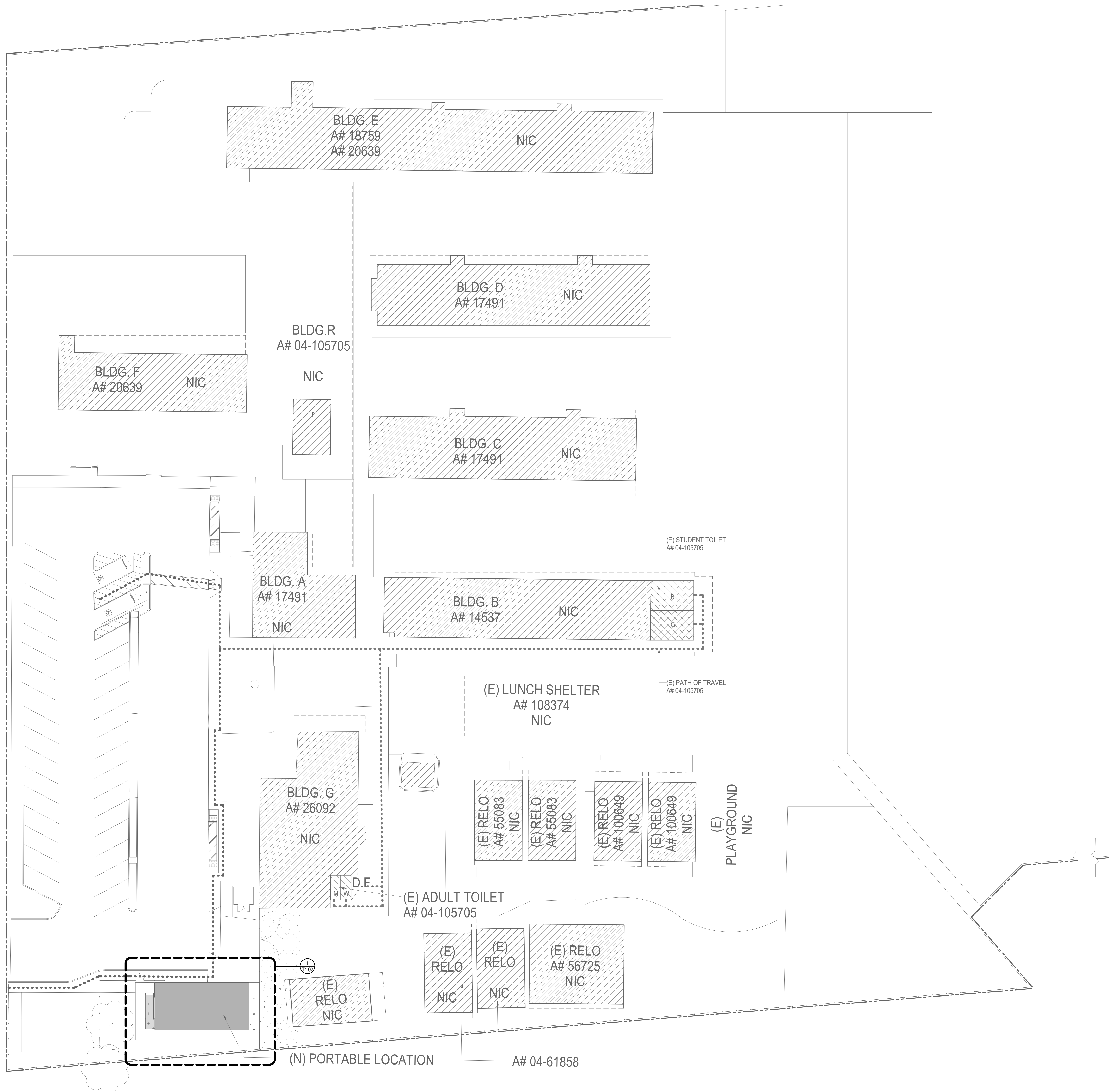
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TECHNOLOGY COVER SHEET

T0.00

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GENERAL NOTES

1. ALL COILED CABLING SHALL BE REINSTALLED, TESTED AND TERMINATED TO DEVICES.
2. NEW FIBER SHALL BE EXTENDED FROM EXISTING IDF TO THE NEW RELOCATED PORTABLE IDF CABINET.

SITE PLAN LEGEND

- (E) BUILDING, NOT IN SCOPE
- SCOPE OF WORK
- (N) RELOCATABLE BLDGS

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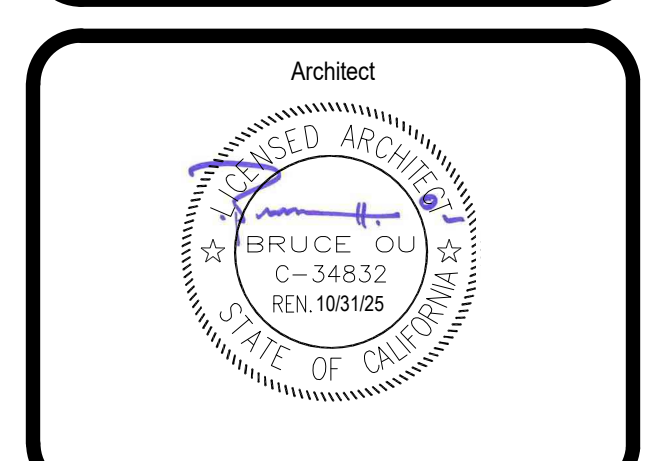
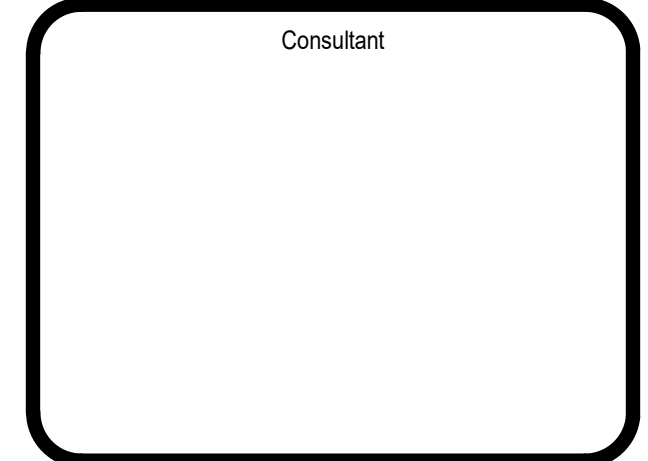
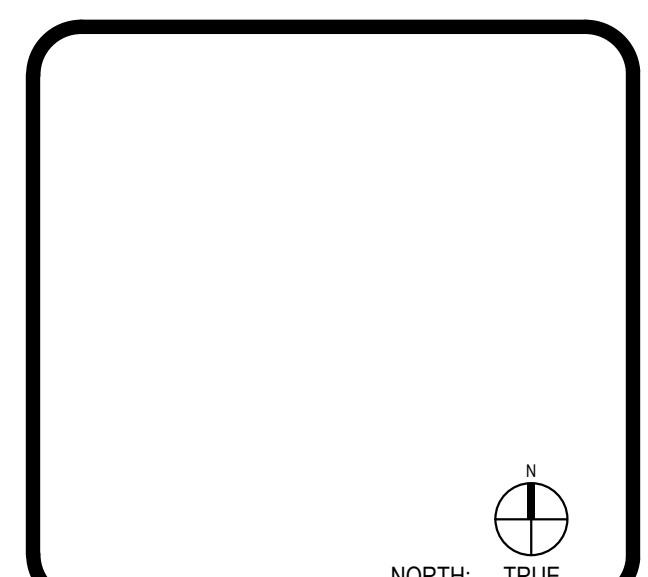
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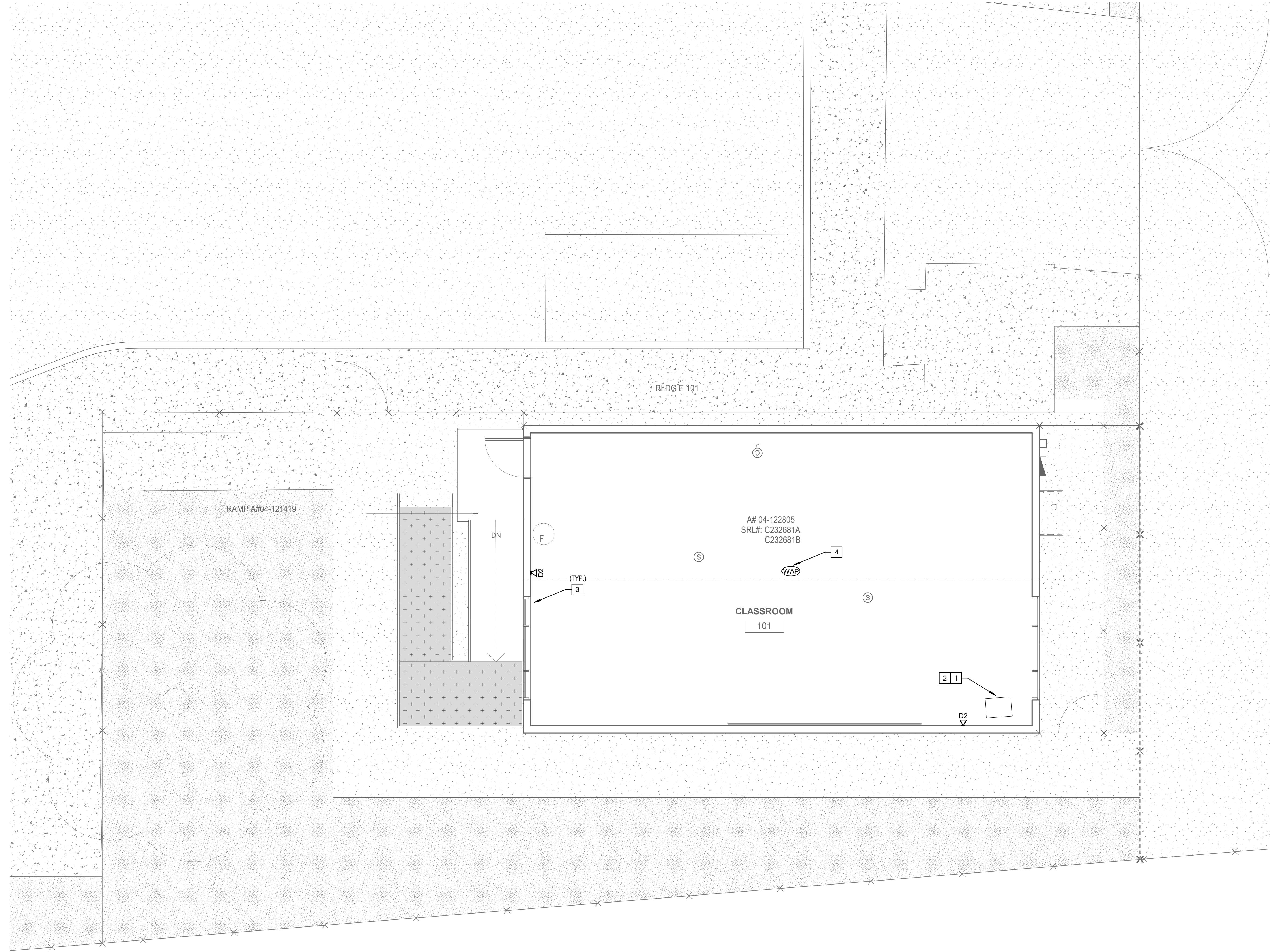
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TECHNOLOGY SITE PLAN



GENERAL NOTES

1. ALL COILED CABLING SHALL BE INSTALLED, TESTED AND TERMINATED TO DEVICES.
2. FOR ALL CABLING TO USE J-HOOKS ROUTING TO DESTINATIONS.
3. TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO ALLOW ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT.
4. FOR TECHNOLOGY RISERS SEE SHEET T5.01 FOR MORE INFORMATION
5. FOR TECHNOLOGY DETAILS SEE SHEET T6.01 FOR MOUNTING INFORMATION

KEY NOTES

1. APPROXIMATE LOCATION OF IDF CABINET.
2. CONNECT NEW 125M FIBER FROM EXISTING IDF TO NEW PORTABLE IDF CABINET.
3. WALL MOUNTED DATA OUTLET. PROVIDE AND INSTALL OUTLET IN A SS BACKBOX WITH A SINGLE-GANG PLASTER RING. INSTALL A (1) 1" EMT CONDUIT FROM BACKBOX UP TO ACCESSIBLE CEILING SPACE WITH CAT6A CABLES. THEN RUN CAT6A CABLES IN ACCESSIBLE CEILING SPACE USING J-HOOKS TO THE IDF CABINET SERVING THIS AREA. PROVIDE 4-PORT FACEPLATES AND RJ45 JACKS FOR DATA AND VOICE. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS. PROVIDE ALL TERMINATION FOR A COMPLETE WORKING SYSTEM.
4. WIRELESS ACCESS POINT, CEILING MOUNT. "CFOP". PROVIDE DATA OUTLET FOR WIRELESS ACCESS POINT. (2) CAT6A CABLES, 2-PORT FLENNUM RATED SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING AS INDICATED ON DRAWINGS. USE J-HOOKS TO SUPPORT NEW CABLING ABOVE ACCESSIBLE CEILING SPACE. FOR INACCESSIBLE CEILING SPACES NEW CONDUITS SHALL BE PROVIDED ABOVE CEILING TO THE IDF CABINET SERVING THIS AREA. PROVIDE 10' SLACK CABLE COILS ABOVE CEILING AT OUTLET LOCATION FOR FUTURE RELOCATION.



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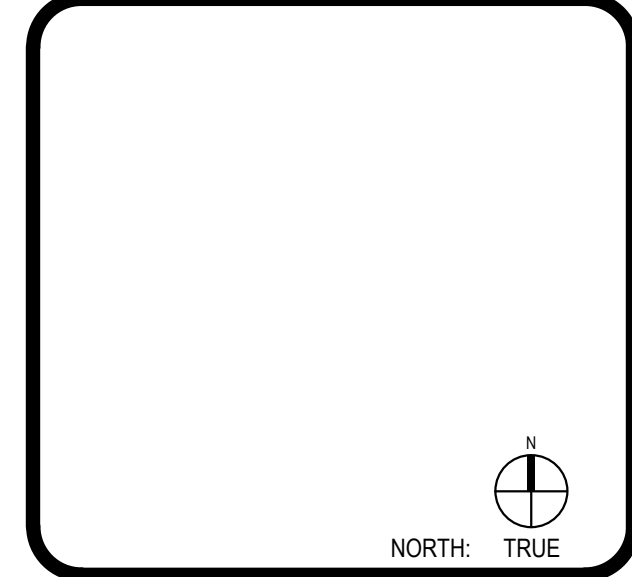
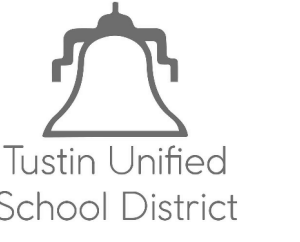
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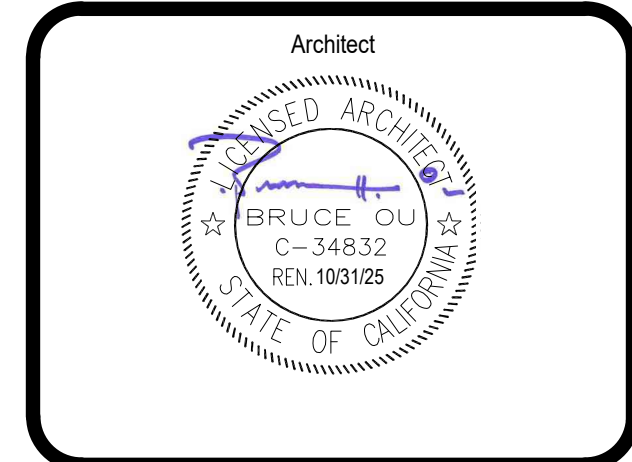
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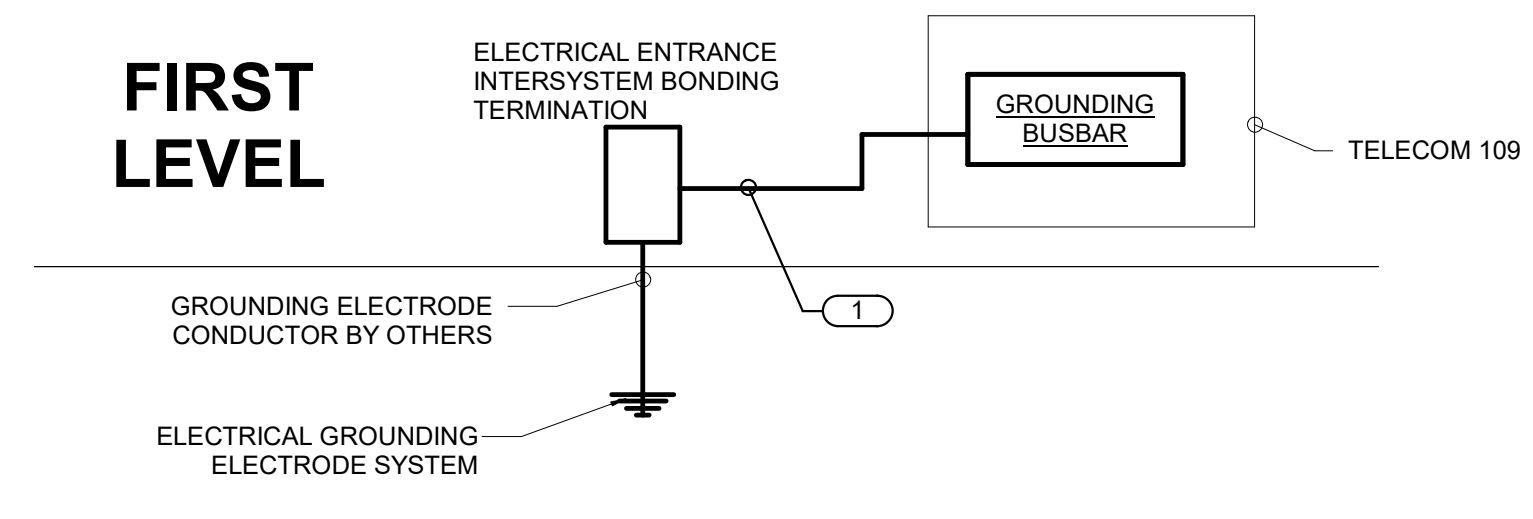
TECHNOLOGY ENLARGED SITE PLAN

T1.02

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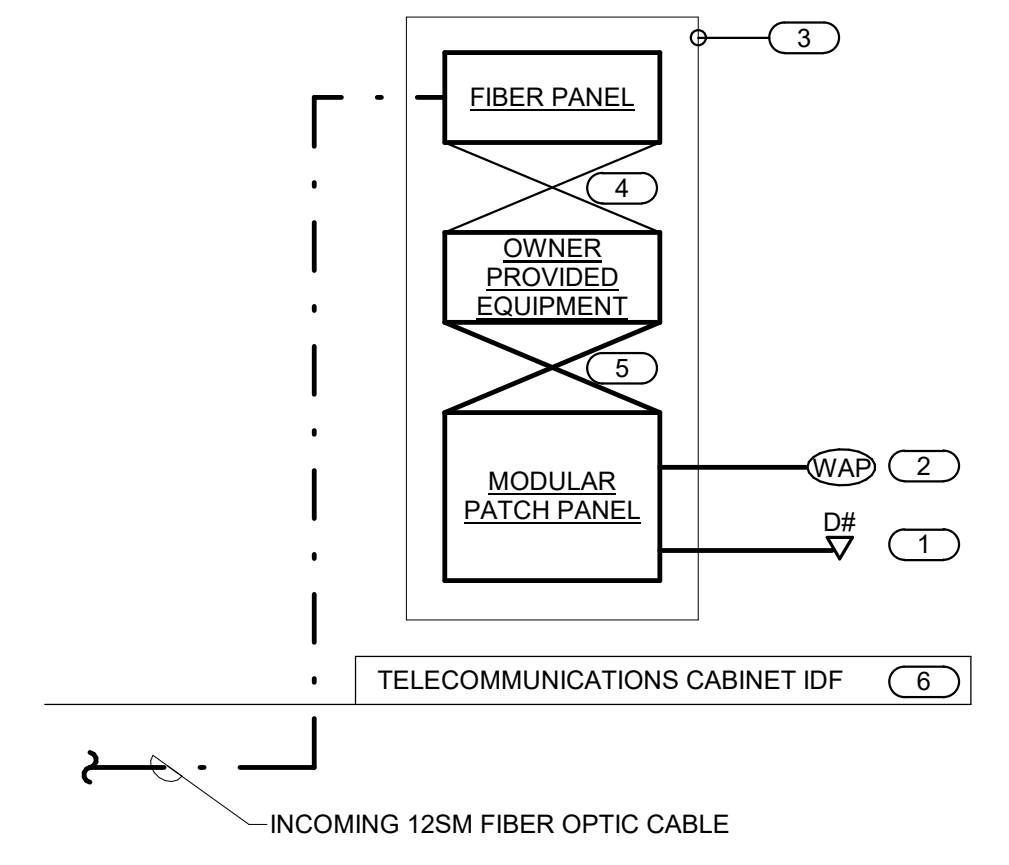


- NOTES:**
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF 30 AWG PLENUM RATED COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR) UNLESS CONDUCTOR LENGTH IS LESS THAN 66 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 66 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 3. ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.

CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 25'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
GREATER THAN 66'	3/0

- KEYNOTES:**
1. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT). BCT SHALL BE THE SAME SIZE AS THE TBB OR LARGER. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING REQUIREMENTS.

1 TECHNOLOGY BONDING RISER DIAGRAM
12" = 1'-0"



- NOTES:**
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTIONS, LOCATIONS AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 2. REFER TO FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED AT EACH INFORMATION OUTLET.

- KEYNOTES:** (#)
1. D# INDICATES VOICE/DATA FACEPLATE CONFIGURATION. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
 2. (WAP) WIRELESS ACCESS POINT. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
 3. RACK OR CABINET AS DEFINED ON THE TELECOM ROOM LAYOUT. REFER TO THE TELECOM ROOM REFERENCES MATRIX ON THE COVERPAGE FOR LOCATION.
 4. OPTICAL FIBER PATCH CABLES.
 5. RJ-45 TO RJ-45 CATEGORY 6A UTP PATCH CORDS. REFER TO SPECIFICATIONS FOR PATCH CORD REQUIREMENTS.
 6. REFER TO COVERPAGE AND FLOOR PLANS FOR TELECOMMUNICATIONS ROOM LOCATIONS.

2 FIBER OPTIC AND COPPER RISER DIAGRAM
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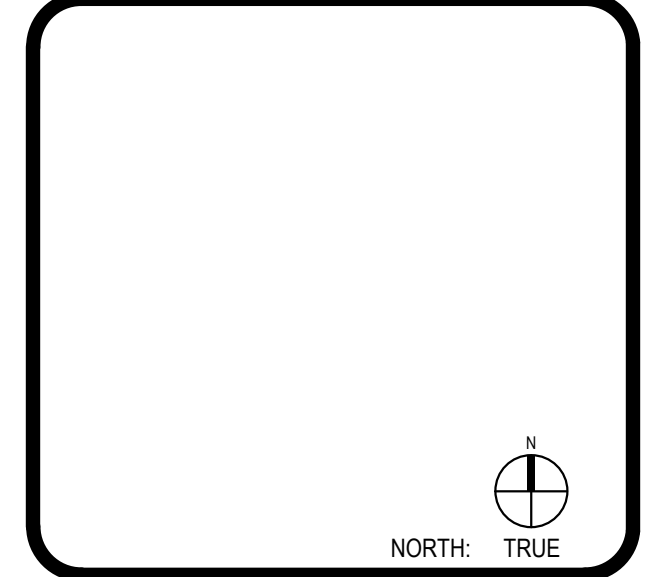
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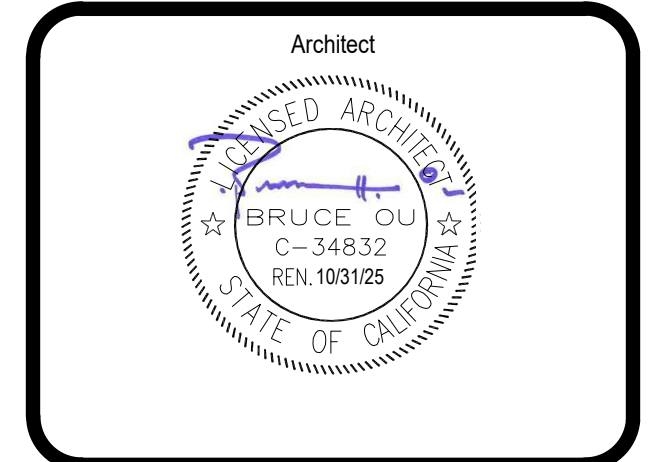
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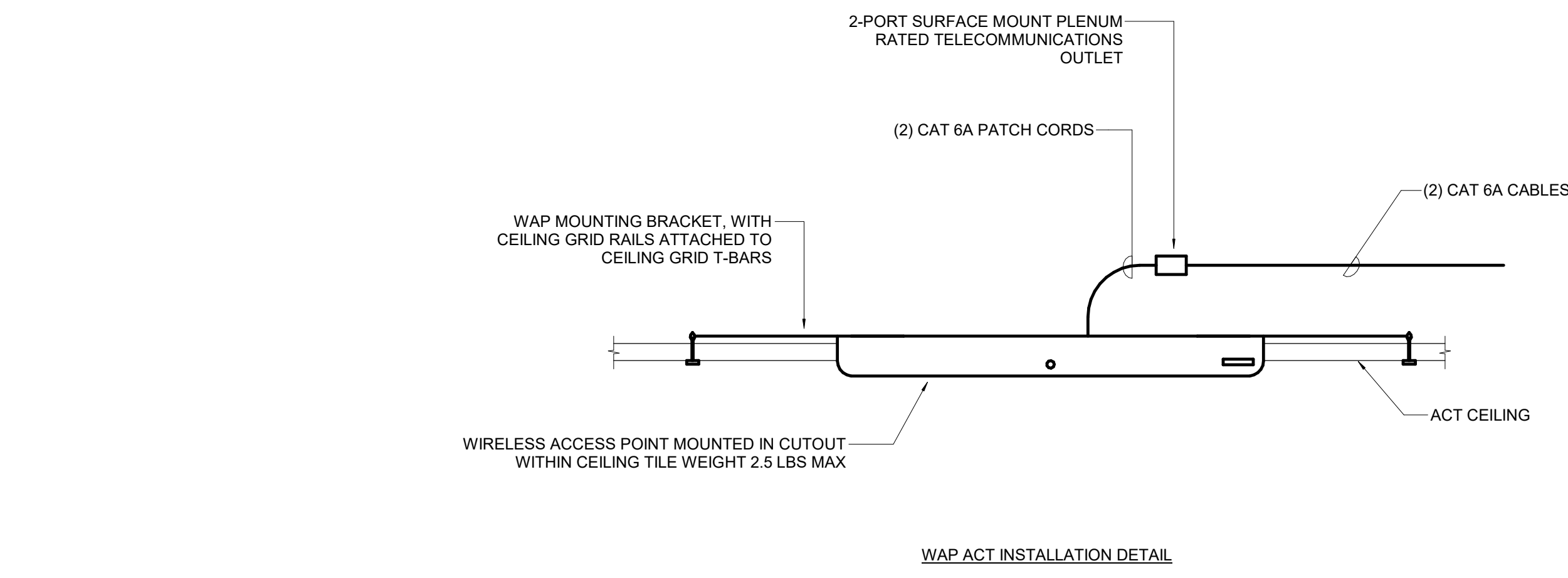


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TECHNOLOGY RISER DIAGRAM AND SCHEDULES

T5.01

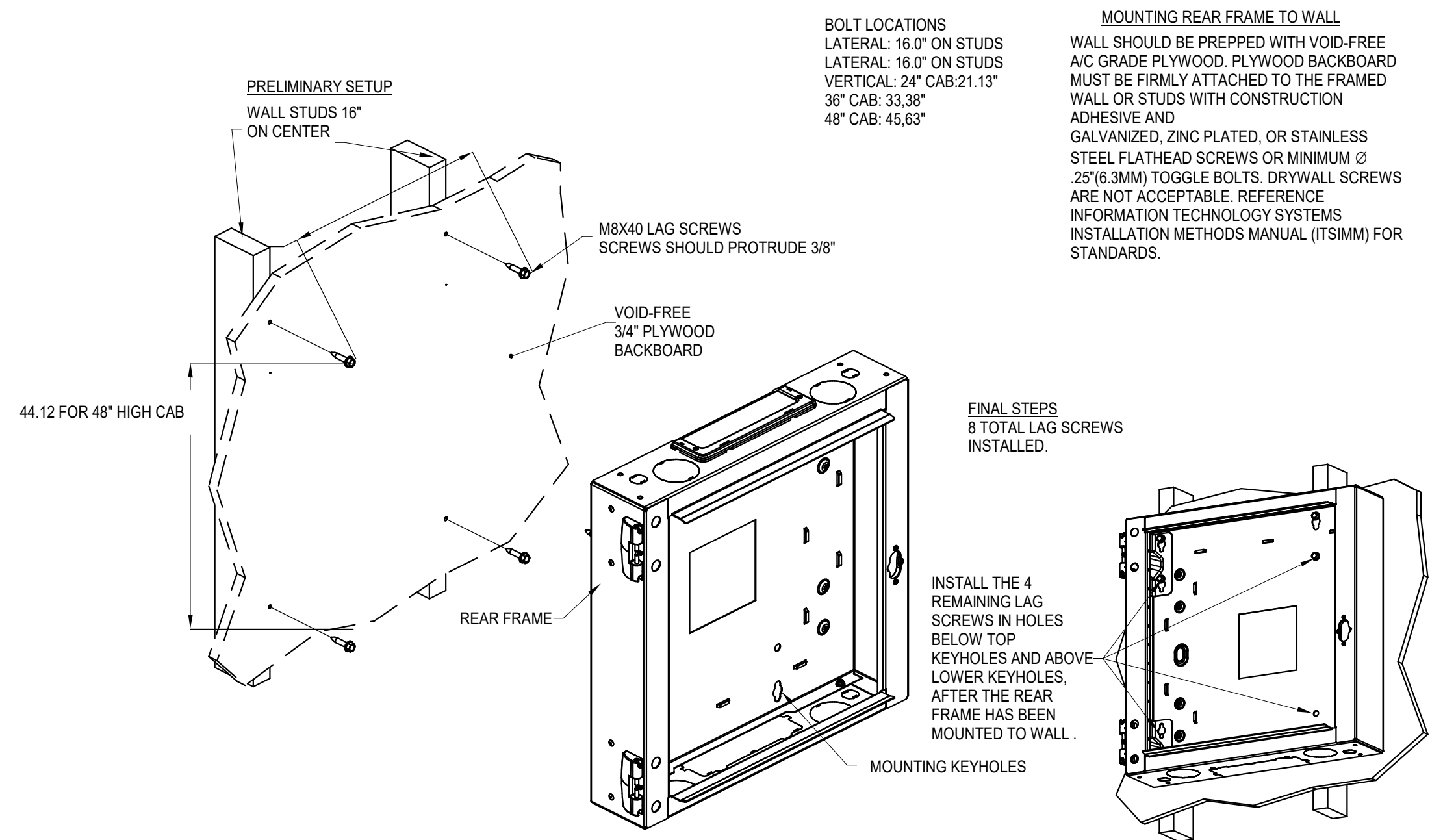
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NOTES:

- WHERE SUPPORTS ATTACH TO METAL ROOF DECKING, EXCLUDING CONCRETE ON METAL DECKING, DO NOT EXCEED 25 LBS. PER HANGAR AND A MINIMUM SPACING OF 2'-0" ON CENTER. THIS 25 LB. LOAD AND 2'-0" SPACING INCLUDE ELECTRICAL AND MECHANICAL ITEMS HANGING FROM DECK. IF THE HANGAR RESTRICTIONS CANNOT BE ACHIEVED, THE ADDITION OF SUPPLEMENTAL FRAMING OR STEEL FRAMING WILL BE REQUIRED.

3 CEILING SPEAKER MOUNTING
12" = 1'-0"



NOTES:

- THE REAR FRAME MUST BE SECURED TO WALL USING ALL 8 LAG SCREWS PROVIDED. THE SCREWS ARE INTENDED TO GO THROUGH 3/4" PLYWOOD BACK-BOARD AND THEN INTO WOOD WALL STUDS FOR MASONRY SURFACE. THE INSTALLER MUST PROVIDE APPROPRIATE HARDWARE.

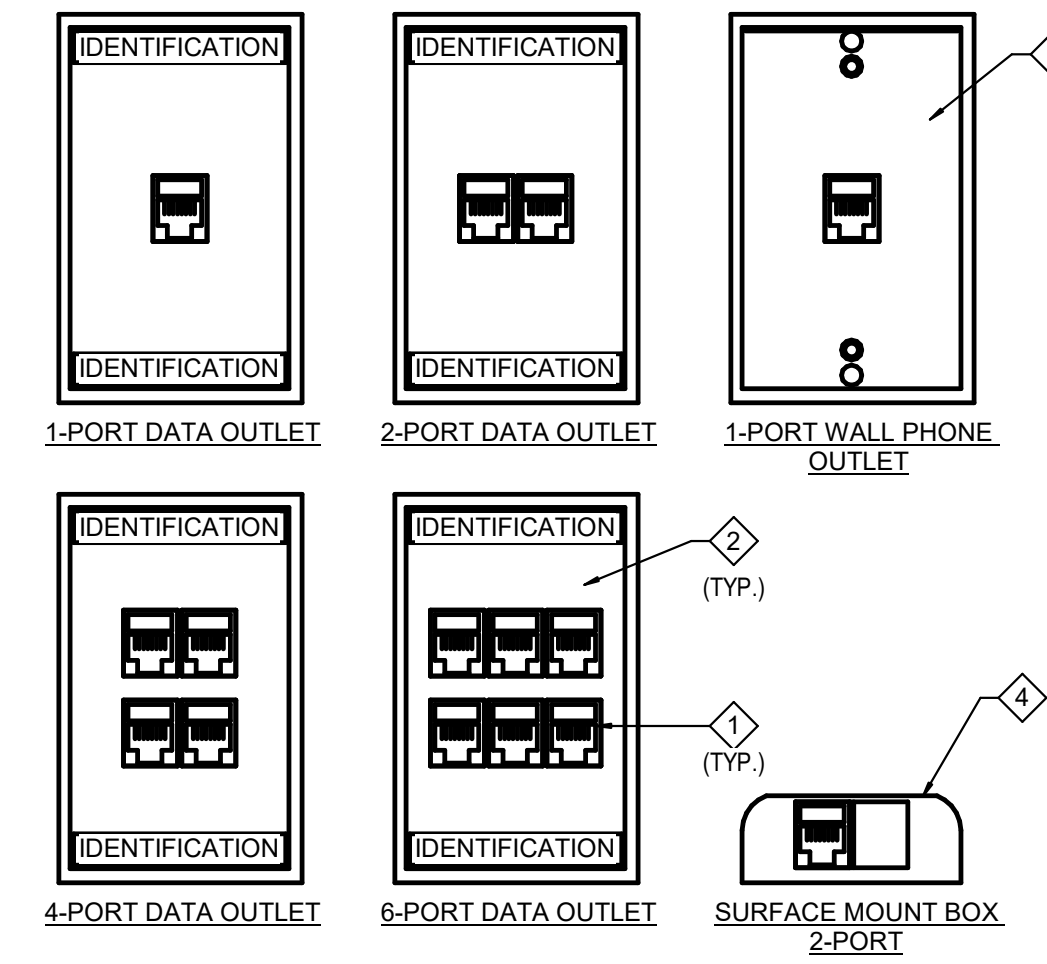
BOLT LOCATIONS
LATERAL: 16.0" ON STUDS
LATERAL: 16.0" ON STUDS
VERTICAL: 24" CAB 21.13"
36" CAB: 33.33"
48" CAB: 45.83"

MOUNTING REAR FRAME TO WALL
WALL SHOULD BE PREPPED WITH VOID-FREE A/C GRADE PLYWOOD. PLYWOOD BACKBOARD MUST BE FIRMLY ATTACHED TO THE FRAMED WALL OR STUDS WITH CONSTRUCTION ADHESIVE AND GALVANIZED, ZINC PLATED, OR STAINLESS STEEL FLATHEAD SCREWS OR MINIMUM Ø 3/16 (3MM) TOGGLE BOLTS. DRYWALL SCREWS ARE NOT ACCEPTABLE. REFERENCE INFORMATION TECHNOLOGY SYSTEMS INSTALLATION METHODS MANUAL (ITSMIM) FOR STANDARDS.

- INSURE THAT THE WALL OR MOUNTING SURFACE HAS SUFFICIENT STRENGTH TO SUPPORT THE CABINET AND THE EXPECTED CABINET PAYLOAD. THE MOUNTING SURFACE MUST ALSO BE FLAT AND EXTEND BEYOND THE TOP, BOTTOM, LEFT, AND RIGHT EDGES OF THE REAR PANEL.
- DRILL 5/32" PILOT HOLES FOR THE FOUR M8X40mm LAG SCREWS TO THE DIMENSIONS SHOWN ON THE DRAWING. THE SCREWS SHOULD GO DIRECTLY INTO THE WALL STUDS.
- INSTALL THE LAG SCREWS INTO THE HOLES. THE SCREW HEAD SHOULD PROTRUDE ABOUT 3/8" FROM THE WALL.
- MOUNT THE REAR FRAME TO THE WALL BY HOOKING THE UPPER AND LOWER KEYHOLES OVER THE SCREWS. TIGHTEN THE SCREWS SECURELY.
- INSTALL THE REMAINING 4 LAG SCREWS IN THE HOLES BELOW THE TOP TWO KEYHOLES, AND ABOVE LOWER KEYHOLES.

4 WALL CABINET MOUNTING DETAILS
12" = 1'-0"

1 DATA OUTLETS CONFIGURATION DETAIL
12" = 1'-0"

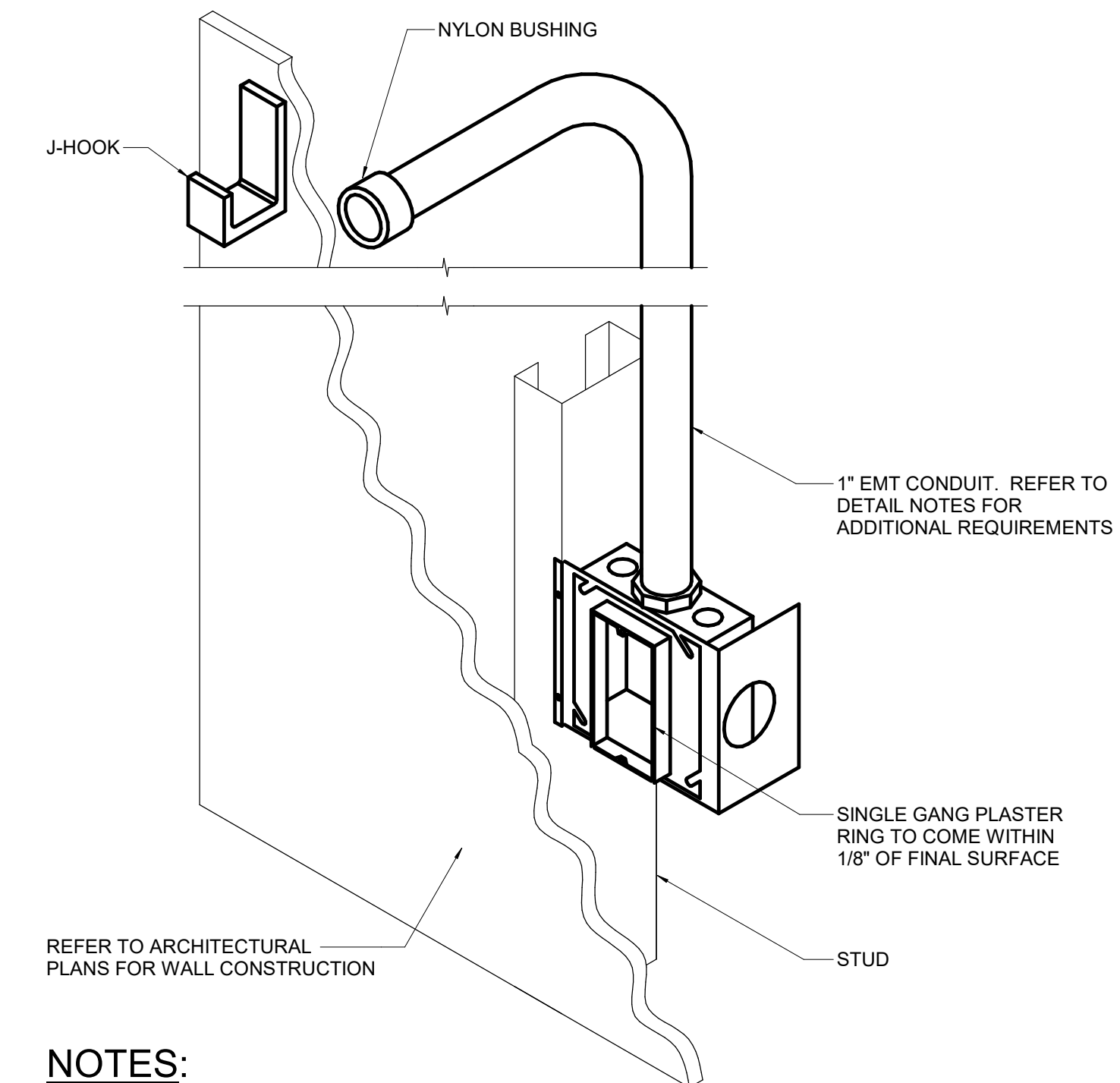


NOTES:

- REFER TO SPECIFICATION SECTION 27 15 00 - HORIZONTAL CABLING REQUIREMENTS FOR CATEGORY CABLE PERFORMANCE REQUIREMENTS.
- REFER TO SPECIFICATION SECTION 27 05 53 - IDENTIFICATION FOR DATA OUTLET PORT IDENTIFICATION.
- DATA OUTLET SHALL BE INSTALL IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING. REFER TO DETAIL 1/TS.01 TECHNOLOGY ROUGH-IN MOUNTING DETAILS FOR CONDUIT SIZE.
- PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS.
- USE T568B WIRING SCHEME TO TERMINATE THE TWISTED-PAIR CABLE ONTO THE CONNECTOR INTERFACE.
- WHERE APPLIES PER PLANS, PROVIDE AV OUTLET WITH HDMI CONNECTION PER BELOW.
 - PANDUIT COVER PLATE: CSEW1W OR APPROVED EQUAL
 - PANDUIT JACK (HDMI 2.0) CMHDM1W OR APPROVED EQUAL
 - PANDUIT MODULAR INSERT: CHF21W-X OR APPROVED EQUAL

KEYNOTE NOTES:

- PROVIDE CAT6 RJ-45 JACKS, 8-POSITION, 8-CONTACT (8P8C), COLOR BLUE FOR DATA, WHITE FOR VOICE, RED FOR SECURITY.
 - PANDUIT PRODUCTS "CJ688TGBU", COMMSCOPE "MGS400-318" OR APPROVED EQUAL.
- PROVIDE 1,2,4,6-PORT FACEPLATE AS INDICATED ON DRAWINGS.
 - 1-PORT: PANDUIT PRODUCTS "CFPE1WHY", COMMSCOPE OR APPROVED EQUAL.
 - 2-PORT: PANDUIT PRODUCTS "CFPE2WHY", COMMSCOPE OR APPROVED EQUAL.
 - 4-PORT: PANDUIT PRODUCTS "CFPE4WHY", COMMSCOPE OR APPROVED EQUAL.
 - 6-PORT: PANDUIT PRODUCTS "CFPE6WHY", COMMSCOPE OR APPROVED EQUAL.
- PROVIDE STAINLESS STEEL 1-PORT FACEPLATE FOR OUTLETS INDICATED WITH "W" ON DRAWINGS. "W" INDICATES WALL PHONE MOUNTED AT +48" AFF FOR WALL HUNG PHONE.
 - 1-PORT: WALL PHONE "W" PANDUIT PRODUCTS "WWRFPY", COMMSCOPE OR APPROVED EQUAL.
- PROVIDE SURFACE MOUNT BOX, PLENUM RATED, MOUNTED ABOVE CEILING FOR CONNECTIONS TO WIRELESS ACCESS POINTS.
 - 2-PORT: PANDUIT PRODUCTS "CBX2WH-AY", COMMSCOPE OR APPROVED EQUAL.



NOTES:

- 1" EMT CONDUIT SHALL STUB UP TO NEAREST ACCESSIBLE CEILING AND TERMINATE ORIENTED HORIZONTALLY AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE. CONDUIT RUN SHALL NOT CONTAIN MORE THAN 180 DEGREES OF BEND BETWEEN ACCESSIBLE JUNCTION BOXES OR BETWEEN JUNCTION BOX AND END OF CONDUIT.
- WHERE CONDUIT STUB IS LOCATED IN A ROOM WITH AN ACCESSIBLE CEILING AND IS NOT REQUIRED TO RUN TO CABLE ROUTE LOCATED OUTSIDE THE ROOM, STUB MUST TERMINATE ABOVE THE ACCESSIBLE CEILING WITH A 90-DEGREE BEND AT THE TOP ORIENTED IN TO THE ROOM AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE IN THE ROOM.
- ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT.
- INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR TECHNOLOGY ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP REQUIREMENTS.

2 TECHNOLOGY ROUGH-IN MOUNTING
N.T.S.



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CONSULTANT LEAF Engineers

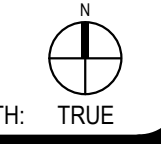


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LOMA VISTA ELEMENTARY SCHOOL

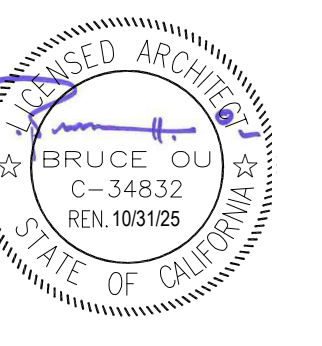
PROJECT ADDRESS:
13822 Prospect Ave
Sanita Area, CA 92705

DSA-APPL. NO.: XXXX DSA-FILE NO.: XXXX



Consultant

Architect



CLIENT TUSD

DATE 01-12-2024 PROJECT NUMBER 230381

No.	Description	Date

TECHNOLOGY DETAILS

DEVICE SCHEDULE

Table with columns: SYMBOL, DESCRIPTION, MODEL, MANUFACTURER, BACKBOX, MOUNTING HEIGHT, C.S.F.M. NUMBER. Includes items like NEW FIRE ALARM VOICE EVAC CONTROL PANEL, NEW FIRE ALARM POWER SUPPLY, ADDRESSABLE AREA SMOKE DETECTOR, etc.

LEGENDS

Table with columns: ABBREVIATION, DESCRIPTION, ABBREVIATION, DESCRIPTION. Lists symbols for A OR AMP, AFF, AIC, ARCH, AWG, C, CKT, CL, C.O., CU, DWG, ER, EMT, EQUIP, EXIST (E), FIN, FLR, FT, GFI, GND, LTG, MTG, N, FS, JB, JIB, PIV, DCCDV, etc.

APPLICABLE CODES

PARTIAL LIST OF APPLICABLE CODES: 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR, 2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR, 2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR, 2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR, 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR, 2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR, 2022 CALIFORNIA FIRE CODE (CFC), PART 7, TITLE 24 CCR, 2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR, 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR, 2022 CALIFORNIA REFERENCED STANDARDS CODE (CALREF), PART 12, TITLE 24 CCR, TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

DRAWING INDEX

Table with columns: SHEET, DESCRIPTION. Lists sheets FA0.00, FA0.01, FA1.01, FA1.02, FA6.01.

ANCHORAGE AND BRACING NOTES

ALL WORK SHALL BE IN CONFORMANCE WITH TITLE 24, 2022 CALIFORNIA CODE OF REGULATIONS (CCR), 2022 CALIFORNIA BUILDING CODE, PART 2, TITLE 24 CCR, 2022 CALIFORNIA ELECTRICAL CODE, PART 3, TITLE 24 CCR. CUTTING, BORING, SAWCUTTING OR DRILLING THROUGH THE NEW OR EXISTING STRUCTURAL ELEMENTS TO BE DONE ONLY WHEN SO DETAILED IN THE DRAWINGS OR ACCEPTED BY THE ARCHITECT AND STRUCTURAL ENGINEER WITH THE APPROVAL OF DSA REPRESENTATIVE.

GENERAL NOTES

- 1. APPLICABLE STANDARD 2022 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 96" MAXIMUM FROM FINISHED FLOOR.
9. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS ABOVE THE FINISHED FLOORS AT HEIGHTS OF NOT LESS THAN 96" AND BELOW THE FINISHED CEILINGS AT DISTANCES OF NOT LESS THAN 6".
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 OCCUPABLE SPACE WITHIN THE BUILDING.
11. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
12. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
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 1/4" 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 FPL OR 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 CONTRACTOR 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 MANNER AS INDICATED ON DESIGN DOCUMENTS.
19. EXPOSED CIRCUITS ARE ONLY AS IDENTIFIED OR NOTED AS IDENTIFIED 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 LOCK 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 8.2.
23. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
24. ACCESSIBLE FIRE ALARM EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVACS) 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 UL, AND C.S.F.M. LISTED.
30. ELECTRICAL CONDUIT SHALL BE RATED FOR HIGH ACCESS PANELS TO AREAS THAT REQUIRE ACCESS FOR ATTC HEAT DETECTOR, SERVICING, TROUBLESHOOTING, ETC.
31. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON RFP PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER. FACTORS SUCH AS EXCESS VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC. THAT ARE RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
32. 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.
33. 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 INDICATED. REFER TO FIRE ALARM SYMBOLS, LEGENDS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. SYSTEM SUPPLIER PROVIDED BACKBOXES SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
34. SMOKE DETECTOR TESTING SHALL BE ACCOMPLISHED PER THE MANUFACTURERS' INSTRUCTIONS.
35. FIRE ALARM 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 DEVICES SHALL BE SUPERVISED.
36. ALL WIRING SHALL BE CUT FOR IN AND OUT, WIRING SHALL NOT BE LOOPED THROUGH DEVICES.
37. POINT, COMMON ANNUNCIATION, AND T-TAPPING ARE PROHIBITED.
38. PROVIDE 3/4" CORE CUT FROM FIRE ALARM CONTROL PANEL TO TELEPHONE BACKBOARD FOR OWNER PROVIDED CENTRAL STATION MONITORING.
39. MINIMUM CONDUIT SIZE SHALL BE 3/4" AND CONTRACTOR SHOULD PROVIDE APPLICABLE CONDUIT SIZE AS REQUIRED PER THE SHOP DRAWING AND SPECIFICATION.
40. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER MANUFACTURERS' SPECIFICATIONS.
41. FIRE ALARM SYSTEM SHALL BE LISTED.
42. CBC 907.8.3 (SPM 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 ULFJ (CENTRAL STATION OR ULIS REMOTE) AND APPROPRIATE BY THE UNDERWRITERS LABORATORY INC. (UL) OR OTHER APPROVED LISTING AND TESTING LABORATORY OR SHALL COMPLY WITH THE REQUIREMENTS OF STANDARD, FM 3011".
43. SUBSTITUTION OF SYSTEM COMPONENTS OR MANUFACTURER WILL REQUIRE THE CONTRACTOR TO SEPARATELY OBTAIN APPROVAL WITH THE DSA 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.
44. FINAL ACCEPTANCE TEST TO INCLUDE TESTING THE CONNECTION BETWEEN THE FIRE ALARM PANEL AND THE SUPERVISING STATION.
45. COORDINATE WITH THE ENGINEER FOR USE OF EXISTING CONDUIT ON A CASE BY CASE BASIS.
46. PRIOR TO DEMOLITION, CONTRACTOR SHALL TEST THE INTERCOM SYSTEM TO ENSURE FULL FUNCTIONALITY. GENERATE A LIST OF FAULTY EQUIPMENT AND PROVIDE TO THE OWNER AND THE ARCHITECT. PROVIDE PRICING FOR ANY REQUIRED EQUIPMENT REPAIRS OR REPLACEMENT.
47. CONTRACTOR SHALL DISCONNECT EXISTING FIRE ALARM SYSTEM FROM THE EXISTING INTERCOM SYSTEM. ENSURE THE INTERCOM SYSTEM IS COMPLETELY FUNCTIONAL AFTER DISCONNECTION.
48. CONTRACTOR SHALL CLEARLY MARK THE ABANDON SECTION OF PUBLIC ADDRESS SYSTEM.
49. PROVIDE A FIRE ALARM DOCUMENTATION CABINET PER NFPA 72.7.2.
50. FIRE SAFETY DURING DEMOLITION AND CONSTRUCTION SHALL COMPLY WITH CBC CHAPTER 33 AND CFC CHAPTER 33.
51. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APPROVED DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24 CALIFORNIA CODE OF REGULATION CHANGE DOCUMENT OR A SEPARATE SET OF PLANS AND SPECIFICATIONS DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK (CAC 4.37(C)).
52. CHANGES TO THE DIVISION OF THE STATE ARCHITECT APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENTS FOR CHANGES TO THE STRUCTURAL, ACCESSIBILITY OR FIRE-SAFE PORTIONS OF THE PROJECT. CHANGES SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK UNDER THESE DRAWINGS (CAC 4.38(C)).
53. PROJECT INSPECTOR TO APPROVE SYSTEM VOICE-EVACUATION INTELLIGIBILITY DURING TESTING PHASE.
54. CONTRACTOR SHALL PROVIDE ALL CABLING, RELAYS, MOUNTING HARDWARE AND ANY OTHER DEVICES (FIRE ALARM SYSTEM DEVICES) TO PROVIDE A FULL FUNCTIONING FIRE ALARM OVERDIE SYSTEM WHEN FIRE ALARM MODULES AND CABLING BY FIRE ALARM CONTRACTOR.
55. FOR ALL HEAT DETECTORS THAT ARE LOCATED ABOVE CEILING/TICAT SPACES, CONTRACTOR SHALL PROVIDE STICKER AND LABEL "HD" AT THE REFLECTED CEILING DIRECTLY BELOW THE DEVICE TO INDICATE LOCATION.
56. AUTOMATIC FIRE ALARM SYSTEMS SHALL BE MONITORED AND SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISORY STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE LISTED AS EITHER ULFJ (CENTRAL STATION OR ULIS REMOTE) AND APPROPRIATE BY THE UNDERWRITERS LABORATORY INC. (UL) OR OTHER APPROVED LISTING AND TESTING LABORATORY OR SHALL COMPLY WITH THE REQUIREMENTS OF FM 3011. TERMINATION OF MONITORING SERVICES SHALL BE IN ACCORDANCE WITH SECTION 907.8.6.2.
57. THE NEW PROJECT SUBMITTAL TO INCLUDE DIRECTION THAT FIRE ALARM SYSTEM RECORD OF COMPLETION AND FIRE ALARM SYSTEM RECORD OF INSPECTION AND TESTING FORM THESE TWO DOCUMENTS FROM NFPA 72 ARE TO BE COMPLETED AND SUBMITTED PRIOR TO CLOSE OUT OF THE PROJECT. A COPY OF COMPLETED AND SIGNED FORM SHALL BE GIVEN TO THE ARCHITECT OR ENGINEER OF RECORD, THE PROJECT INSPECTOR, THE OWNER (SCHOOL DISTRICT) AND LOCAL FIRE AUTHORITY.
58. INTELLIGIBILITY SHALL BE TESTED ACCORDING TO NFPA 72 ANNEX D.2 (SPEECH INTELLIGIBILITY).
59. UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBERS SHALL BE CUT, DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER FROM THE DIVISION OF THE STATE ARCHITECT.

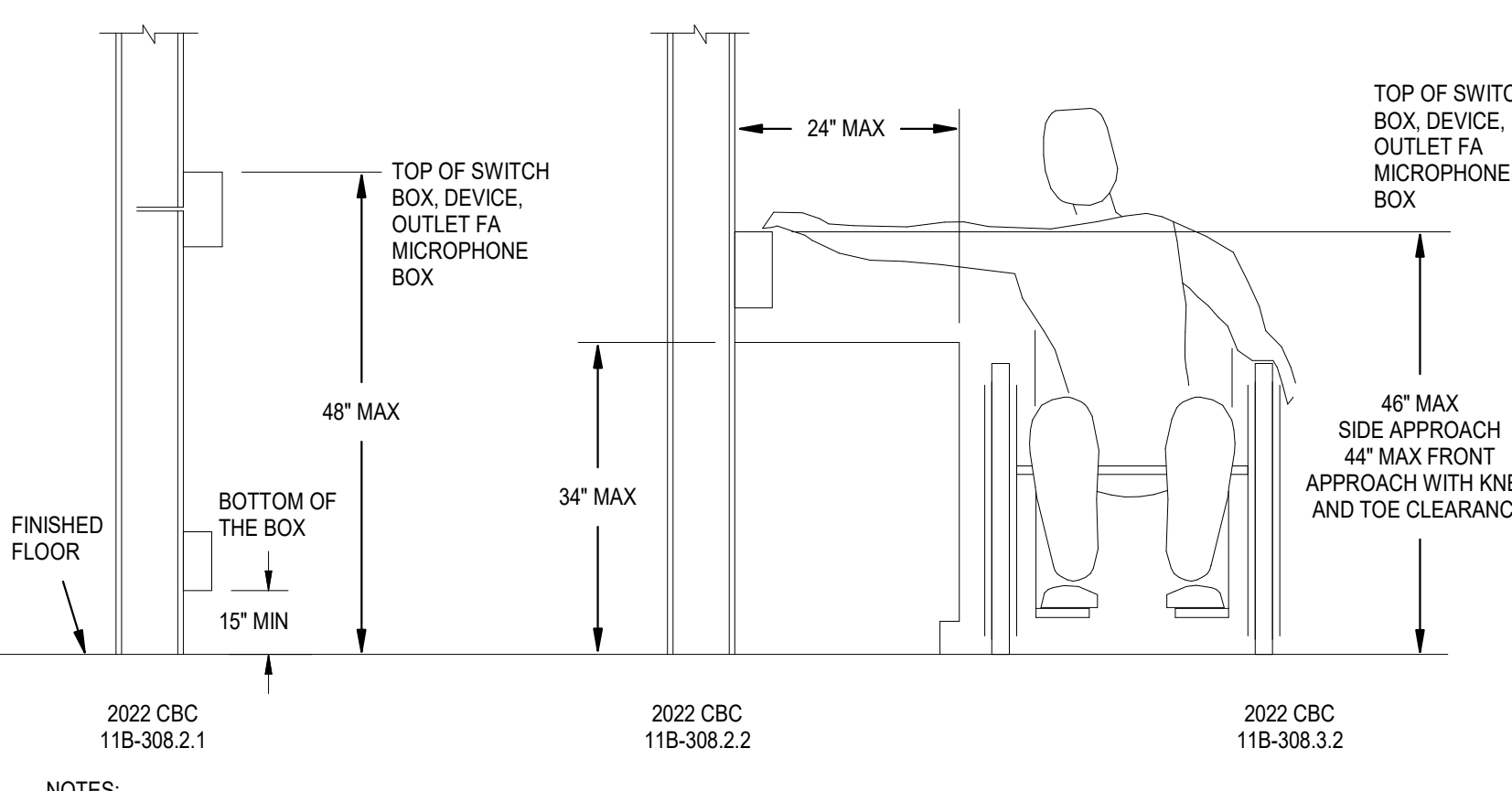
FIRE WATCH NOTE

A FIRE WATCH SHALL BE ESTABLISHED AND THE FIRE DEPARTMENT & FIRE CODE OFFICIAL SHALL BE NOTIFIED IMMEDIATELY WHENEVER THE FIRE PROTECTION /ALARM SYSTEM IS RENDERED OUT OF SERVICE. A FIRE WATCH SHALL BE STAGED WHENEVER THE BUILDING IS OCCUPIED (PARTIAL OR WHOLE) PER DSA R-F-2 AND CFC 901.7.

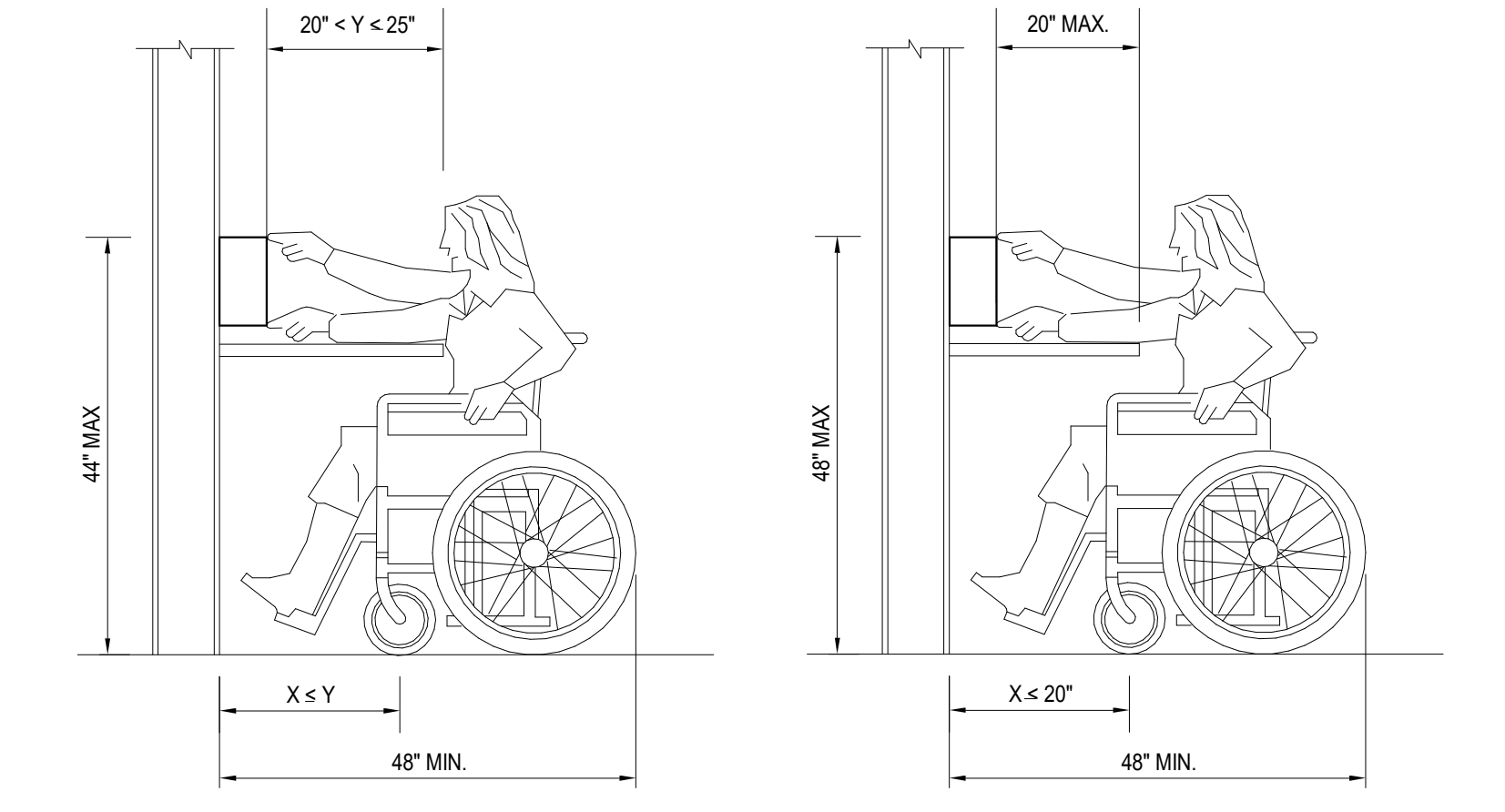
SCOPE OF WORK

PROVIDE COMPLETE FULL AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM WITHIN THE AREA OF WORK. PROVIDE FIRE ALARM SYSTEM DEVICES AS SHOWN IN EQUIPMENT LEGEND, FLOOR PLANS, AND SPECIFICATIONS IN THIS CONSTRUCTION DOCUMENT SET. USE NEW FIRE ALARM CONTROL PANEL TO CONNECT NEW FIRE ALARM SYSTEM DEVICES SHOWN PER DRAWINGS AND SPECIFICATION DOCUMENT. UPON COMPLETION, A COMPLETE FIRE TEST SHALL BE PERFORMED TO VERIFY FUNCTIONALITY. IF FUNCTIONALITY IS COMPLETE, THEN THE PROPER DOCUMENTATION SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PRIOR TO SCHEDULING A FINAL INSPECTION.

MOUNTING OVER OBSTRUCTION DETAIL



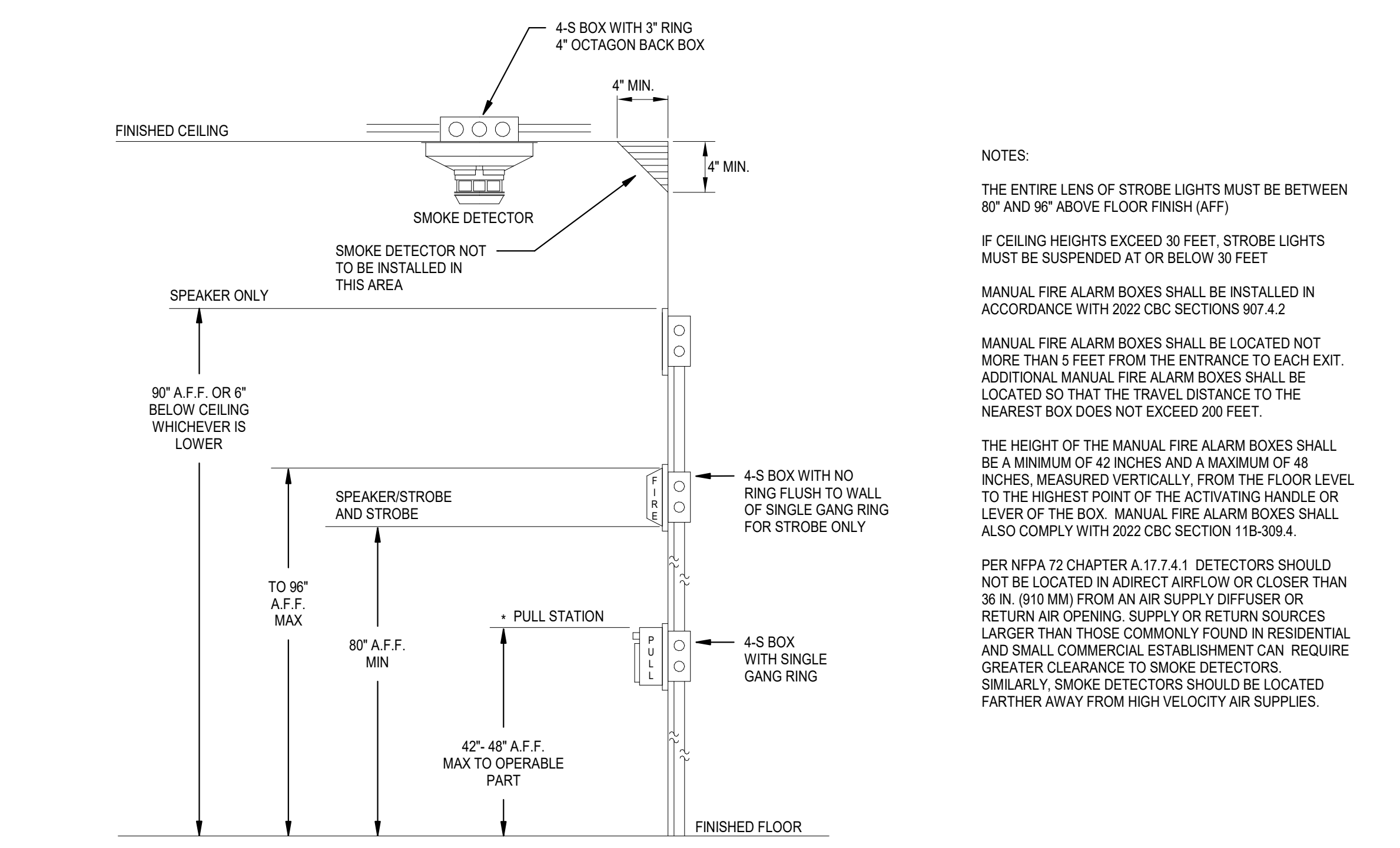
- 1. THIS DETAIL APPLIES TO MOUNTING OF ANY MECHANICAL AND ELECTRICAL DEVICE WHICH CONTAINS AN OPERABLE PART THAT IS ADJUSTABLE BY THE OCCUPANT. THIS DOES NOT APPLY TO SENSORS OR CONTROLS THAT ARE ONLY ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM (IE: TEMPERATURE AND HUMIDITY SENSORS).
2. FORWARD OR FRONT APPROACH FOR DEVICES MOUNTED ABOVE COUNTERS ASSUMES THAT DIRECTLY BELOW THE DEVICE, THE COUNTER HAS A 30" MIN. WIDTH x 27" HIGH x 19" MIN. DEEP CLEAR OPENING. CBC SECTIONS 11B-308 & 11B-308.



FIRE ALARM REQUIREMENTS

THE CONTRACTOR SHALL PROVIDE AND SUBMIT 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:
A. 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 FIRE RATED WALLS.
B. ELECTRICAL CONTRACTOR'S AND FIRE ALARM SYSTEM INSTALLER'S NAME, ADDRESS, PHONE NUMBER AND C-1 LICENSE NUMBER.
C. LIST OF SYSTEM COMPONENTS, EQUIPMENT AND DEVICES, INCLUDING MANUFACTURERS' MODEL NUMBERS) AND CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS.
D. ORIGINAL COPIERS OF MANUFACTURERS' SPECIFICATION SHEETS FOR ALL EQUIPMENT AND DEVICES INDICATED.
E. VOLTAGE DROP CALCULATIONS - INCLUDE THE FOLLOWING INFORMATION FOR THE WORST CASE:
1. POINT-TO-POINT OR OHMS LAW CALCULATIONS.
2. IDENTIFICATION OF ZONE USES AND CALCULATIONS.
3. VOLTAGE DROP PERCENT (NOT TO EXCEED MANUFACTURERS' REQUIREMENTS).
a. NOTE: IF VOLTAGE DROP EXCEEDS 10%, INDICATE MANUFACTURERS' LISTED OPERATING RANGE(S) OR EQUIPMENT AND DEVICES.
4. NOTE CIRCUIT NUMBER FOR WORST CASE CALCULATION.
F. BATTERY TYPE(S), AMPS HOURS AND LOAD CALCULATIONS - INCLUDE THE FOLLOWING INFORMATION:
1. 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)
2. 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)
3. NORMAL OPERATION + ALARM OPERATION
a. TOTAL AMP HOURS REQUIRED.
b. TOTAL AMP HOURS PROVIDED.
10% OF EXISTING FIRE ALARM DEVICES AND APPLIANCES SHALL BE ADDED TO THE NEW FIRE ALARM DEVICES AND APPLIANCES FOR TESTING.

ELEVATION MOUNTING DETAIL



SEQUENCE OF OPERATIONS

Table with columns: DEVICE, AREA SMOKE/BEAM DETECTOR, HEAT DETECTOR, 120VAC POWER FAILURE, SHORT CIRCUIT, GROUND FAULT, BATTERY FAILURE. Rows include: SOUND ALARM AT "FACP", SOUND TROUBLE BUZZER AT "FACP", ANNUNCIATING AT "FACP" AND THE REMOTE ANNUNCIATOR (ALARM OR TROUBLE), ACTIVATE AUDIBLE / VISUAL ALARM SIGNAL THROUGHOUT BUILDING, ACTIVATE SIGNAL FOR OFF-SITE MONITORING, MUTE AUTONOMOUS LOCAL SOUND SYSTEM.



ARCHITECT: ANAHEIM, 2400 East Katella Ave, Suite 950, Anaheim, CA 92806, P: 949-548-5000. CONSULTANT: LEAF ENGINEERS, 8163 Rochester Avenue, Suite 100, Rancho Cucamonga, CA 91730, 909-847-0909, leafengineers.com.

LOMA VISTA ELEMENTARY SCHOOL. PROJECT ADDRESS: 13822 Prospect Ave, Santa Ana, CA 92705. DSA-APPL. NO.: XXXX, DSA-FILE NO.: XXXX.



Consultant: REGISTERED PROFESSIONAL ENGINEER, E-18917, 909-903-0018, STATE OF CALIFORNIA.

Architect: REGISTERED ARCHITECT, C-34832, REL. 10/31/25, STATE OF CALIFORNIA.

CLIENT: TUSD. DATE: 01-12-2024. PROJECT NUMBER: 230381.

Table with columns: No., Description, Date. Includes revision entries.

FIRE ALARM SYMBOLS, LEGENDS & GENERAL NOTES

SECTION 28 31 00 FIRE DETECTION AND ALARM PART 1 GENERAL

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

- 1. Provide a complete, fully addressable, power limited, fire detection and voice evacuation system for this project. The system shall be connected, tested, verified by AHJ to be acceptable and left in first class operating condition.
2. Provide all work and material as shown and / or required to provide a fully functional and adequate system as described hereon and as required by the California State Fire Marshal.
3. Supervision: The fire alarm system shall monitor the integrity of all alarm initiating and indicating appliance circuits and provide local and remote status of all connected systems.
4. The system shall be provided with automatically charged standby batteries to maintain system operation for 24 HRS in the normal supervisory mode and 15 minutes of alarm.
5. Testing: The completed system shall be tested in accordance with NFPA Standard 72 7.6.8 and 7.8.2.
6. All Fire Alarm wiring shown in drawings shall be installed in conduit.
7. System Operation shall include:
a. Separate zone signaling and device status indication for all initiating devices.
b. Audible to sound the California uniform fire alarm signal in temporal mode.
c. Visual devices shall not exceed 2 flashes per second and shall not be slower than 1 flash per second.
8. Identification and instruction to Owner Representative.
9. Coordination with Section 28 35 33: Raceway and Boxes for Electrical Systems.
10. Furnishing of special back boxes where required for installation of fire alarm devices.
11. All conduits to be installed in conduit pursuant to Specification Section 28 05 33: Raceway and Boxes for Electrical Systems.
12. Qualifications: Contractor shall receive written approval and verified test results which shall be submitted to the owner for system from manufacturers recognized representative prior to completion and acceptance.
13. All initiating devices shall be separately addressed for individual identification at control panel.
14. As-Built Drawings: A complete set of reproducible "as-built" drawings showing installed wiring, color coding, wire tag notations exact locations of all installed equipment, specific interconnections between all equipment and internal wiring of the equipment shall be delivered to the owner upon completion of the system.
15. Maintenance Instructions: Three (3) copies of maintenance instructions shall be provided and shall be complete, easy to read, understandable and shall provide the following information:
a. Instructions for replacing any components of the system, including internal parts.
b. Instructions for periodic cleaning and adjustments of equipment with a schedule of two years.
c. A complete list of all equipment and components with information as to the address and telephone number of both the manufacturer and local supplier of each item.
d. User operating instructions shall be prominently displayed on a separate sheet located near to the control unit in accordance with UL Standard 864.
16. The FACP shall integrate with the fire alarm system to prevent bells from activating during a fire alarm.
17. The FACP shall meet the requirements of UL ANSI 864 Ninth Edition, Systems listed to UL ANSI 864 Eighth Edition or earlier revisions are not acceptable.
18. Per DSA RA-1 chapter of approval for temporary school use of DSA approved educational buildings.
19. Fire Alarm: Section 3.4.4.4 For buildings tested less than three years and used for educational purposes (instruction), provide an approved manual fire alarm system consisting of manual pull-stations, visual notification appliances and audible devices (with a minimum rating of 95 dBA at 10 feet).
20. Buildings more than 25 feet apart to be provided with additional audible devices to ensure the fire alarm signal can be heard within adjacent buildings.
21. Communications: Section 3.4.4.5 Buildings more than 25 feet from other buildings, including other temporary buildings, with a stand-alone fire alarm system must be provided with approved "two-way communication" with the main administration offices consisting of an intercom system, permanently mounted telephones or "walkie-talkie" devices or other similar systems.
22. Substitutions:
a. Substitution of system components or manufacturing will require the contractor to separately obtain approval with DSA Contractor's expense and shall meet all requirements of the system as designed and pre-approved.
23. All proposed substitutions shall be tested with the California State Fire Marshal.

1.3 SUBMITTALS

- A. Comply with applicable provisions of Section 26 05 00: Common Work Results for Electrical.
1. General:
a. Two (2) copies of all submittals shall be submitted to the Architect/Engineer for review and approval.
b. All references to manufacturers model numbers and other pertinent information herein is intended to establish minimum standards of performance, function, and quality.
c. For equipment other than that specified, the contractor shall provide proof that the proposed substitute equipment equals or exceeds the form, feature, function, performance, and quality of the specified equipment.
d. Product Data:
1. A complete list of all supplied equipment including model numbers with catalog data sheets on each component.
2. Data sheets show California State Fire Marshal Listing, UL listing, equipment ratings, dimensions and finishes.
3. Highlight actual devices to be used and their size in stand-by and alarm modes.
e. Shop Drawings:
1. Provide schematic wiring, floor plan, drawings indicating location of all components and equipment, required size and location of conduit and outlets and type and quantity of system components. Include voltage drop calculations and battery calculations based on actual number of devices to be installed.
2. Include riser and wiring diagrams for overall system and components including control panels, annunciators, power supplies, initiating circuits, notification appliances, control devices and FAIC. Address numbers shall be noted on all applications.
3. Include physical and electrical characteristics of equipment to indicate conformance with the Specifications.
4. Describe system characteristics and function as well as device wiring diagrams.
5. Voltage drop and battery calculations for each control panel and power supply and initiating circuits at 24 hour stand-by and 15 mins alarm.
6. System operational matrix.
E. Operating and Maintenance Instructions for each control panel.
1. Manual shall include the following related to this specific project:
a. Operational description.
b. Coded cabling plan.
c. No wire circuit diagrams.
d. Wiring destination schedule.
e. Schematic component diagrams and PCB board layouts.
f. Maintenance and alignment procedures.
g. Voltage drop and battery calculations.
F. Other documentation:
1. In addition to the shop drawings, the following information shall also be included with the submittal.
a. Manufacturer's technical data sheets for each piece of equipment to be installed.
b. Standby battery calculations for the FACP and any remote power supply or other panels that include their own standby batteries.
c. Voltage drop calculations showing the worst case use and use of the voltage for all notification appliance circuits.
d. Detailed description of the overall operation of the system or a sequence of operation matrix.
e. Proof of factory training and certification of the supervising technician assigned to the project.
f. Proof of factory training and certification of a service technician employed by the installation company that can be onsite to troubleshoot and repair any service-related problems with the system, within 4 hours of being notified of the problem.

1.4 PERFORMANCE REQUIREMENTS

- A. Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Style 4 (Class B) Signaling Line Circuits (SLC).
B. Device Circuits (DC) shall be wired Class A (NFPA Style D) as part of an addressable device connected by the SLC Circuit.
C. Notification Appliance Circuits (NAC) shall be wired Class A (NFPA Style Z) as part of an addressable device connected by the SLC Circuit.
D. No Style 1 or 1 (Class B) 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.
E. Alarm signals arriving at the FACP shall not be lost following a primary power failure (or outage) until the alarm signal is processed and recorded.
F. NAC circuits and control equipment shall be arranged such that loss of any one (1) NAC circuit will not cause the loss of any other NAC circuit in the system.
G. Two-way emergency telephone communication circuits shall be supervised for open and short circuit conditions.
H. The secondary power source of the fire alarm control panel shall be capable of providing at least 24 hours of backup power with the ability to power the system for an additional 15 minutes in an alarm condition, at the end of the 24-hour backup period.
I. Basic System Operation:
1. When an off normal condition occurs (Alarm, Supervisory, or Trouble) the respective LED on the FACP shall illuminate.
2. A piezo sounder shall activate at the FACP during any off normal condition until the SILENCE button is pressed by an authorized user.
3. A Red LED shall illuminate when an alarm or pre-alarm condition exists.
4. An Amber (yellow) LED shall illuminate when a Supervisory or Trouble condition exists.
5. A backlit 4-line 40-character LCD screen shall display all messages that relate to an off-normal condition.
6. An Alarm condition shall have priority over all other signals.
7. The FACP shall include an event buffer that maintains the last 4,000 system events including a date and time stamp for each.
8. In response to a fire alarm condition, the systems notification appliances and relay-controlled output circuits that are associated through programming with the device initiating the alarm, shall automatically activate. Additionally, the system shall notify an approved central station via dial-up, IP, or cellular means as deemed acceptable by the local Authority Having Jurisdiction (AHJ).

1.5 QUALITY ASSURANCE

- A. Loads of Equipment and Components:
a. Follow IEEE Standard where applicable.
b. Provide fuse protection for equipment and spare fuses.
c. Design systems for operation at 120 volts, normal or emergency power as indicated, 60 Hz nominal input.
d. Operating voltage dissipated by resistors shall not exceed 25% of rating.
e. Operating voltage of capacitors shall not exceed 80% of rated voltage.
f. Operating loads and voltages on transformers and solid-state devices shall not exceed manufacturer's recommendation for normal full load operation.
g. Use electronic components of types and rating commonly available from stock of established commercial distribution.
h. Regulatory Requirements:
1. The specifications and standards shall fully comply with the latest issue of the current code and standards.
2. All requirements of the Authority Having Jurisdiction (AHJ).
B. Field and associated field devices system shall comply with the following Underwriters Laboratories Inc. (UL) USA listing standards as applicable.
1. No. 38 Manually Actuated Signaling Boxes
2. No. 50 Cabinets and Boxes
3. No. 864 Control Units for Fire Protective Signaling Systems
4. No. 268 Smoke Detectors for Fire Protective Signaling Systems
5. No. 268A Smoke Detectors for Duct Applications
6. No. 346 Waterflow Indicators for Fire Protective Signaling Systems
7. No. 464 Audible Signaling Appliances
8. No. 521 Heat Detectors for Fire Protective Signaling Systems
9. No. 1638 Private Mode Emergency and General Utility Signaling
10. No. 1971 Visual Notification Appliances

1.6 WARRANTY

- A. For a period of three years from date of final acceptance, the system shall be under full guarantee for materials and labor at no cost to the Owner. The system shall be under a service contract with a technician authorized by the manufacturer. Replacement parts and labor shall be readily available during normal business hours while the service contract is in effect. A complete system inspection and test shall be performed at five months and again at eleven months after final acceptance. Tests shall include all smoke detector sensitivity settings.

- B. Conform to applicable provisions of the General Requirements.
C. Service technicians and replacement components for the system shall be available locally from a service representative of the manufacturer who is able to provide evidence of technical training and authorization by the manufacturer.
D. All component failures shall be remedied to the satisfaction of the Owner.
E. A continuing service contract shall be offered at no bid to commence at the expiration of warranty included with the system.

1.7 ACCEPTABLE MANUFACTURER

- A. All fire alarm system devices and equipment shall be manufactured with the one indicated on the drawing or approved equivalent. No other manufacturers will be accepted.
B. All equipment, materials, accessories, etc., covered by the specifications and/or noted on the control drawings shall be new and unused and be UL listed for their intended use.
C. All equipment provided shall be available for purchase from at least two authorized distributors within the service area.
1.8 MAINTENANCE:
Maintenance and testing shall be on a semi-annual basis or as required by the AHJ. A preventative maintenance schedule shall be provided by the contractor describing the protocol for systematic testing and complete inspection of the entire fire alarm system including control panels, field devices, and wiring terminations including smoke sensors, heat sensors, manual pull stations, sprinkler system switches, remote panels, power supplies, and terminal boxes, and all other fire alarm accessories, in accordance with NFPA 72. Cleaning and adjusting of these devices shall be conducted under normal operating conditions such as well as under simulated conditions such as well as under simulated conditions such as well as under simulated conditions.
An inspection and test of system power supplies, batteries, circuit breakers, and fuses as well as a load test of the batteries shall be conducted in accordance with NFPA 72.
Input the system into an alarm condition and checking each notification device for proper operation.
Removing devices from the FACP SLC circuit to ensure a trouble condition occurs.
Input and output mapping shall be tested to ensure proper sequence of operation.
Signal transmission shall be tested to the Monitoring Station.
A report showing the calibration of each of the systems smoke detectors shall be generated from the fire alarm control panel and verified to ensure all smoke detectors are within UL tolerance.
Following each periodic maintenance and test, the owner shall be provided with a detailed report of the test results including any deficiencies found.

PART 2 PRODUCT

- 2.1 MANUFACTURERS:
A. Fire Alarm Control Panel (FACP), Gamewell-FCI
B. Fire Alarm Power Supply, Gamewell-FCI
C. Area Smoke Detectors and Heat Detectors, Gamewell-FCI
D. Combination Speaker/strobe and Weatherproof Speaker, System Sensor
2.2 MATERIALS:
A. Main FACP network node shall contain a microprocessor based Central Processing Unit (CPU) and power supply in an economical space saving single board design. 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, printer, annunciators, and other system-controlled devices.
B. System Devices and components shall be specified as specified on the fire alarm equipment legend and as shown on associated electrical drawing.

2.3 COMPONENTS

- NEW FIRE ALARM CONTROL PANEL (FACP)
A. FACP shall be as indicated model on the drawing or approved equivalent.
1. System description
A. The fire alarm system as outlined on the drawings, shall be a fire life safety system as manufactured by the panel indicated on the drawing. It shall be complete with all necessary hardware, software and menu specifically tailored for this project.
B. All equipment needed for a complete operable system, (whether specifically indicated or not) shall be included in this section. It shall be the installing contractor's responsibility for a complete and operable system for the entire project.
2. Automatic alarm operations
A. The fire alarm system operation subsequent to the alarm initiation via pull station, smoke detector, heat detector, sprinkler flow switch, etc., shall be as follows:
1. Audible alarm indicating devices shall sound at point of alarm device in synchronization with each other, until silenced at the control panel or at the remote annunciator.
2. All visual alarm indicating devices shall flash per NFPA instructions in synchronization with each other, until reset at the control panel or at the remote annunciator.
3. Alarm audible devices and alarm visual devices shall operate on the same circuit.
4. The alarm signals shall be inhibited from being silenced for a period of at least 1 minute after commencing operation, this rate is to be field programmable for actual AHJ requirements.
5. Display type and location of alarm per point on the main control panel to be noted.
6. Display type and location of alarm per point on remote UL annunciator.
7. List on printer the time, date, type, and user defined message for each event display.
8. Graphically display on the firework's station, school diagram showing whole school, with graphic scrolling thru system prompts, down to point of alarm activation.
9. Subsequent alarms are to be reported to the main control panel and firework's, shall indicate to the operator that a subsequent alarm is present, and also indicate the number of subsequent alarms.
10. Shut down all associated air handlers in alarm zone.
2.3.4 Automatic supervision lines
A. All data, initiating, indicating and supervisory lines shall be constantly monitored for integrity, indicate opens, shorts, grounds, at main control panel and remote annunciator.
2.4 OPERATOR:
A. During the normal state, the normal led (green) shall flash, the first line of the led shall display the time in (hr: mm: ss) as well as the number of active points (ap) and the number of disabled points (dp) in the system.
B. When the control panel goes into alarm condition, the normal led (green) extinguishes and the alarm led (red) shall light, the buzzer pulsates, and the led indicates the time, the number of messages waiting, the time that the alarm occurred, and the time that the alarm occurred. The second line is dedicated to the user specified message.
C. To silence the panel buzzer, the operator shall press the local silence button and the buzzer will silence.
D. To silence the audible devices, the operator shall press the alarm silence button, a new alarm shall cause the audibles to resume.
E. During the trouble condition, the trouble led shall light, the normal led shall go out, and the buzzer shall pulsate. The display shall indicate the point id number of the device, the time event occurred and up to a 40-character custom user description.
F. During the monitor or supervisory condition, the appropriate led shall light, the normal led shall go out, and the buzzer shall pulsate. The display shall indicate the point id number of the device, the time the event occurred and up to a 40-character custom user description.
Fire Alarm Amplifier:
1. The intelligent fire alarm amplifier shall be as indicated model on the drawing or approved equivalent. The intelligent 50 or 70-watt amplifier is used to amplify the audio message for distribution throughout the facility. Since it is designed as a self-contained distributed amplifier it can be conveniently located near the area of protection to reduce wiring demands.
2. Each amplifier can produce 50 or 70 watts of audio power. Up to four amplifiers can be used on the voice evacuation system. The amplifier has its own power supply with battery backup and four speaker circuits which can be expanded to eight speaker circuits. The amplifier is fully supervised by the main panel for trouble conditions.
B. Fire Alarm Power Module:
1. The intelligent fire alarm power module shall be as indicated model on the drawing or approved equivalent. It delivers 6 amps of notification appliance circuit power and built-in synchronization. Its switch mode power supply design is up to 50% more efficient than competitive linear mode power supplies.
2. The power supply is a 6-ampere power conversion, battery charging circuit, and backup battery unit with the same manufacturer series fire alarm control panels (FACPs). The power supply is the cost-effective solution for powering notification appliances required by the Americans with Disabilities Act (ADA). It has built-in ANSI cadence pattern. The output circuits can be programmed as notification appliance circuits, or as auxiliary power (configurable for constant, restorable, or door holder power).
C. Intelligent Photoelectric Smoke Detector:
1. The intelligent photoelectric smoke detector shall be as indicated model on the drawing or approved equivalent and shall use the photoelectric (light-scattering) principle to measure smoke density and shall, on demand from the control panel, send data to the panel representing the analog level of smoke density.
D. Intelligent Thermal Detectors:
1. The intelligent thermal detectors shall be as indicated model on the drawing or approved equivalent addressable devices rated at 135 degrees Fahrenheit (58 degrees Celsius) and have a 60-degree element rated at 15 degrees F (3.4 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.
E. Control Relay Module:
1. The Control Relay is intended for use in intelligent, two-wire systems where the individual address of each device is indicated by the built-in rotary switches. It allows a compatible control panel to switch discrete contacts by code command. The relay contains two isolated sets of Form-C contacts, which operate as a DPDT switch and are rated in accordance with the table in the manual. Circuit load capacity is dependent on the relay contacts are not supervised by the module. The module also has a panel-controlled LED indicator.
F. Intelligent Synchronized Monitor Module:
1. The addressable output supervised control module allows addressable fire alarm control panel to switch an external power supply, such as a DC supply or audio amplifier (up to 80 W RMS). The notification appliance circuit can be wired either Class A (Style Z) or Class B (Style Y). It also supervises the wiring to the connected loads and reports the status to the panel as NORMAL, OPEN or SHORT CIRCUIT. The module contains a panel-controlled LED. The Series is a communication protocol that substantially increases the speed of communication between the SLC devices and certain addressable fire alarm control panels. These devices operate in a grouped fashion. One of the devices in the group is the status indicator and concentrates on the group poll and concentrates on the single device. The net result is a superior response speed up to five times greater than the earlier designs. This module is designed for installation in the signaling line circuit of any addressable fire alarm control panel. The signaling line circuits of addressable fire alarm control panels are designed to accommodate up to 159 modules per circuit. It is designed to mount in a 4" (10.16 cm) square junction box 2 1/8" (5.5 cm) deep.
G. Intelligent Monitor Module:
1. The monitor module indicated on the drawing is an addressable monitor module for use with Honeywell Silent Knight Series fire alarm control panels (FACPs). The monitor module is intended for use in intelligent, two-wire systems, where individual address of each module is indicated with the built-in rotary switches.
2. It supports Class A supervised or Class B unsupervised wiring to the load device. Conventional 4-wire smoke detectors can be monitored for alarm and trouble conditions.
H. Ceiling Mounted Strobe:
1. The notification appliances shall be as indicated model or approved equivalent model as Visual Strobe appliances for ceiling-mount applications with a low-profile design and tone signaling, ideal for mass notification and voice evacuation.
2. The Series shall be Restriction of Hazardous Substances (RoHS) compliant and contain no mercury or other hazardous substances.
3. All Series shall meet the requirements of FCC Part 15 and ICES-003.
4. All signals shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 16 to 33 VDC.
5. The Strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Light Emitting Diode (LED) as the light source with a rugged Lexan® lens. The appliances shall be of low current design. The LED strobe flash duration shall be 20 ms. Where multi-candela appliances are specified, the strobe intensity shall have 4 field-selectable settings: at 15, 37, 95 candela for ceiling-mount applications. The selector switch for selecting the candela shall be tamper resistant. Appliances with candela settings shall show the candela selection in a visible location at all times when installed.
6. The Strobe mounting options shall include Ceiling backboxes, 4" square, 1 1/2" x 2 1/8" deep and 4" Octagonal, 1 1/2" x 2 1/8" deep. Two wire appliance wiring shall be capable of directly connecting to the mounting base. Removal of an appliance shall result in a supervisory fault condition by the Fire Alarm Control Panel (FACP).
7. All notification appliances shall be backwards compatible.
8. The ceiling models shall have a low-profile mounting.
9. When synchronization is required, the appliance shall be compatible with the Sync Modules, PS Power Supplies, or other manufacturer's panels with built-in manufacturer Patented Sync Protocol. The strobes shall offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.
10. Speaker Strobes are UL Listed for indoor use under Standard 1971 (Signaling Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances). All inputs employ INOUT wiring terminals for fast installation using #12 to #18 AWG wiring.
11. The speakers shall be UL Listed under UL 1480 for Emergency Devices for the Hearing-Impaired) and Standard 1480 (Speaker Appliances). All inputs employ for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.
12. All models shall have listed sound output of up to 87 dB at 10 feet and a listed frequency response of 400 to 4000 Hz. The speaker shall also incorporate a sealed back construction.
13. The speaker and speaker strobe appliances shall be designed for indoor flash mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover with no visible screws for a level, aesthetic finish and shall mount to standard electrical hardware. The finish of the Speakers and Speaker Strobes shall be red. All speaker and speaker strobe appliances shall be backward compatible.
14. When synchronization is required, the strobe portion of the appliance shall be compatible with Sync modules or the Power Supplies with built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate.
I. Weatherproof Speaker:
1. Weatherproof notification appliances shall be UL listed for outdoor use. The appliances shall be available for optional wall mounting or ceiling mounting to weatherproof backboxes using either exposed conduit, concealed conduit, or semi-flush mounting to a recessed electrical box in walls or ceilings using indicated manufacturer mounting accessories.
2. The speaker and speaker strobe appliances shall be designed for indoor flash mounting. The speaker and speaker strobe shall incorporate a speaker mounting plate with a snap-on grille cover with no visible screws for a level, aesthetic finish and shall mount to standard electrical hardware. The finish of the Speakers and Speaker Strobes shall be red. All speaker and speaker strobe appliances shall be backward compatible.
3. Field-selectable settings, including candela, speaker voltage and power settings, and automatic setting of 12- or 24-volt operation enable installers to easily adapt devices to meet requirements.
4. Weatherproof audibles shall be System sensor models or approved equals. The speaker devices shall be able to produce a continuous output or a temporal code 3 output that can be synchronized.

- 5. Speaker shall be listed to Underwriters Laboratories Standard S4048 for outdoor fire protective signaling systems. Speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature from -40°F to 150.8°F. Speaker shall have power taps and wattage settings that are selected by rotary switches. The speaker must be installed with its weatherproof back box in order to remain outdoor approved per UL listing S4048. The speaker shall be suitable for use in air handling spaces and wet environments.
K. Battery:
1. The battery shall have sufficient capacity to power the fire alarm system for no less than twenty-four hours plus 15 minutes of alarm upon a normal AC power failure.
2. The batteries are to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills, and leakage shall not be required.
3. Necessary to meet standby requirements, external battery and charger systems may be used.

PART 3 EXECUTION

- 3.1 COORDINATION:
A. Refer to electrical and mechanical drawings and specifications to determine quantities and location of devices and required scope of work and coordinate work with mechanical and electrical installers. Provide function described under mechanical section Sequence of Control, for fire and/or emergency conditions. Submit proposed interconnection to elevator supplier, submit conduit and pitting requirements to electrical installer. For self-contained door release, coordinate with door supplier.
B. Notify Owner, Architect and Engineer when system is 100 percent operational.
C. Comply with all applicable paragraphs in Section 26 05 00: Common Work Results for Electrical, apply as follows with repeated hereon.
D. Install system(s) in accordance with manufacturer's instructions.
E. In-house services of all subcontractors to provide adjustments, provide final connections, system testing and system training to Owner Representative
3.2 INSTALLATION:
The complete system shall be installed by one (1) contractor and the installing contractor must be a certified dealer of the specified system. No subcontractors, to the awarded proposing contract, will be allowed to install any portion of this system including, but not limited to:
1. Wiring
2. Field device installation
3. Service loop programming
4. FACP installation
5. Remote power supply installation
A. The installing contractor shall install the network fire alarm system in as instructed by the manufacturer's instructions.
B. Installation shall be in accordance with the 2022 NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.
C. 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.
D. All fire detection and alarm system devices, control panels shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.
E. Manual fire alarm boxes shall be suitable for surface mounting or semi-flush mounting as shown on the plans and shall be installed not less than 42 inches (1067 mm), nor more than 48 inches (122 mm) above the finished floor.
F. The fire alarm control panel 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 panel primary power wiring shall be 12 AWG. The control panel cabinet shall be grounded securely to either a cold-water pipe or grounding rod. The control panel enclosures shall feature a quick-changes kit to facilitate rapid replacement of the FACP electronics.
3.3 GROUNDING:
A. All equipment to be grounded by means of green ground wire to "U" contact of duplex receptacles and bonded to ground provided under 26 05 26: Grounding and Bonding of Electrical Systems to meet all the requirements of the CSMF and IOR AHJ and shall be approved thereby before installation and prior to final acceptance.
B. The system shall be in accordance with the specifications and of the architect/engineer that a continued program of system maintenance be continued by the owner in compliance with NFPA Standard 72H. It is mandatory that the installing contractor provide such services and make available these services to the owner upon completion of the project.
C. In the event of the closest documents, fire alarm contractor will provide owner with AutoCAD as built drawings indicating locations of devices, routing of wiring, and panel information. All room numbers indicated on final close out documents and all panel settings shall be listed by actual building room numbers and not by room number indicated on construction documents. CAD files shall be AutoCAD 2004 or later. Provide the owner with one Mylar plot of each drawing and two blue line prints of each drawing. Provide the contractor notes building FACP and other fire alarm panels.
D. A building graphic shall be provided mounted in aluminum-extruded frame with plexi-glass front. Graphic shall locate all fire alarm devices, power supplies, and FACP.
E. State FM-1003 certificate shall also be framed and mounted near the fire alarm panel. Fire alarm panel shall have white FM required installation sticker attached to it.
C. Graphic shall include actual room numbers posted as part of the building graphics package, include as part of substantial completion requirement

3.4 WIRING

- A. All fire alarm wiring shall be new.
B. Furnish all conductors, equipment, terminal strips, etc., and labor to install a complete and operable system. All cable conductors shall be color coded and numbered for identification at all terminals. Green shall be for grounding conductor only. Use red insulation and/or red jacketing on all fire alarm panels.
C. All wiring shall be in accordance with NFPA 72, the California Electrical Code, Local Codes, and article 760 of NFPA Standard 70. All wiring sizes shall conform to recommendations by the equipment manufacturer, and as indicated on the engineered shop drawings.
D. All wire shall be UL Listed FPL for limited energy (300V) and fire alarm applications and shall be installed in conduit. Limited energy FPL or MPP wire may be run open in return air ceiling plenums provided such wire is UL Listed for such applications and is of the low smoke producing fluorocarbon type and complies with CEC Article 700 so, approved by the local authority having jurisdiction.
E. No A.C. wiring or any other wiring shall be run in the same conduit as fire alarm wiring.
F. Wiring used for the multiplex communication circuit (SLC) shall be twisted and support a minimum wiring distance of 10,000 feet when sized at 12 AWG. The design of the system shall permit the use of DC and NAC wiring in the same conduit with the SLC communication circuit. Shielded wire shall not be required.
G. The fire alarm control panel shall be capable of tapping NFPA Style 4 (Class B) Signaling Line Circuits (SLCs). Systems which do not allow or have restrictions to, for example, the number of taps, length of 1-taps etc., is not acceptable.
H. Contractor shall provide a service loop located above each device installed on the entire project. The service loop shall be a minimum of 5'.
I. Contractor shall provide a service loop located above each type of panel installed. The service loop shall be a minimum of 10', but shall have enough length to allow for the panel to be relocated to any wall within the room that panel is located in.
3.5 TERMINAL BOXES, JUNCTION BOXES AND CABINETS:
A. All boxes and cabinets shall be UL listed for their use and purpose.
3.6 CONDUIT RACEWAY:
A. All wire shall be installed in an approved conduit/raceway system (except where permitted by NEC and the local authority having jurisdiction). Maximum conduit "fill" shall not exceed 40% per NEC.
B. Conduit and raceway system shall be installed as specified under the general electrical section of the specifications, and per CEC, local, and state requirements.
C. Minimum conduit size shall be 3/4" (19.1 mm). Install conduit per engineered shop drawings.
D. Systems utilizing open wiring techniques with low smoke plenum cable shall provide conduit in all inaccessible locations, inside concealed walls, all mechanical/electrical rooms, or other areas where wiring might be exposed or subject to damage.
E. All vertical wiring and all main trunk/riser wiring shall be installed in a complete raceway/conduit system. All riser boxes shall be adequately sized for the number of conductors traversing the respective box as well as the number of terminations required.
F. 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, per CEC Article 700-20.
G. Wiring for 24-volt DC 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.
H. Conduit shall not enter the fire alarm control panel or any other remotely mounted control panel equipment or back boxes, except where conduit entry is specified by the FACP manufacturer.
I. All wiring associated with speaker control system shall be installed in conduit per current adopted codes regardless of voltages or ratings.

3.7 TESTING

- A. After all equipment specified herein for each system has been installed and is in operating condition, conduct performance tests to determine if the installation and components comply with these specifications. Furnish competent personnel, all test material and approved test instruments and conduct the tests under supervision of factory personnel, in the presence of the Engineer, the building and fire inspecting agencies.
1. The contractor's job foreman, in the presence of a representative of the manufacturer, a representative of the owner, and the fire department shall operate every installed device to verify proper operation and correct annunciation at the control panel.
2. At least on half of all tests shall be performed on battery standby power.
3. Where application of heat would destroy any detector, it may be manually activated.
4. The signaling line circuits and notification appliance circuits shall be opened in at least two (2) locations to verify the presence of supervision.
5. When the testing has been completed to the satisfaction of the contractor representative (OR, representatives of the manufacturer and owner, a notarized letter co-signed by each attesting to the satisfactory completion of said testing shall be forwarded to the owner and the authority having jurisdiction.
6. The contractor shall leave the fire alarm system in proper working order, and, without additional expense to the owner, shall replace any defective materials or equipment provided by him under this contract within two years from the date of final acceptance by the awarding authority.
7. The local responding fire department must be notified prior to the final test in accordance with local requirements and when requested, participate in system testing and evaluation.
B. Intelligibility shall be tested according to NFPA 72 annex D.2 (speech intelligibility).
C. DSA, Architect/Engineer and Owner shall be notified a minimum of 48 hours prior to the final inspection and/or testing.
3.11 WALK TEST:
A. Notify Owner, Architect and Engineer when system is 100 percent operational. Schedule walk-through of the entire facility and verify that each initiating and each indicating device is operating properly.
B. Provide report at conclusion of walk through certifying all fire alarm devices are working.
C. Walk test shall include a representative from owner maintenance department.
D. Walk test to show in a printed report all AHU shutdown, strobes/horns, heat and smoke detectors. Report shall list all devices by approximate location to rooms, and device number.
3.12 SOFTWARE:
A. Installer shall provide a backup copy of the installed program database (on CD) upon completion of the project. They shall also provide the current version of system software, for the panel provided, on CD.
3.13 REPORT:
A. Prepare written report of final test results, signed by witnessing parties. Submit to the Engineer in triplicate for final approval.

END OF SECTION 28 31 00



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CONSULTANT: LEAF ENGINEERS 8163 Rochester Avenue, Suite 100 Rancho Cucamonga, CA 91730 909-867-0909 leafengineers.com

LOMA VISTA ELEMENTARY SCHOOL PROJECT ADDRESS: 13827 Prospect Ave Santa Ana, CA 92705 DSA-APPL. NO.: XXXX DSA-FILE NO.: XXXX

Tustin Unified School District logo

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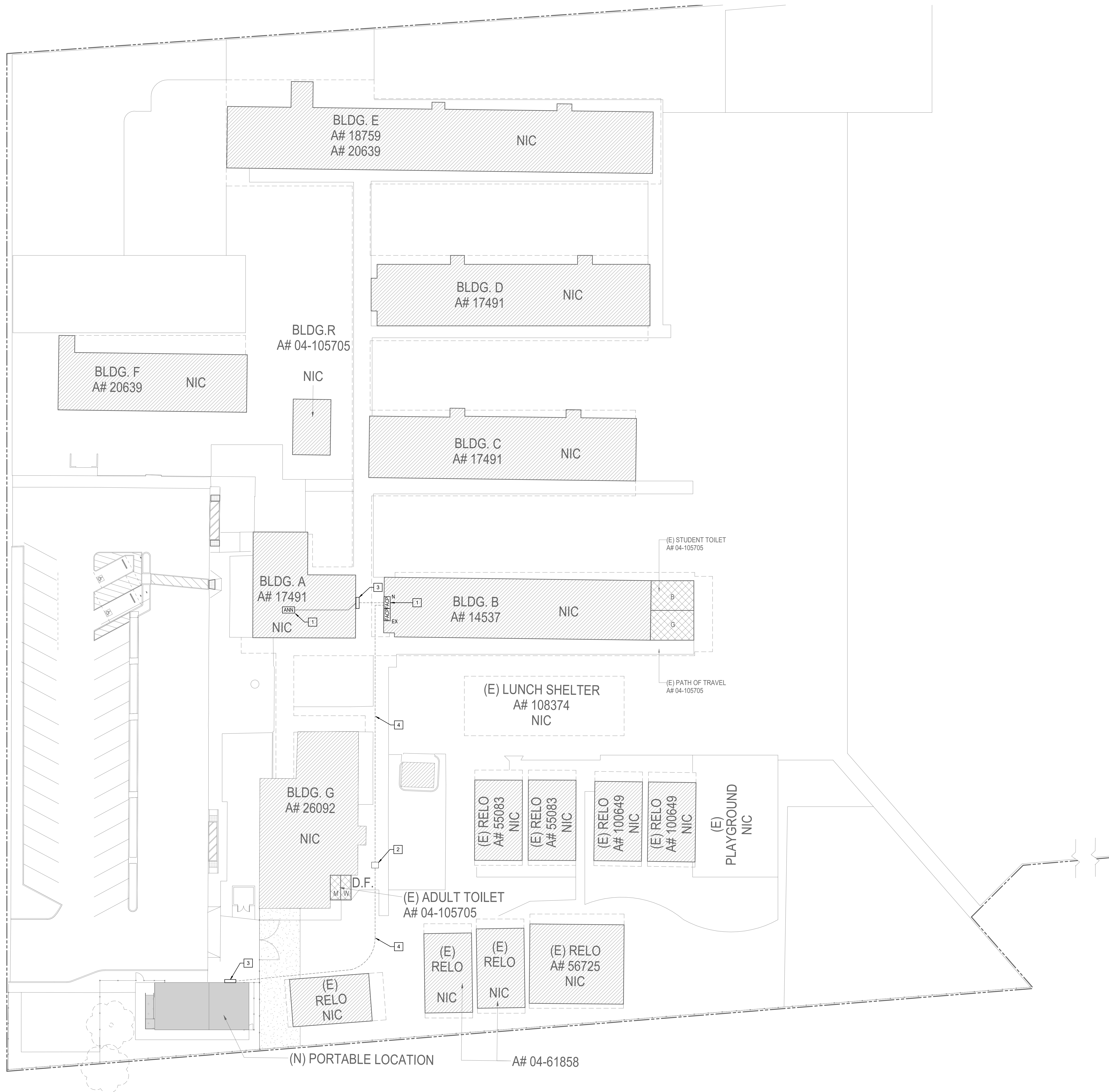
Architect logo: REGISTERED ARCHITECT STATE OF CALIFORNIA

CLIENT: TUSD PROJECT NUMBER: 230381 DATE: 01-12-2024

Table with 3 columns: No., Description, Date. Contains 10 empty rows.

FIRE ALARM SPECIFICATION

FA0.01



KEY NOTES

- 1 PROVIDE NEW FIRE ALARM CONTROL PANEL NEXT TO THE EXISTING FACILITY (A# 18759). CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION. PROVIDE FIRE ALARM ANNUNCIATOR PANEL IN THE RECEPTION AREA/ ADMIN OFFICE. CONTRACTOR TO FIELD VERIFY TO PLACE THE EXACT LOCATION.
- 2 PROVIDE NEW CONCRETE UNDERGROUND PULL BOXES AS 11" X 17" X 18" DEEP ON A 6" DEEP GRAVEL BASE AS SHOWN (TYPICAL).
- 3 PROVIDE NEMA 3R WEATHERPROOF PULLBOX 18"x18"x8" FOR FIRE-ALARM (TYPICAL).
- 4 PROVIDE NEW (2) 2" UNDERGROUND CONDUIT (PVC, SCHEDULE 40, 24" BELOW GRADE), ONE CONDUIT IS FOR SPARE AND FIRE ALARM CABLE AS INDICATED, SAWCUT AND TRENCH EXISTING ASPHALT AND BACK-FILL TO MATCH EXISTING SURFACES.

Not for permitting or construction



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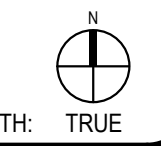


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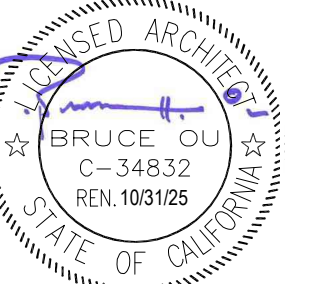
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Consultant



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TUSD

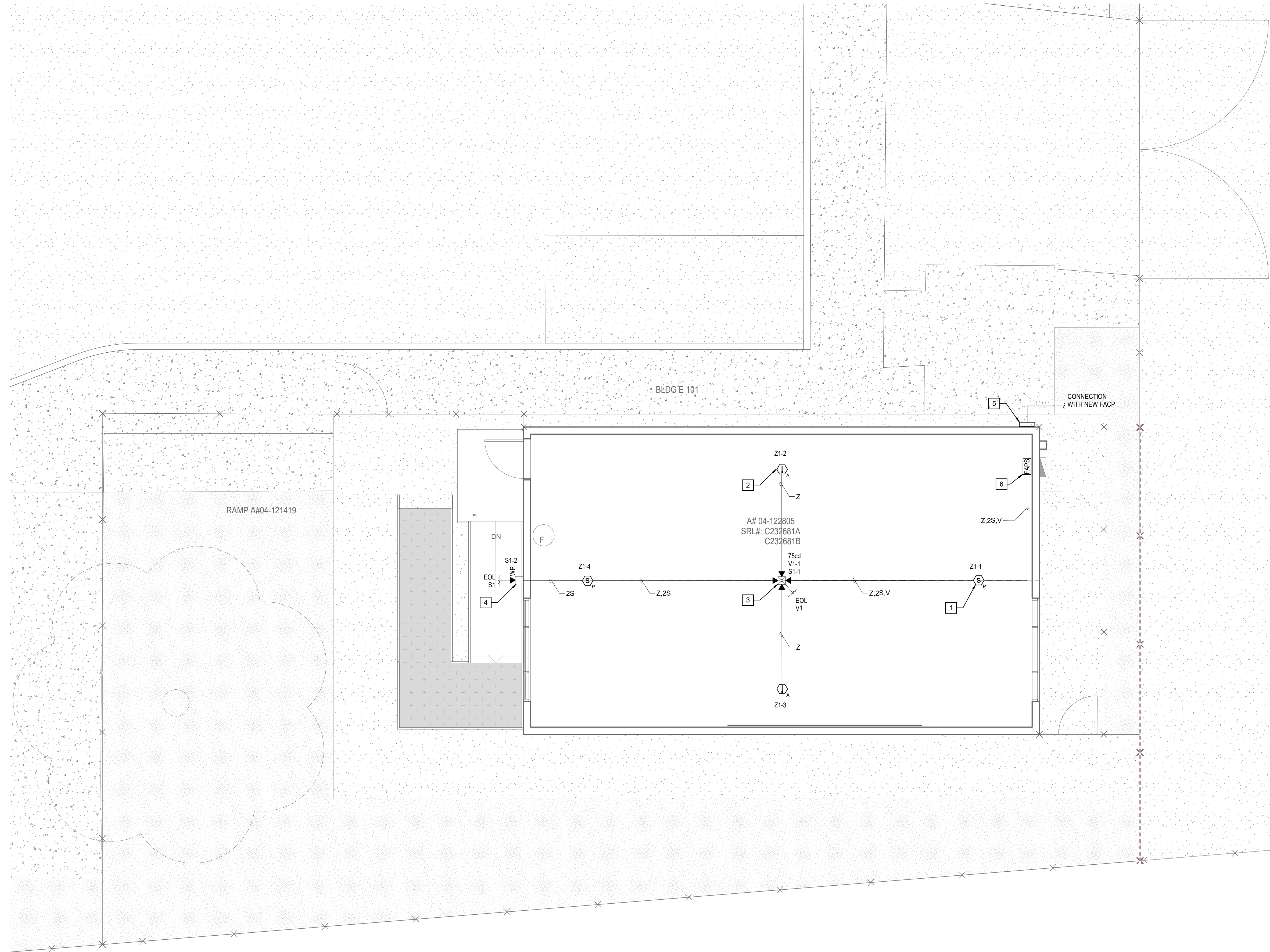
DATE 01-12-2024 PROJECT NUMBER 230381

REVISIONS

No.	Description	Date

FIRE ALARM SITE PLAN

This document is for plan review only



KEY NOTES

- 1 PROVIDE FIRE ALARM ADDRESSABLE SMOKE DETECTOR AS SHOWN (TYP).
- 2 PROVIDE FIRE ALARM ADDRESSABLE ATTIC HEAT DETECTOR AS SHOWN (TYP).
- 3 PROVIDE FIRE ALARM CEILING MOUNTED SPEAKER STROBE AS SHOWN (TYP).
- 4 PROVIDE FIRE ALARM WALL MOUNTED WEATHERPROOF SPEAKER DEVICE AS SHOWN (TYP).
- 5 PROVIDE NEMA 3R WEATHERPROOF PULLBOX 18"x18"x6" FOR FIRE-ALARM.
- 6 PROVIDE NEW FIRE ALARM POWER SUPPLY PANEL AS SHOWN.

GENERAL NOTES

1. ALL SPEAKER TAP SETTING SHALL BE SET AT 12 WATT FOR INTERIOR SPEAKER AND 2 WATT FOR EXTERIOR SPEAKERS UNLESS NOTED OTHERWISE (U.N.O.)
2. RUN FIRE ALARM CABLES IN CONDUIT CONCEALED IN WALLS AND CEILING WHEN POSSIBLE. EXPOSED CONDUITS ARE NOT ACCEPTABLE.
3. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN 36 IN. (910 MM) HORIZONTAL PATH FROM THE SUPPLY REGISTERS OF A FORCED AIR HEATING OR COOLING SYSTEM AND SHALL BE INSTALLED OUTSIDE OF THE DIRECT AIRFLOW FROM THOSE REGISTERS PER CBC 907.2.11.8.
4. FOR ALL HEAT DETECTORS THAT ARE LOCATED ABOVE CEILING/ATTIC SPACES, CONTRACTOR SHALL PROVIDE STICKER AND LABEL "HOT" AT THE REFLECTED CEILING DIRECTLY BELOW THE DEVICE TO INDICATE LOCATION.
5. ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS THAT REQUIRE ACCESS FOR ATTIC HEAT DETECTOR, SERVICING, TROUBLESHOOTING, ETC (IF REQUIRED).
6. PER 2022 CBC SECTION 1209.2 - AN ATTIC ACCESS OPENING NOT LESS THAN 20 INCHES BY 30 INCHES SHALL BE PROVIDED TO ANY ATTIC AREA HAVING A CLEAR HEIGHT OF OVER 30 INCHES.



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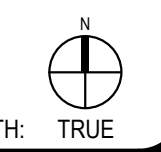
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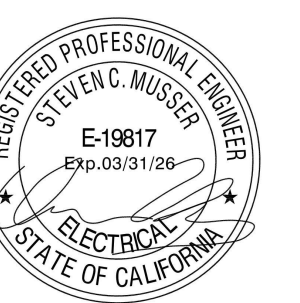


Tustin Unified School District

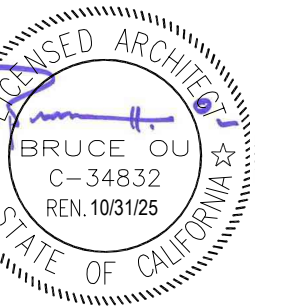


NORTH TRUE

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DATE 01-12-2024 PROJECT NUMBER 230381

REVISIONS

No.	Description	Date

FIRE ALARM ENLARGED SITE PLAN

FA1.02

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FACP BATTERY CALCULATION SHEET					
FACP (N)					
QUANTITY	DESCRIPTION	UNIT	TOTAL	UNIT	TOTAL
		STANDBY	STANDBY	ALARM	ALARM
		CURRENT(A)	CURRENT(A)	CURRENT(A)	CURRENT(A)
1	CONTROLS	0.0860	0.0860	2.2060	2.2060
1	ANNUNCIATOR	0.0120	0.0120	0.0230	0.0230
2	SMOKE DETECTOR	0.0002	0.0004	0.0020	0.0040
2	HEAT DETECTOR	0.0002	0.0004	0.0020	0.0040
SUB TOTAL			0.099		2.237
STANDBY CURRENT x 24 Hrs. (AH)			2.371 AH		
ALARM CURRENT x 15 MINUTES (AH)			0.559 AH		
TOTAL (AH)			2.930 AH		
25% DERATING			0.732 AH		
TOTAL DEMAND (AH)			3.662 AH		
BATTERY POWER REQUIRED			36 AH		

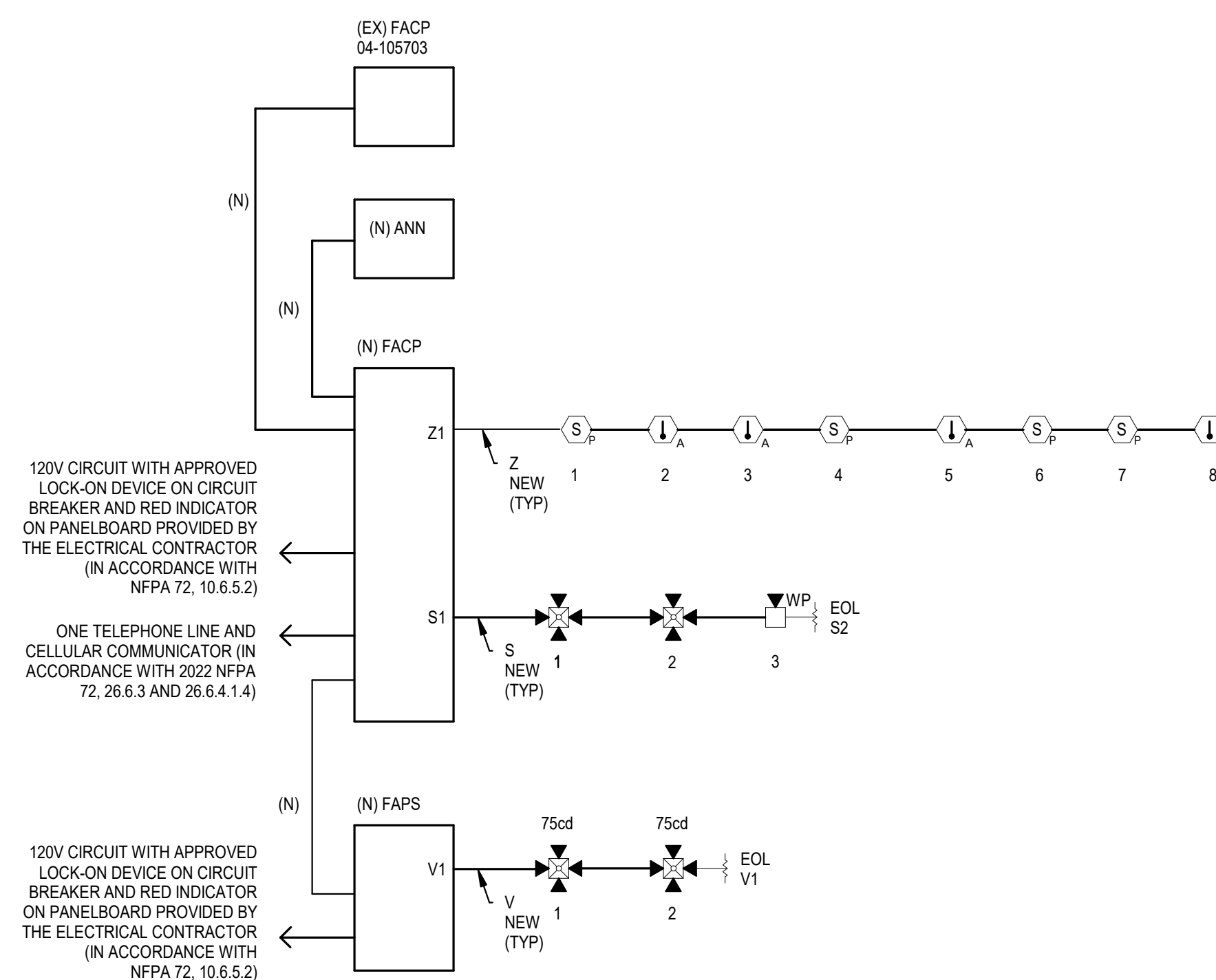
BATTERY CAPACITY CALCULATION SHEET					
FAPS (N)					
QUANTITY	Description	Unit	Total	Unit	Total
		Standby	Standby	Alarm	Alarm
		Current(A)	Current(A)	Current(A)	Current(A)
1	NAC TRIP	0.075	0.075	0.175	0.175
1	75cd ceiling speaker/strobe	0.000	0.000	0.142	0.142
Sub Total			0.075		0.317
A - Battery Backup - Standby (Hour)			24		
B - Battery Backup (minutes)			15		
C - Allowable Error (%)			25		
D - Total Standby Backup (Amp-Hour)			1.800		
E - Total Alarm Backup (Amp-Hour)			0.079		
F - Allowable Error (C x D + E)			0.470		
Total Amp-Hour Required (D + E + F)			2.349		
Battery Submitted			7 Amp-Hour (NEW)		

SPEAKER CIRCUIT LOAD CALCULATION										
SPEAKER CIRCUIT DESCRIPTION	PANEL NUMBER	CIRCUIT LOCATION	WIRE GAUGE (18, 16, 14 AWG)	CIRCUIT VOLTAGE (25 OR 70 Vrms)	APPLIANCE QUANTITIES / TAP VALUES			TOTAL CIRCUIT LOAD (WATTS)	ESTIMATED CIRCUIT LENGTH (FEET)	MFG. REC. MAXIMUM LOSS IS -0.5dB
					SPEAKER TAPPED AT 0.25 WATTS	SPEAKER TAPPED AT 0.5 WATTS	SPEAKER TAPPED AT 1 WATTS			
FACP		PORTABLE BUILDING	14 AWG	70	1			2.50	500	-0.01
TOTAL								2.50		2.58

STROBES WORST CASE VOLTAGE DROP									
PANEL NAME	CIRCUIT NUMBER	CEILING SPEAKER/STROBE				TOTAL CURRENT (AMPS)	TOTAL DISTANCE (FEET)	TOTAL VOLTAGE DROP (%)	TOTAL DEVICES
		15cd	30cd	75cd	95cd				
FAPS (N)	V1			1		0.142	40	0.08%	1
	V2					0.000		0.00%	0
	V3					0.000		0.00%	0
	V4					0.000		0.00%	0
TOTAL		0	0	1	0				

4 FIRE ALARM VOLTAGE DROP AND BATTERY CALCULATIONS

NOT TO SCALE

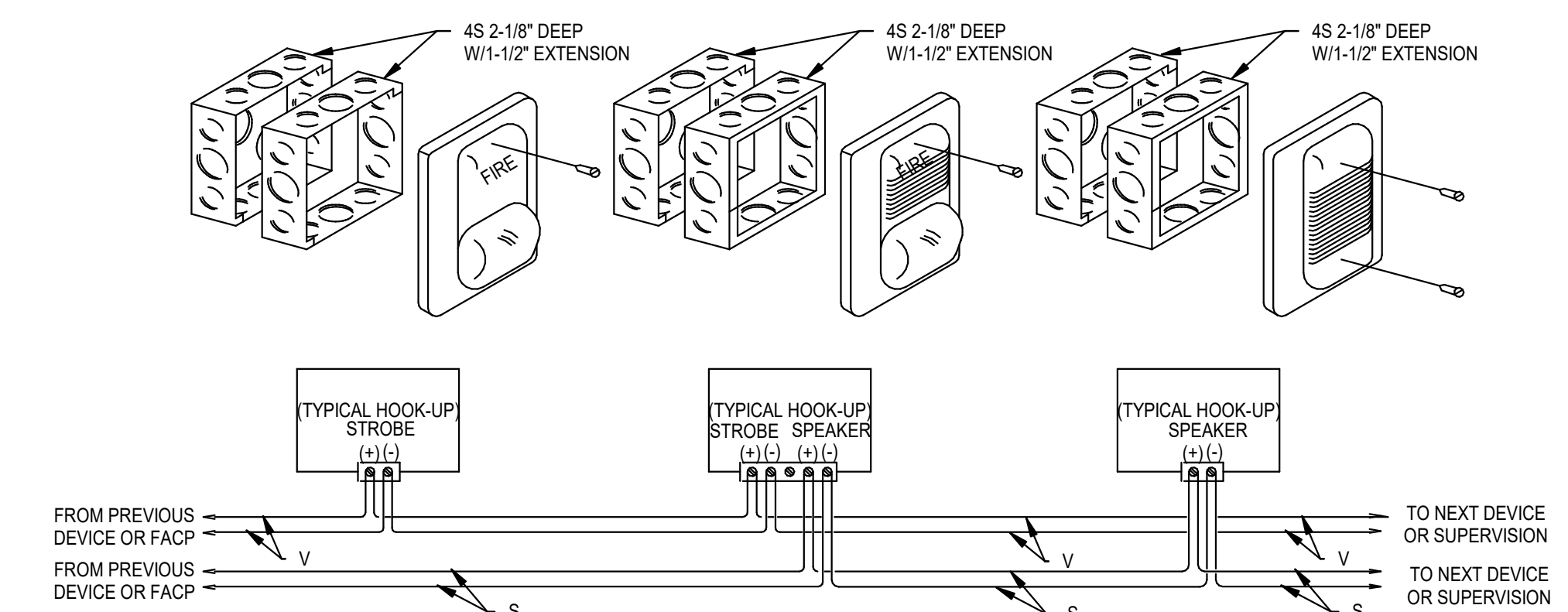


3 FIRE ALARM RISER DIAGRAM

NOT TO SCALE

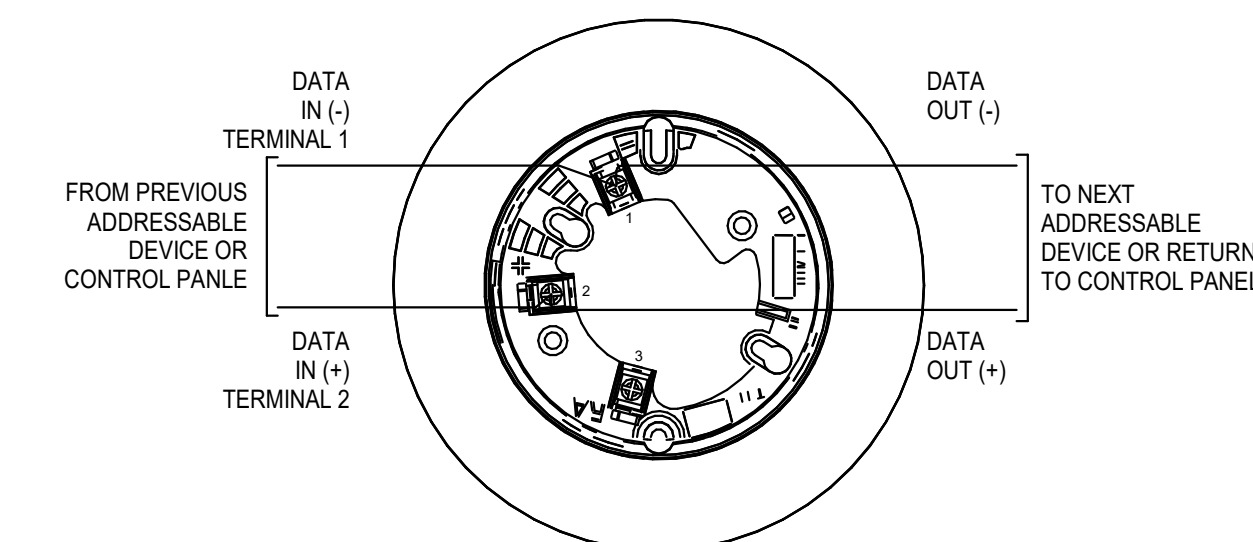
2 SPEAKER/STROBE DETAIL

NOT TO SCALE



1 SMOKE/HEAT DETECTOR DETAIL

NOT TO SCALE



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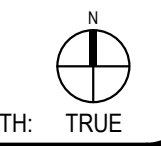


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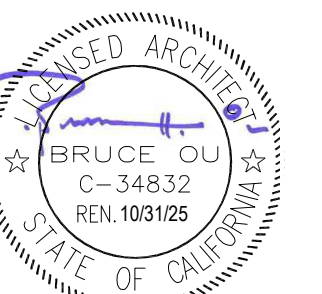
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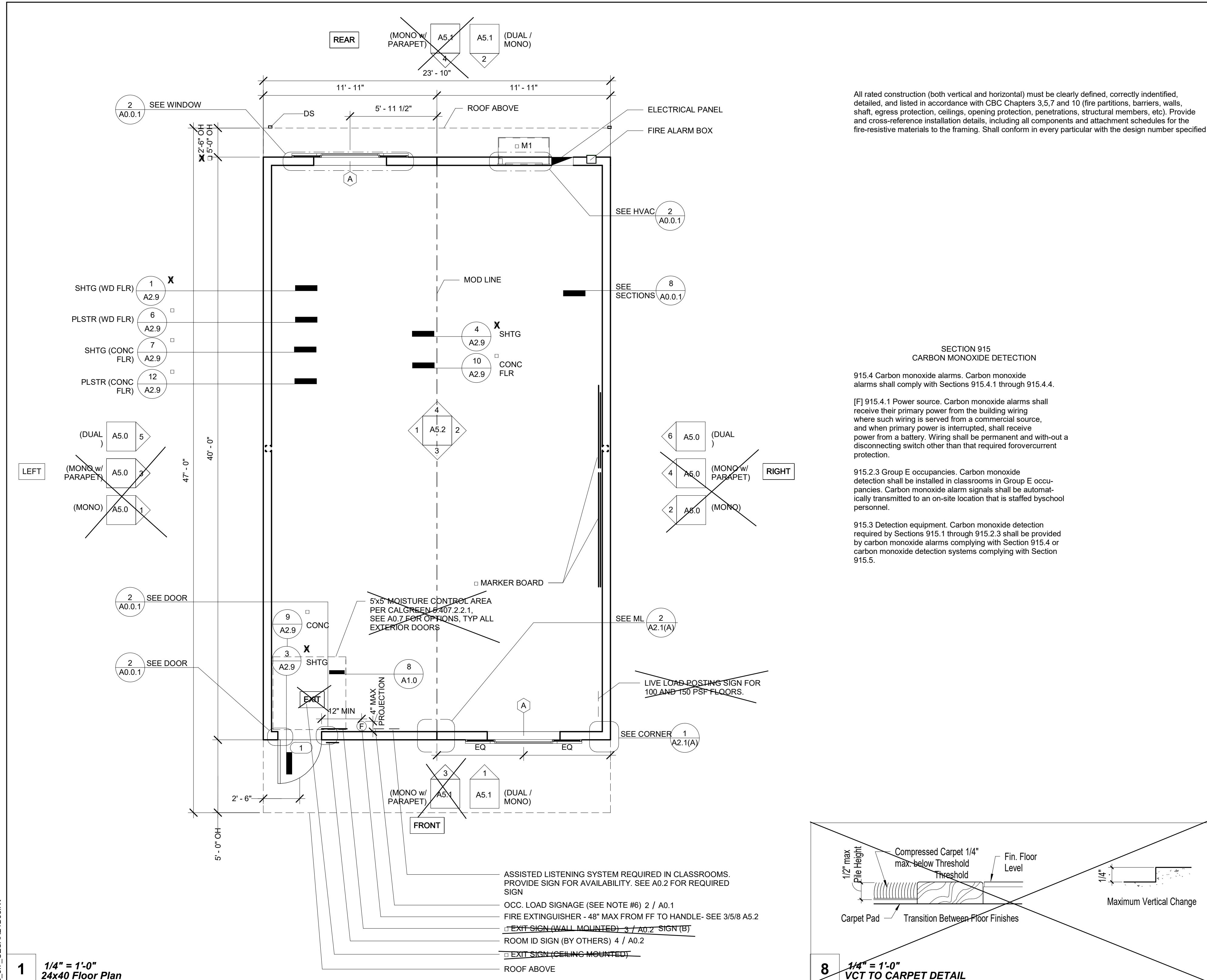
DATE 01-12-2024 PROJECT NUMBER 230381

No.	Description	Date

FIRE ALARM DETAILS

FA6.01

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1 1/4" = 1'-0"
24x40 Floor Plan

All rated construction (both vertical and horizontal) must be clearly defined, correctly identified, detailed, and listed in accordance with CBC Chapters 3.5.7 and 10 (fire partitions, barriers, walls, shaft, egress protection, ceilings, opening protection, penetrations, structural members, etc). Provide and cross-reference installation details, including all components and attachment schedules for the fire-resistive materials to the framing. Shall conform in every particular with the design number specified

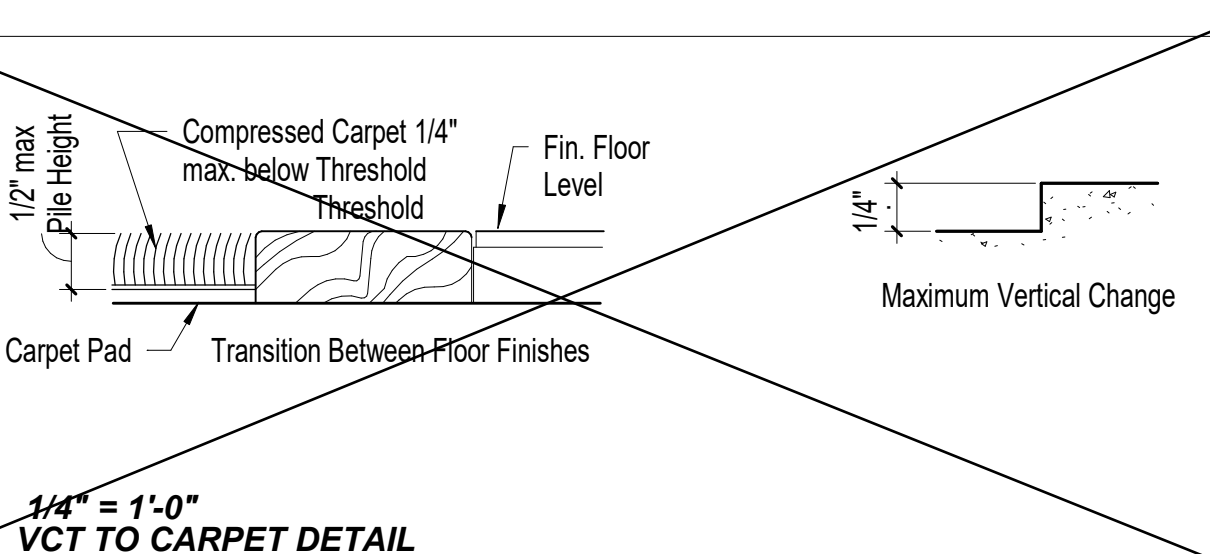
**SECTION 915
CARBON MONOXIDE DETECTION**

915.4 Carbon monoxide alarms. Carbon monoxide alarms shall comply with Sections 915.4.1 through 915.4.4.

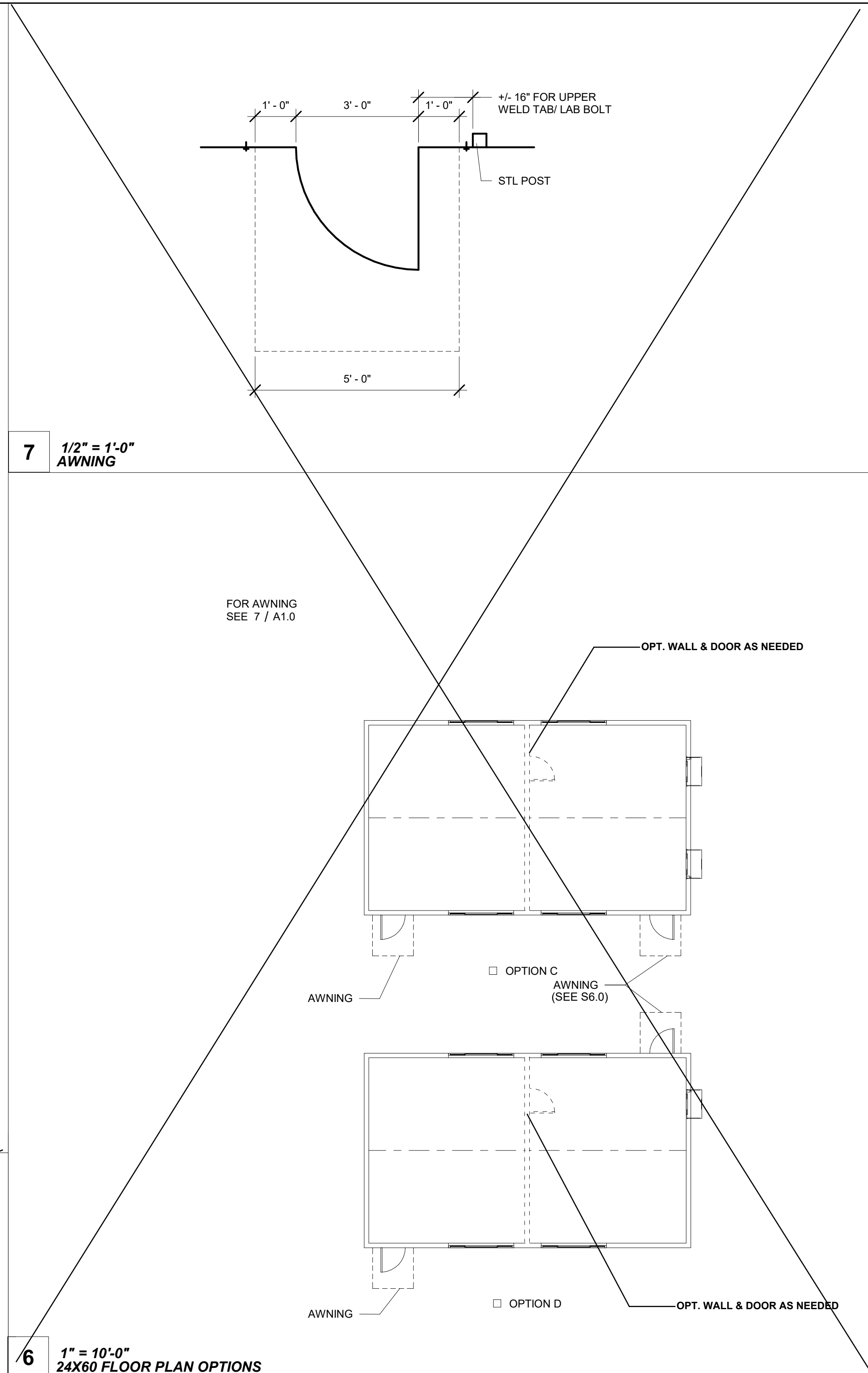
[F] 915.4.1 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and with-out a disconnecting switch other than that required for overcurrent protection.

915.2.3 Group E occupancies. Carbon monoxide detection shall be installed in classrooms in Group E occupancies. Carbon monoxide alarm signals shall be automatically transmitted to an on-site location that is staffed by school personnel.

915.5 Detection equipment. Carbon monoxide detection required by Sections 915.1 through 915.2.3 shall be provided by carbon monoxide alarms complying with Section 915.4 or carbon monoxide detection systems complying with Section 915.5.



8 1/4" = 1'-0"
VCT TO CARPET DETAIL



6 1" = 10'-0"
24X60 FLOOR PLAN OPTIONS

5 1/4" = 1'-0"
Wall Schedule

Stud Size	Sheet	Notes
X Wood Wall Stud	S4.5	

4 1/4" = 1'-0"
Fire Rating Schedule

Rating	Sheet	Notes
1 HOUR - SIDING OVER WD STUDS	A2.5	
1 HOUR - PLASTER OVER 1/2" OSB OR 1/2" CDX PLY w/ WD STUDS	A2.6	

FOR BURNING CHARACTERISTIC SEE 3 / A0.1

SEE A3.0 FOR ADDITIONAL FIRE ASSEMBLY NOTES AND DETAILS

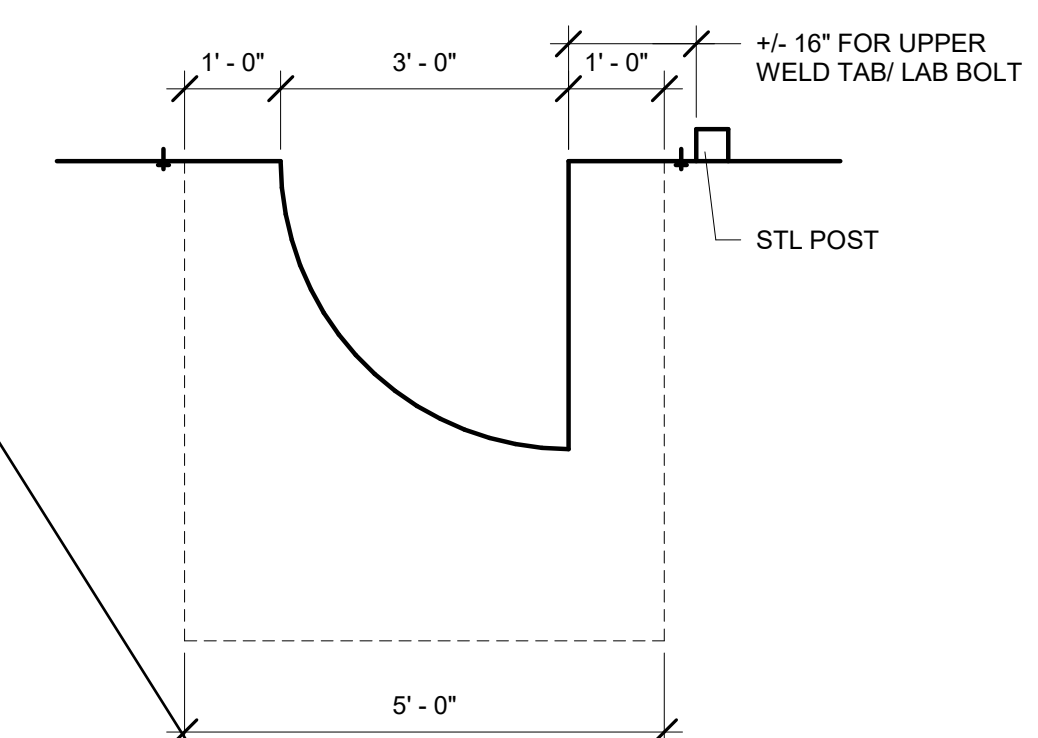
3 1/4" = 1'-0"
Ext. Finish Schedule

Finishes	Sheet	Notes
X SIDING OVER WD STUDS	A2.1	
□ PLASTER OVER 1/2" OSB OR 1/2" CDX PLY w/ WD STUDS	A2.2	

6 1" = 10'-0"
Roofing Schedule

"SLOPE"	EDPM	Standing Seam	Parapet	Notes
Dual	□ A4.2.2	X A4.0.2	N/A	
Mono	□ A4.2.1	□ A4.0.1	□ A4.4.1	

HVAC Unit		
Keynote	Type	Type Comments
X M1	Wall Mounted HVAC	See (M)-Sheets
□ M2	Roof Mounted HVAC	See (M)-Sheets



7 1/2" = 1'-0"
AWNING

FOR AWNING SEE 7 / A1.0

OPT. WALL & DOOR AS NEEDED

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 04-122805 INC.
REVIEWED FOR
SS FLS ACS
DATE: 09/28/2023

R&S TAVARES ASSOCIATES
DESIGN & CONSULTING & PROJECT MGT
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SAN DIEGO, CA 92127
WWW.RSTAVARES.COM

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ARCHITECT
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03/31/24
PC 123456
STATE OF CALIFORNIA
05/24/23
RST#22088

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP. 04-121368 PC
REVIEWED FOR
SS FLS ACS CG
DATE: 09/22/2023

Revision Schedule

#	Description	Date

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
PC 2022 CBC: 24' x 40'
EXPANDABLE TO
120' x 40'

SHEET TITLE
24x40 FLOOR PLAN

PROJECT NUMBER
22088

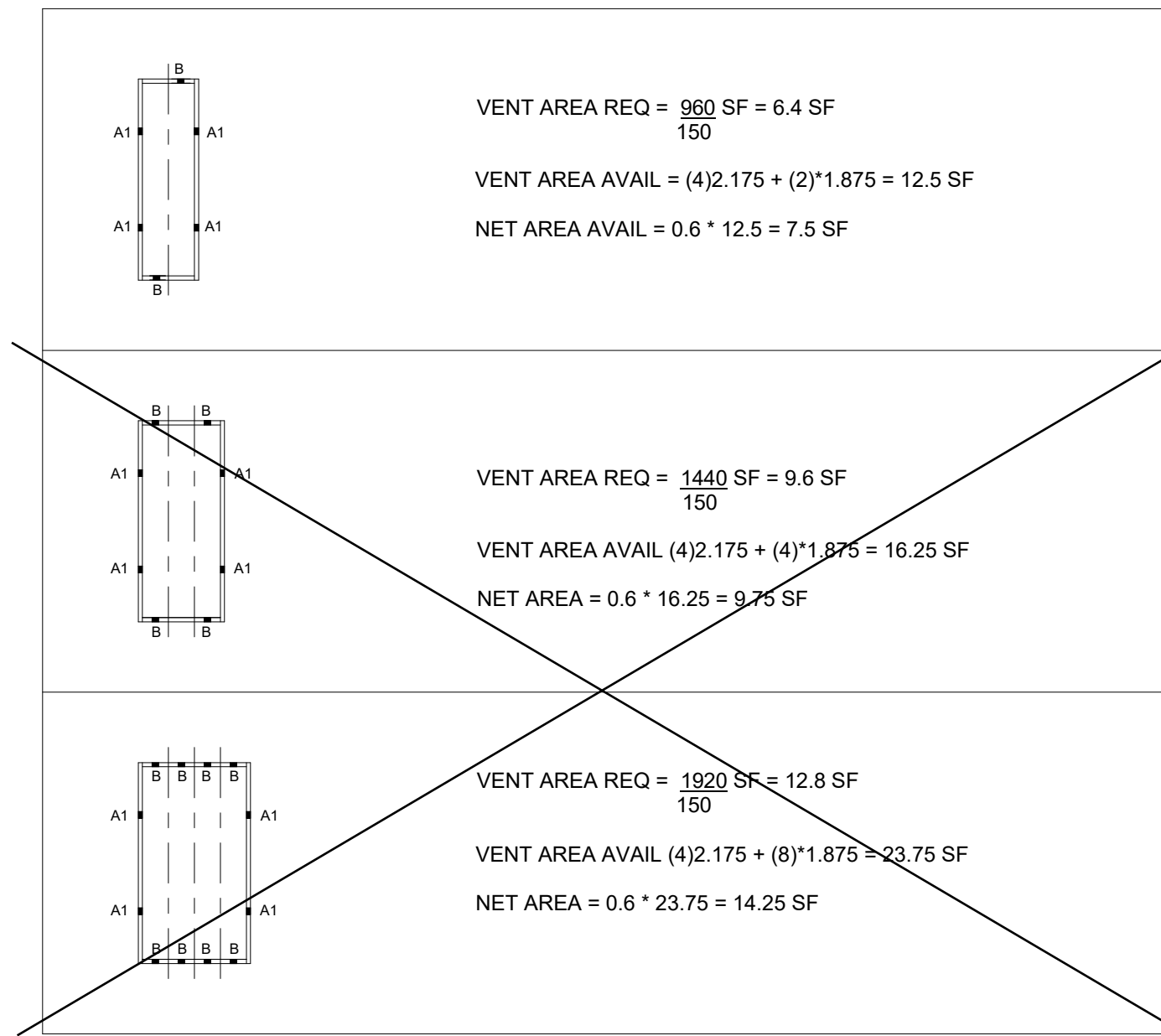
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RH/RT

DATE

SHEET NO.
A1.0

SHEET OF



NOTE: WOOD FOUNDATION EXPANDABLE TO 48x40

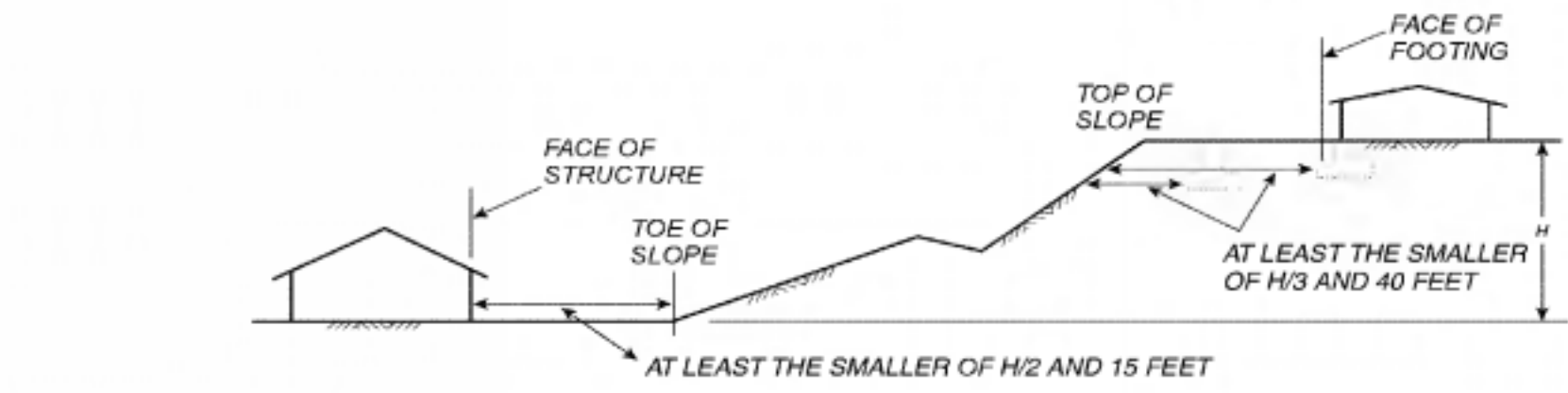


FIGURE 1808.7.1
 FOUNDATION CLEARANCES FROM SLOPES

- WOOD FOUNDATION CONSTRUCTION IS ALLOWED FOR BUILDINGS WITH 2160 AND UNDER.
- SILL PLATES SHALL BE OF FOUNDATION GRADE REDWOOD OR PRESERVATIVE PRESURE TREATED MATERIAL AND IS ALLOWED TO REST DIRECTLY ON SOIL PAVEMENT. MATERIALS ABOVE THE SILL PLATES ARE NOT CONTROLLED BY REQUIREMENT.
- VENTS THAT OCCUR INSIDE RAMP BOUNDARIES SHALL REQUIRE A VENT OF EQUAL SIZE AT RAMP SKIRTING.
- TO PREVENT SLIDING, A 1 INCH G.S. SCHEDULE 40 PIPE (1.315" ACTUAL O.D.) SHALL BE ATTACHED TO SILL PLATE AND ANCHORED INTO THE EARTH W/ 12" MIN EMBEDMENT (PROJECTED VERTICALLY) @ 10' - 0" MAX O.C. AND SHALL BE LOCATED A MAXIMUM OF 2'-0" FROM CORNERS
- STACKED FOUNDATION MEMBERS SHALL BE FASTENED TO ONE ANOTHER W/ CORROSION RESISTANT NAILS.
- WOOD FOUNDATION HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 1,000 PSF IN ABSENSE OF A SOILS INVESTIGATION REPORT PROVIDED BY A LICENSED GEOTECHNICAL ENGINEER.
- REFER TO ARCHITECT'S SITE PLAN FOR DRAINAGE.

3 $1/4" = 1'-0"$
 FOUNDATION SETBACKS

7 $1/4" = 1'-0"$
 NOTES FOR 50+15

KEY PLAN VENTING SCHEDULE	
VENT "A1" (SIDEWALL):	3'-6" x 7'-5" = 2,188 SF VENTILATION AVAILABLE
VENT "B" (ENDWALL):	3'-0" x 7'-5" = 1,875 SF VENTILATION AVAILABLE

SEE 2/F1.40 FOR REFERENCE

(2) 16d NAILS SILL TO BASE CONNECTION FOR 50+15 SEE 7 / F1.10			
	ENDWALL	SIDEWALL	SEPERATION
24x40	7" O.C	12" O.C	12" O.C
36x40	7" O.C	12" O.C	12" O.C
48x40	7" O.C	12" O.C	12" O.C

9 $1/4" = 1'-0"$
 KEY PLAN VENTING SCHEDULE FOR 50+15 PSF

6 $1/4" = 1'-0"$
 NAILING SCHEDULE FOR 50+15

WOOD FOUNDATION PLATE SCHEDULE								
50 + 15 PSF								
PLATES	END WALL	SIDE WALL	MODLINE ENDS	MODLINE INTERIOR	ML "B" ENDS	ML "B" INTERIOR	SEPERATION ENDS	SEPERATION INTERIOR
BOOSTER	2x4	2x4	2x6	2x6	2x8	2x8	2x4	2x4
TOP	2x6	2x6	2x8	2x8	2x10	2x10	2x6	2x6
BASE	2x8	2x8	2x10	2x10	2x12	2x12	2x8	2x8
SILL	2x12	2x12	(6) 2x12, 24" LONG	(6) 2x12, 24" LONG	(8) 2x12, 24" LONG	(8) 2x12, 24" LONG	2x12	2x12

* MODLINE "B" - MODLINE W/ EXT. WALLS BACK-TO-BACK SEE F1.14

TIE PLATE SCHEDULE		
	END WALL	SIDE WALL
24x40	5	3
36x40	7	3
48x40	10	3

8 $1/4" = 1'-0"$
 WOOD FOUNDATION PLATE SCHEDULE FOR 50+15

4 $1/4" = 1'-0"$
 TIE PLATE SCHEDULE FOR 50+15

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APP. 04-122805 INC.
 REVIEWED FOR
 SS FLS ACS
 DATE: 09/28/2023

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 STATE OF CALIFORNIA
 05/24/23
 RST#22088

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APPROVED
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 APP. 04-121368 PC
 REVIEWED FOR
 SS FLS ACS CG
 DATE: 09/22/2023

Revision Schedule		
#	Description	Date

PRE-CHECK (PC) DOCUMENT
 Code: 2022 CBC
 A separate project application for construction is required

PROJECT TITLE
 PC 2022 CBC:24' x 40'
 EXPANDABLE TO
 120' x 40'

SHEET TITLE
 WOOD FOUNDATION NOTES SCHED FOR BLDG W/ 50+15

PROJECT NUMBER
 22088

DRAWN BY
 rMc/SC

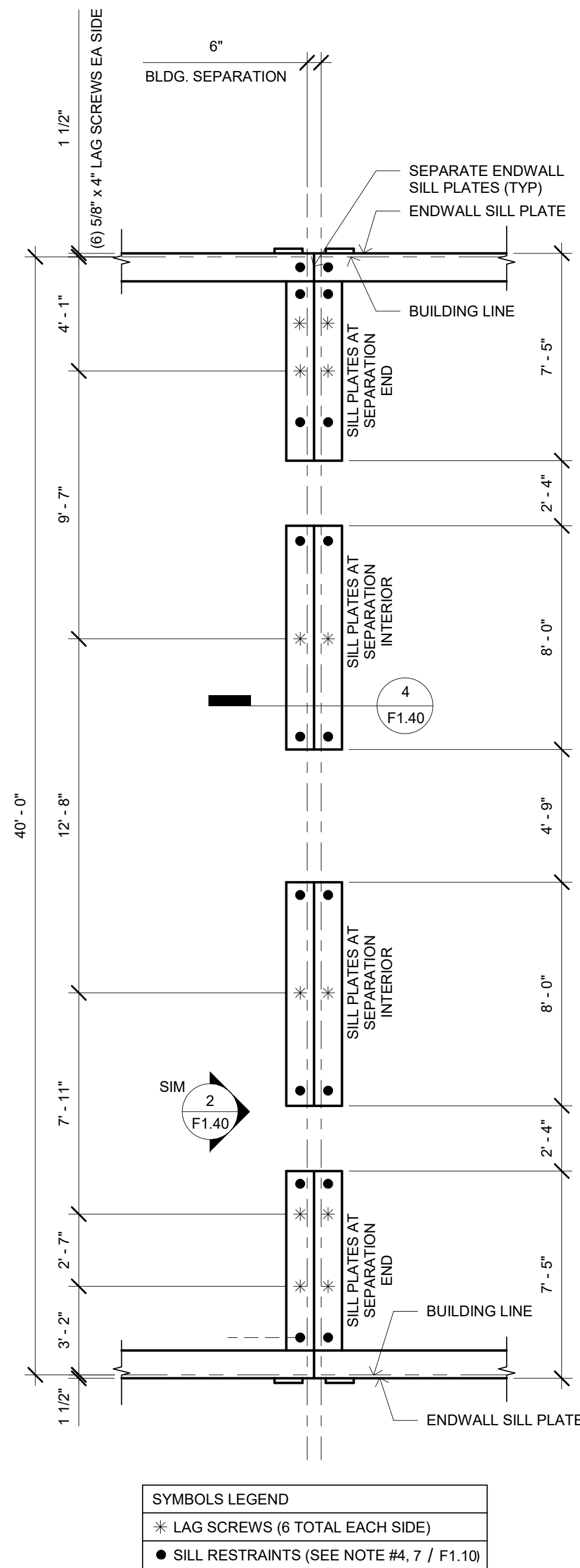
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DATE

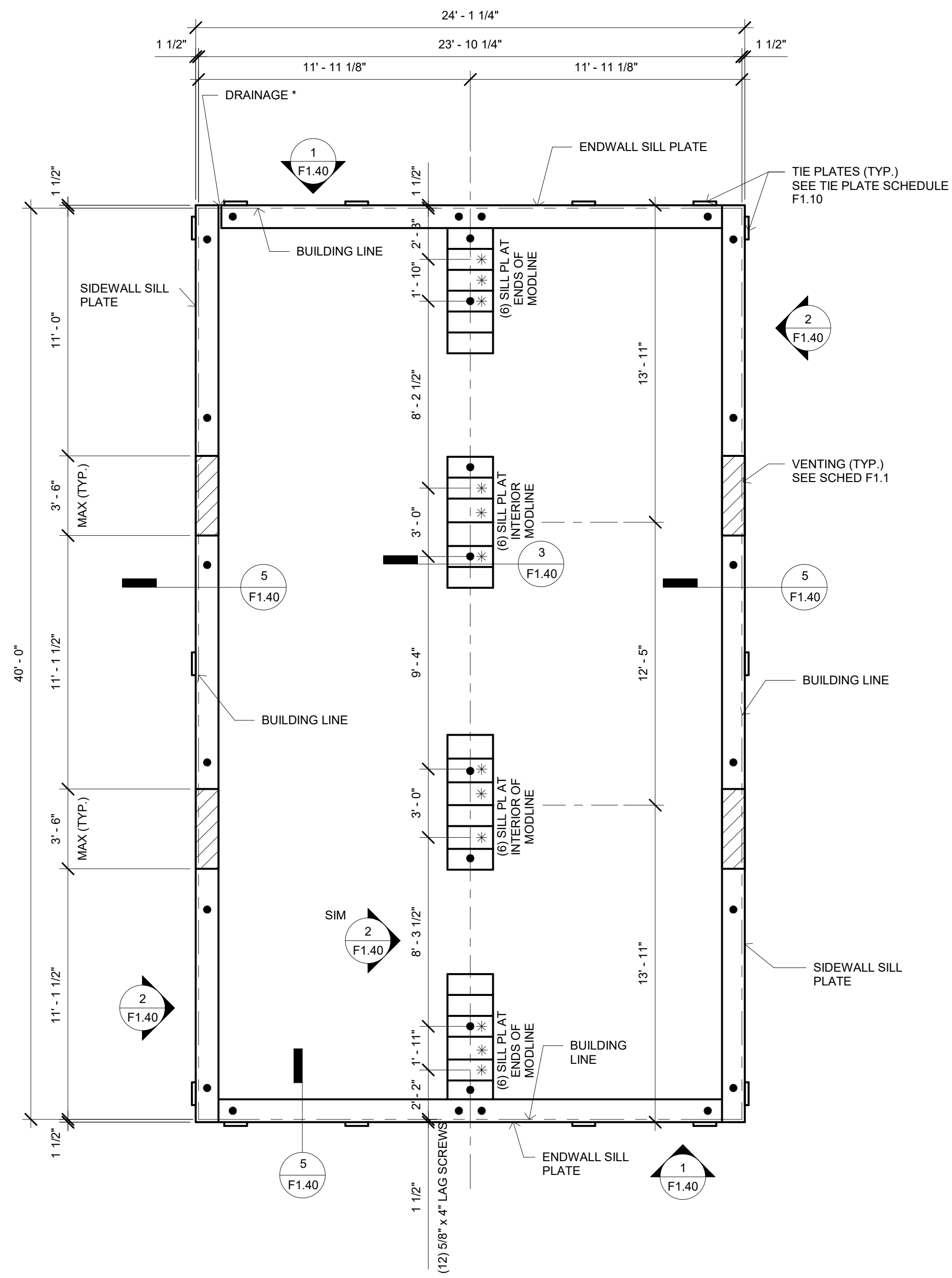
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F1.10

SHEET OF

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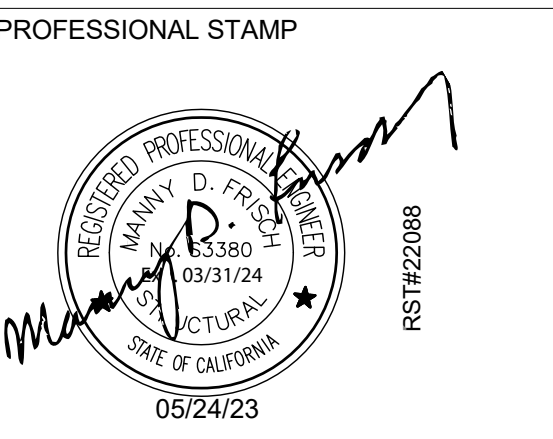
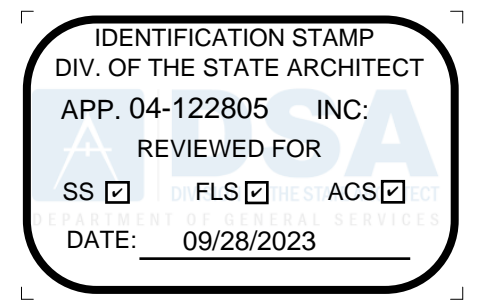
SYMBOLS LEGEND	
*	LAG SCREWS (6 TOTAL EACH SIDE)
●	SILL RESTRAINTS (SEE NOTE #4, 7 / F1.10)



SYMBOLS LEGEND	
*	LAG SCREWS (12 TOTAL)
●	SILL RESTRAINTS (SEE NOTE #4, 7 / F1.10)

* REFER TO ARCHITECTURAL SITE PLAN FOR DRAINAGE

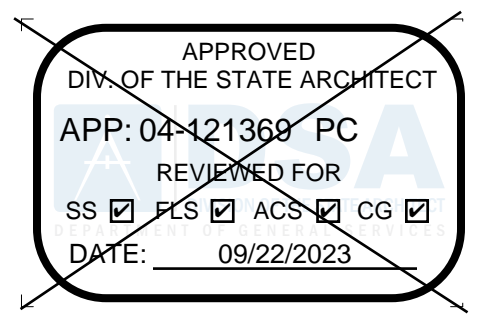
PROJECT SPECIFIC STATE AGENCY APPROVAL



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ORIGINAL PC STATE AGENCY APPROVAL



Revision Schedule		
#	Description	Date

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
PC 2022 CBC:24' x 40'
EXPANDABLE TO
120' x 40'

SHEET TITLE
WOOD
FOUNDATION
PLAN 24x40 BLDG
W/ 50+15

PROJECT NUMBER
22088

DRAWN BY
rMc/SC

CHECKED BY
JA/RT

DATE

SHEET NO.
F1.11

SHEET OF

C:\Users\User\Documents\RS#20132 - Class Leasing_PC 24x40 to 120x40 HS_detached_CESAR24D63.rvt

6/16/2021 7:44:48 AM

C:\Users\User\Documents\RS#20132 - Class Leasing_PC 24x40 to 120x40 HS_detached_CESAR24D63.rvt

6/16/2021 7:44:53 AM

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APP. 04-122805 INC.
 REVIEWED FOR
 SS FLS ACS
 DATE: 09/28/2023

R&S TAVARES ASSOCIATES
 DESIGN & CONSULTING & PROJECT MGT
 11500 W BERNHARD COURT, SUITE 100
 SAN DIEGO, CA 92127
 WWW.RSTAVARES.COM

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ARCHITECT
 MANNY D. FRIEDL
 65380
 03/31/24
 CALIFORNIA
 STATE OF CALIFORNIA
 05/24/23
 RST#22088

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CLIENT

Class Leasing
 1320 W. Oleander Ave, Perris CA 92571-7408
 VOICE (951) 943-1908 Fax (951) 943-5768

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
 DIV. OF THE STATE ARCHITECT
 APP. 04-121368 PC
 REVIEWED FOR
 SS FLS ACS CG
 DATE: 09/22/2023

Revision Schedule

#	Description	Date

PRE-CHECK (PC) DOCUMENT
 Code: 2022 CBC
 A separate project application for construction is required

PROJECT TITLE
**PC 2022 CBC:24' x 40'
 EXPANDABLE TO
 120' x 40'**

SHEET TITLE
**MODLINE "B" W/
 EXTERIOR WALLS
 BACK-TO-BACK 50+15
 PSF**

PROJECT NUMBER
 22088

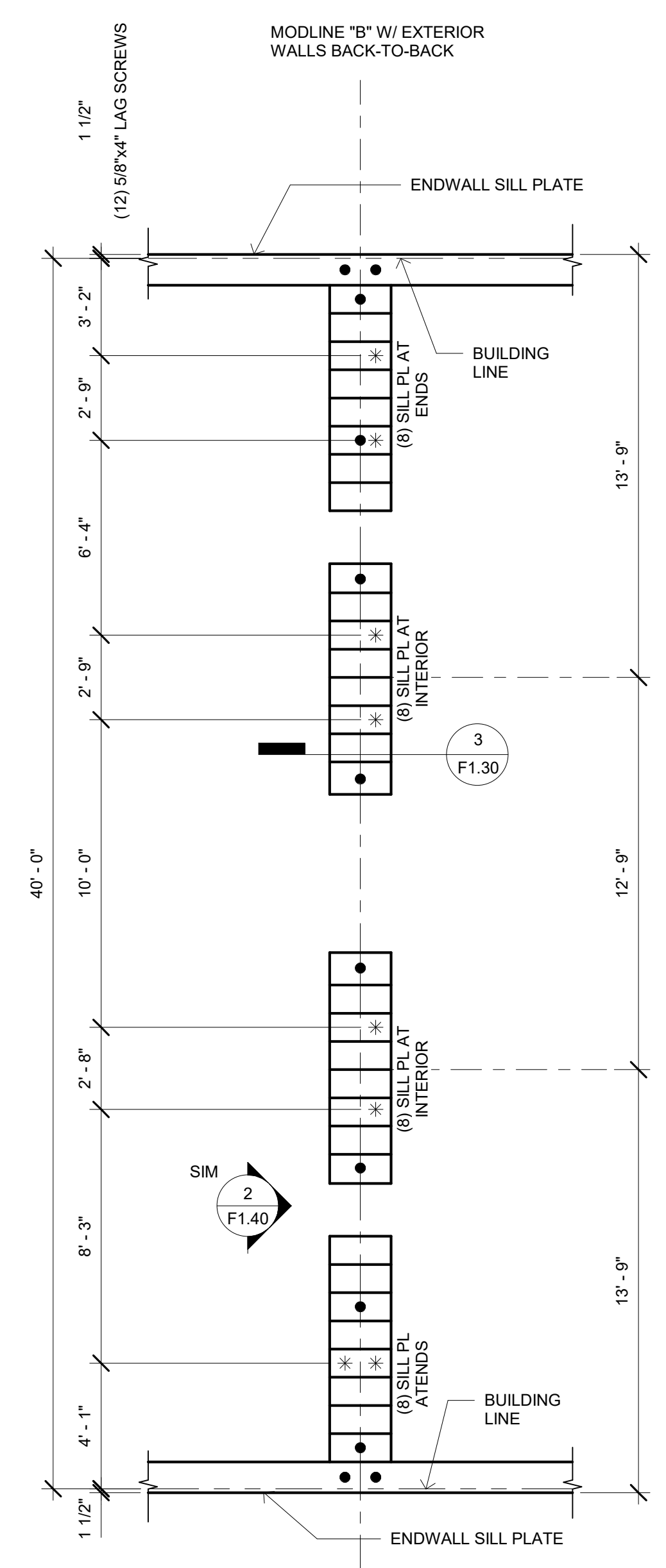
DRAWN BY
 rMc/SC

CHECKED BY
 JA/RT

DATE

SHEET NO.
F1.14

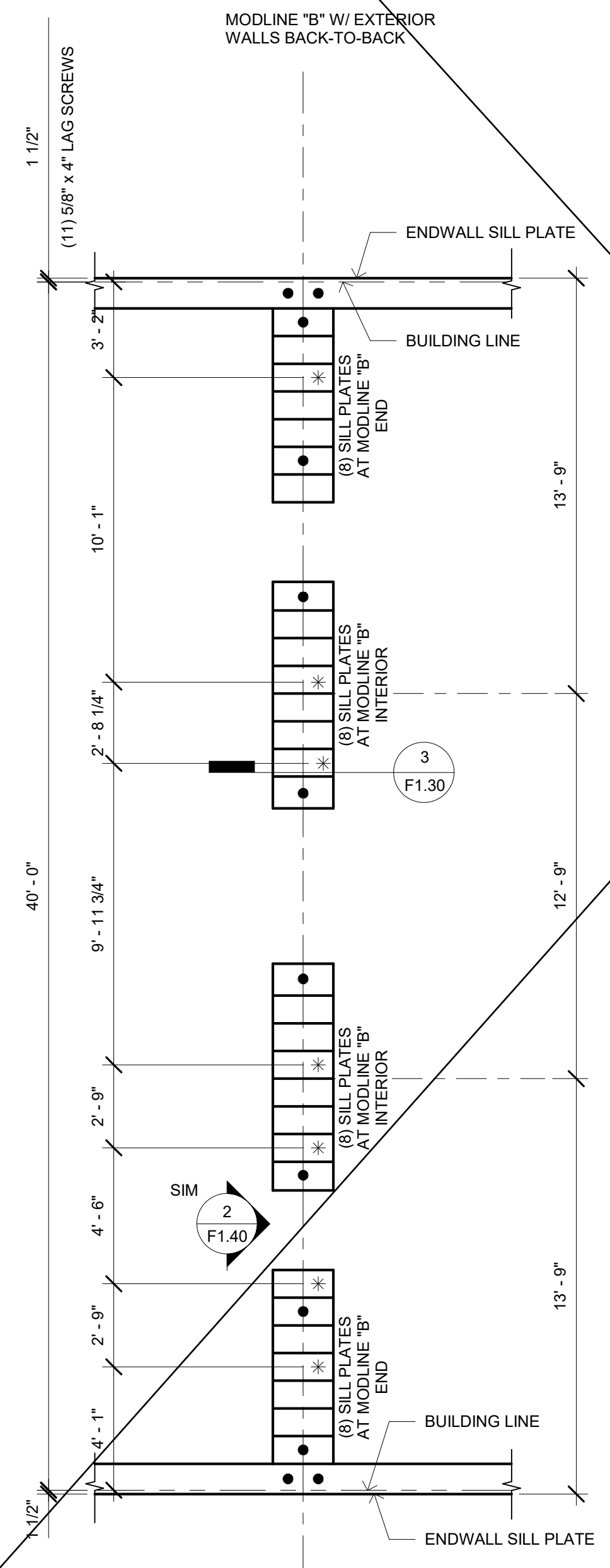
SHEET OF



SYMBOLS LEGEND
 * LAG SCREWS (12 TOTAL)
 ● SILL RESTRAINTS (SEE NOTE #4.7 / F1.10)

NOTE: IT IS ONLY APPROPRIATE WHERE ADJACENT MODULE IS BOLTED AND DOES NOT EXCEED 36 FEET WIDE TOGETHER (2160 SF. TOTAL AREA)

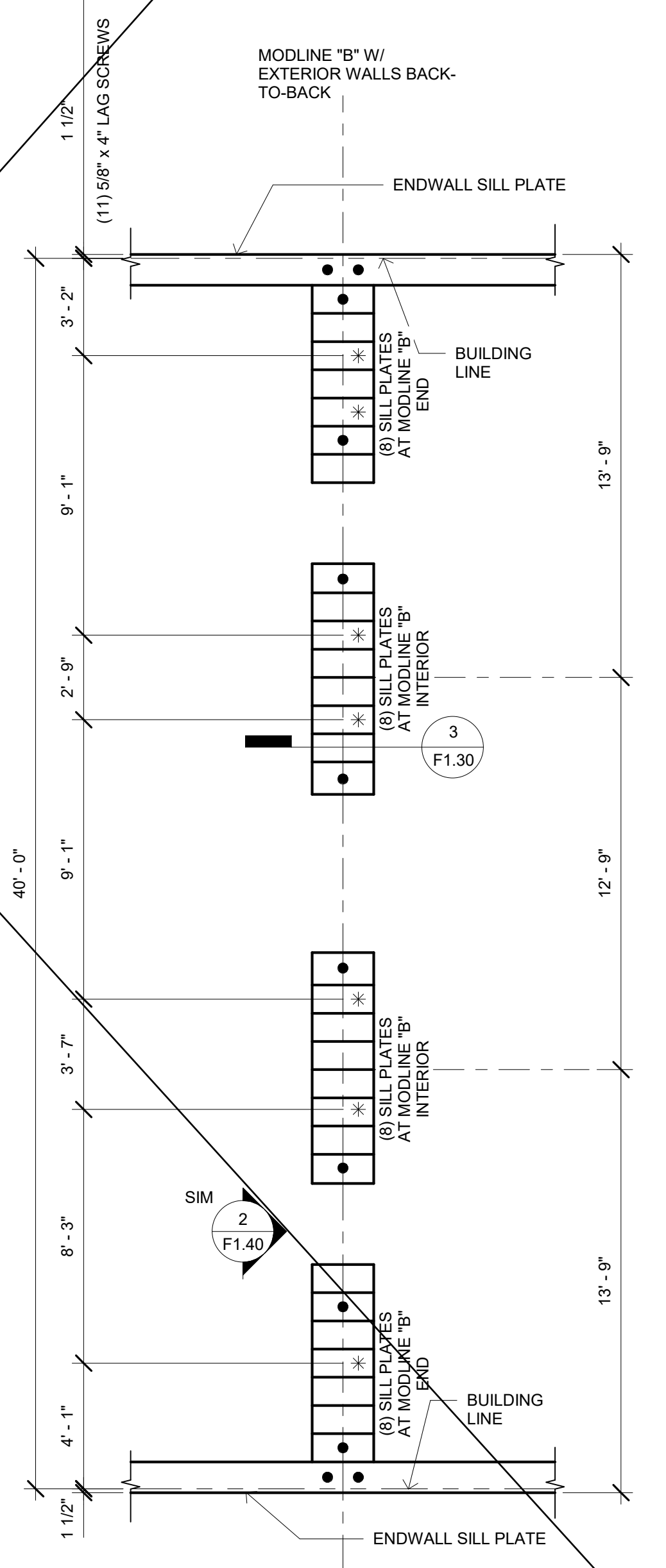
1 1/4" = 1'-0"
 FOOTING AT MODELINE TYPE "B", 24x40



SYMBOLS LEGEND
 * LAG SCREWS (11 TOTAL)
 ● SILL RESTRAINTS (SEE NOTE #4.7 / F1.10)

NOTE: IT IS ONLY APPROPRIATE WHERE ADJACENT MODULE IS BOLTED AND DOES NOT EXCEED 36 FEET WIDE TOGETHER (2160 SF. TOTAL AREA)

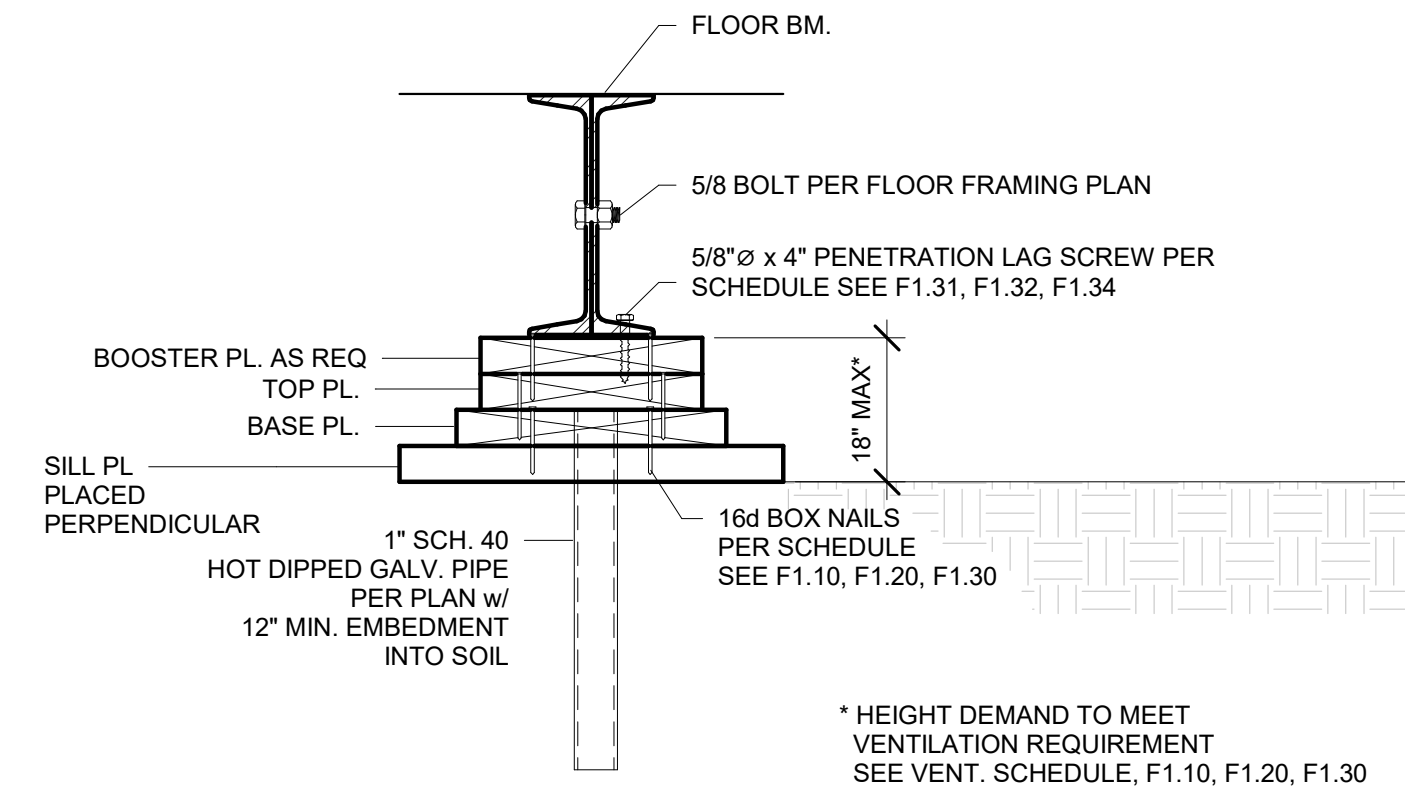
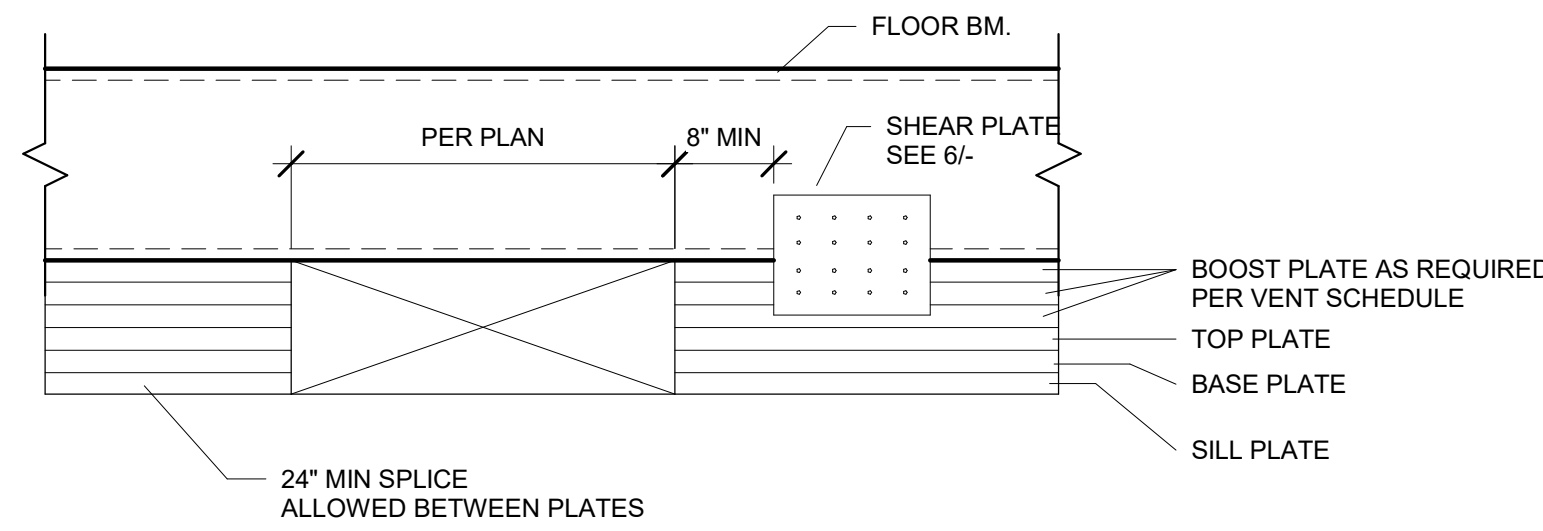
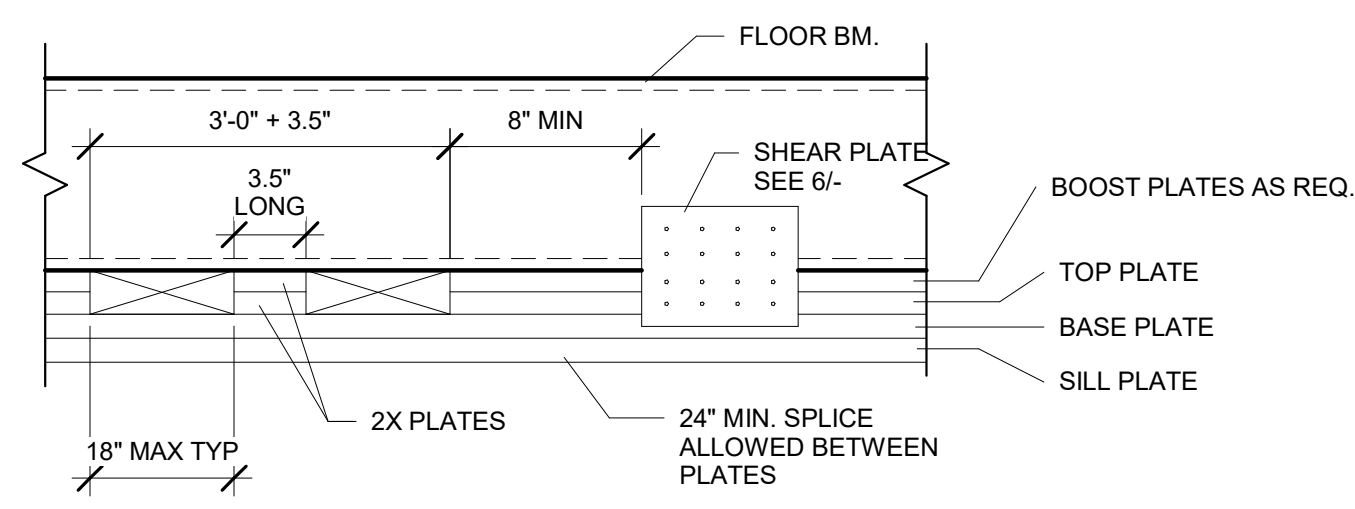
2 1/4" = 1'-0"
 FOOTING AT MODELINE TYPE "B", 36x40



SYMBOLS LEGEND
 * LAG SCREWS (11 TOTAL)
 ● SILL RESTRAINTS (SEE NOTE #4.7 / F1.10)

NOTE: IT IS ONLY APPROPRIATE WHERE ADJACENT MODULE IS BOLTED AND DOES NOT EXCEED 36 FEET WIDE TOGETHER (2160 SF. TOTAL AREA)

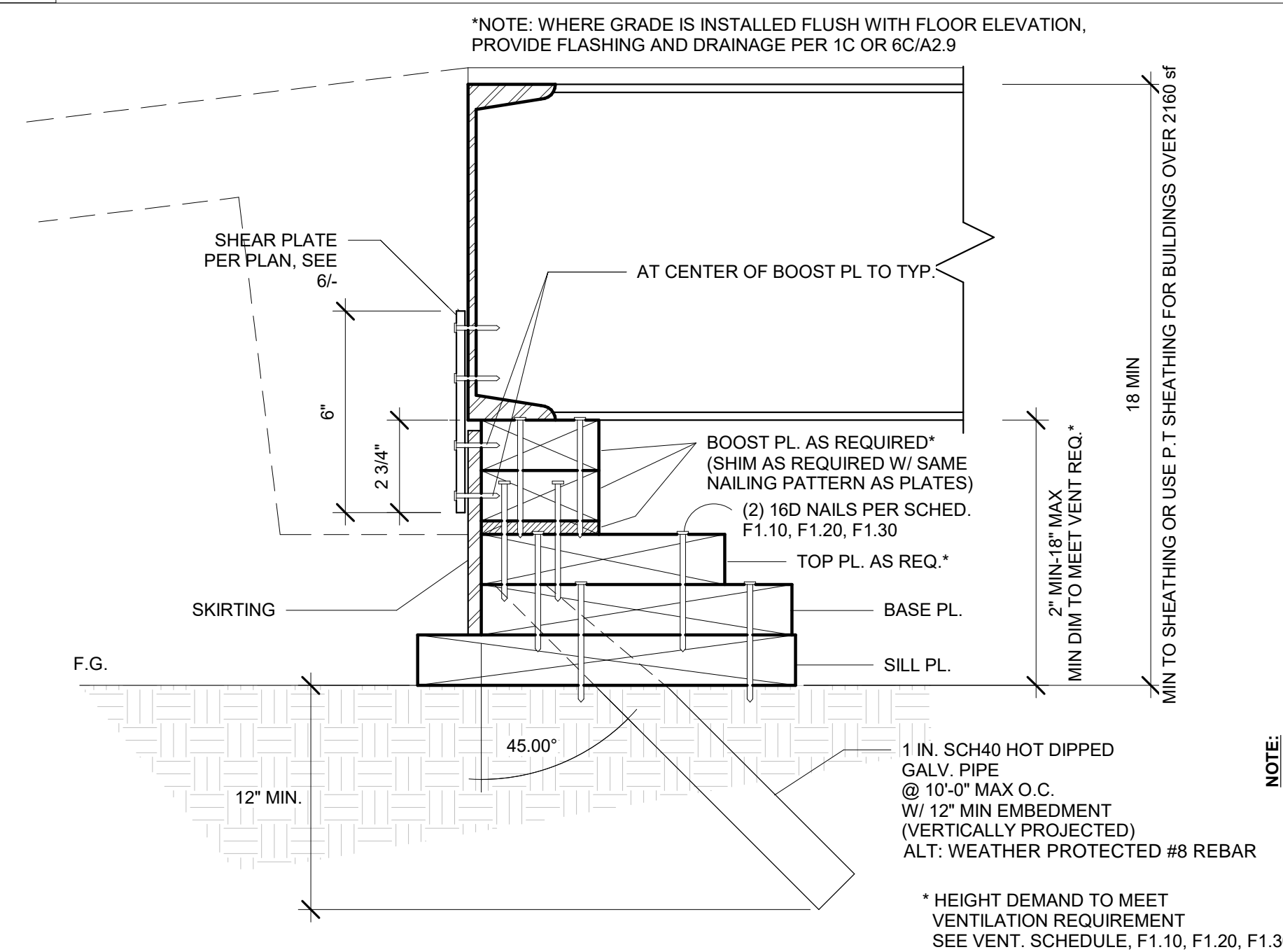
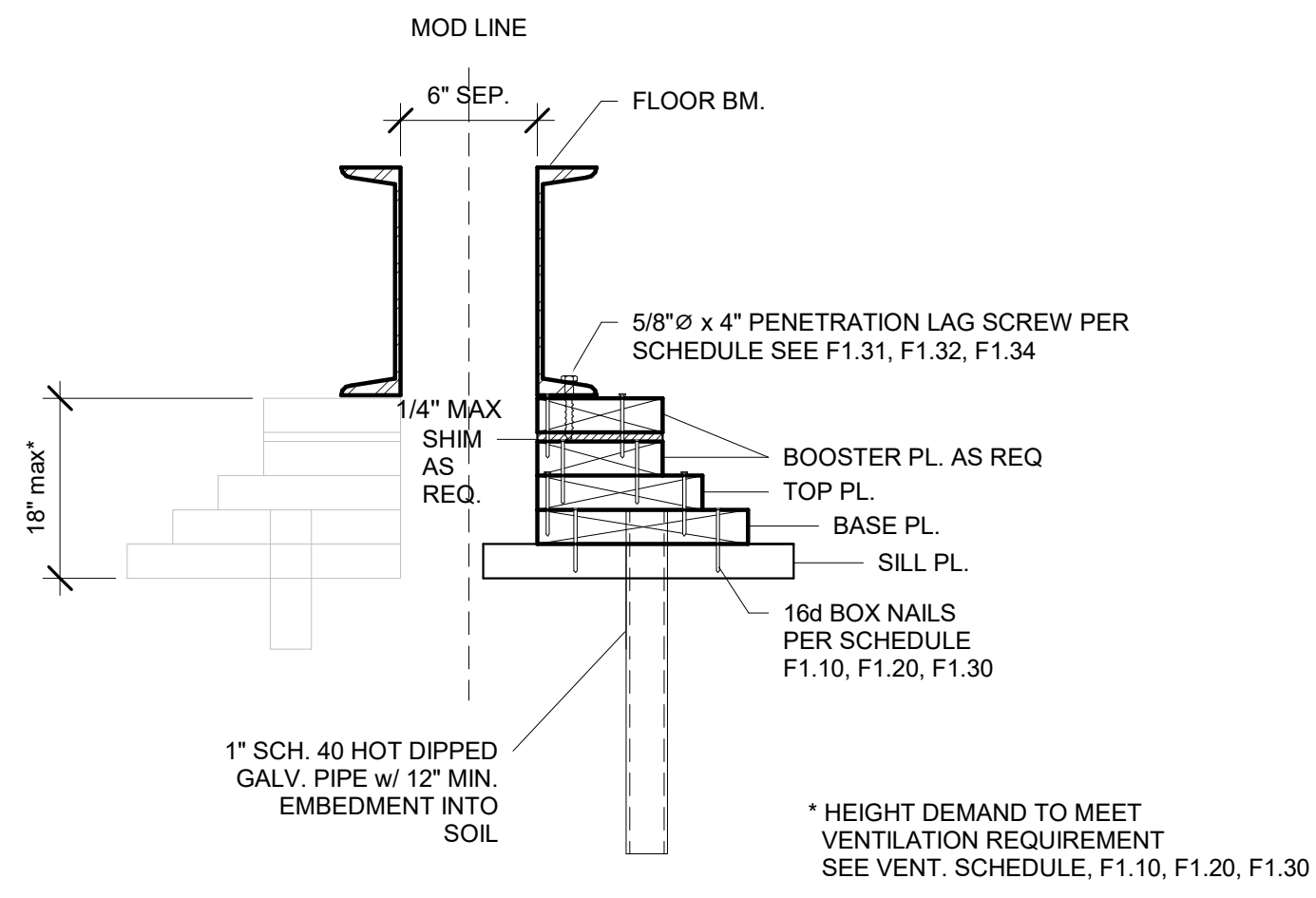
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 FOOTING AT MODELINE TYPE "B", 48x40



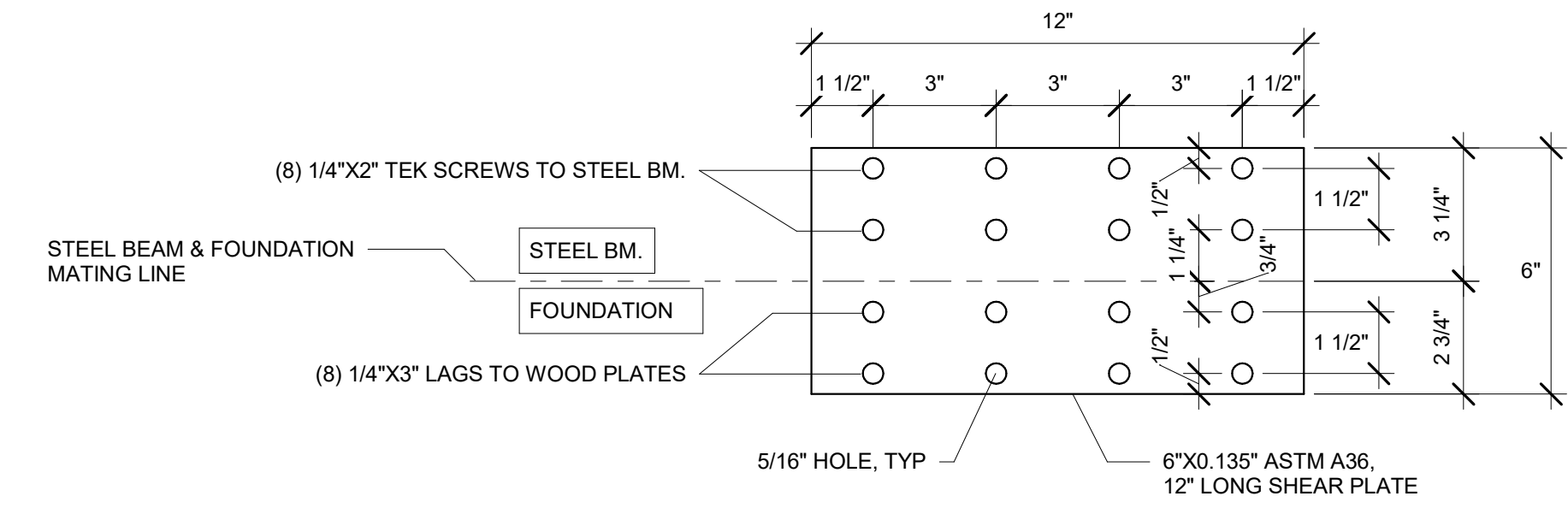
1 1 1/2" = 1'-0"
VENT OPENING OVER BASE PLATE

2 1 1/2" = 1'-0"
VENT OPENING @ SIDEWALL OR MODLINE @ SEPERATION

3 1 1/2" = 1'-0"
FOUNDATION PAD AT MOD LINE



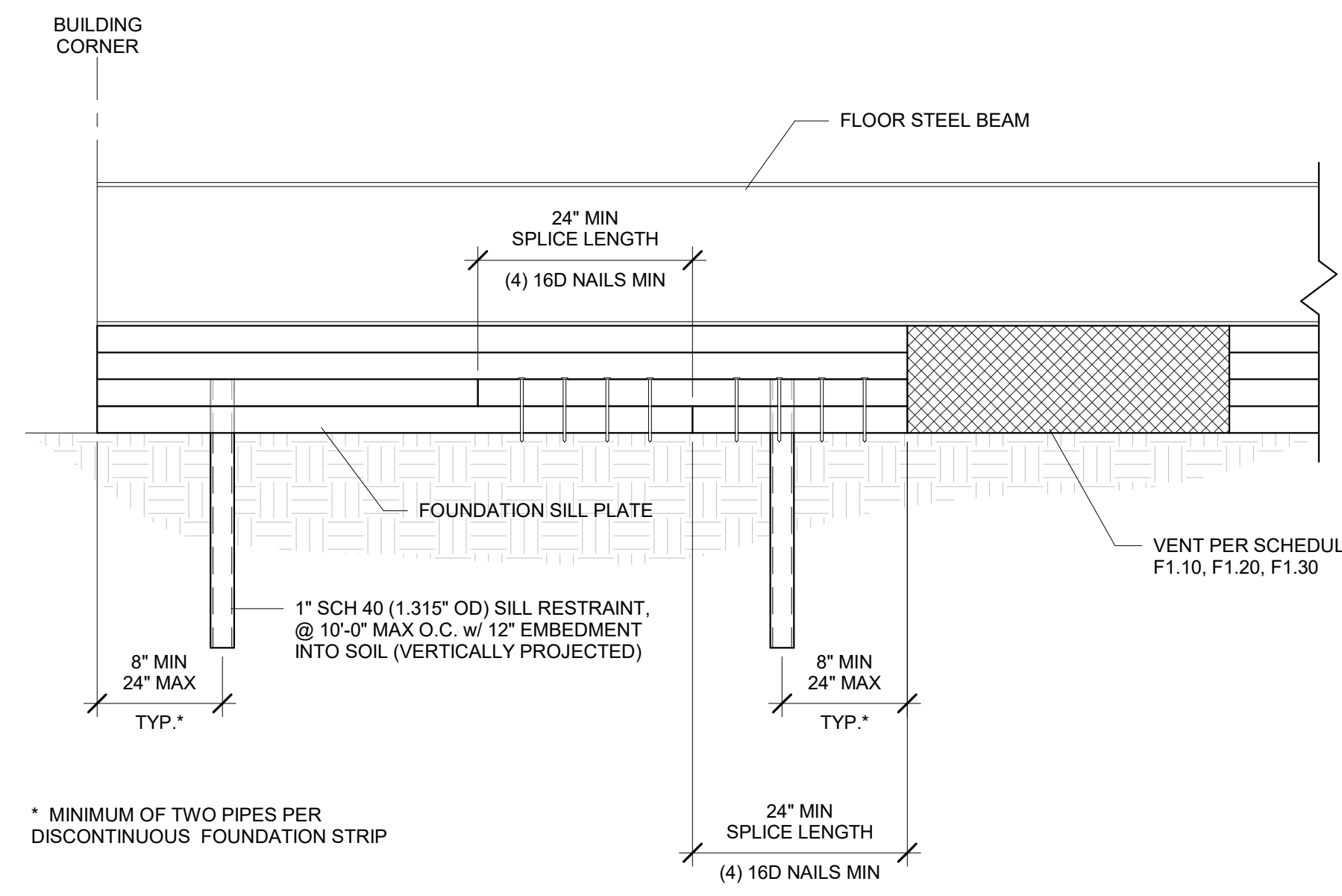
NOTE: (BASED ON DSA IR-16-1 SECTIONS 2.2.3, 2.3 AND 2.4. ANY BUILDING UNDER 2160 SOFT MAY BE LOWER THAN 16'. THE REQUIREMENT FOR PRESERVATIVE FLOOR FINISHES SHALL BE DETERMINED BY THE CLIENT'S APPOINTED AGENT.)



4 1 1/2" = 1'-0"
FOUNDATION PAD AT SEPERATION

5 3" = 1'-0"
SILL PLATE PROFILE

6 3" = 1'-0"
SHEAR PLATE



7 1 1/2" = 1'-0"
Splice at Sills

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 04-122805 INC.
REVIEWED FOR
SS FLS ACS
DATE: 09/28/2023

R&S TAVARES ASSOCIATES
DESIGN & CONSULTING PROJECT MEET
11500 W BERNARDO COURT, SUITE 100
SAN DIEGO, CA 92127
WWW.RSTAVARES.COM

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ARCHITECT
MANNY D. FLORES
03380
03/31/24
CALIFORNIA
STATE OF CALIFORNIA
05/24/23
RST#22088

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CLIENT

Class Leasing
1320 W. Oleander Ave, Perris CA 92571-7408
VOICE (951) 943-1908 Fax (951) 943-5768

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP. 04-121368 PC
REVIEWED FOR
SS FLS ACS CG
DATE: 09/22/2023

Revision Schedule

#	Description	Date

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
PC 2022 CBC:24' x 40' EXPANDABLE TO 120' x 40'

SHEET TITLE
WOOD FOUNDATION DETAILS

PROJECT NUMBER
22088

DRAWN BY
rMc/SC

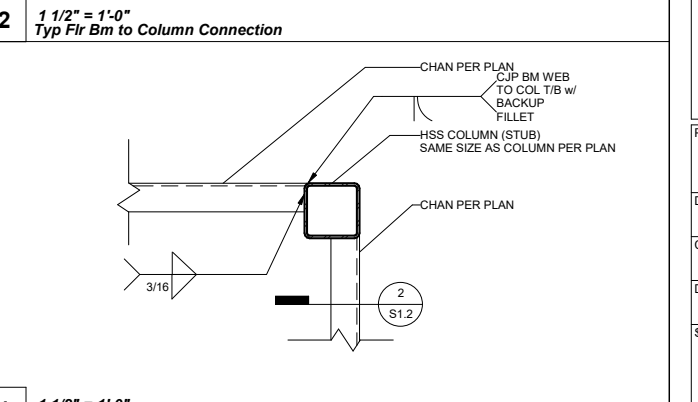
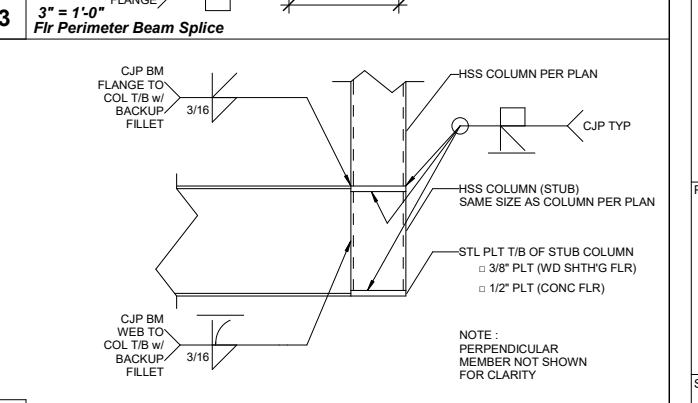
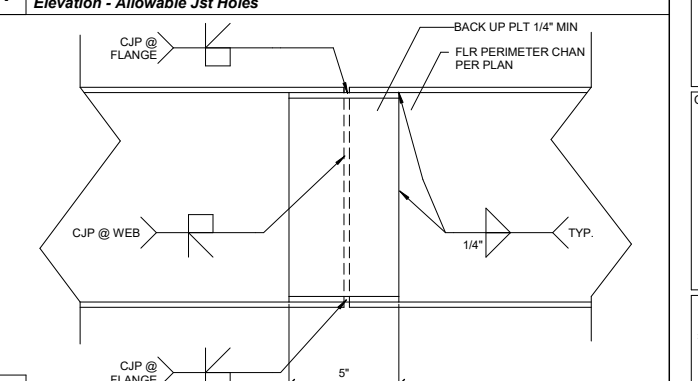
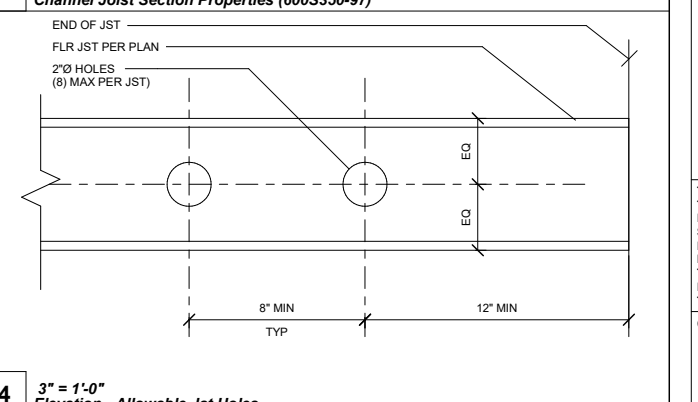
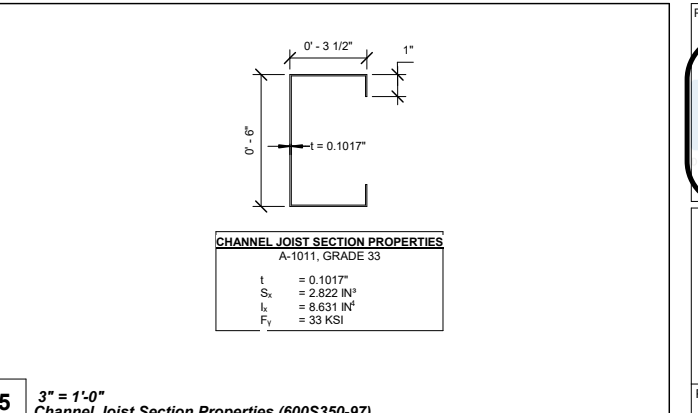
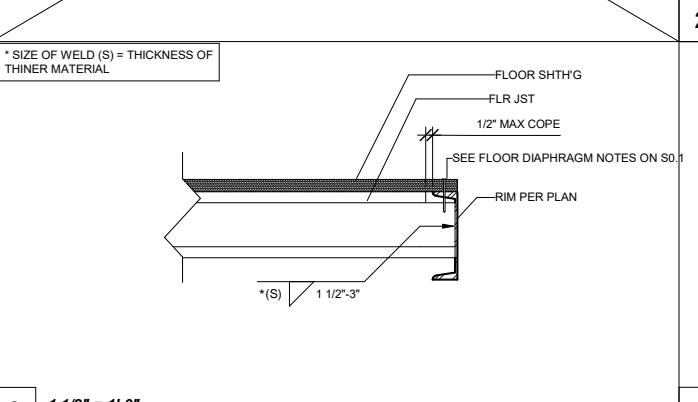
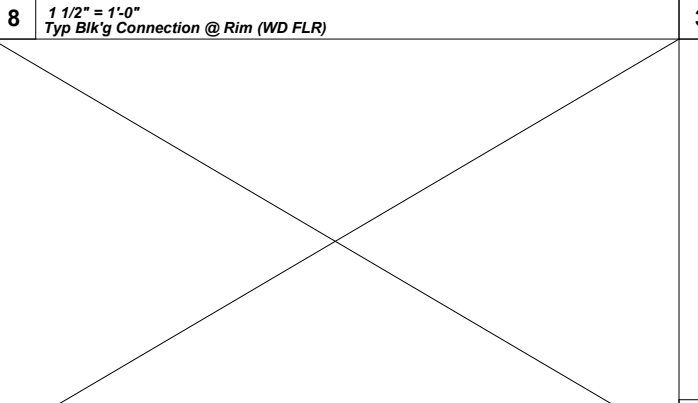
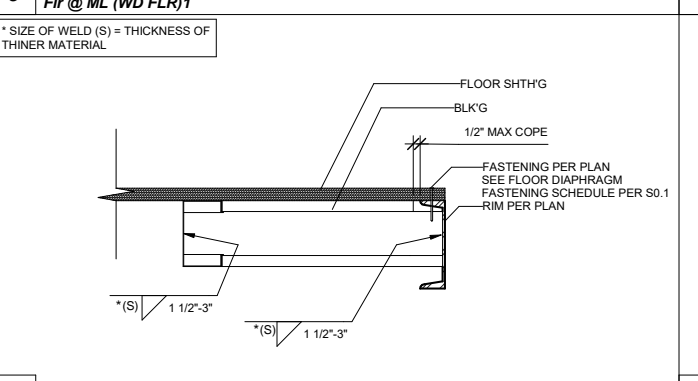
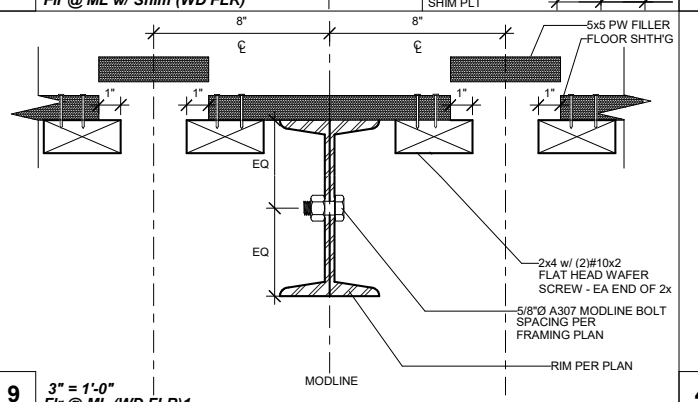
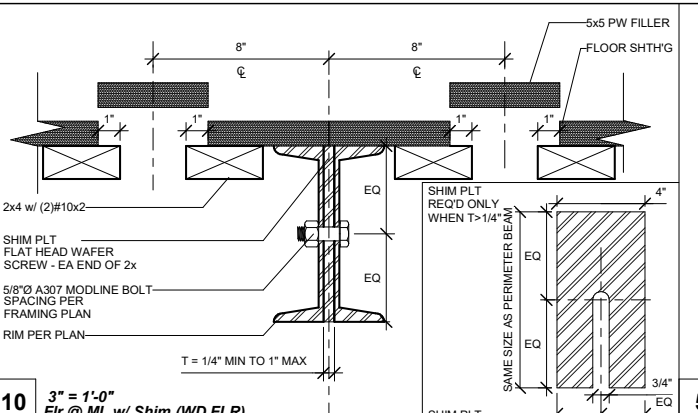
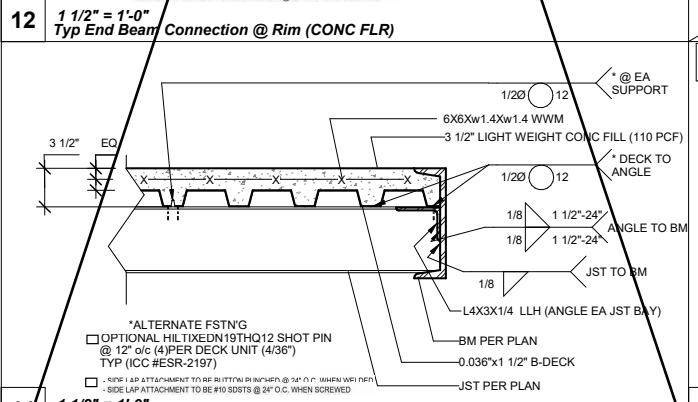
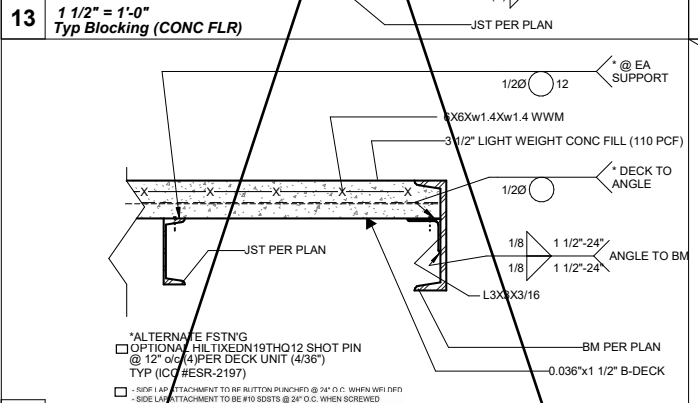
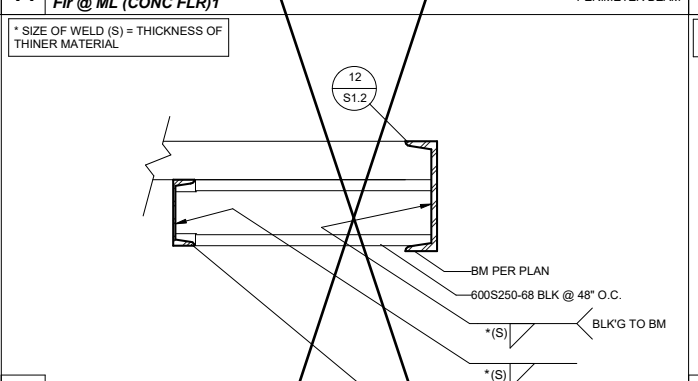
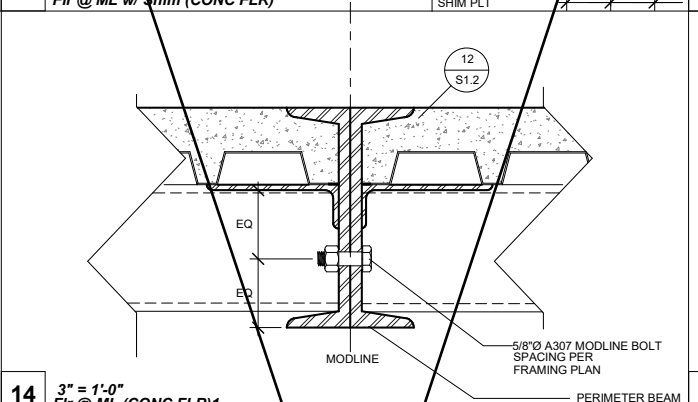
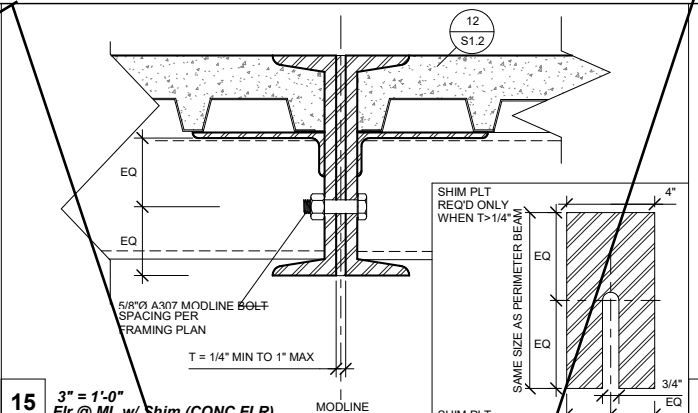
CHECKED BY
JA/RT

DATE

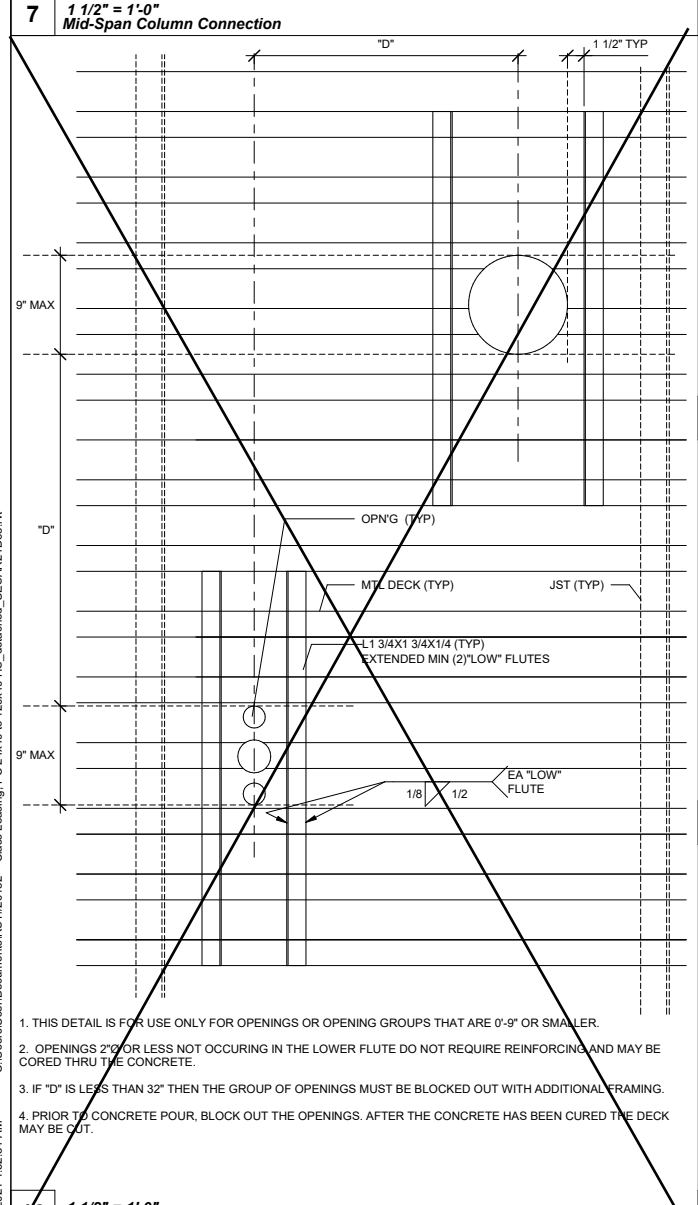
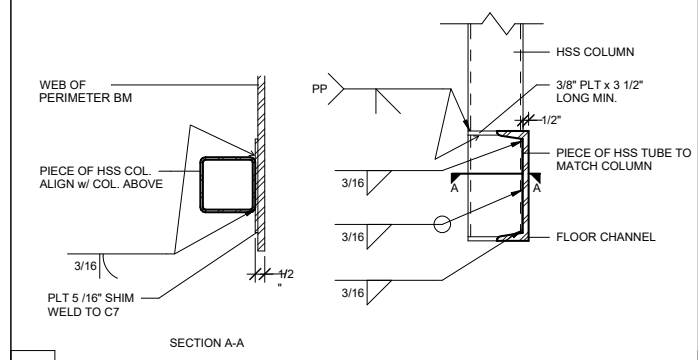
SHEET NO.
F1.40

SHEET OF

BH-36 METAL DECK PROPERTIES & PROFILE					
PLAN DESIGNATION	DECK TYPE	MINIMUM EFFECTIVE PROPERTIES			DECK PROFILE
		S_x IN ² /FT	S_y IN ² /FT	I_x IN ⁴ /FT	
1-12'-18GA ABC BH-36 GALV DECK (2" WIDE)		0.311	0.329	0.287	
		0.313			



20 1 1/2" = 1'-0" BH-36 Metal Deck Properties & Profile



16 1 1/2" = 1'-0" Typ Deck Penetrations (CONC FLR)

CHANNEL JOIST SECTION PROPERTIES	
A-1011, GRADE 33	
t	= 0.1017"
S _x	= 2.822 IN ²
I _x	= 8.631 IN ⁴
F _y	= 33 KSI

PROJECT SPECIFIC STATE AGENCY APPROVAL
 APPROVED
 DIV. OF THE STATE ARCHITECT
 APP. 04-122805 INC.
 REVIEWED FOR
 SS FLS ACS
 DATE: 10/17/23

R&S TAVARES ASSOCIATES
 DESIGN & CONSTRUCTION PROJECT MGMT
 1150 W BERNHARD COUNTY, SUITE 100
 SAN DIEGO, CA 92117
 WWW.R&STAVARES.COM

PROFESSIONAL STAMP

 REGISTERED PROFESSIONAL ENGINEER
 MANNY D. FRASCA
 No. 63380
 03/31/24
 STATE OF CALIFORNIA
 RSTW22088

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CLIENT
Class Leasing
 1320 W. Oleander Ave., Perris CA 92571-7408
 VOICE (951) 943-1908/Fax (951) 943-5768

ORIGINAL PC STATE AGENCY APPROVAL
 APPROVED
 DIV. OF THE STATE ARCHITECT
 APP. 04-121369 PC
 REVIEWED FOR
 SS FLS ACS CG
 DATE: 09/22/2023

Revision Schedule		
#	Description	Date
1	AMEND CALL OUT PER CALCS	10-11-23

PRE-CHECK (PC) DOCUMENT
 Code: 2022 CBC
 A separate project application for construction is required

PROJECT TITLE
PC 2022 CBC:24' x 40' EXPANDABLE TO 120' x 40'

SHEET TITLE
STRUCTURAL DETAILS (FLOOR)

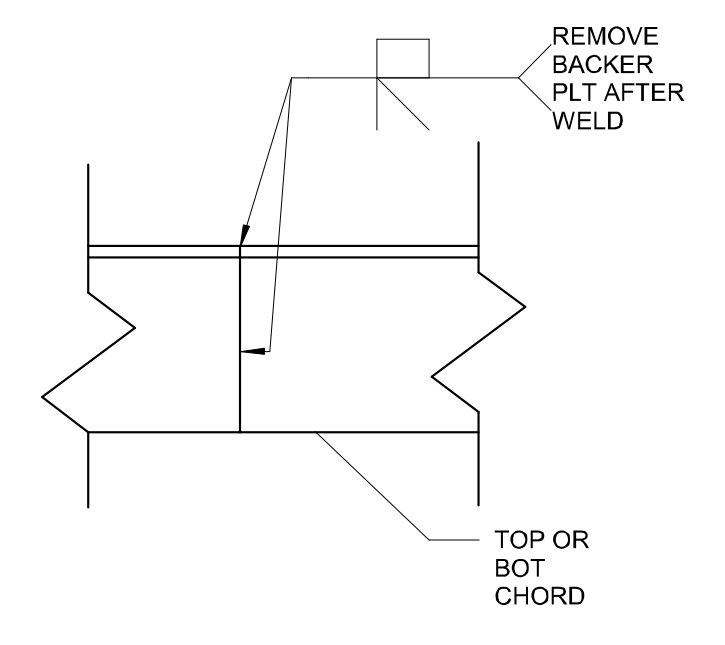
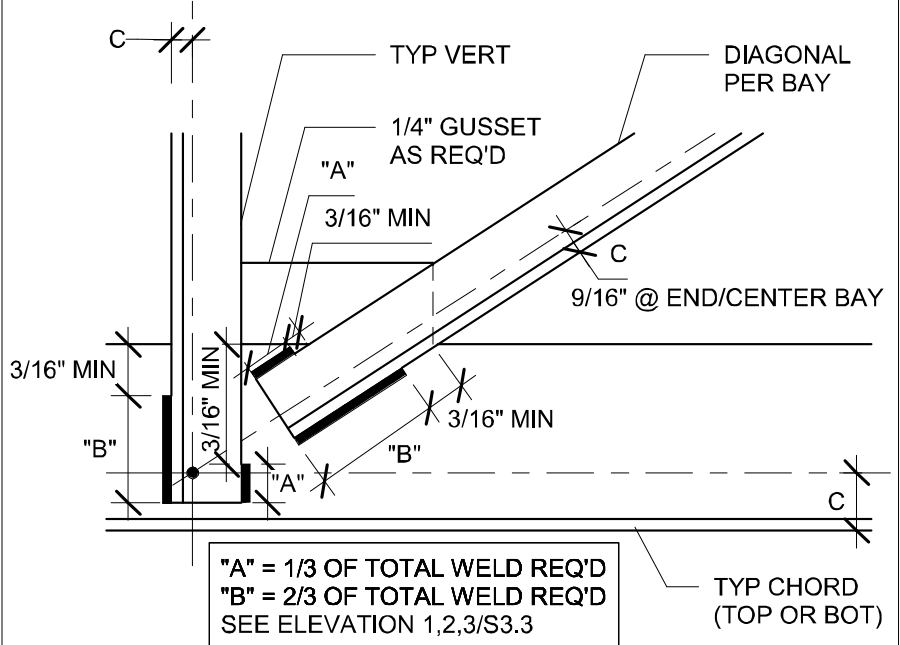
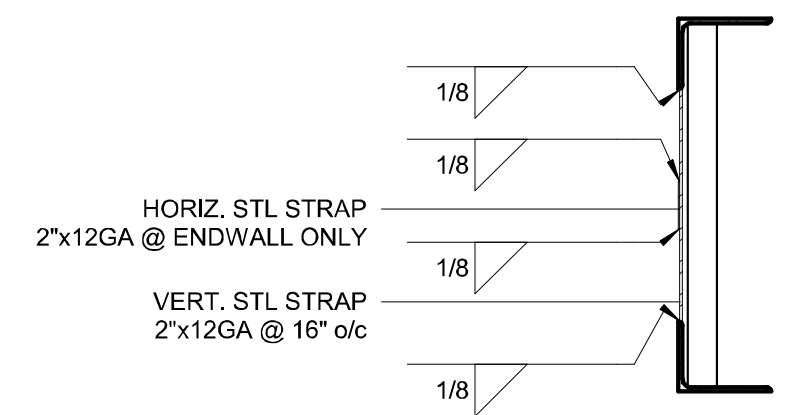
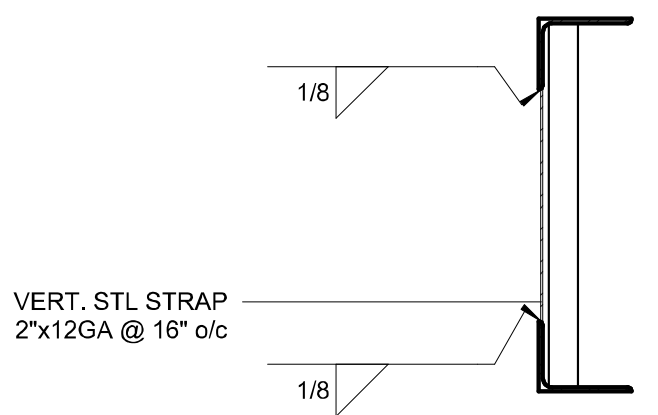
PROJECT NUMBER
 22088
 DRAWN BY
 rMc/SC
 CHECKED BY
 JA/RT
 DATE

SHEET NO.
S1.2

CCD_001

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TABLE A-SECTION CENTROID	
SECTION	CENTROID C
L4X3 (LLV)	1 1/4"
L4X3 (LLH)	3/4"
L2X2X3/16	9/16"
L1.5X1.5X3/16	7/16"

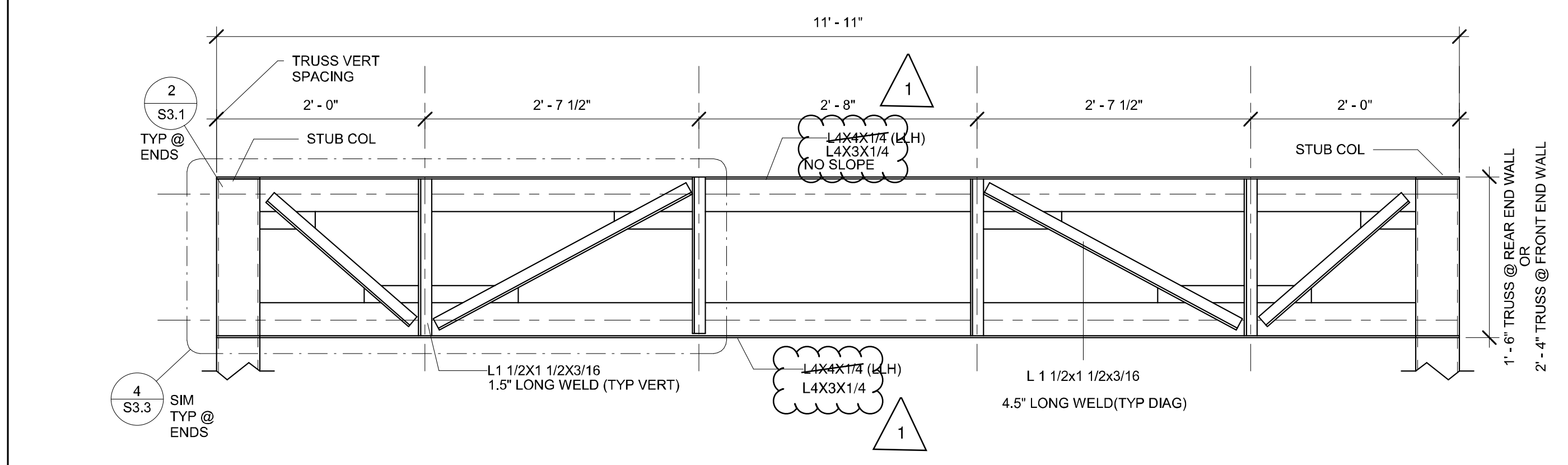


1/2" = 1'-0"
TABLE A - SECTION CENTROID

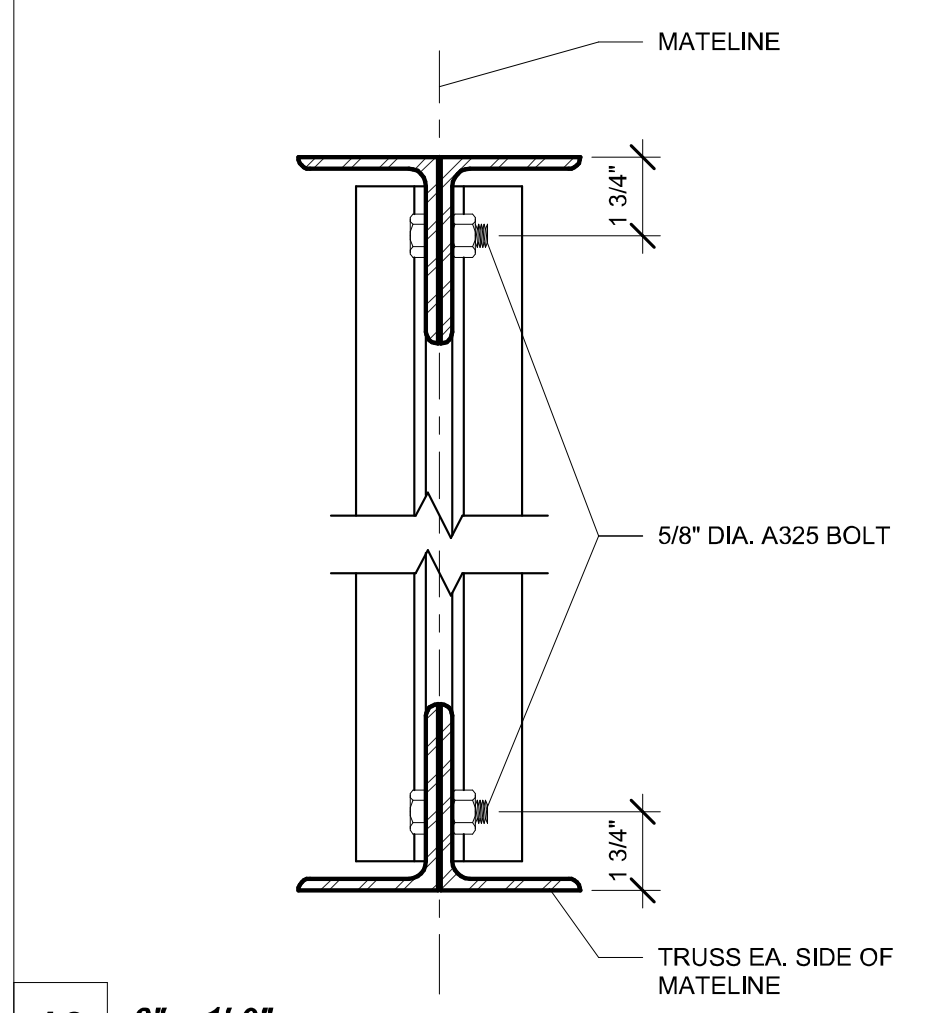
NOTE: SEE DETAIL 8 / S3.3

3" = 1'-0"
Typ Fillet Weld Lengths

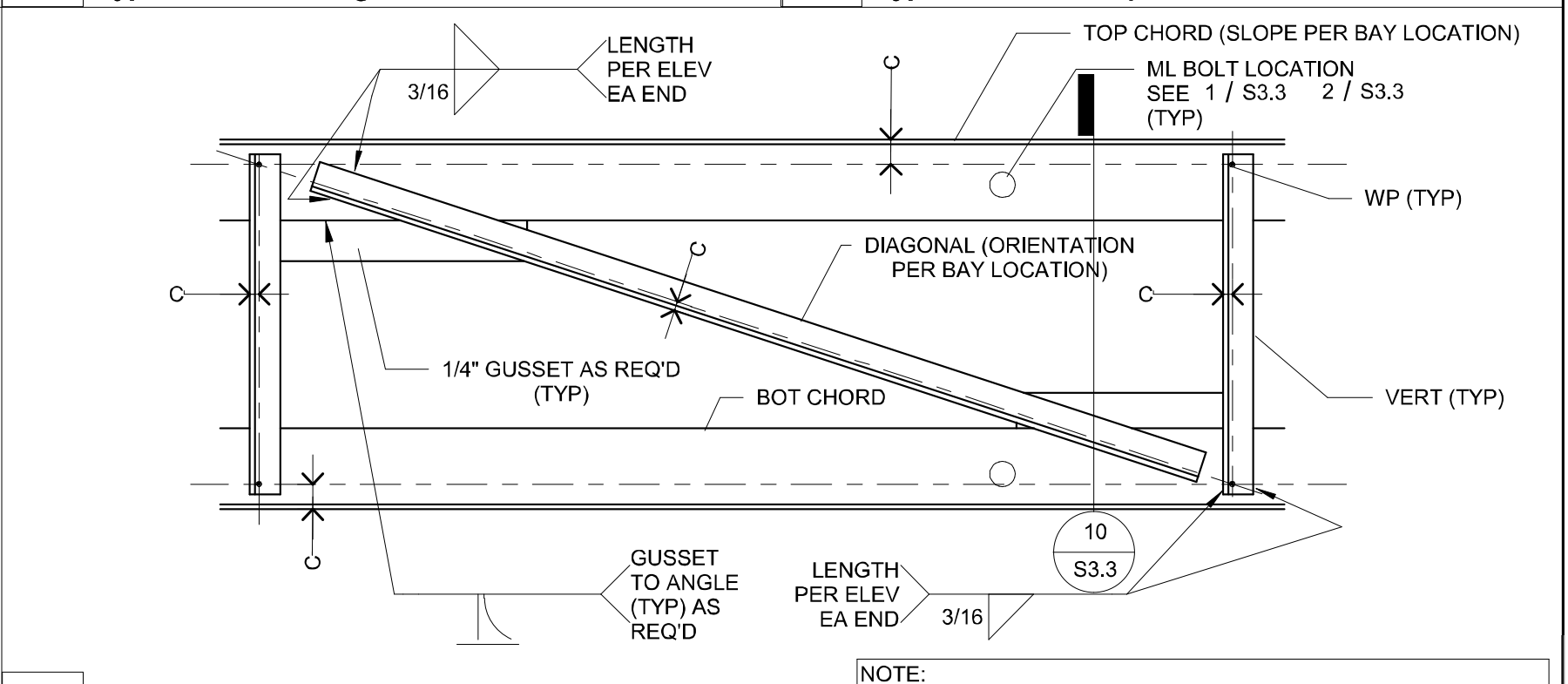
3" = 1'-0"
Typ Truss Chord Splice



1" = 1'-0"
End Wall Truss

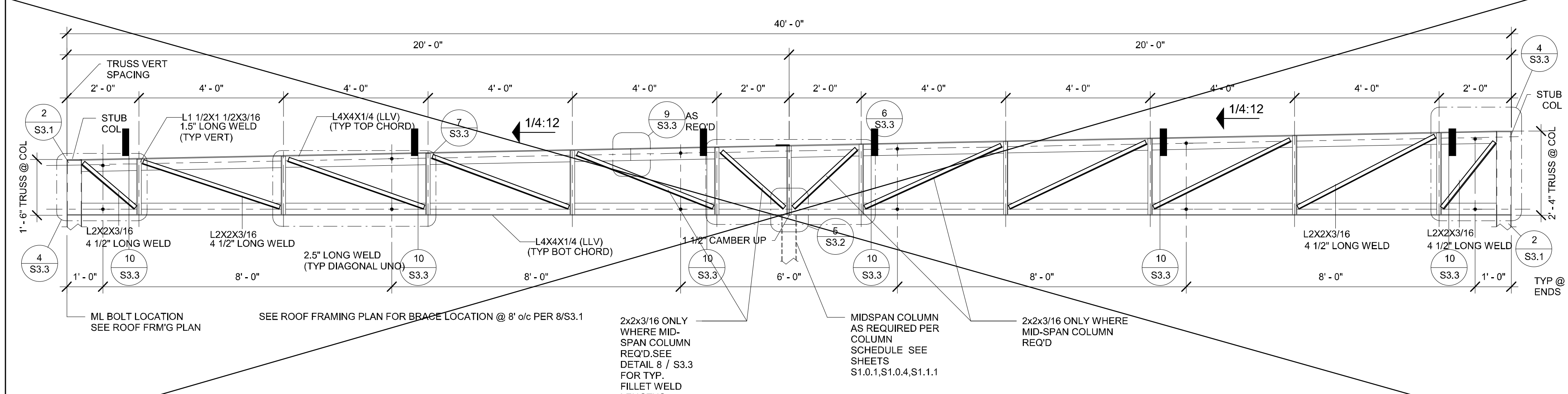


3" = 1'-0"
TRUSS CONN. @ MATELINE

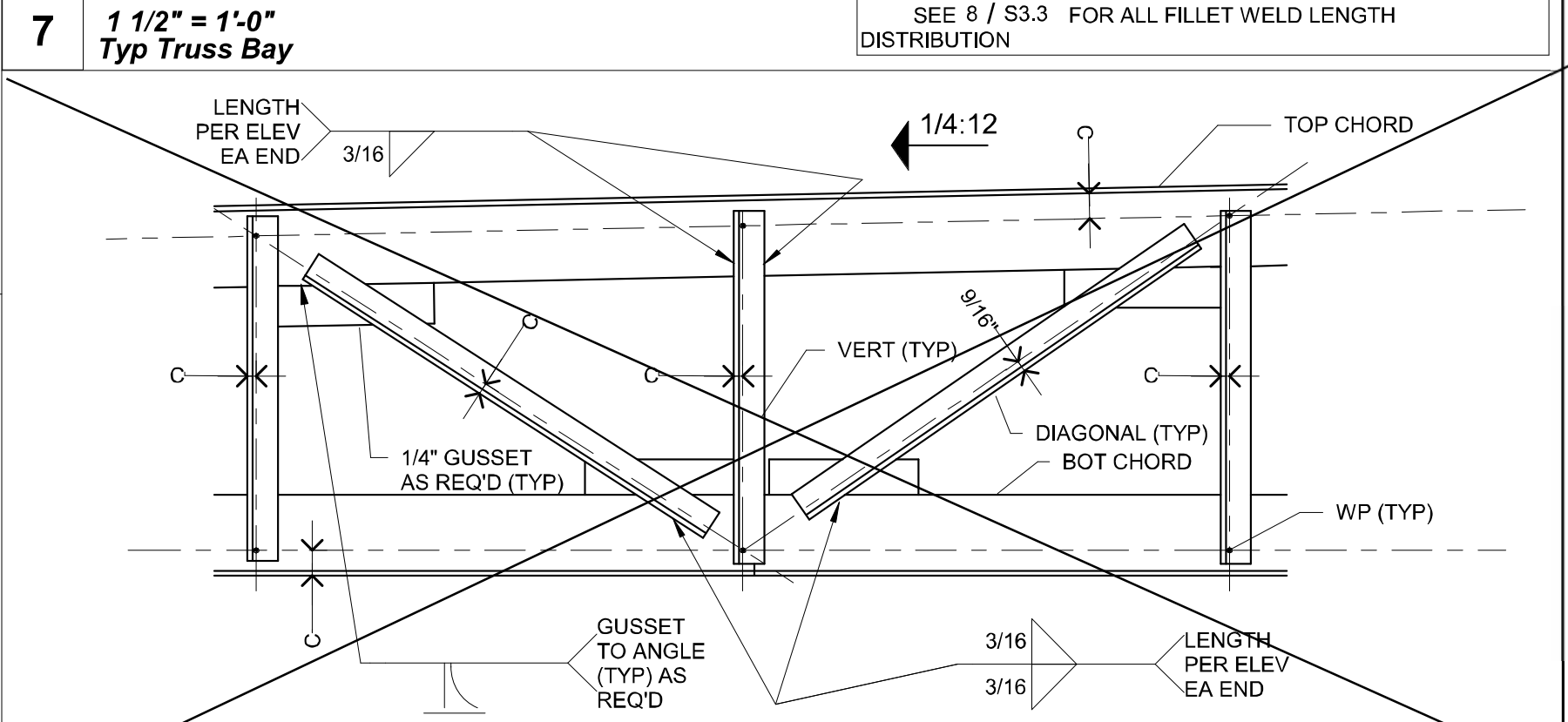


1 1/2" = 1'-0"
Typ Truss Bay

NOTE: SEE 8 / S3.3 FOR ALL FILLET WELD LENGTH DISTRIBUTION

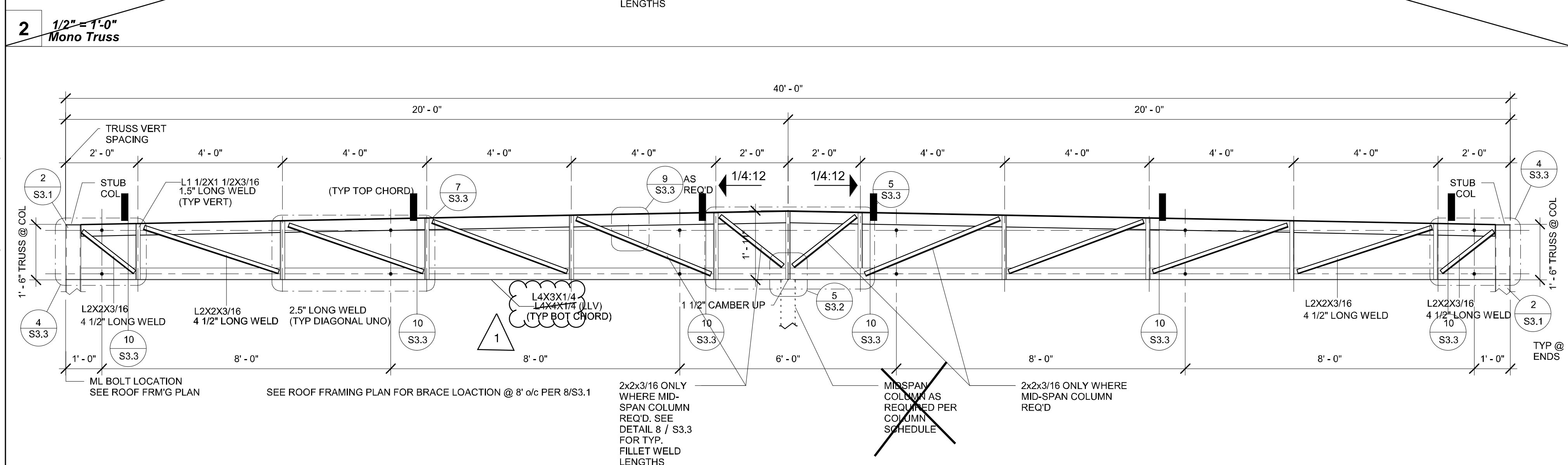


1/2" = 1'-0"
Mono Truss

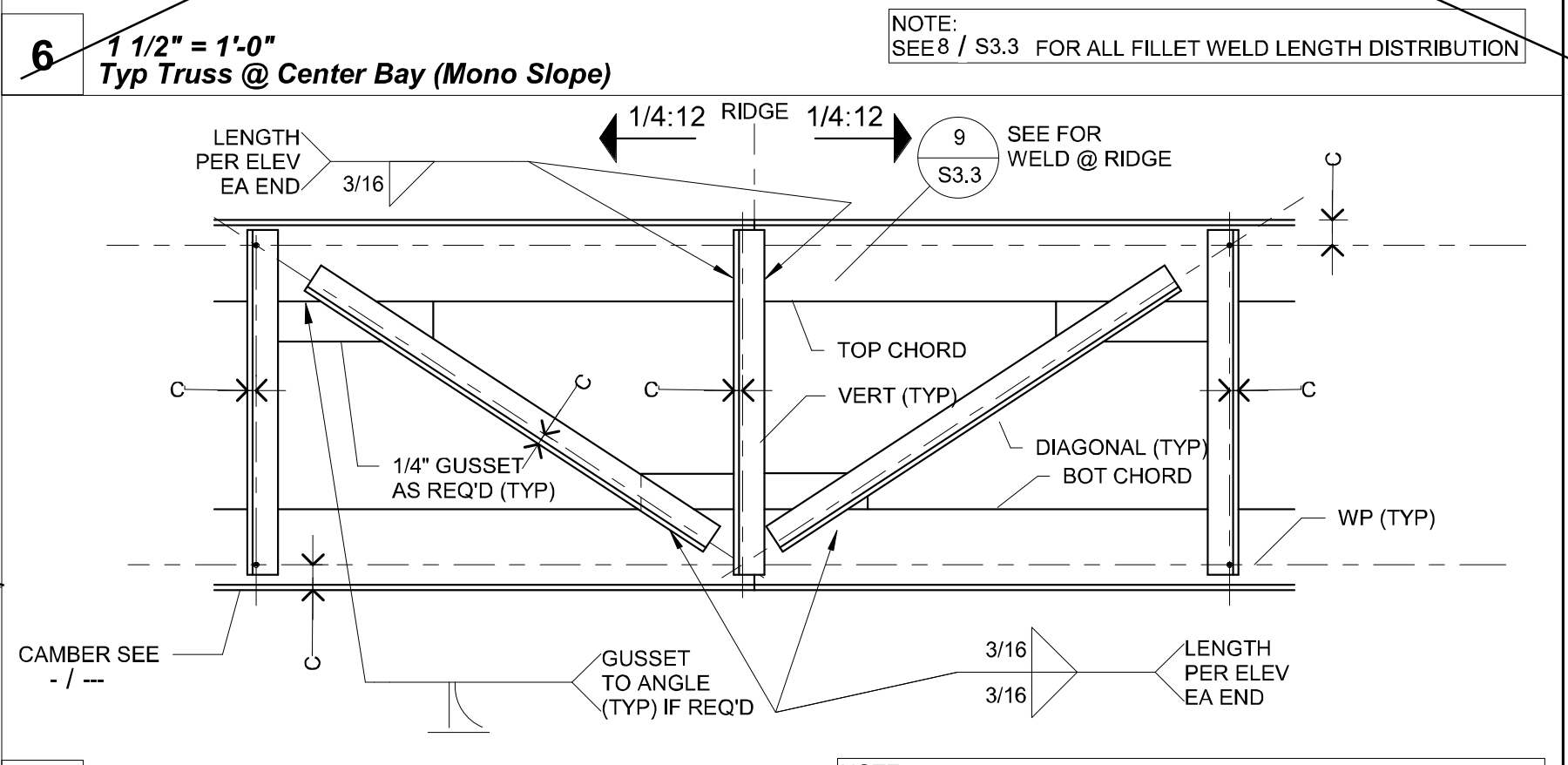


1 1/2" = 1'-0"
Typ Truss @ Center Bay (Mono Slope)

NOTE: SEE 8 / S3.3 FOR ALL FILLET WELD LENGTH DISTRIBUTION

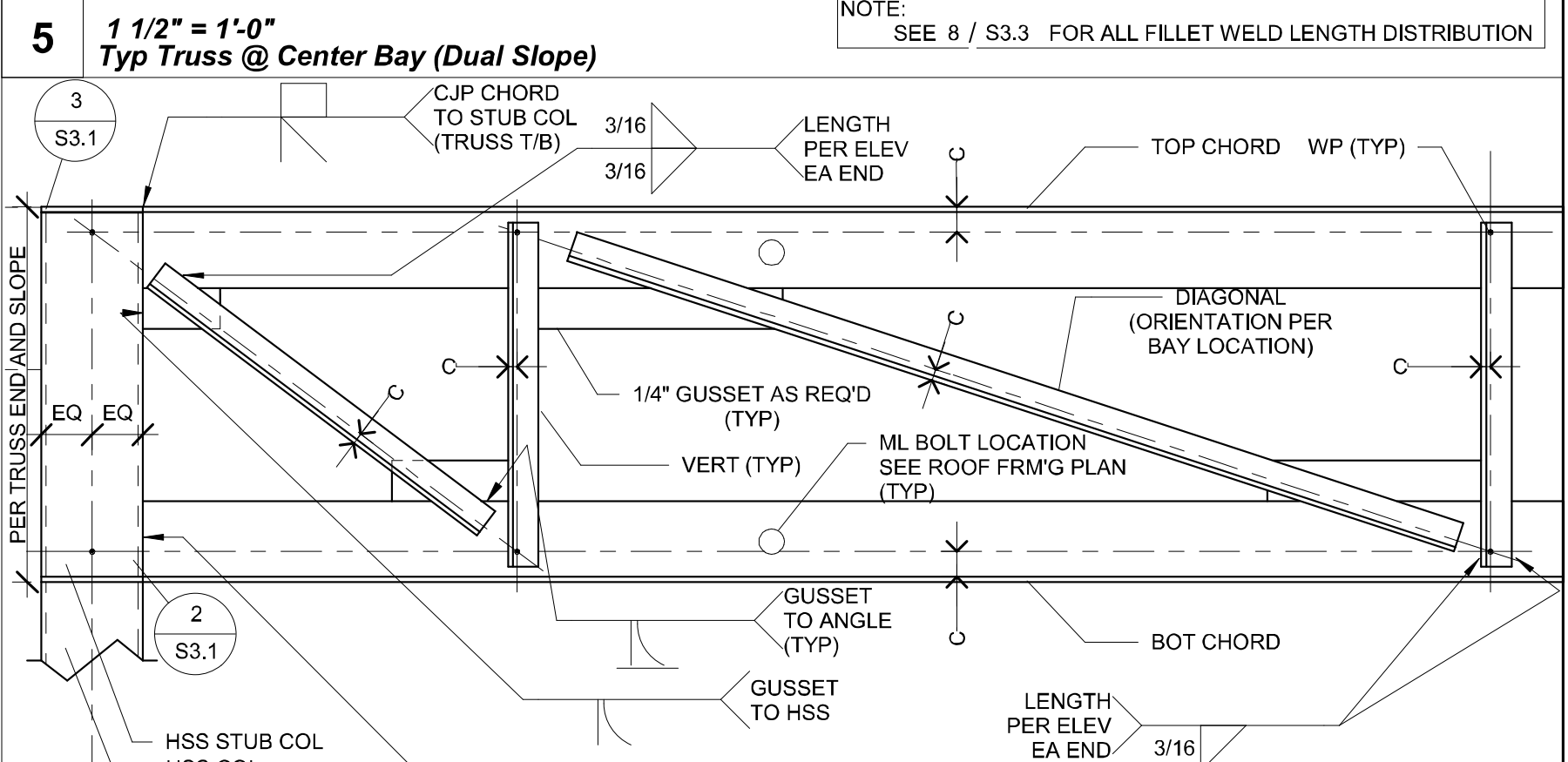


1/2" = 1'-0"
Dual Truss



1 1/2" = 1'-0"
Typ Truss @ Center Bay (Dual Slope)

NOTE: SEE 8 / S3.3 FOR ALL FILLET WELD LENGTH DISTRIBUTION



1 1/2" = 1'-0"
Typ End Bay to Stub Conn

NOTE: SEE 8 / S3.3 FOR ALL FILLET WELD LENGTH DISTRIBUTION

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 04-122805 INC.
REVIEWED FOR
SS FLS ACS
DATE: 09/28/2023

R&S TAVARES ASSOCIATES
DESIGN • CONSULTING • PROJECT MGMT
11550 W. BISHOP AVENUE, SUITE 100
SAN DIEGO, CA 92127
WWW.RSTAVARES.COM

PROFESSIONAL STAMP

MANLY D. FERRELL
REGISTERED PROFESSIONAL ARCHITECT
NO. 13380
03/31/24
STATE OF CALIFORNIA
05/24/23
RST17422088

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CLIENT

Class Leasing
1320 W. Oleander Ave. Perris CA 92571-7408
VOICE (951) 943-1908 FAX (951) 943-5768

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121368 PC
SS FLS ACS CG
DATE: 09/22/2023

#	Revision Description	Date
1	AMEND CALL OUT PER CALCS	10-11-23

PRE-CHECK (PC) DOCUMENT
CODE: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
PC 2022 CBC: 24' x 40'
EXPANDABLE TO
120' x 40'

SHEET TITLE
ROOF PERIMETER TRUSS

PROJECT NUMBER
22088

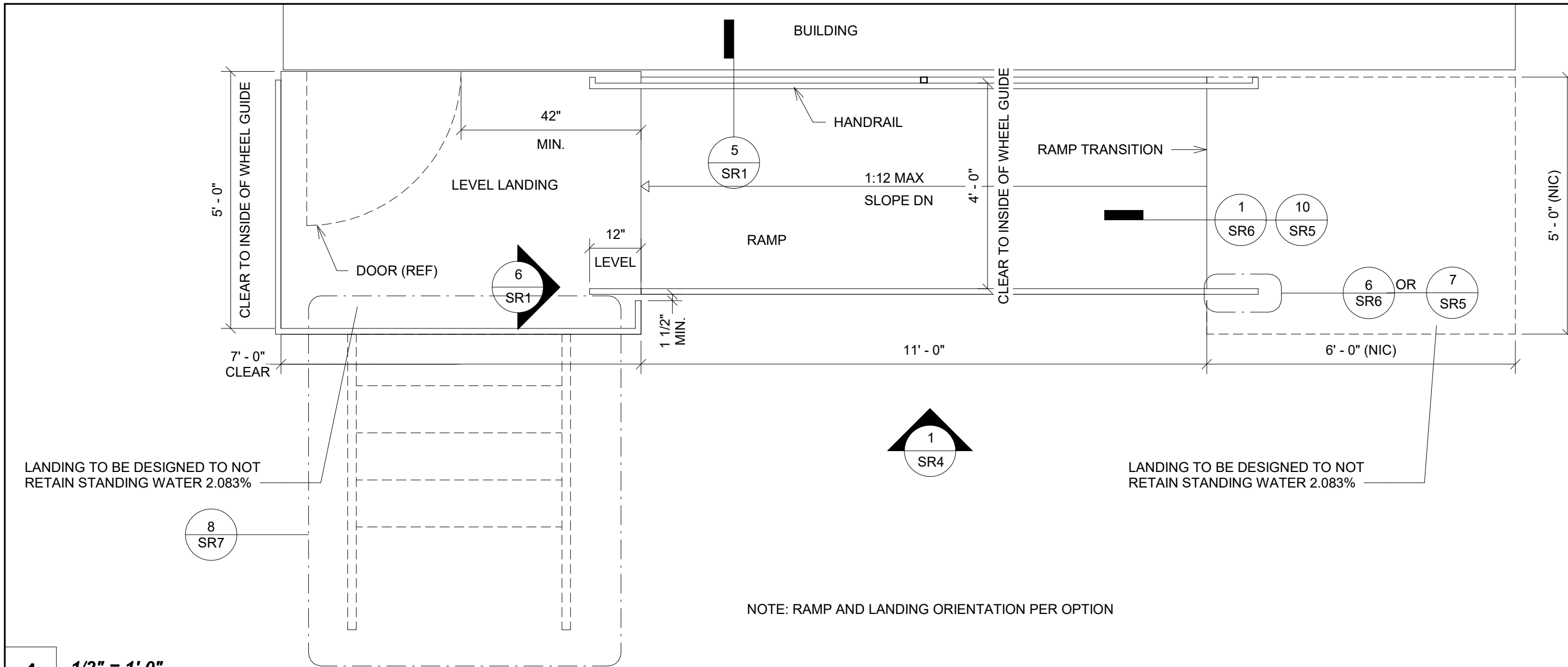
DRAWN BY
rMc/SC

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RH/RT

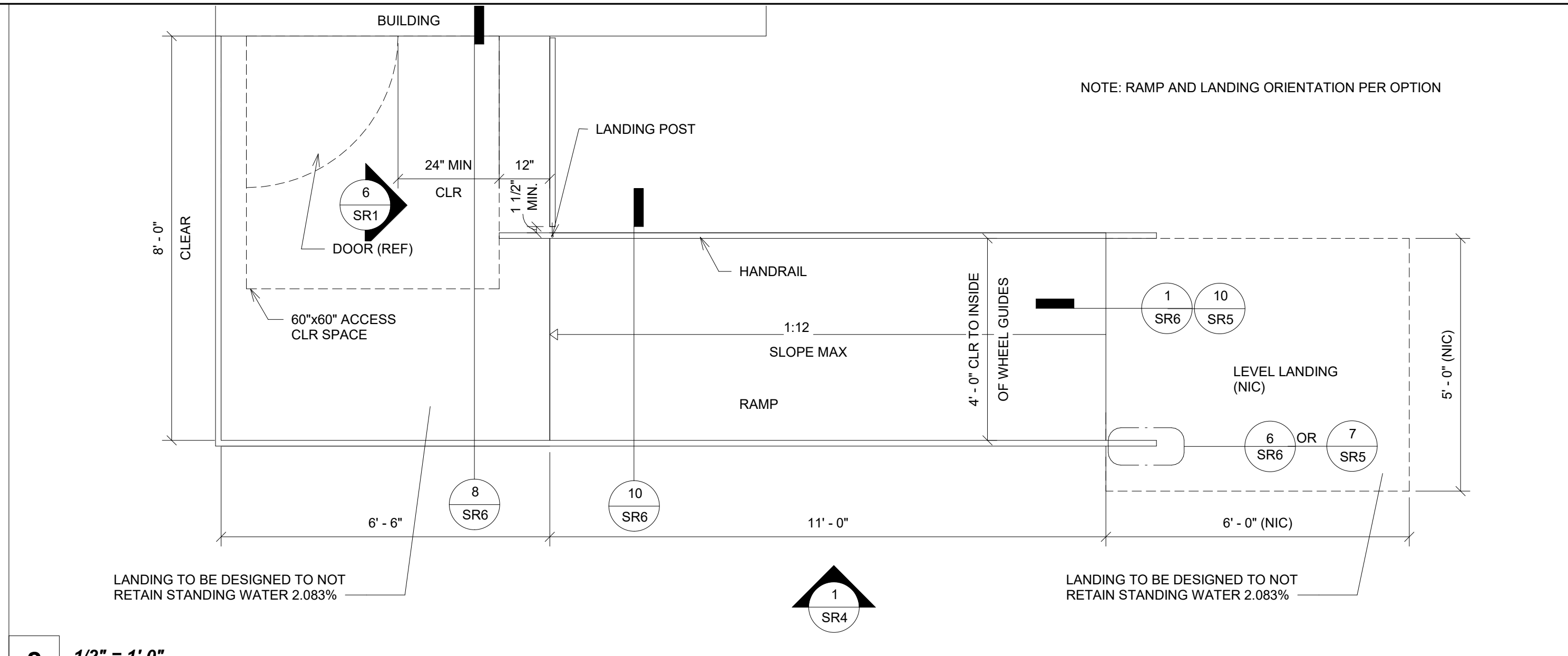
DATE

SHEET NO.
S3.3

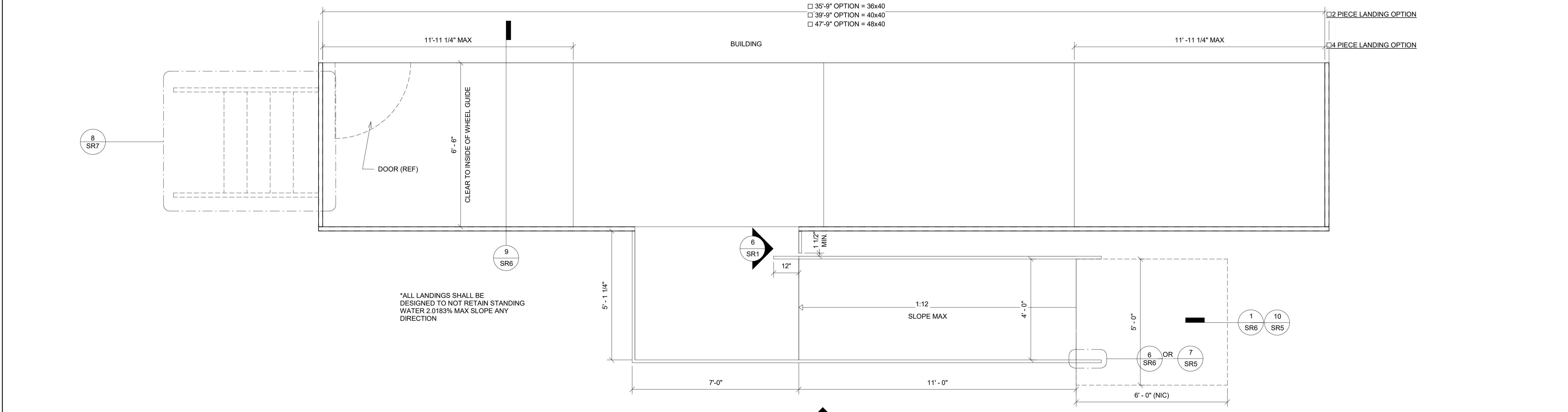
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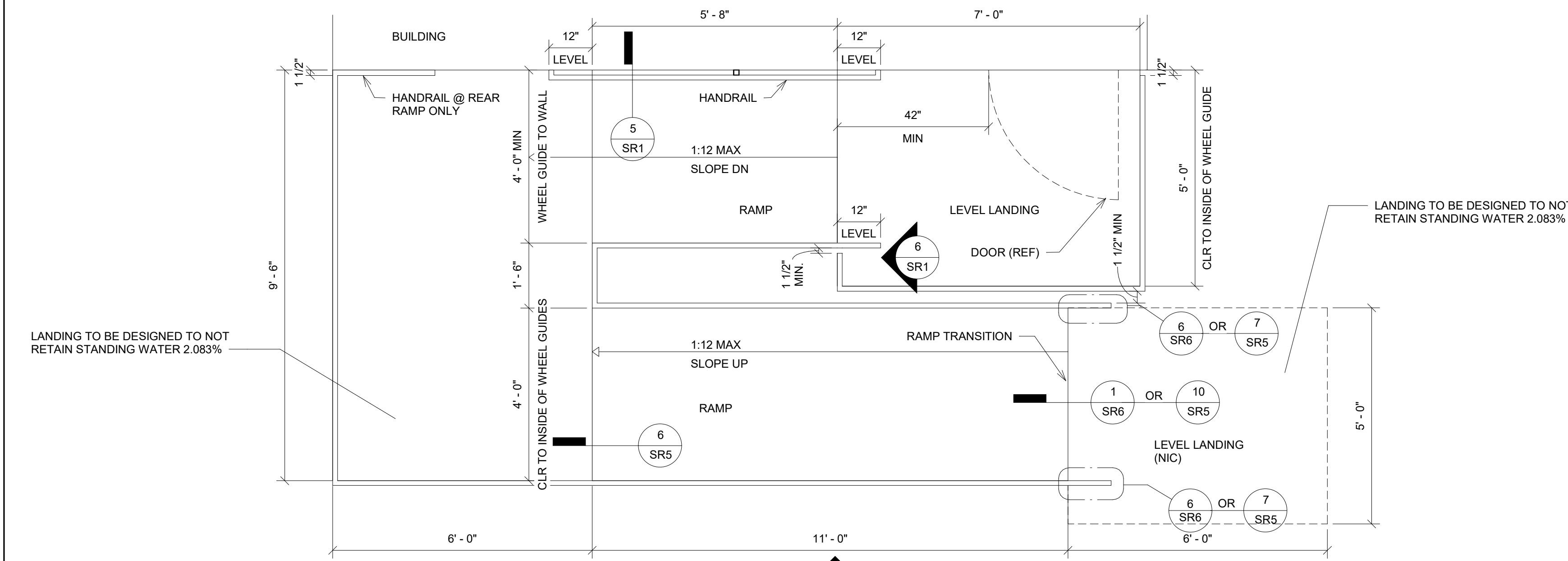
1 1/2" = 1'-0"
Ramp & Landing @ Building



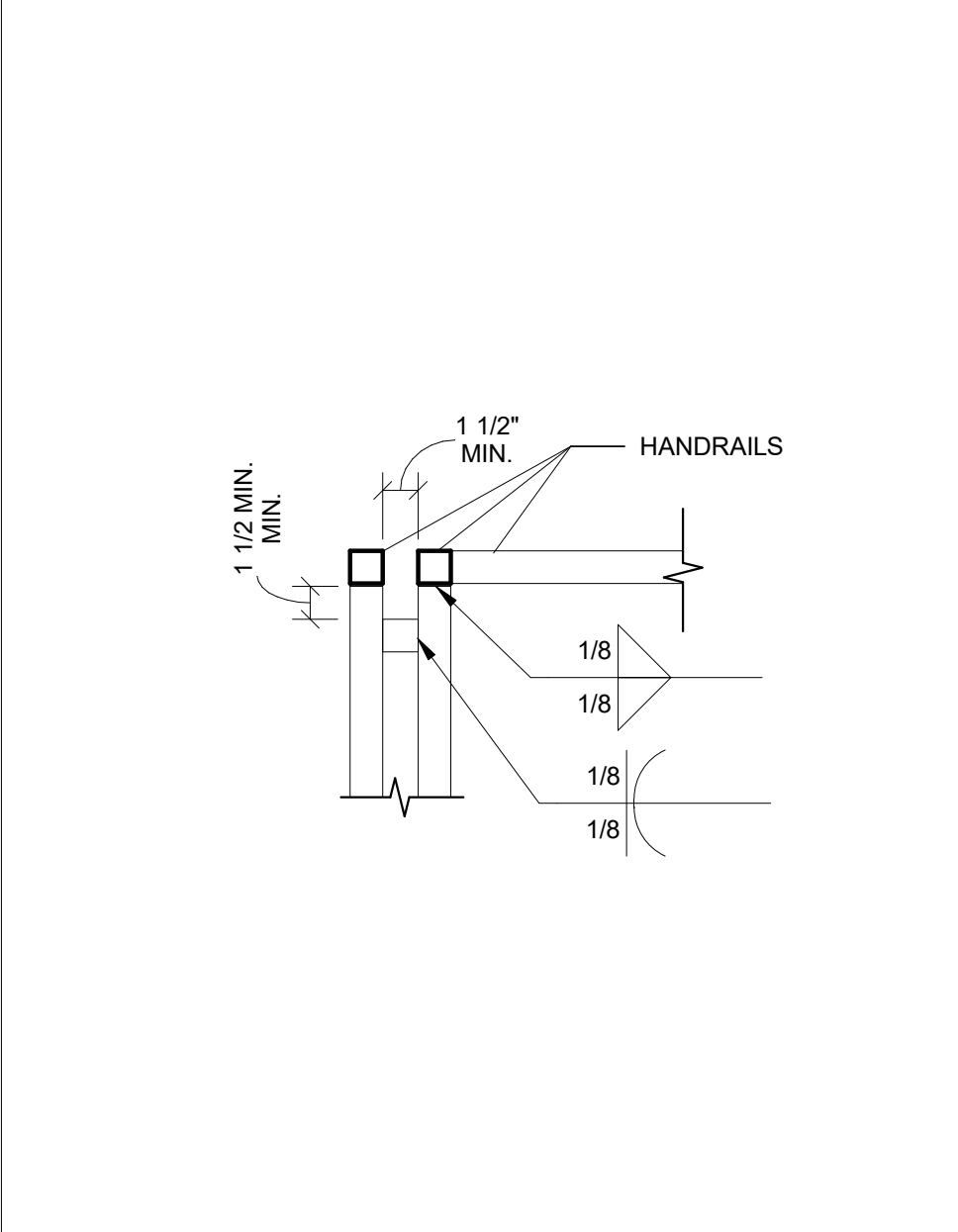
2 1/2" = 1'-0"
Ramp & Landing w/ Offset Ramp



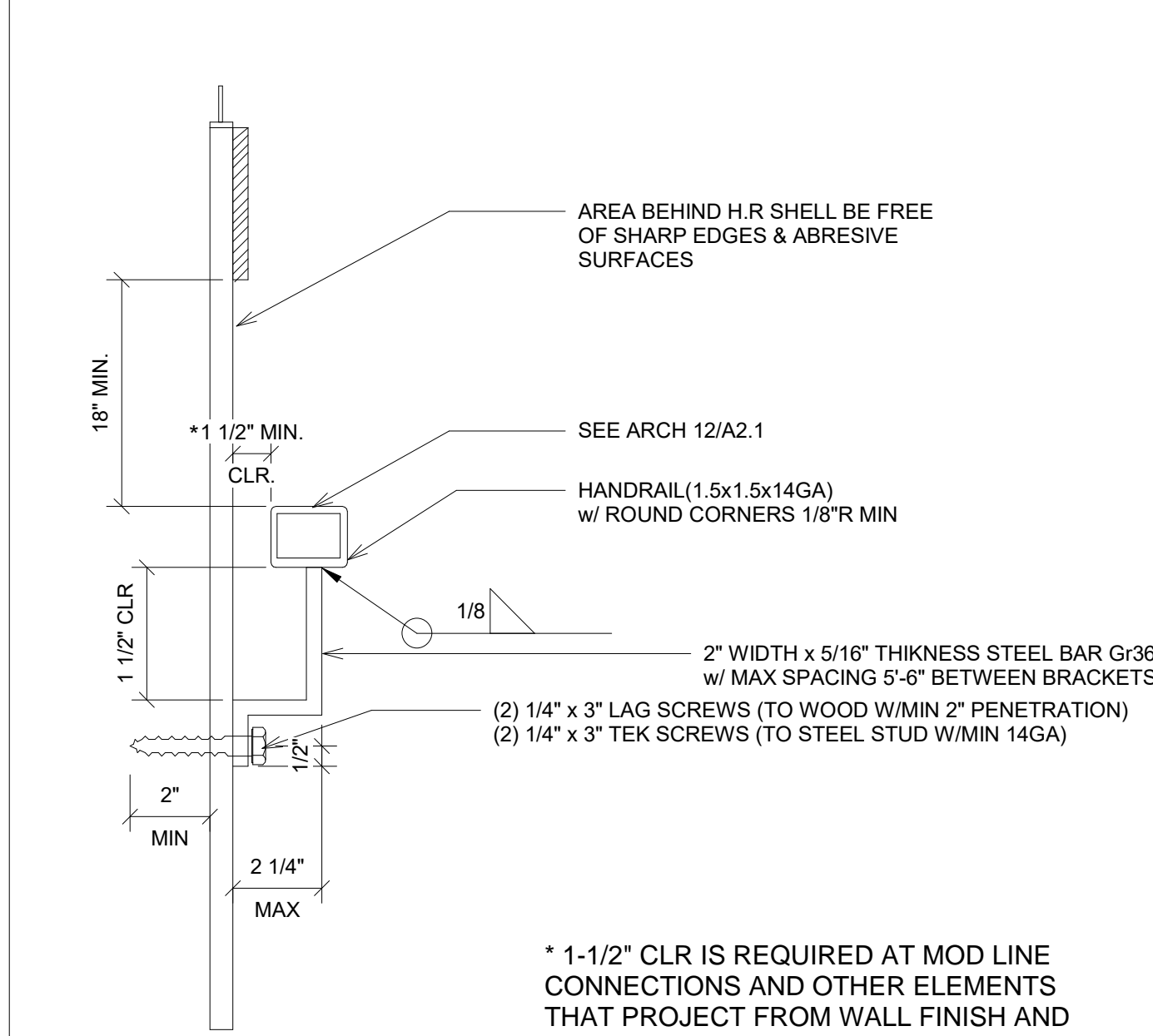
3 1/2" = 1'-0"
Ramp and Platform Landing



4 1/2" = 1'-0"
Ramp & Landing w/ Switch Back Ramp

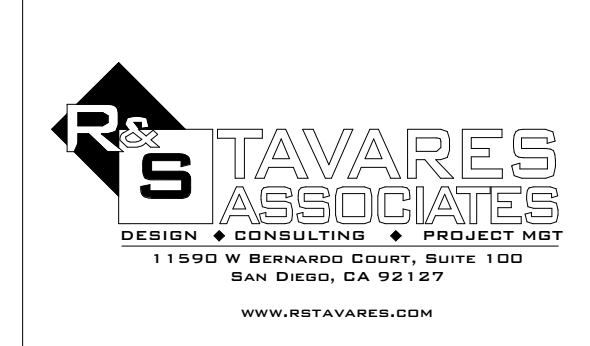


6 1 1/2" = 1'-0"
RAMP & LANDING CONNECTION @ RAILS

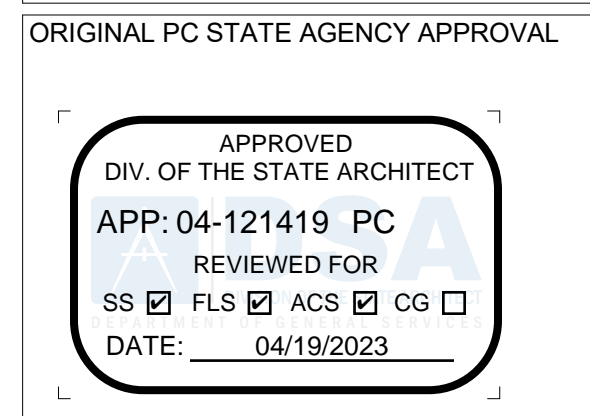


5 3" = 1'-0"
Handrail

PROJECT SPECIFIC STATE AGENCY APPROVAL



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Revision Schedule		
#	Description	Date
22079		

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

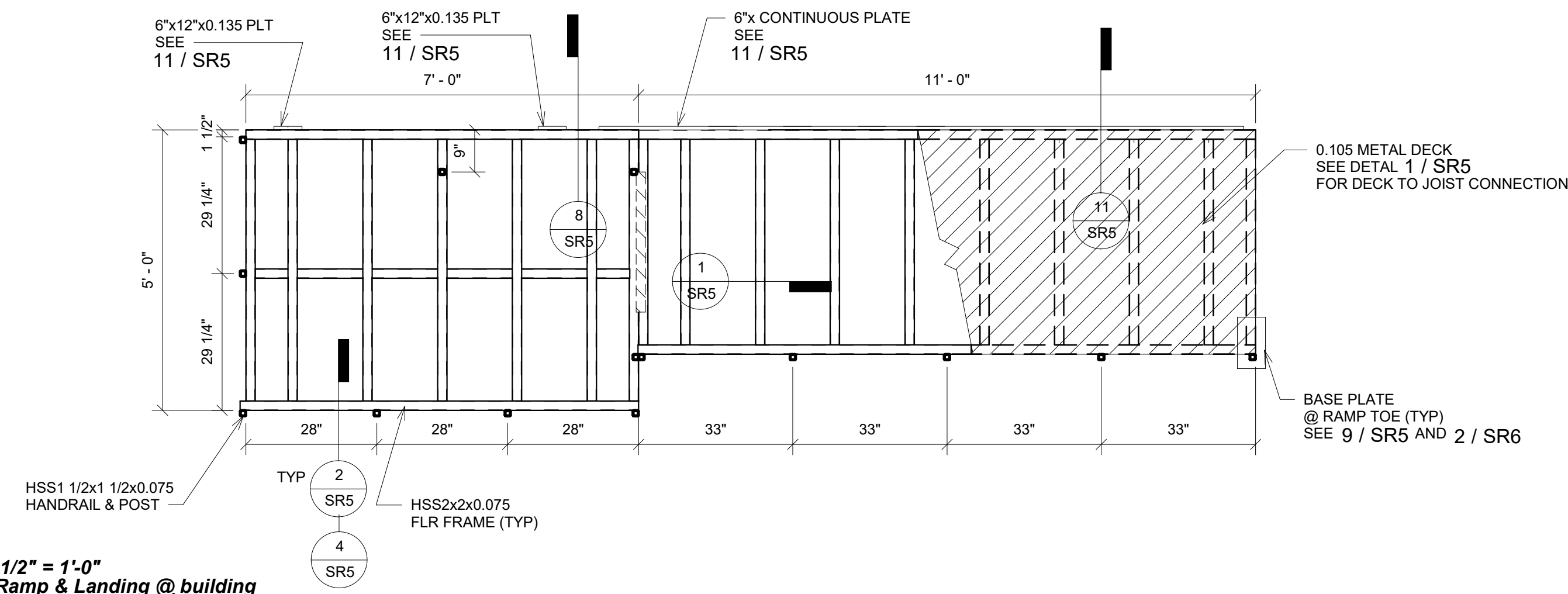
PROJECT TITLE
RAMPS PC
CLASS LEASING
PC#04-121419

SHEET TITLE
Ramp and Landing Plan

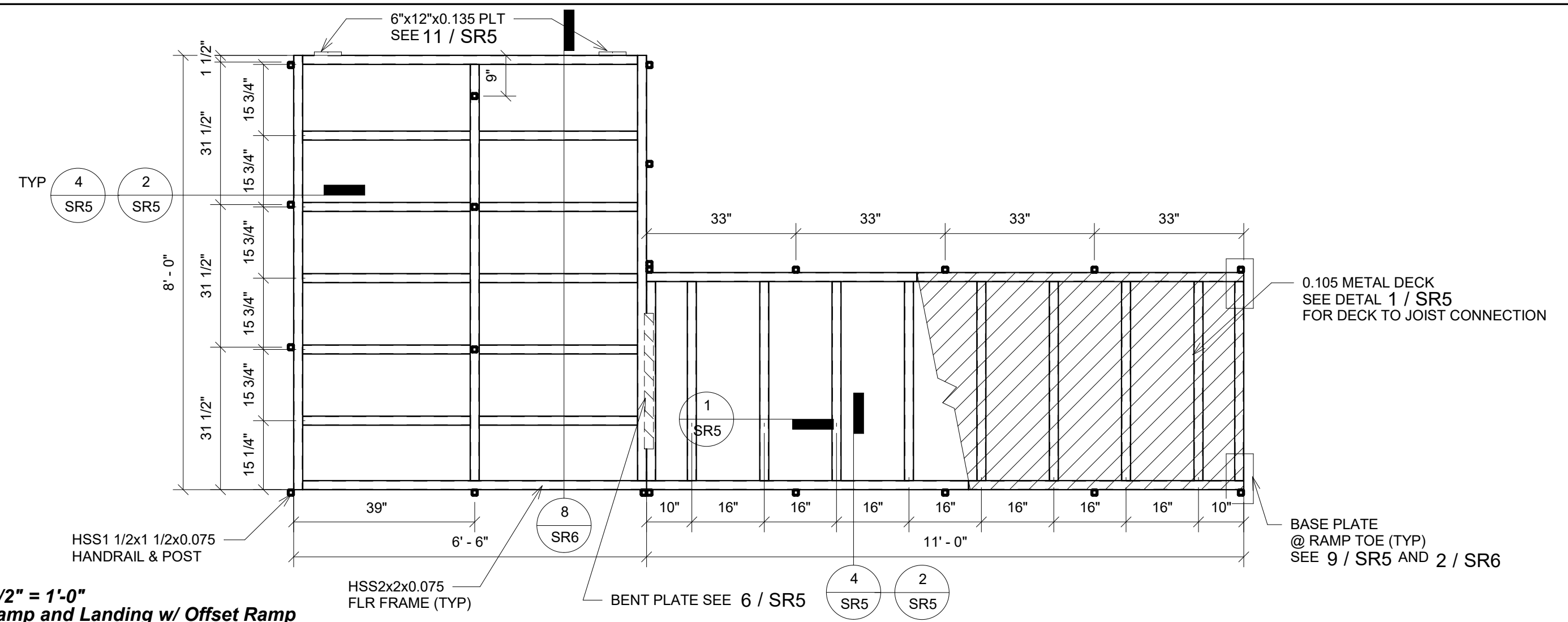
PROJECT NUMBER: 22079
DRAWN BY: SM
CHECKED BY: rMc
DATE: 12/23/2022
SHEET NO.: **SR1**
SHEET OF

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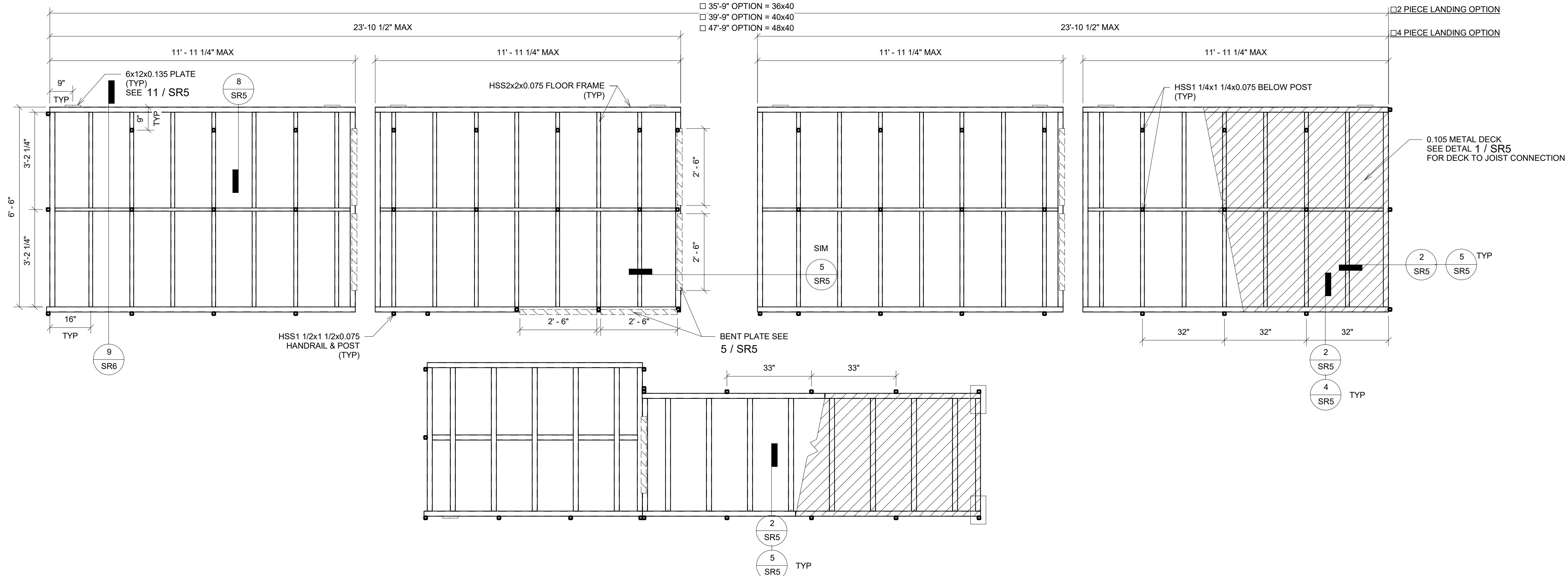
1 1/2" = 1'-0"
Ramp & Landing @ building



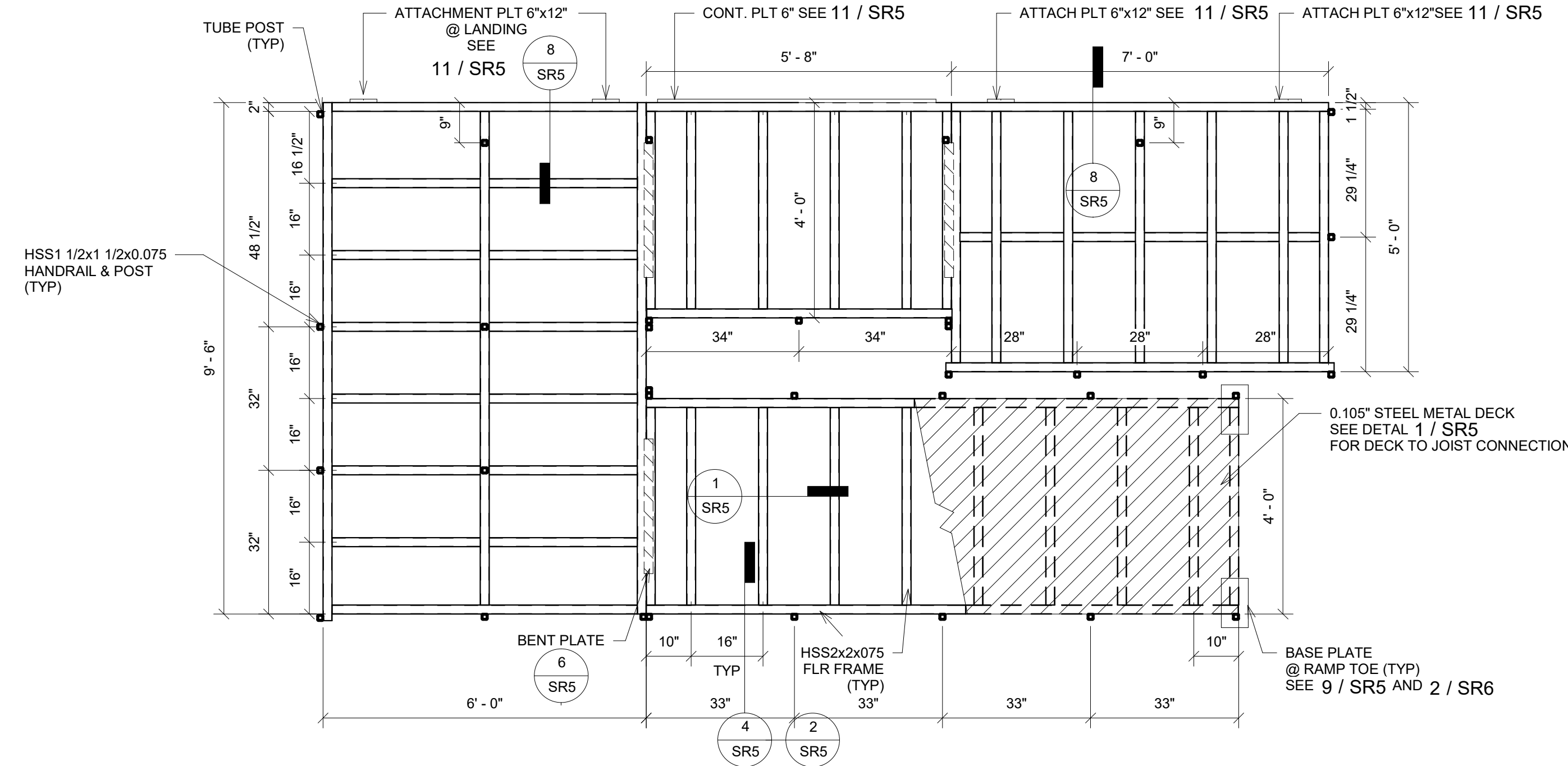
2 1/2" = 1'-0"
Ramp and Landing w/ Offset Ramp



3 1/2" = 1'-0"
Ramp & Platform Landing Frame



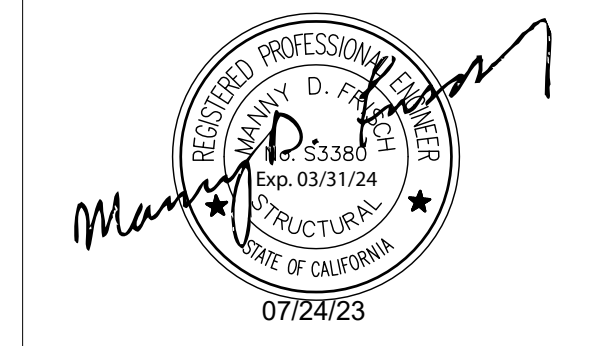
4 1/2" = 1'-0"
Ramp & Landing w/ Switch Back Ramp



PROJECT SPECIFIC STATE AGENCY APPROVAL



PROFESSIONAL STAMP

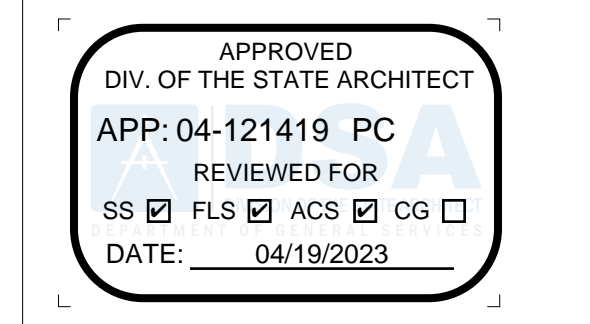


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ORIGINAL PC STATE AGENCY APPROVAL



Revision Schedule

#	Description	Date
22079		

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
RAMPS PC
CLASS LEASING
PC#04-121419

SHEET TITLE
Ramp and Landing Framing

PROJECT NUMBER
22079

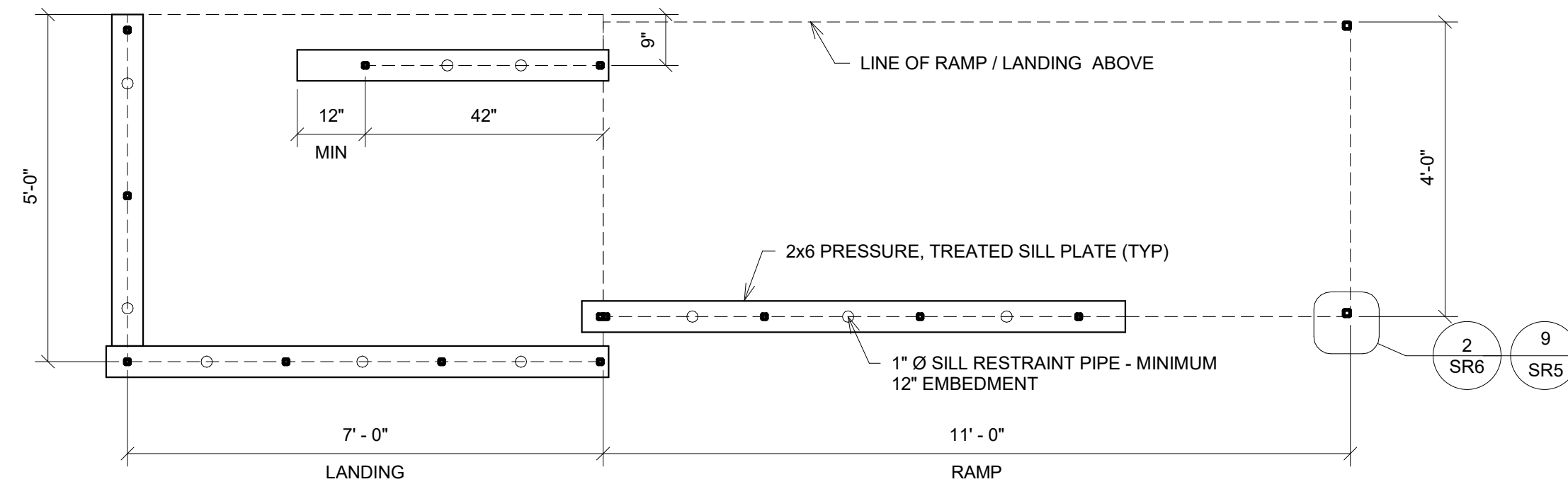
DRAWN BY
SM

CHECKED BY
BR/rMc

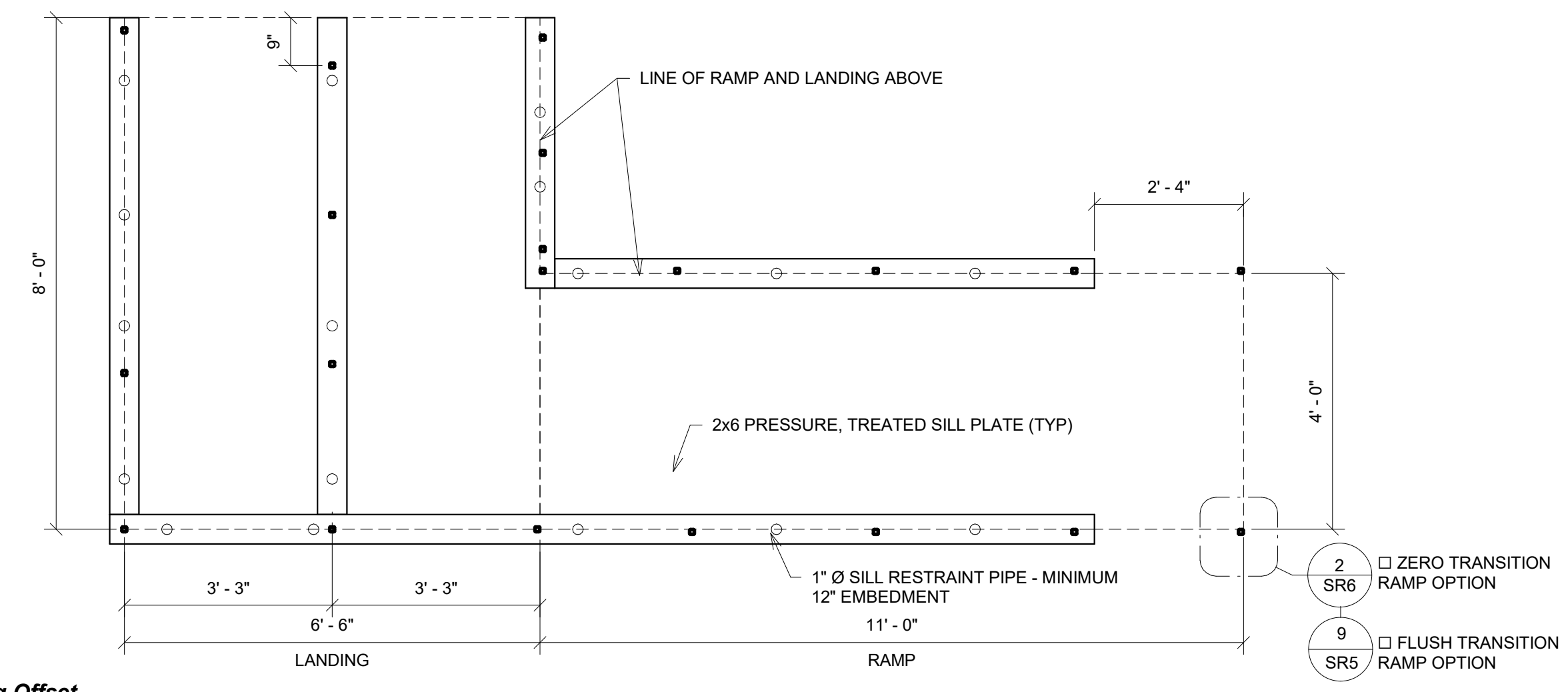
DATE
12/23/2022

SHEET NO.
SR2

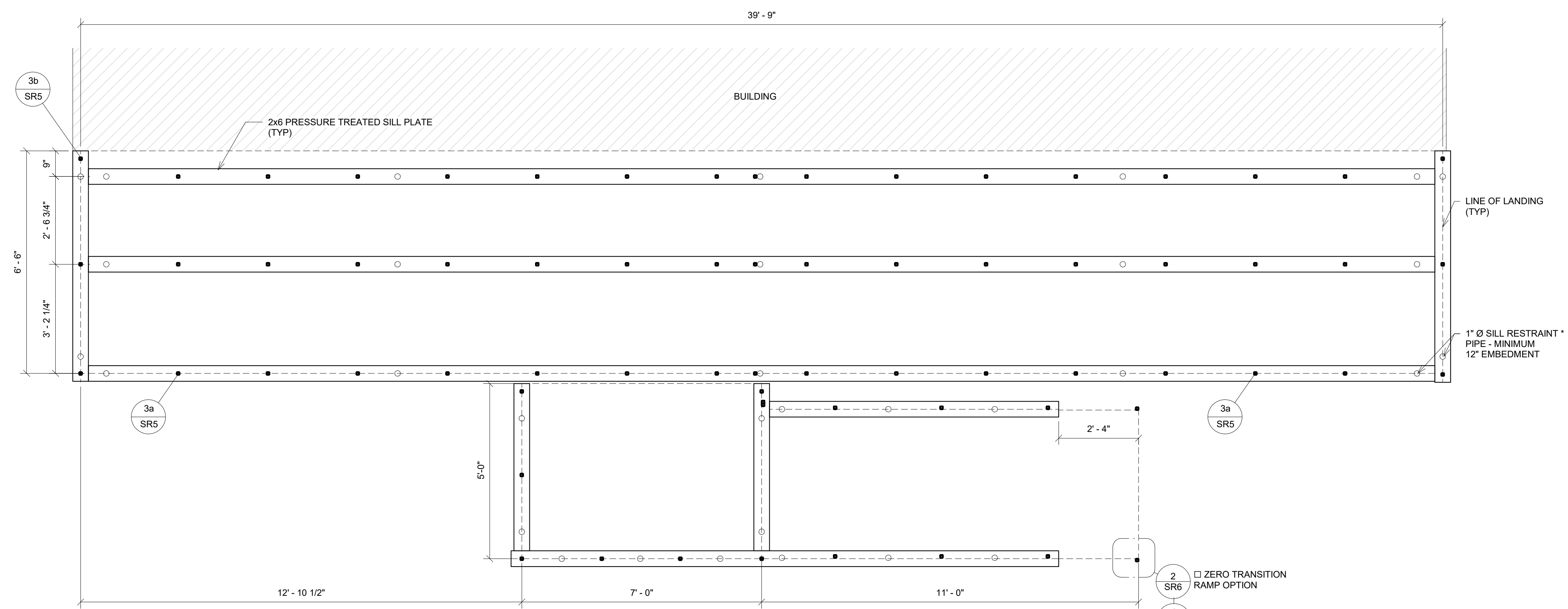
SHEET OF



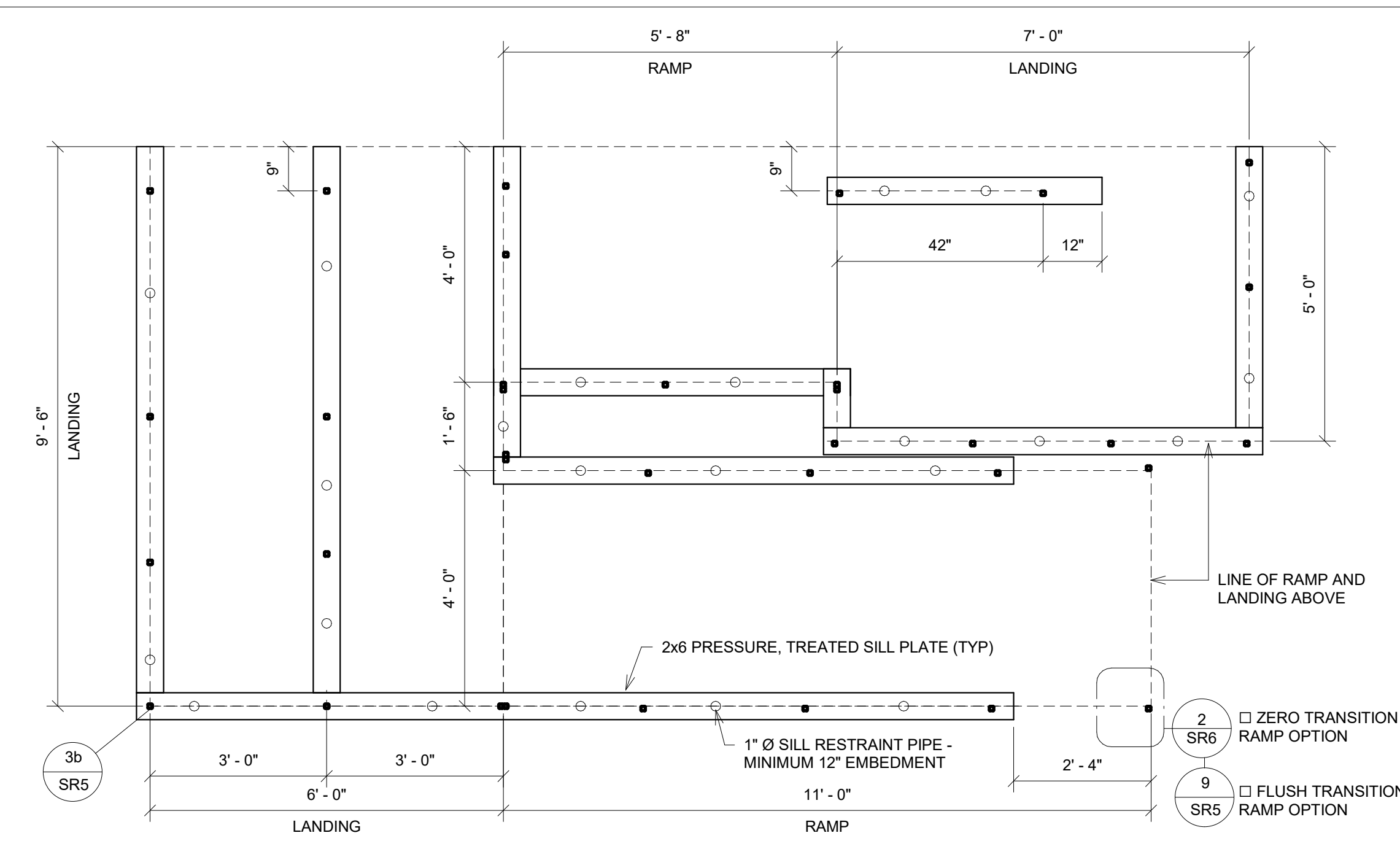
1 1/2" = 1'-0"
Sill Plan For Ramp & Landing



2 1/2" = 1'-0"
Sill Plan For Ramp & Landing Offset



3 1/2" = 1'-0"
Platform Sill Plan For Ramp & Landing



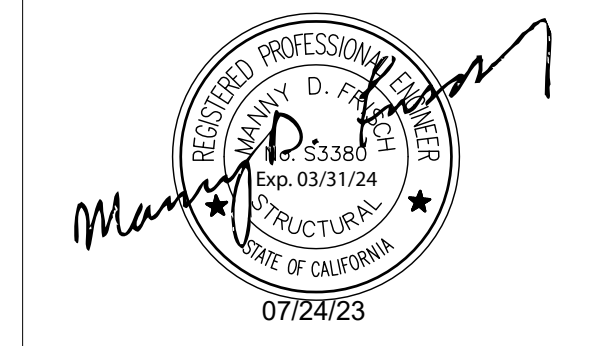
4 1/2" = 1'-0"
Sill Plan For Ramp & Landing Switchback

RESTRAINING PIPES / RODS SPECS
 ONE INCH DIAMETER STANDARD WEIGHT (1.315" ACTUAL 0.0) NOT DIPPED GALVANIZED PIPES OR ONE INCH DIAMETER SOLID STEEL RODS SPACED AT NOT MORE THAN 10'-0" o.c.
 ONE PIPE / ROD SHALL BE LOCATED A MAXIMUM OF TWO FEET FROM EACH CORNER IN BOTH DIRECTIONS AND MINIMUM OF TWO PIPES / RODS PER DISCONTINUOUS FOUNDATION STRIP. PIPES SHOULD PENETRATE INTO SOIL AND/OR PAVING A MIN. OF 12" MEASURED VERTICALLY. PER DSA IR 16-1

PROJECT SPECIFIC STATE AGENCY APPROVAL



PROFESSIONAL STAMP

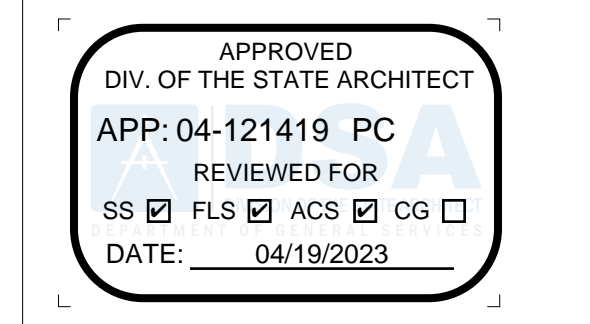


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ORIGINAL PC STATE AGENCY APPROVAL



Revision Schedule

#	Description	Date
22079		

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
RAMPS PC
CLASS LEASING
PC#04-121419

SHEET TITLE
Foundation Plan

PROJECT NUMBER
22079

DRAWN BY
SM

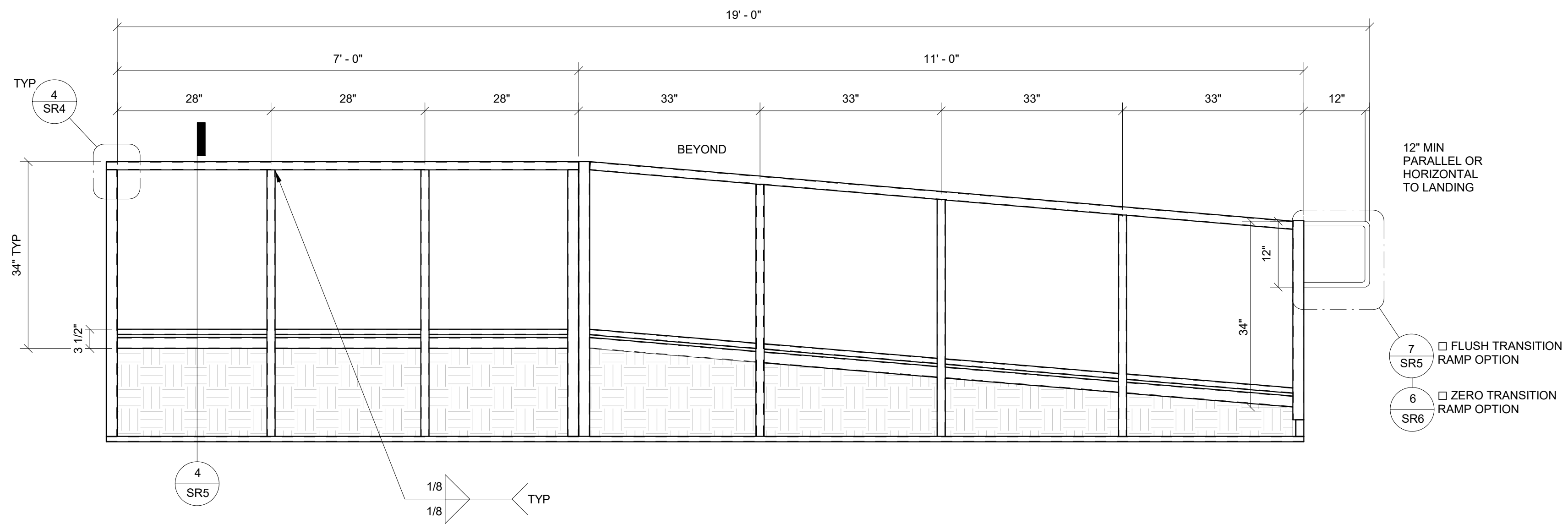
CHECKED BY
rMc

DATE
12/23/2022

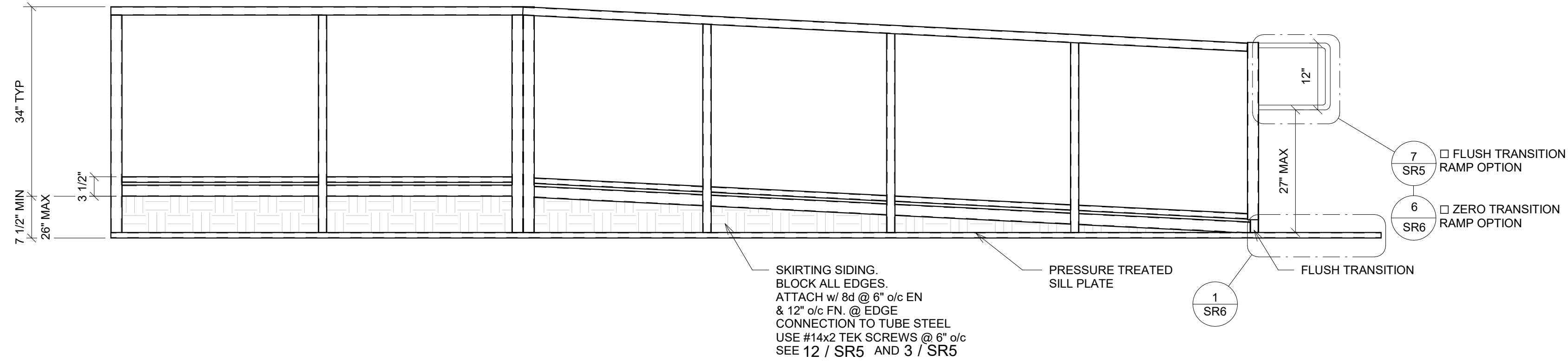
SHEET NO.
SR3

SHEET OF

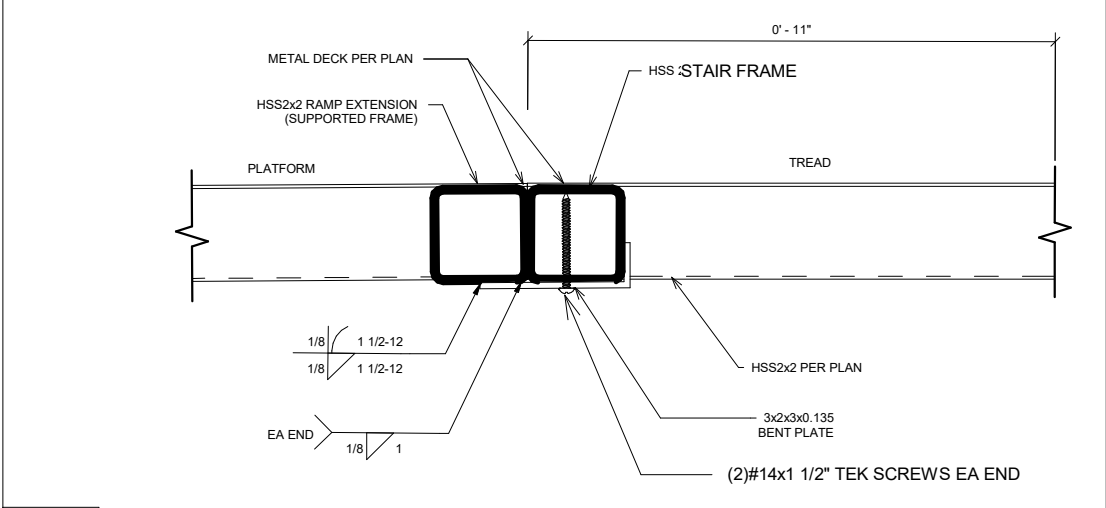
6/15/2021 7:29:26 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REV\TRSH\20093 - Aries, Ramps and Stairs PC.rvt



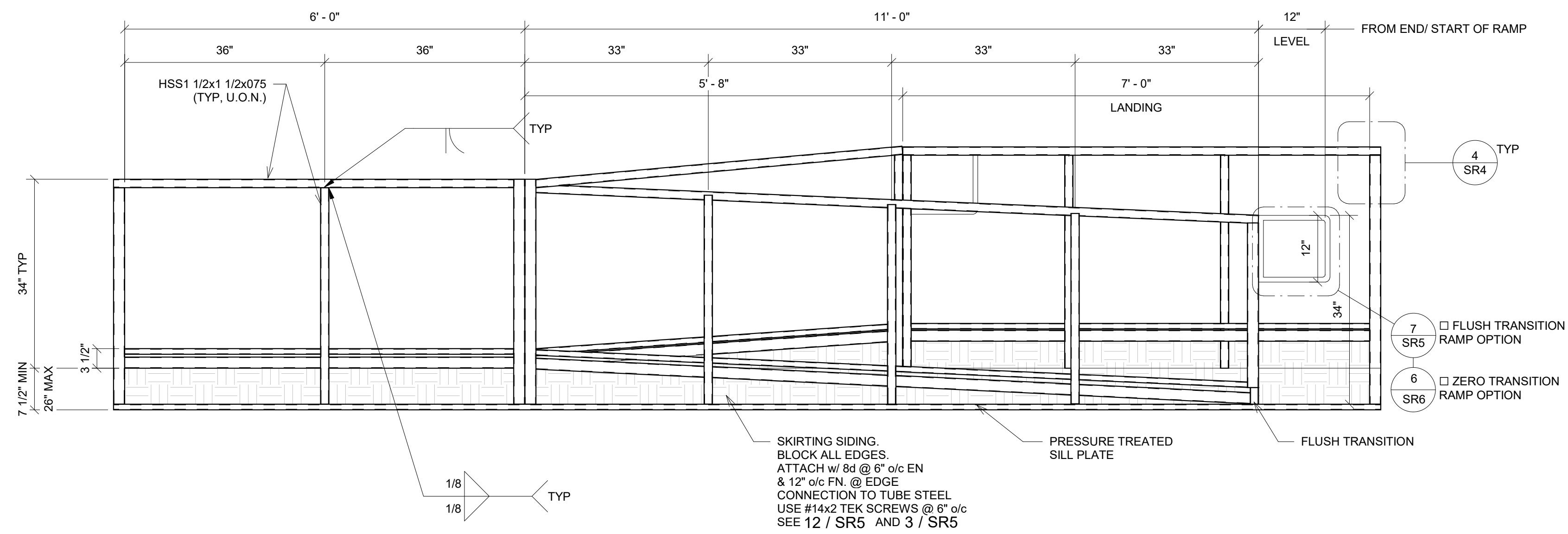
1 3/4" = 1'-0"
Ramp & Landing Elevation



2 3/4" = 1'-0"
Ramp & Landing Elevation Option X Copy 1

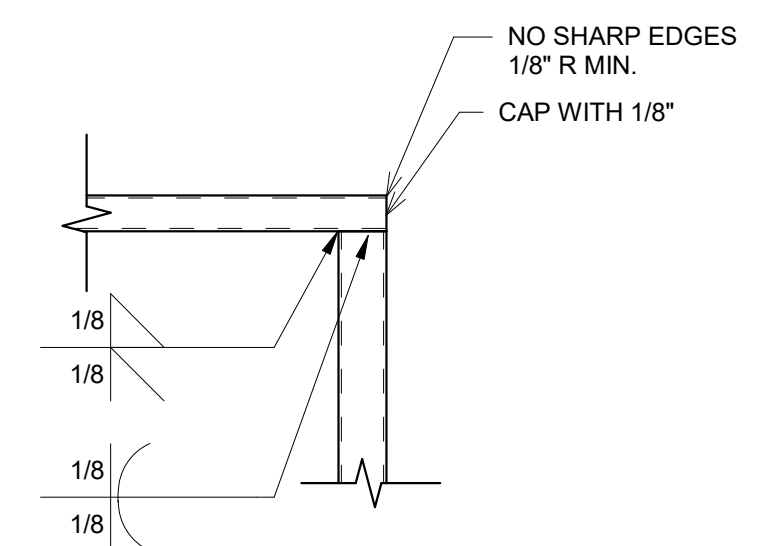


5 3" = 1'-0"
Conn @ Platform



3 3/4" = 1'-0"
Ramp & Landing Elevation Option X

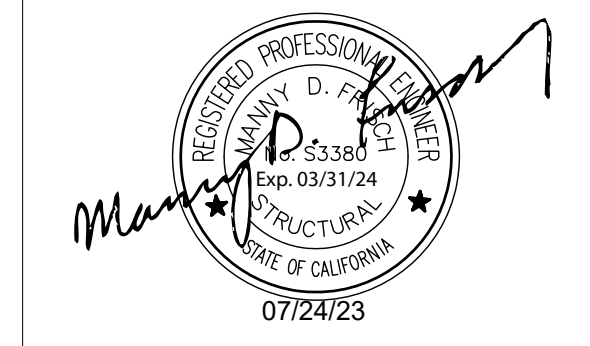
4 1 1/2" = 1'-0"
Ramp & Landing Elevation Option X1 - Callout 1



PROJECT SPECIFIC STATE AGENCY APPROVAL



PROFESSIONAL STAMP

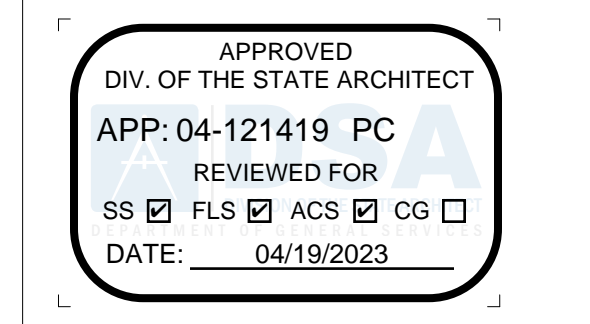


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ORIGINAL PC STATE AGENCY APPROVAL



Revision Schedule

#	Description	Date
22079		

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
RAMPS PC
CLASS LEASING
PC#04-121419

SHEET TITLE
Ramp and Landing / Stair Framing Elevation

PROJECT NUMBER
22079

DRAWN BY
SM

CHECKED BY
rMc

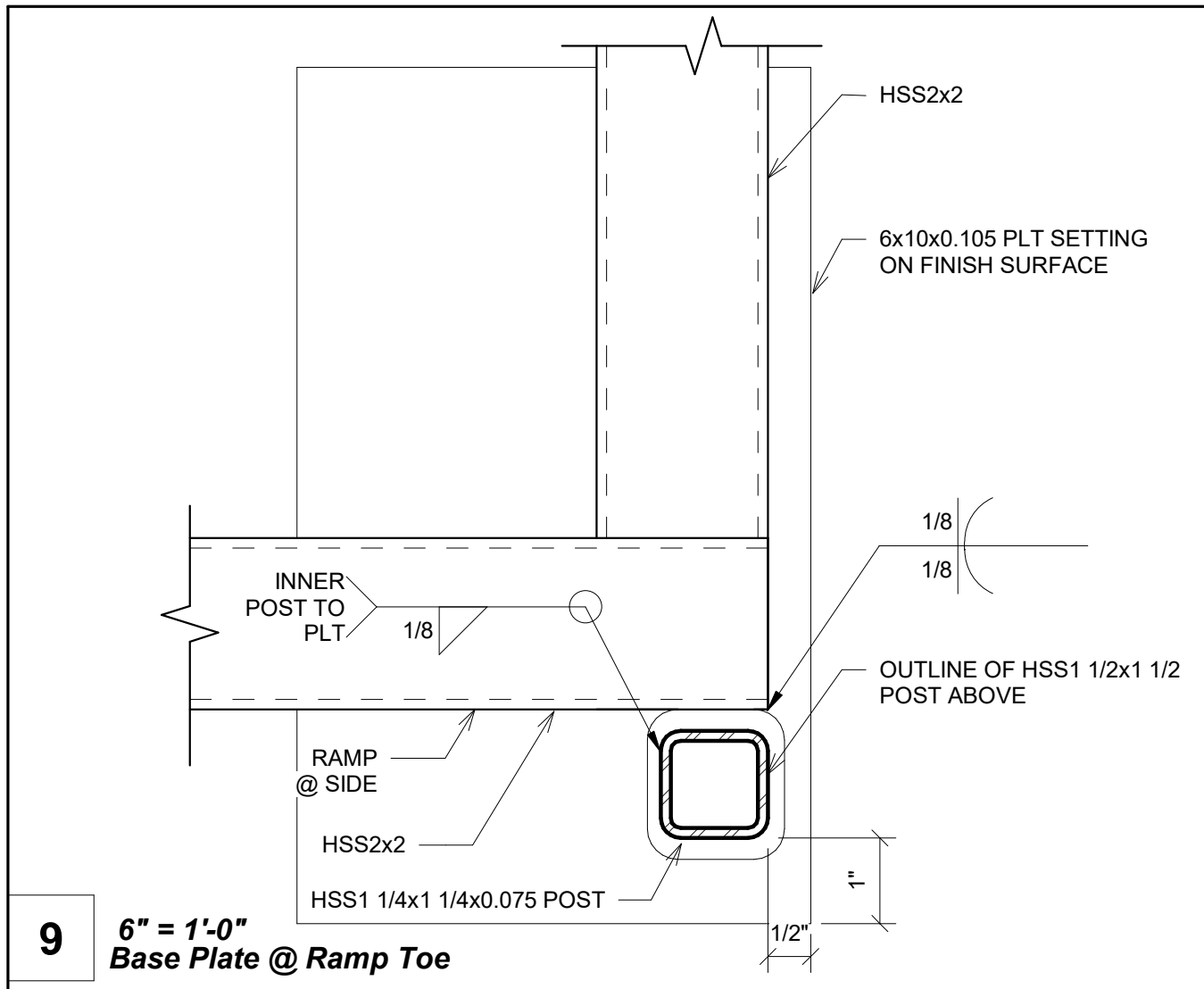
DATE
12/23/2022

SHEET NO.
SR4

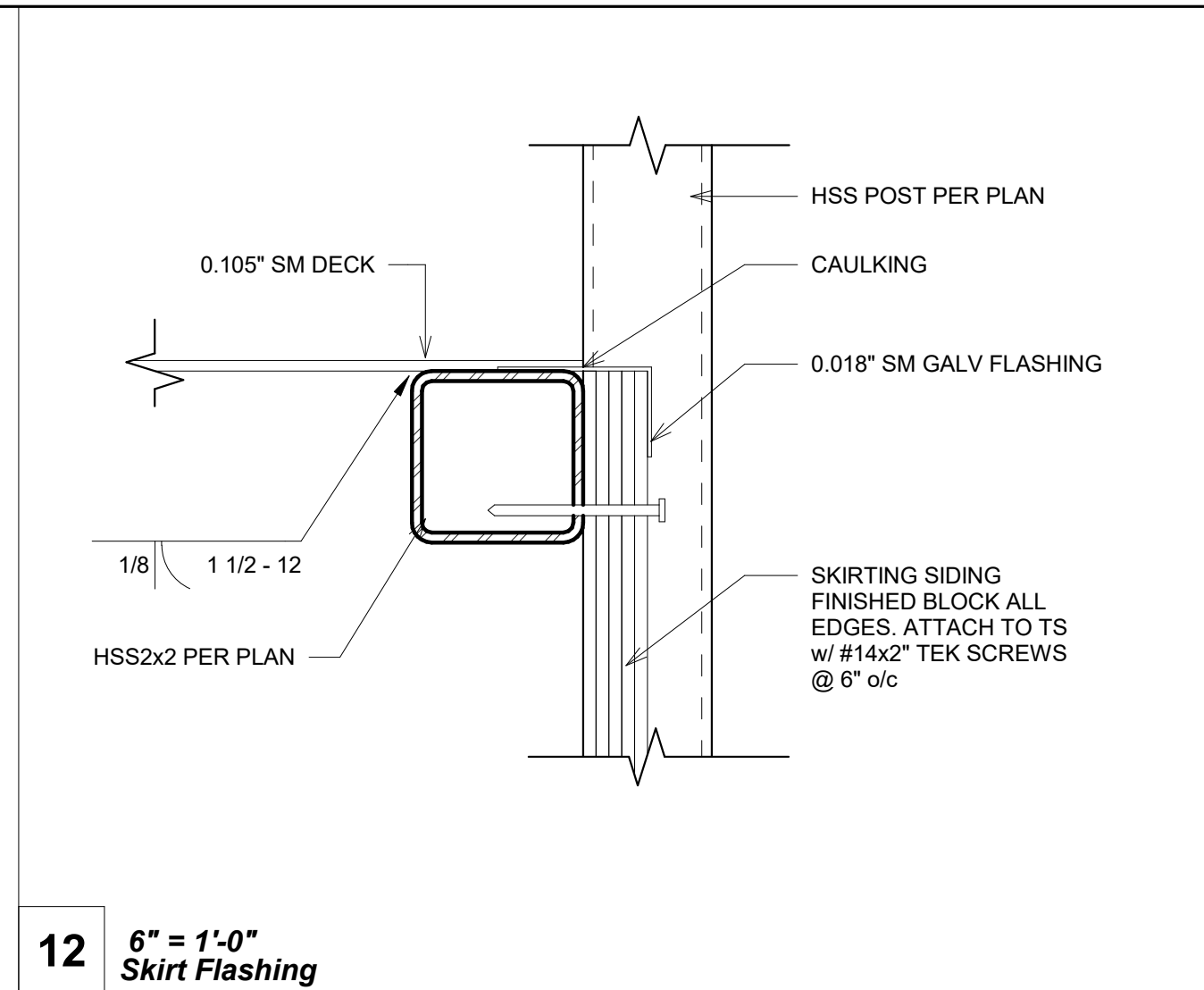
SHEET OF

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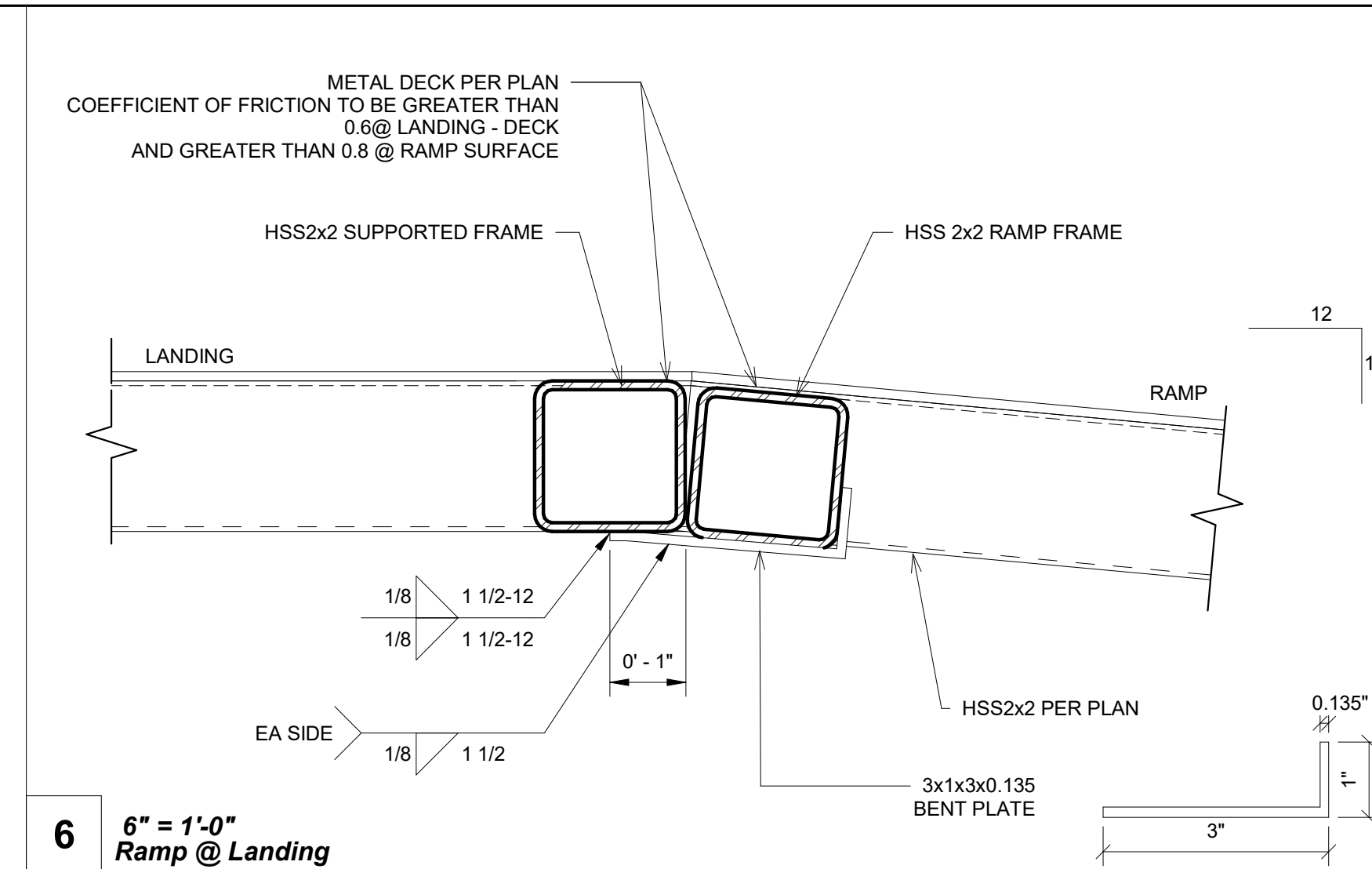
6/15/2021 7:29:28 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REV\RSH\20093 - Aries, Ramps and Stairs PC.rvt



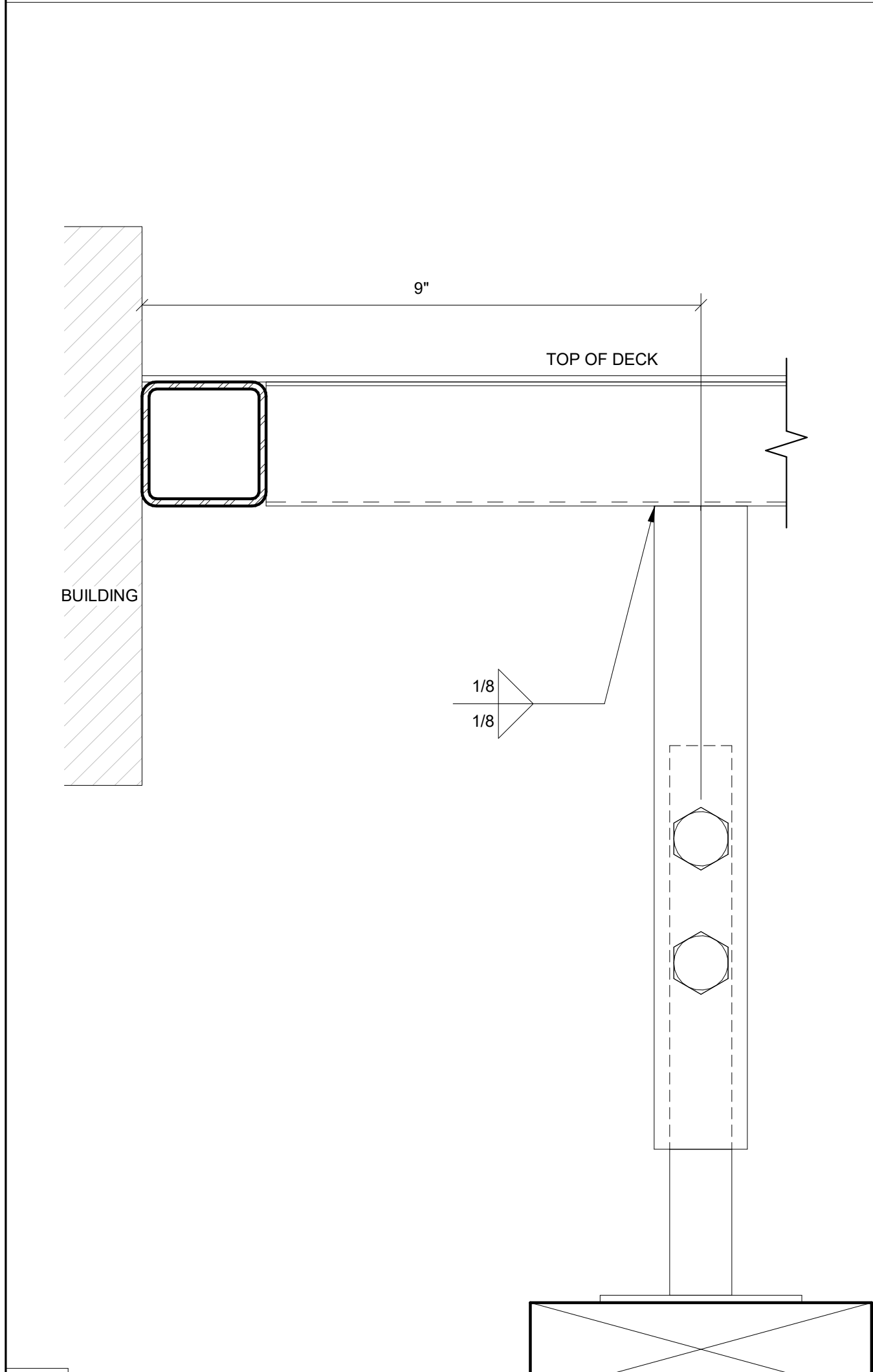
9 6" = 1'-0" Base Plate @ Ramp Toe



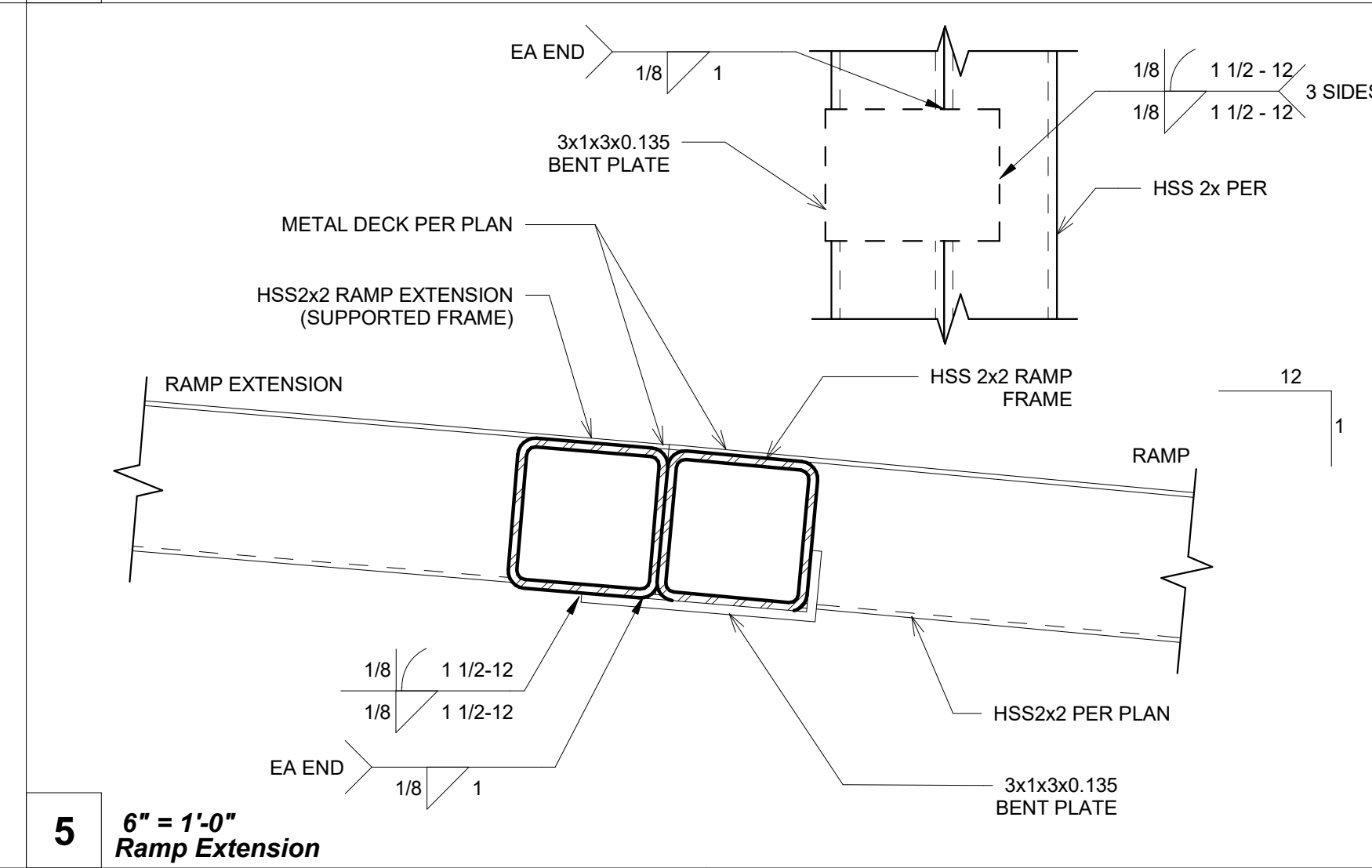
12 6" = 1'-0" Skirt Flashing



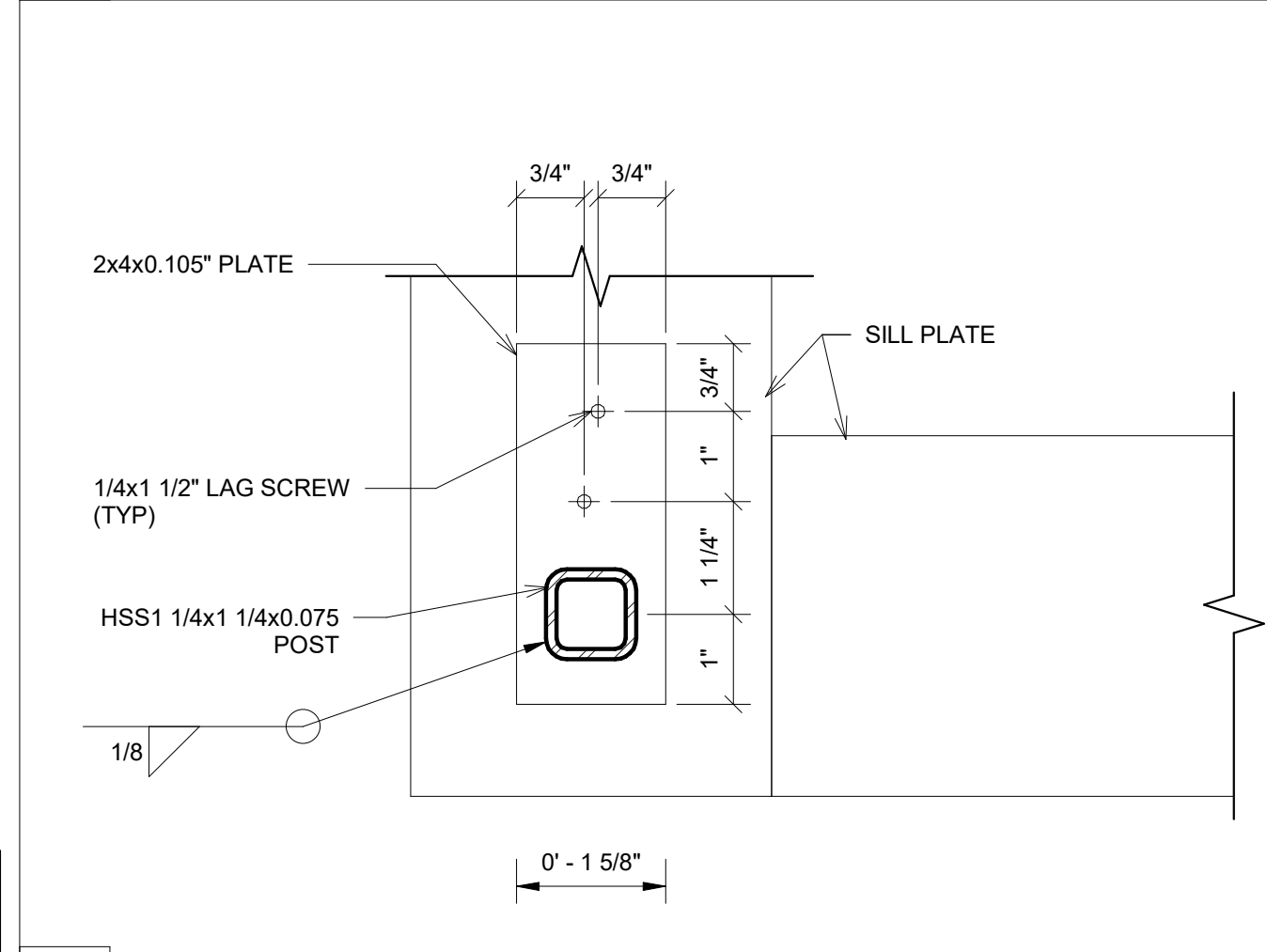
6 6" = 1'-0" Ramp @ Landing



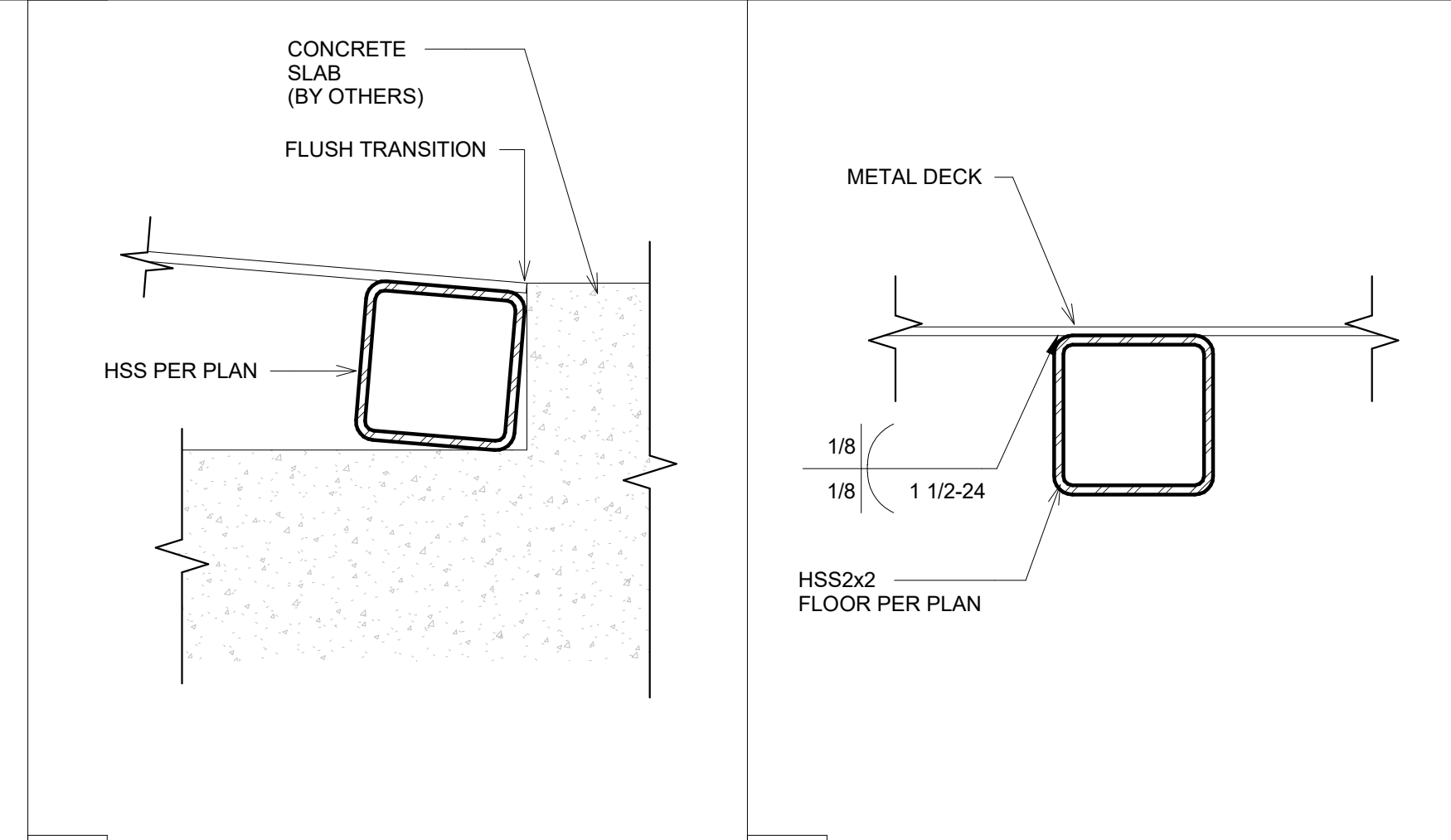
3 6" = 1'-0" Skirt Flashing @ Sill Plate



5 6" = 1'-0" Ramp Extension



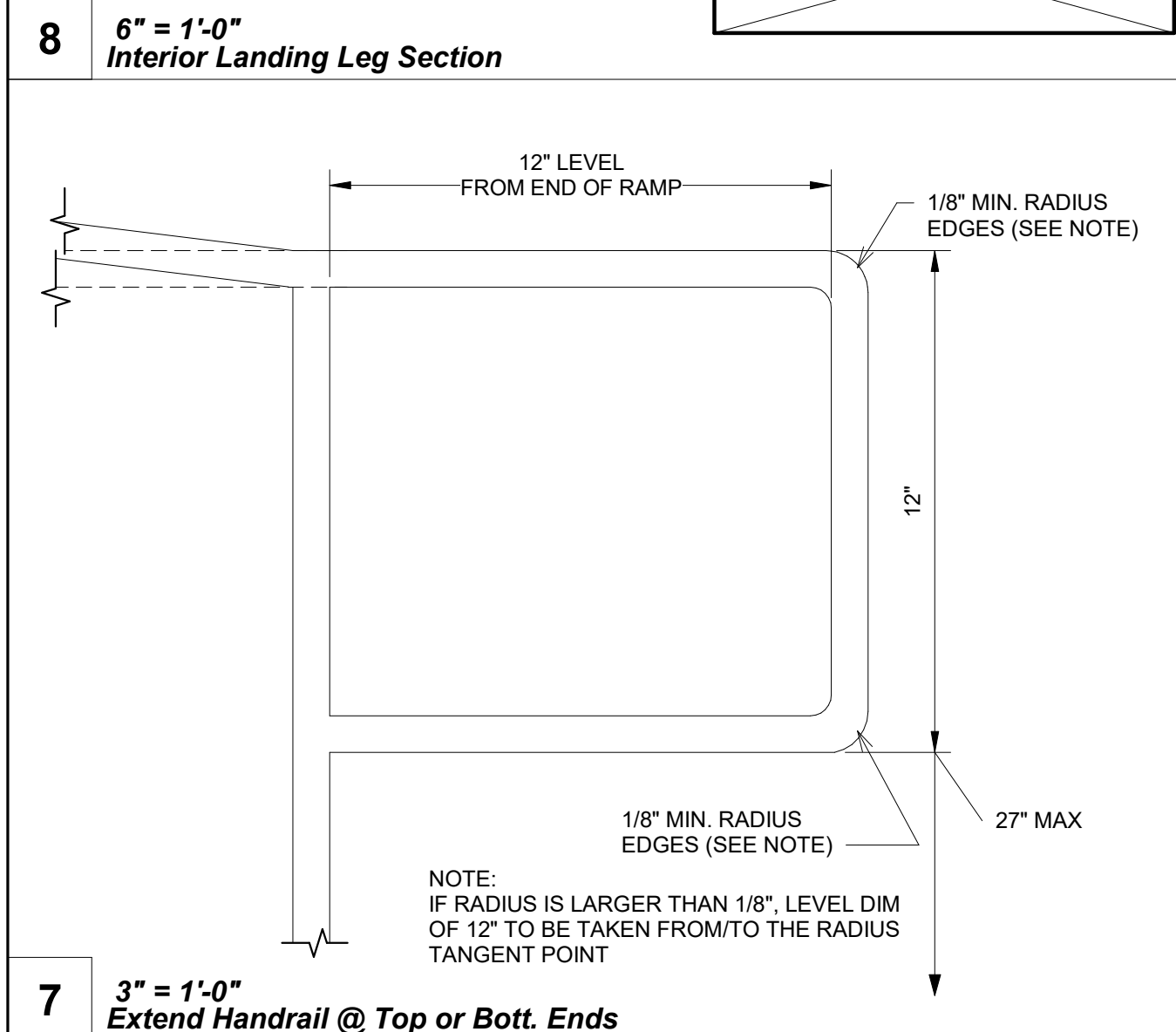
3b 6" = 1'-0" Adjustable Leg Base Plate



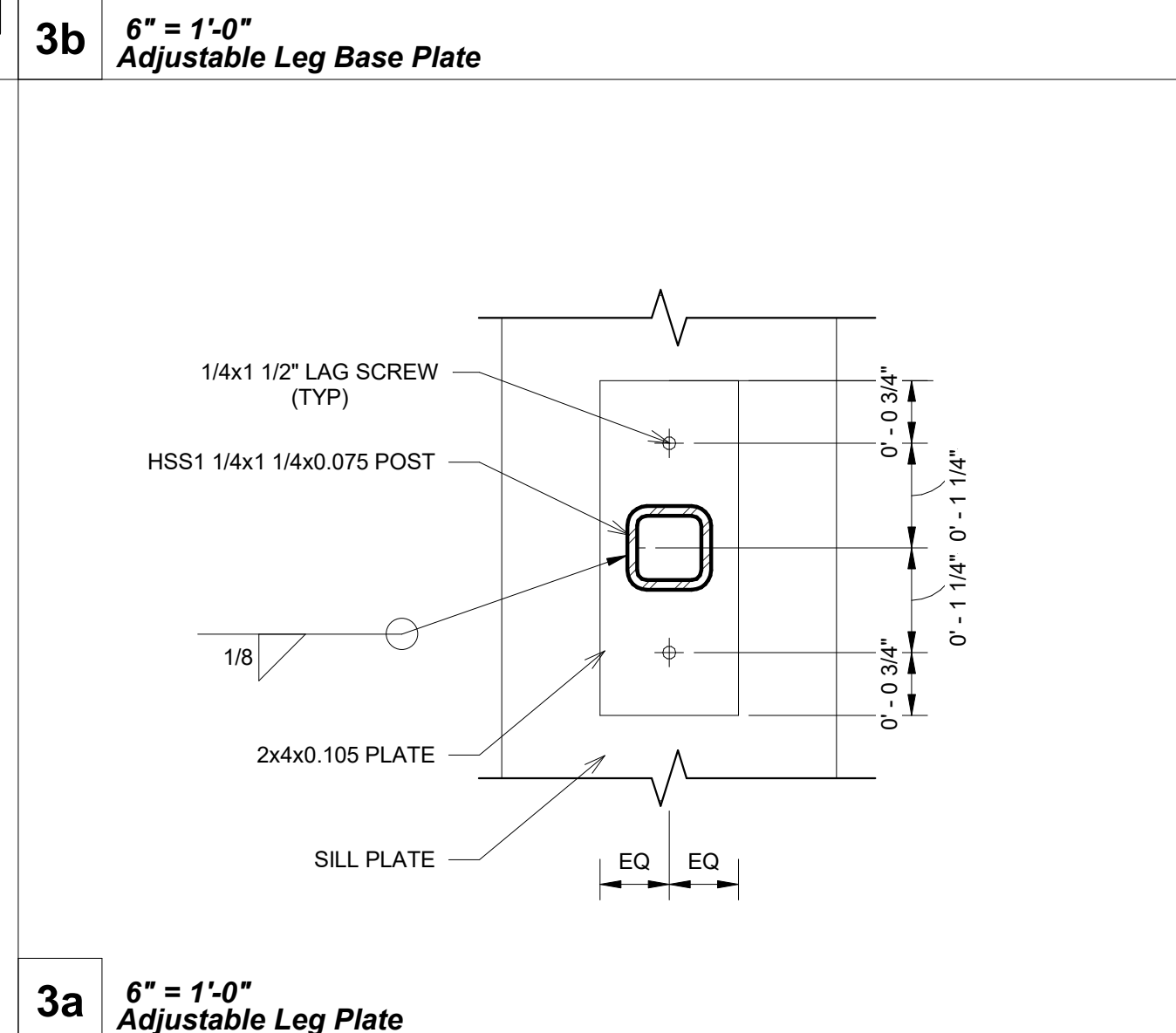
10 6" = 1'-0" Flush Transition @ Bottom of Ramp



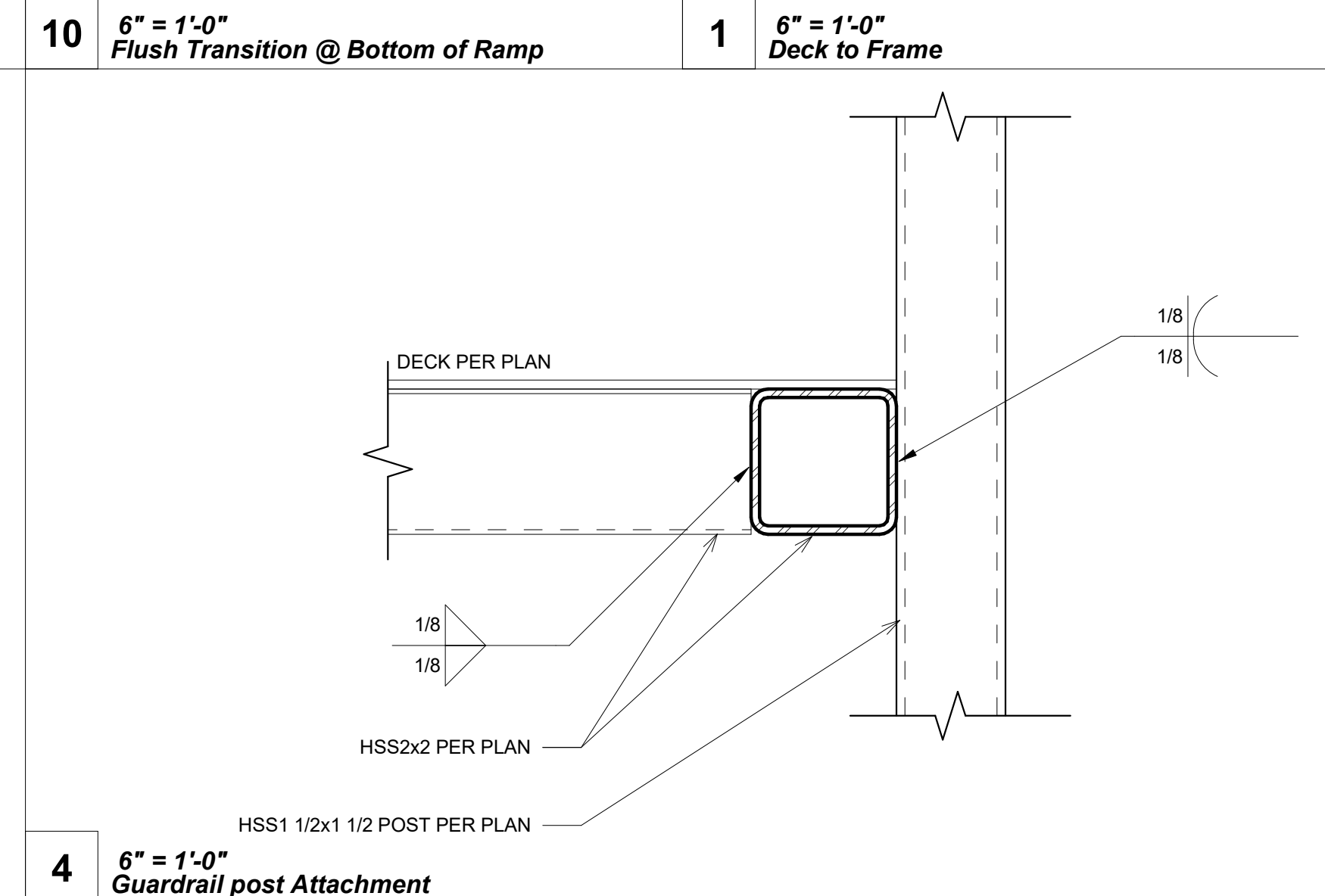
1 6" = 1'-0" Deck to Frame



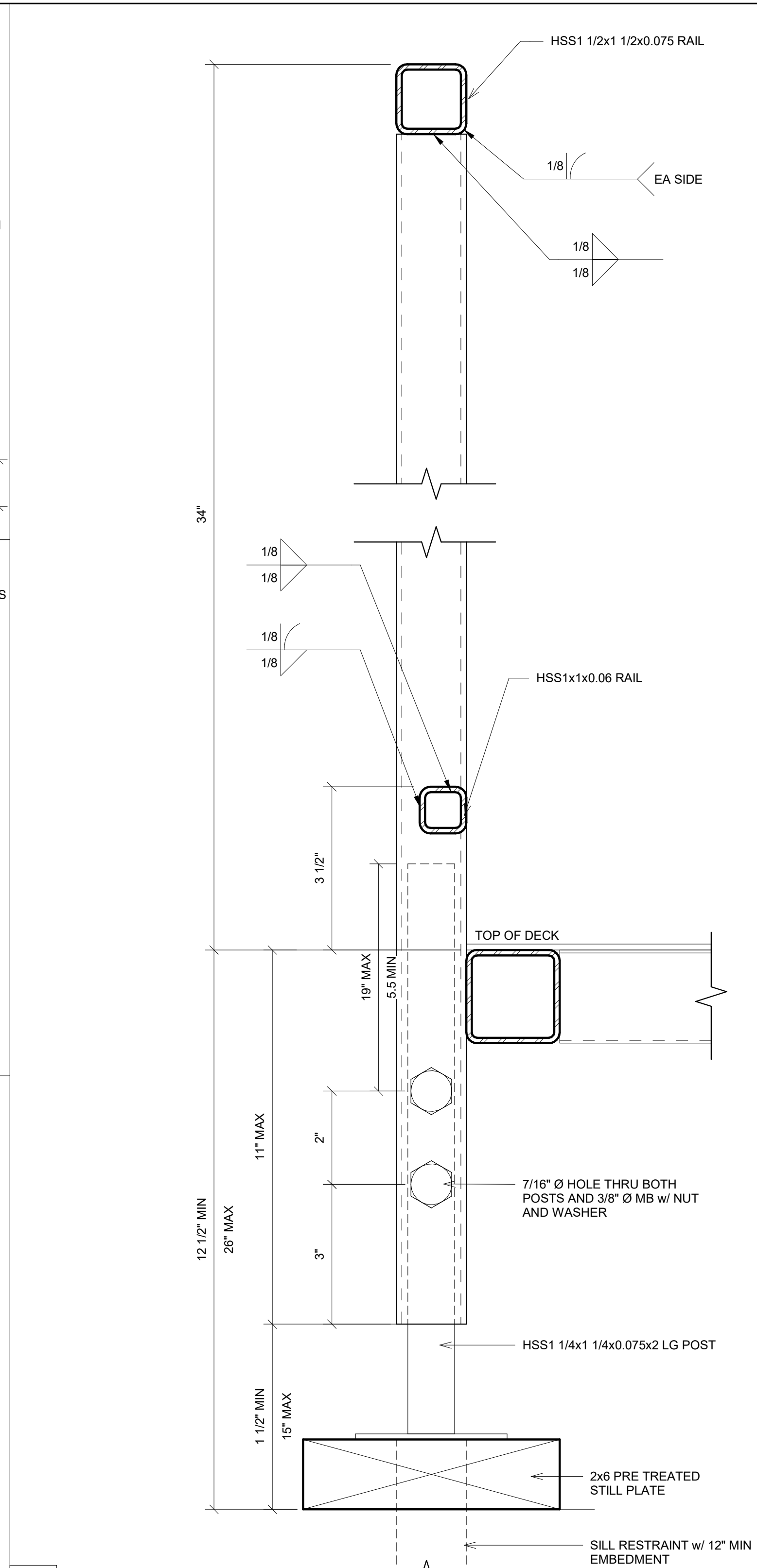
7 3" = 1'-0" Extend Handrail @ Top or Bott. Ends



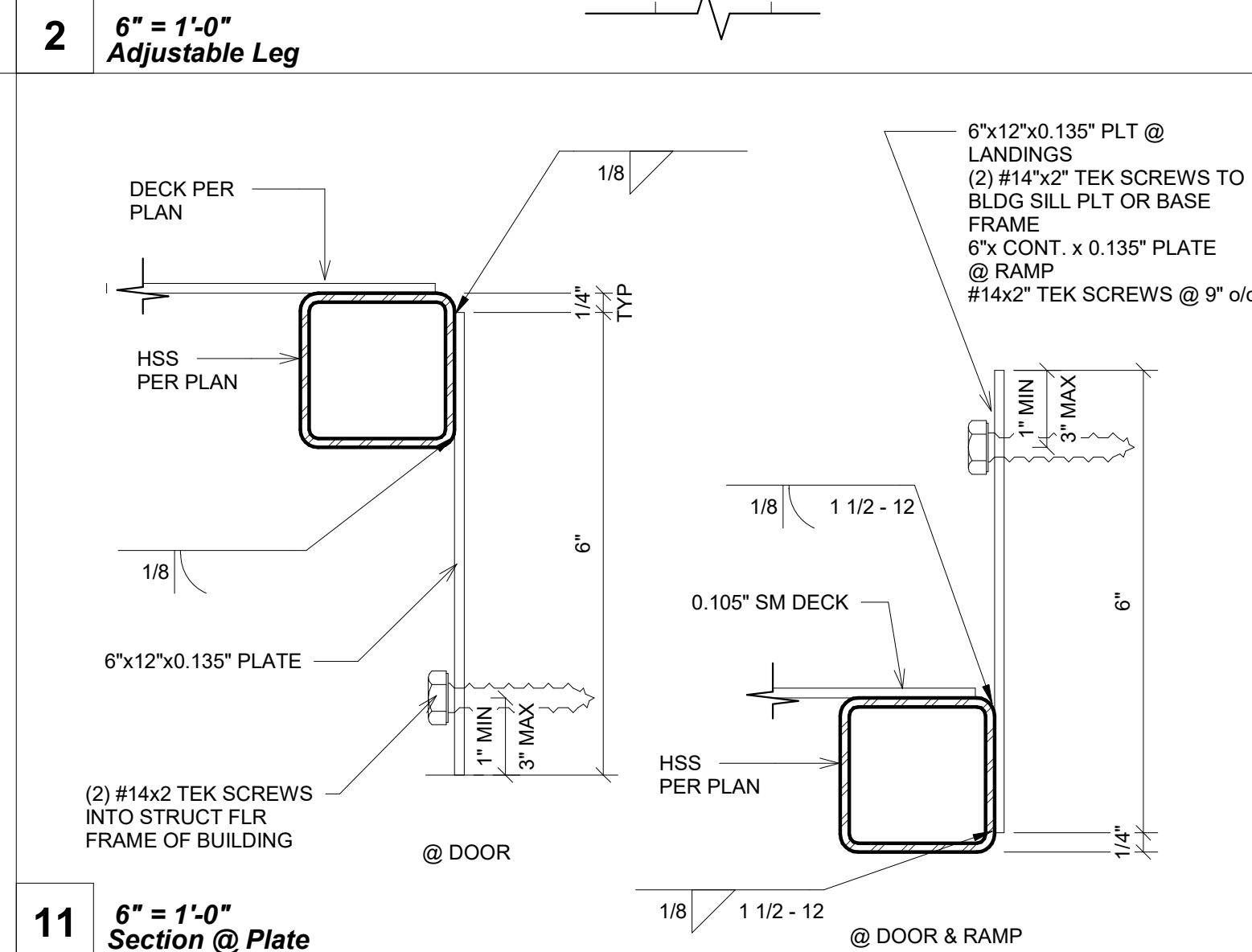
3a 6" = 1'-0" Adjustable Leg Plate



4 6" = 1'-0" Guardrail post Attachment



2 6" = 1'-0" Adjustable Leg

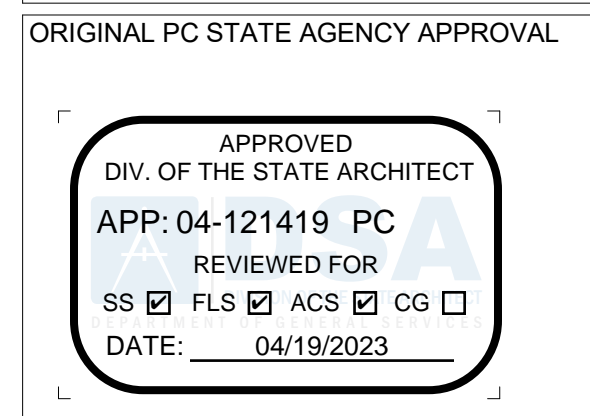


11 6" = 1'-0" Section @ Plate

PROJECT SPECIFIC STATE AGENCY APPROVAL



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Revision Schedule

#	Description	Date
22079		

PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
RAMPS PC
CLASS LEASING
PC#04-121419

SHEET TITLE
Ramp Details

PROJECT NUMBER
22079

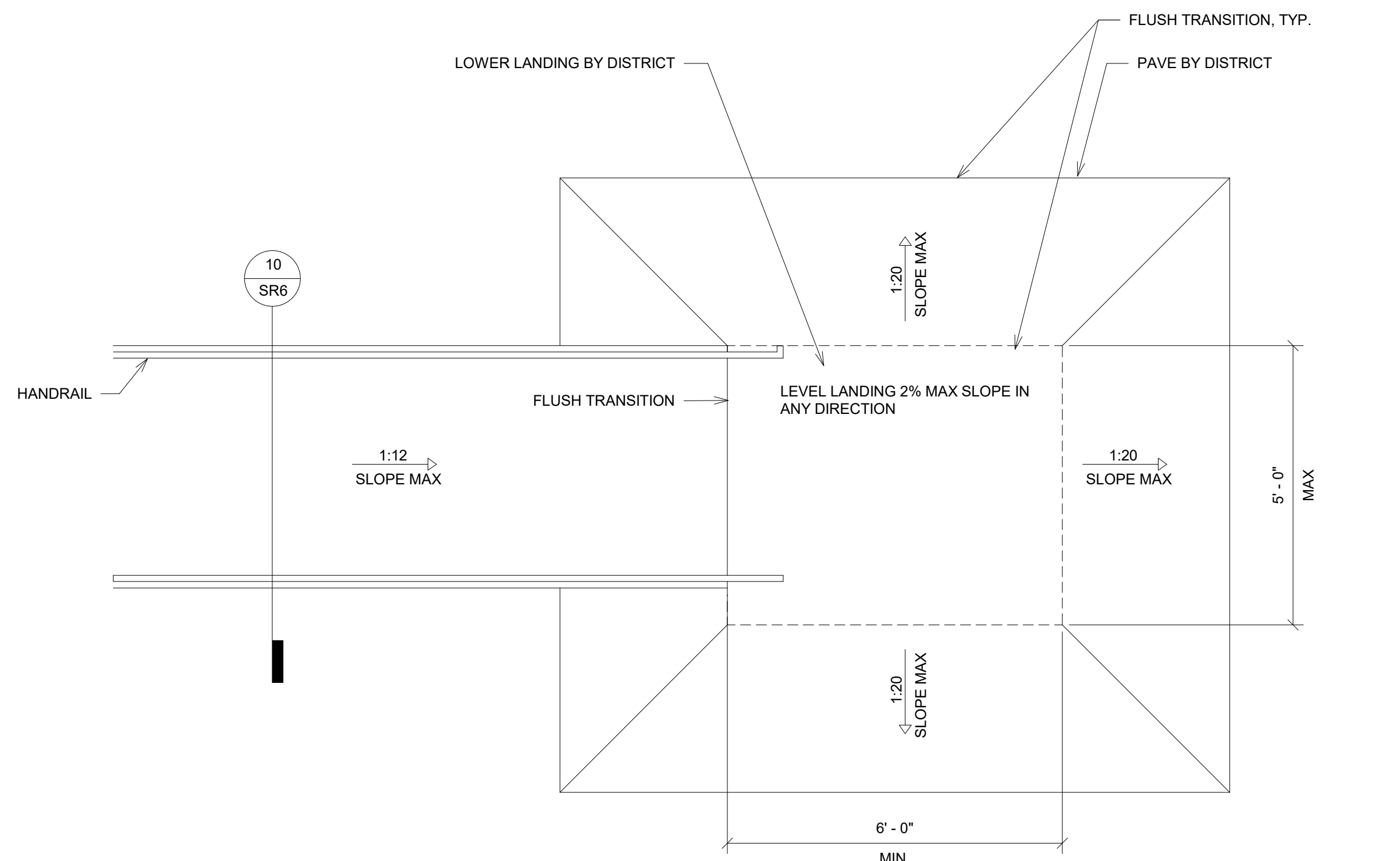
DRAWN BY
SM

CHECKED BY
rMc

DATE
12/23/2022

SHEET NO.
SR5

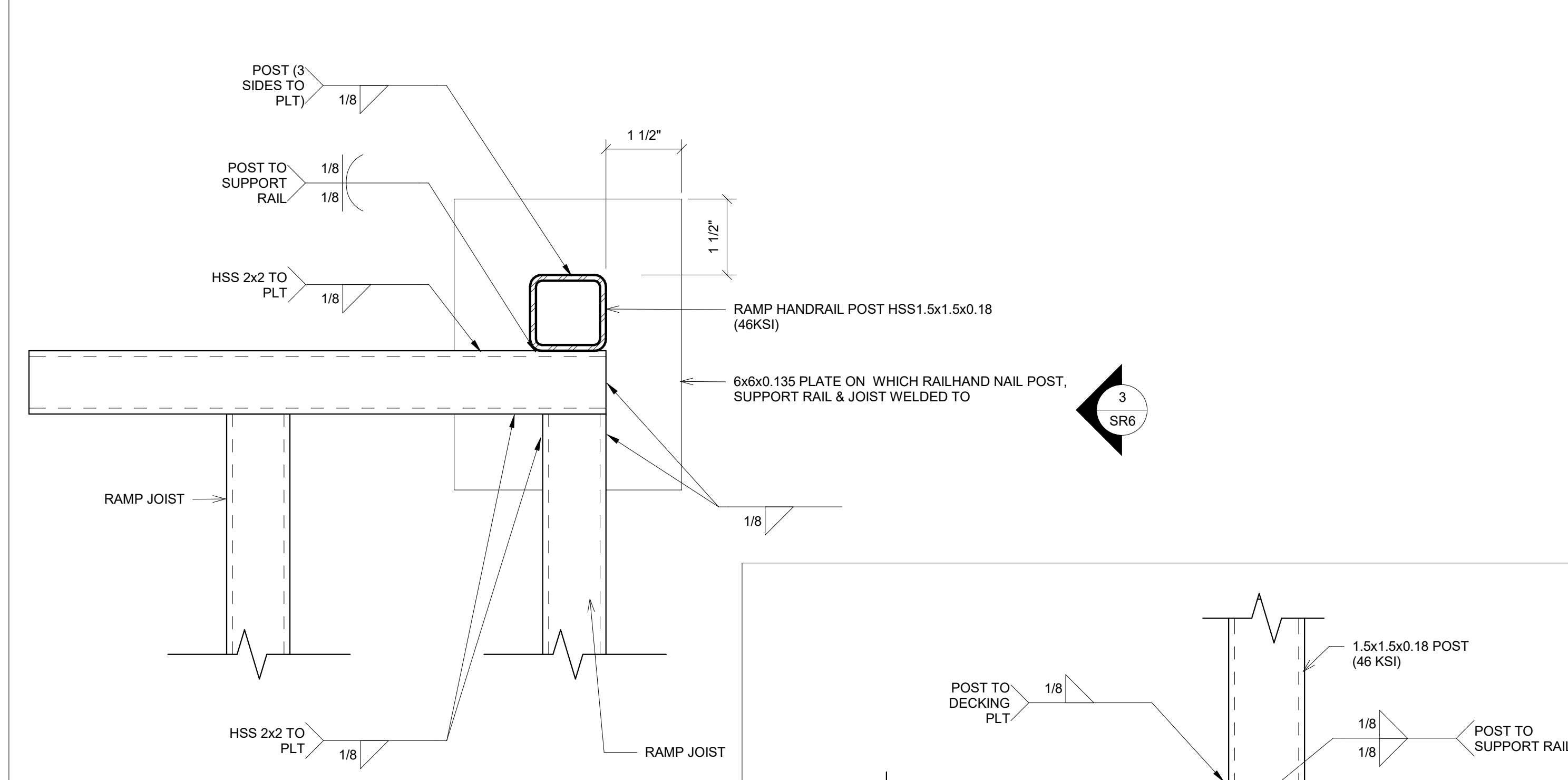
SHEET OF



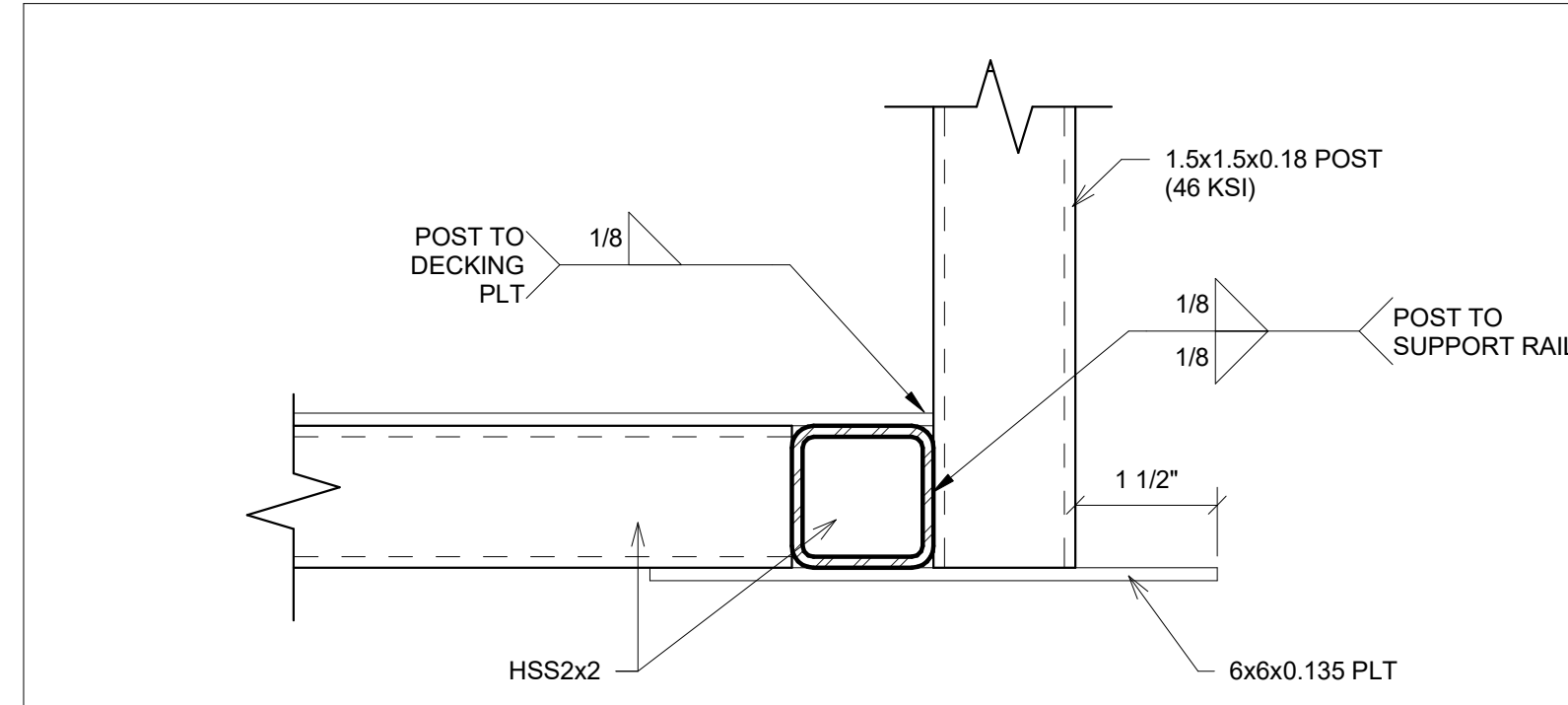
NOTE:
 1. 1:20 TRANSITION OFF OF LOWER LANDING REQUIRES NO HANDRAIL.
 2. TRANSITIONS EXCEEDING 1:20 BUT NOT EXCEED 1:12 REQUIRE REMOVAL OF 12" HANDRAIL EXTENSION AND ADDITIONAL HANDRAILING BY DISTRICT. (THIS CONDITION REQUIRES A SITE SPECIFIC DETAIL PROVIDED BY ARCHITECT TO DEMONSTRATE ACCESSIBLE RAMP)

LANDING TO BE DESIGNED TO NOT RETAIN STANDING WATER 1% 1% 2.083 MAX SLOPE

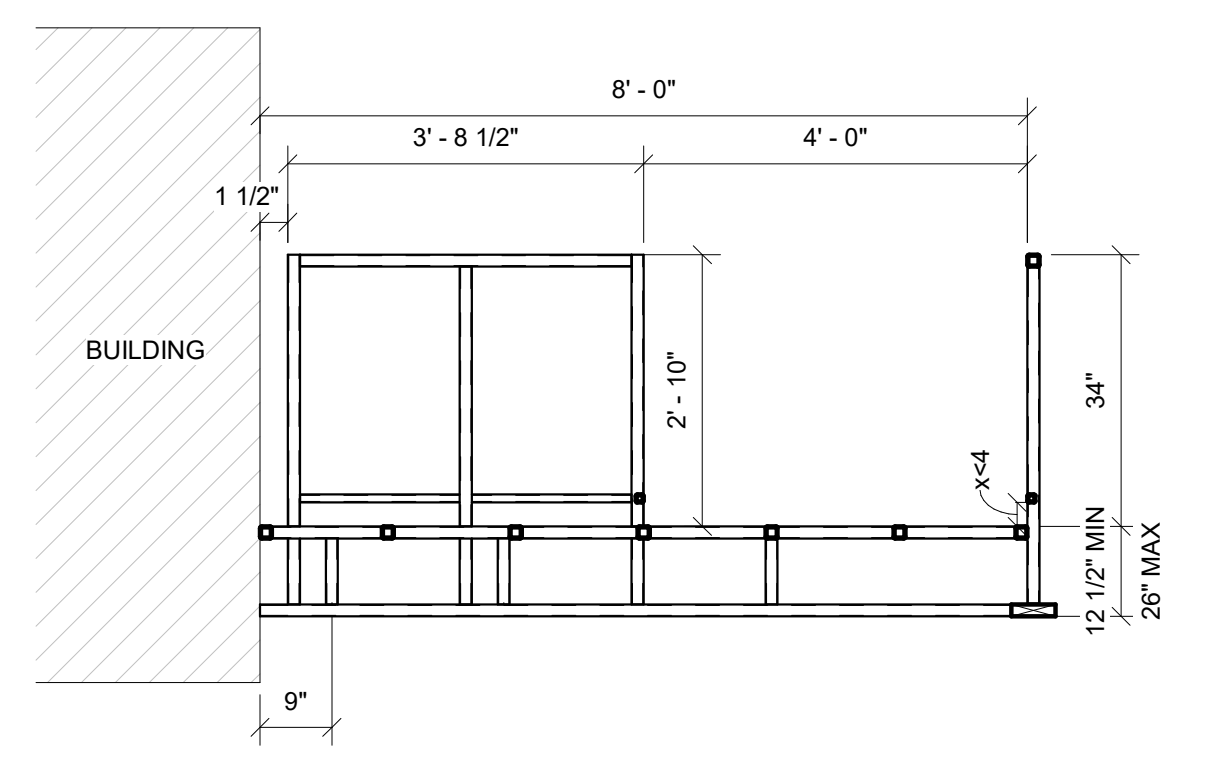
7 1/2" = 1'-0" Ramp Transition



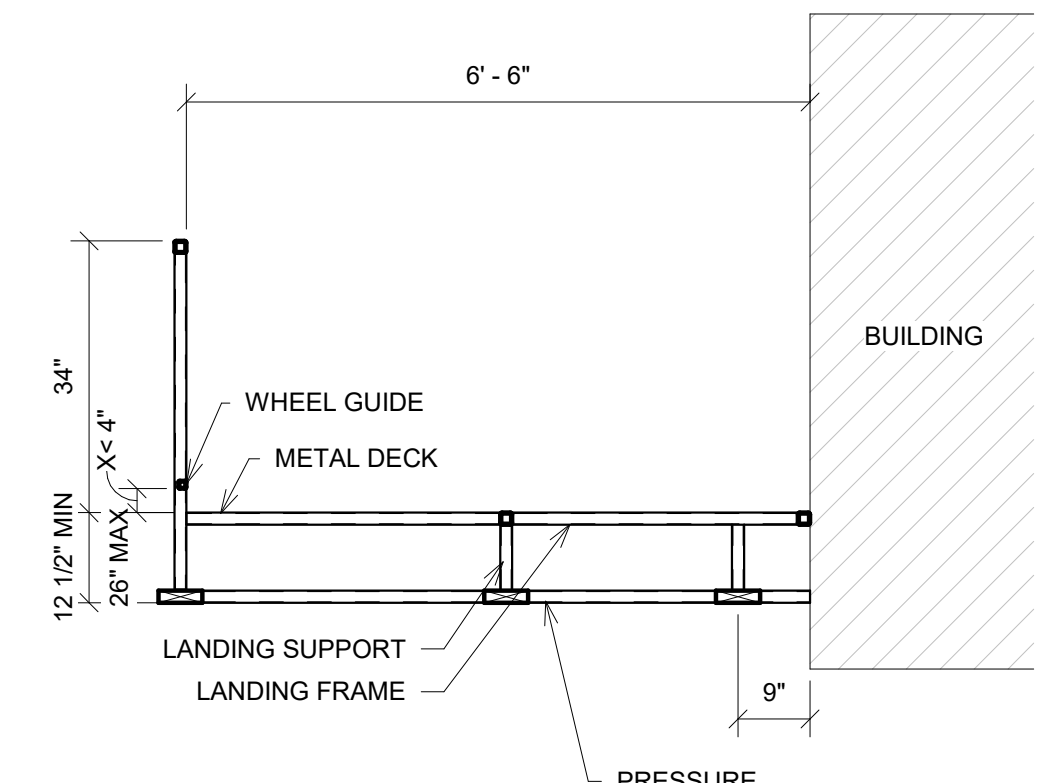
2 6" = 1'-0" Base Plt @ Ramp Toe For Zero Transition



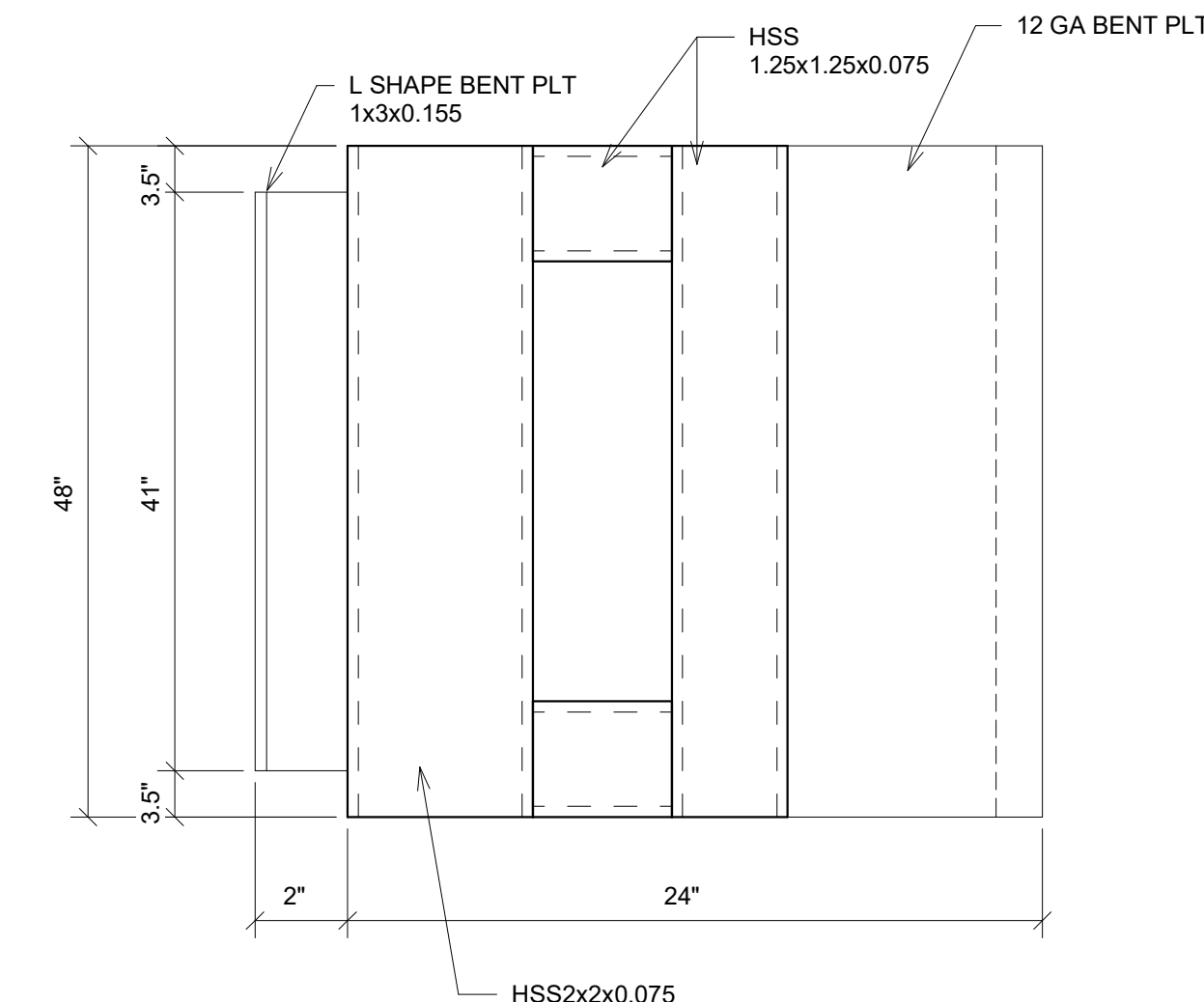
3 6" = 1'-0" Base Plt @ Ramp Toe Low Zero Side View



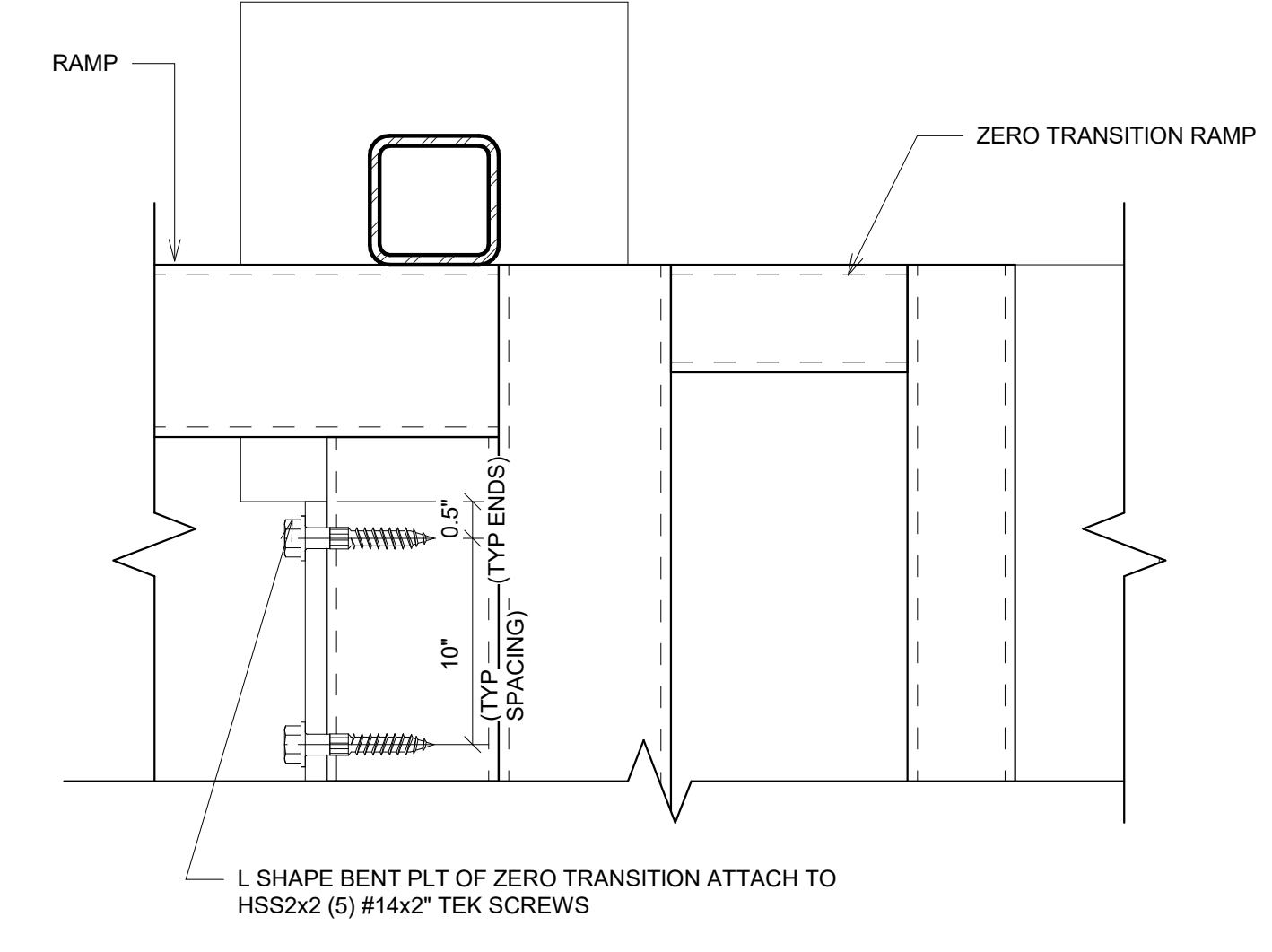
8 1/2" = 1'-0" Section @ Landing



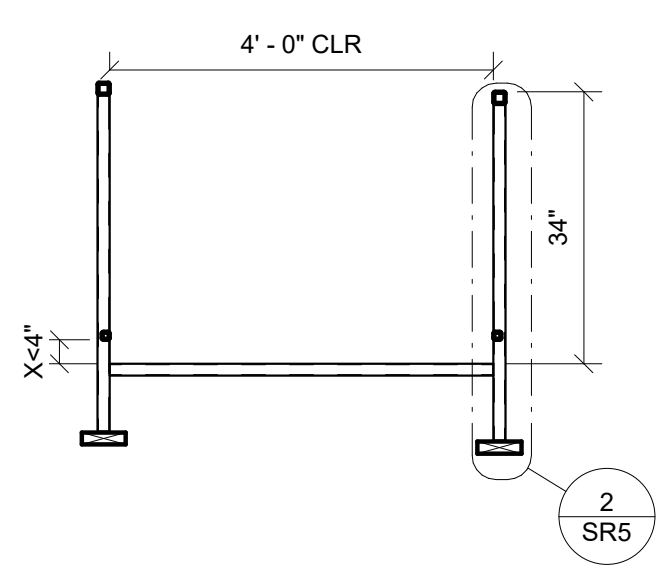
9 1/2" = 1'-0" Section @ Landing



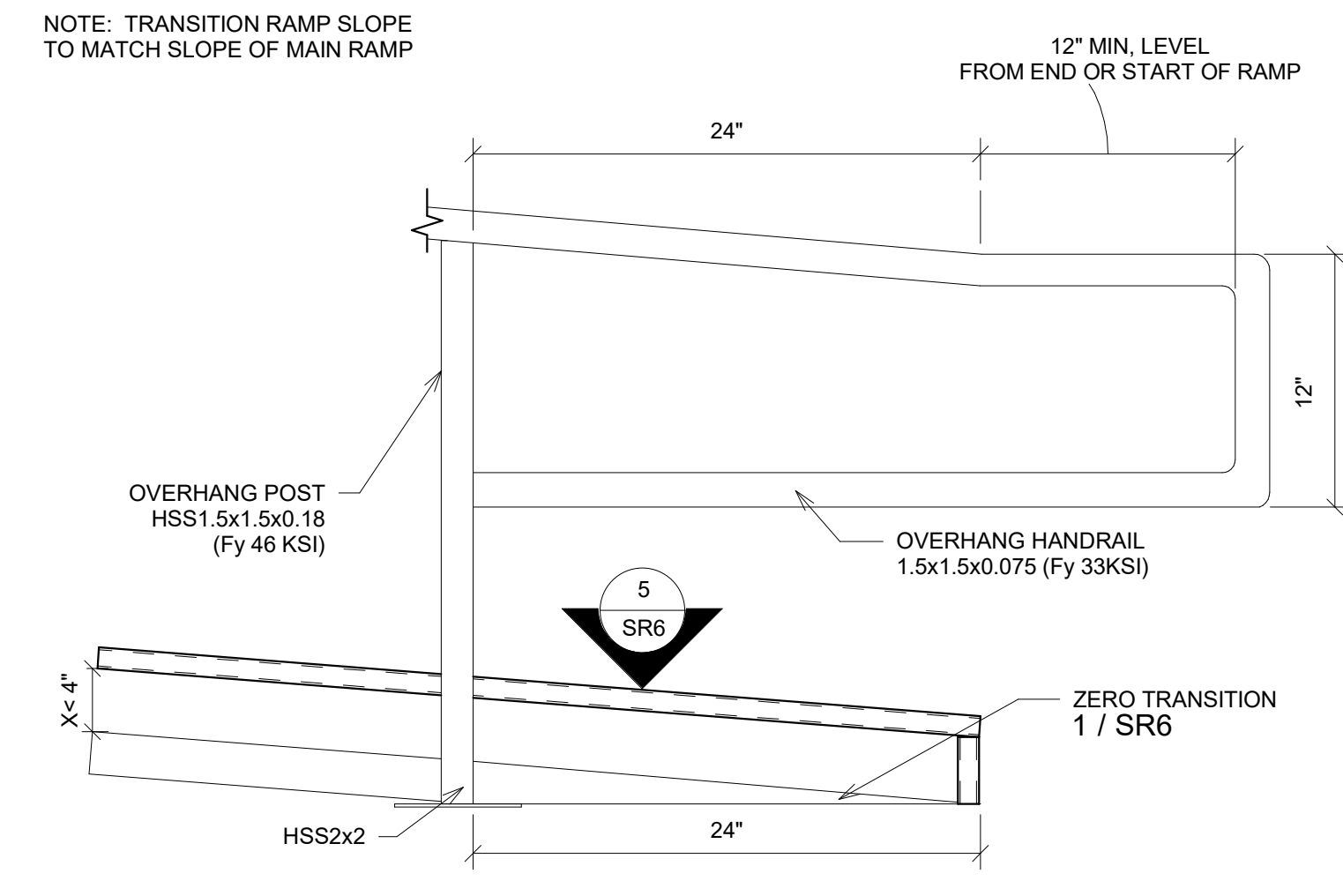
4 6" = 1'-0" Top View Ramp Zero Transition



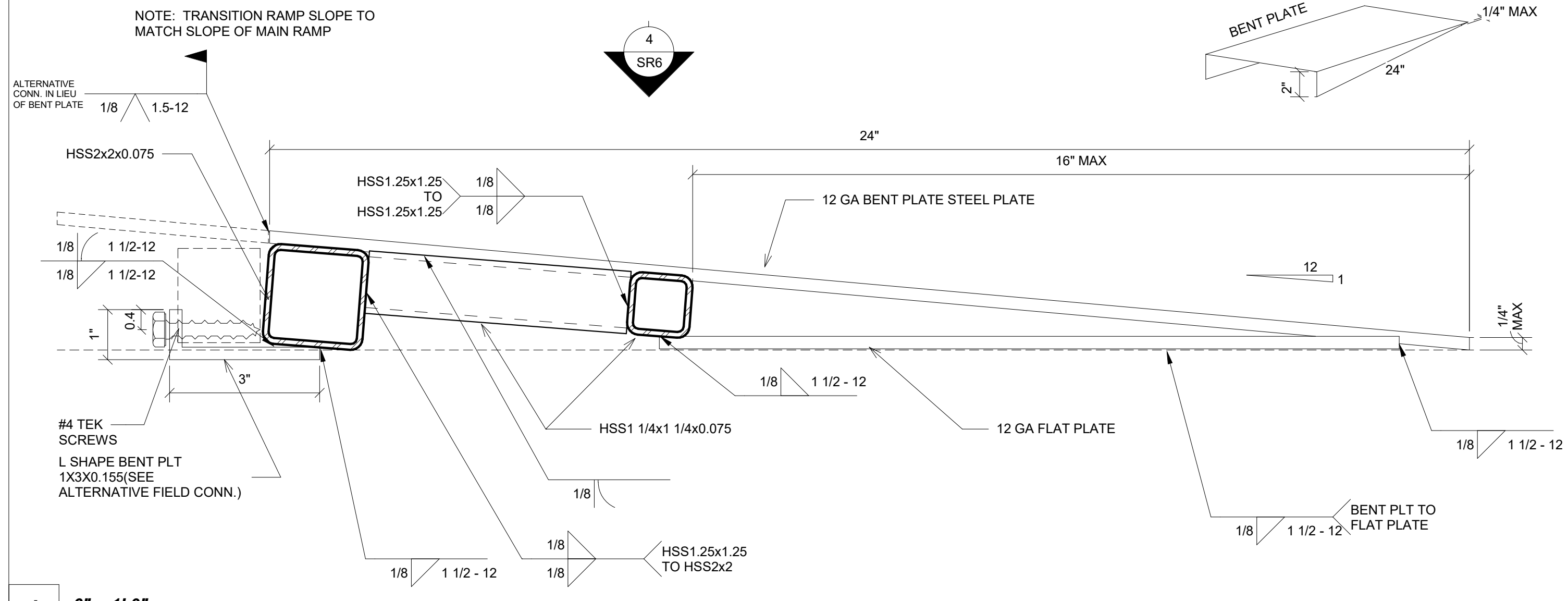
5 6" = 1'-0" Zero Transition Ramp Connection



10 1/2" = 1'-0" Section @ Ramp



6 1 1/2" = 1'-0" Extend Handrail @ Bottom End For Zero Transition Ramp

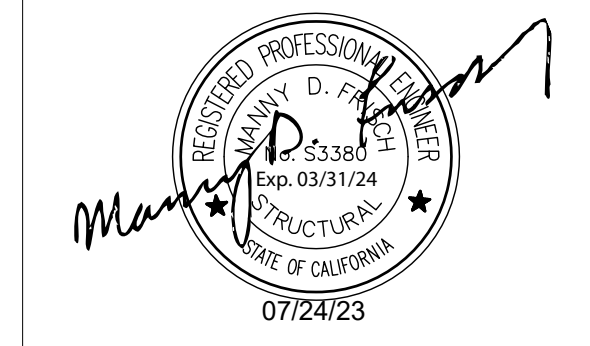


1 6" = 1'-0" Zero Transition Ramp

PROJECT SPECIFIC STATE AGENCY APPROVAL



PROFESSIONAL STAMP

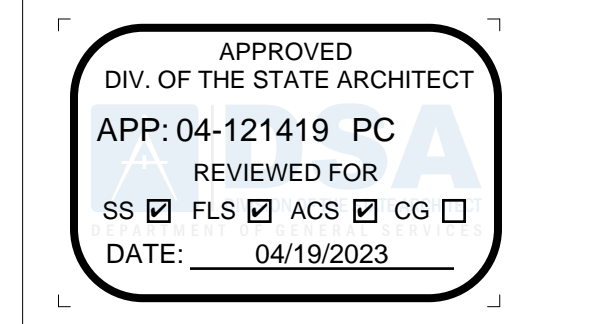


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ORIGINAL PC STATE AGENCY APPROVAL



Revision Schedule

#	Description	Date
22079		

PRE-CHECK (PC) DOCUMENT
 Code: 2022 CBC
 A separate project application for construction is required

PROJECT TITLE
RAMPS PC
 CLASS LEASING
 PC#04-121419

SHEET TITLE
Ramp Details

PROJECT NUMBER
 22079
 DRAWN BY
 SM
 CHECKED BY
 rMc
 DATE
 12/23/2022
 SHEET NO.
SR6

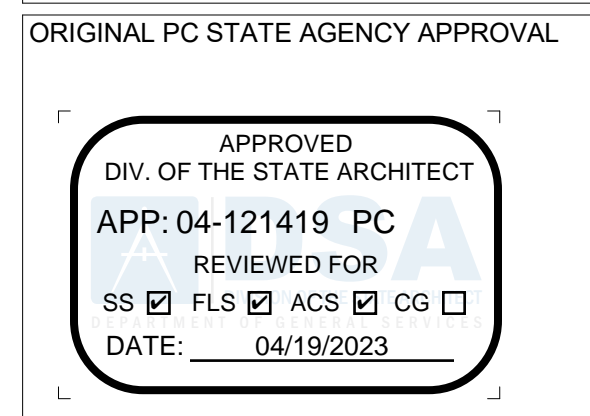
SHEET OF

6/15/2021 7:29:30 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REV\RS\H\20093 - Aries, Ramps and Stairs PC.rvt



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CLIENT
Class Leasing
 1320 W. Oleander Ave, Perris CA 92571-7408
 VOICE (951) 943-1908/Fax (951) 943-5768



Revision Schedule

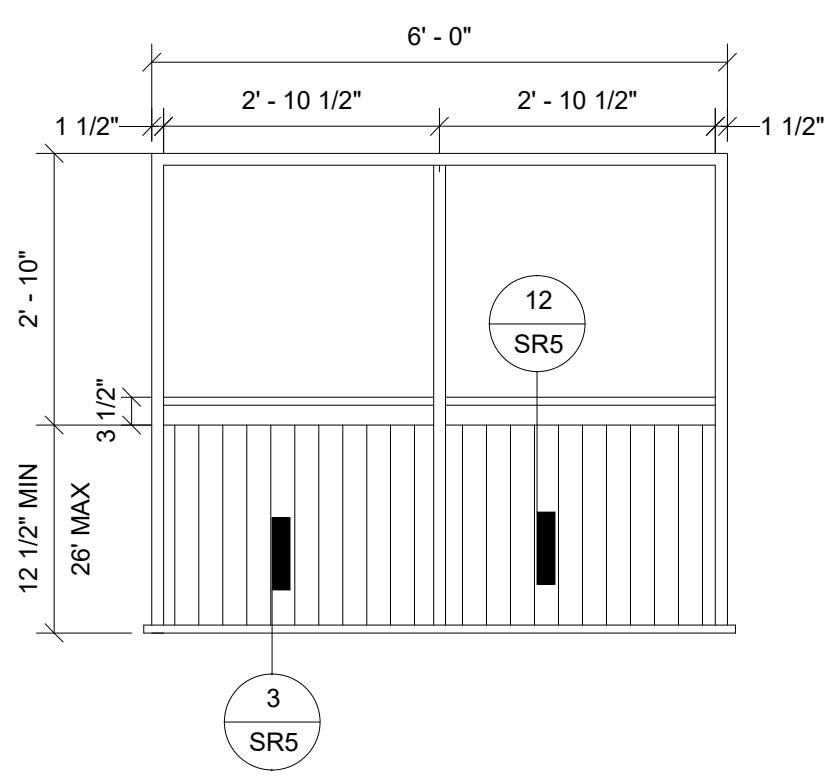
#	Description	Date
22079		

PRE-CHECK (PC) DOCUMENT
 Code: 2022 CBC
 A separate project application for construction is required

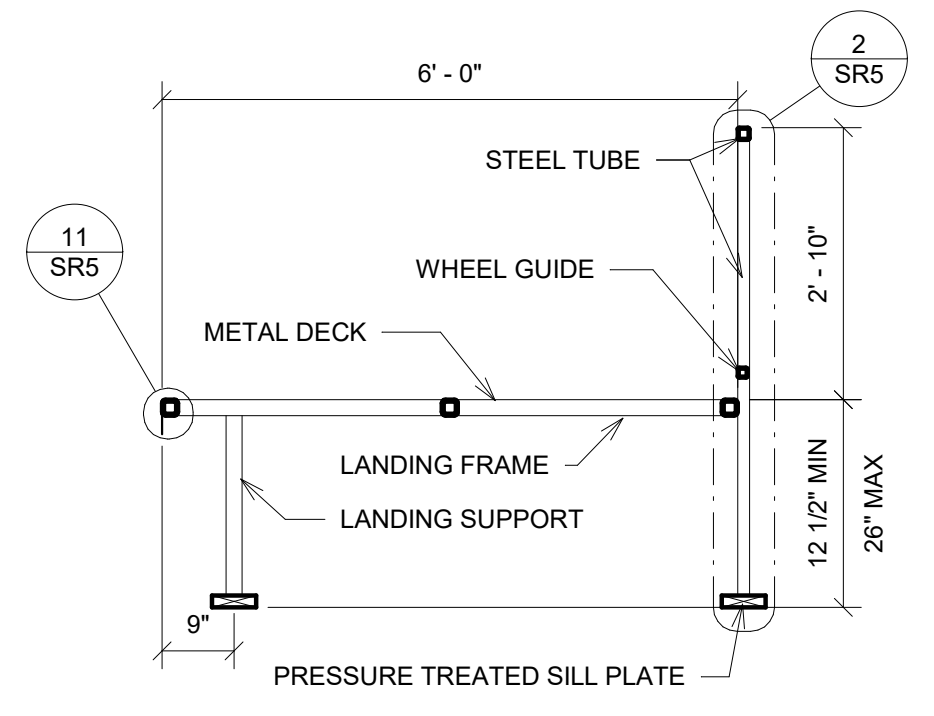
PROJECT TITLE
RAMPS PC
 CLASS LEASING
 PC#04-121419

SHEET TITLE
Stair Conn

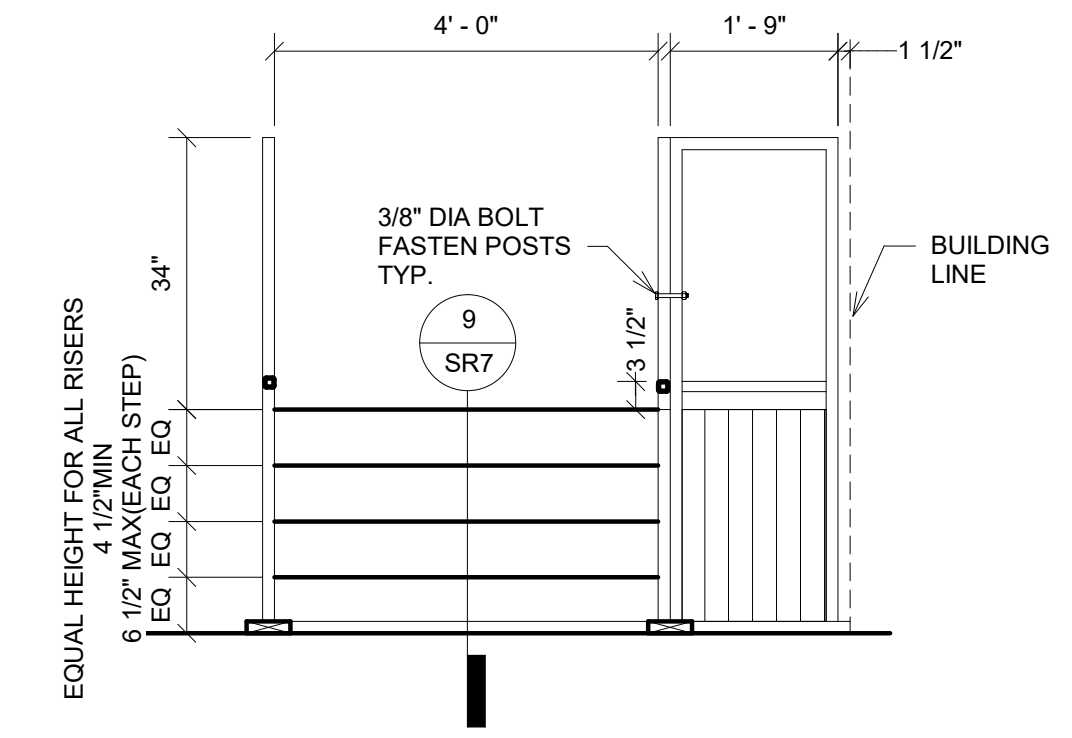
PROJECT NUMBER
 22079
 DRAWN BY
 rMc
 CHECKED BY
 BR
 DATE
 12/23/2022
 SHEET NO.
SR7



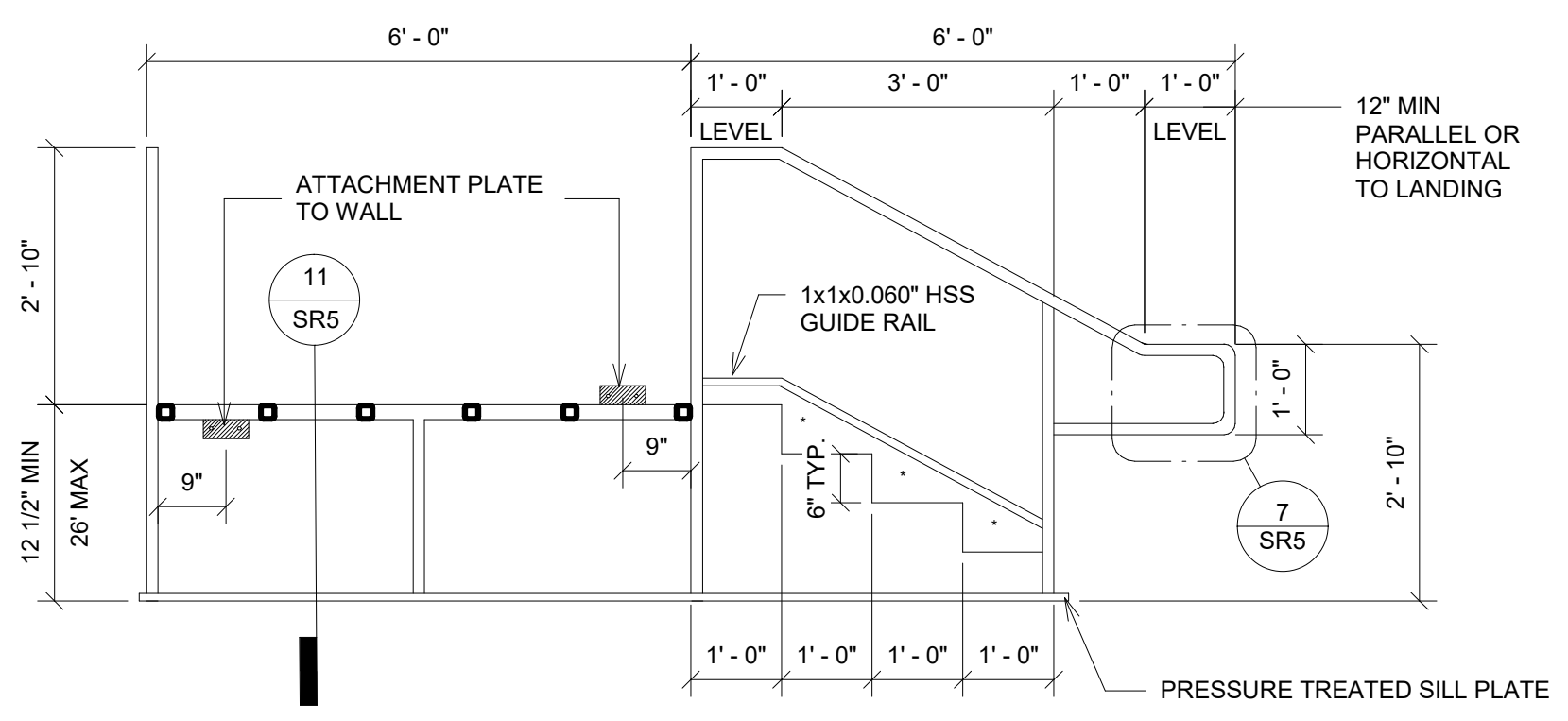
1 1/2" = 1'-0"
 LANDING ELEVATION VIEW



2 1/2" = 1'-0"
 LANDING SECTION

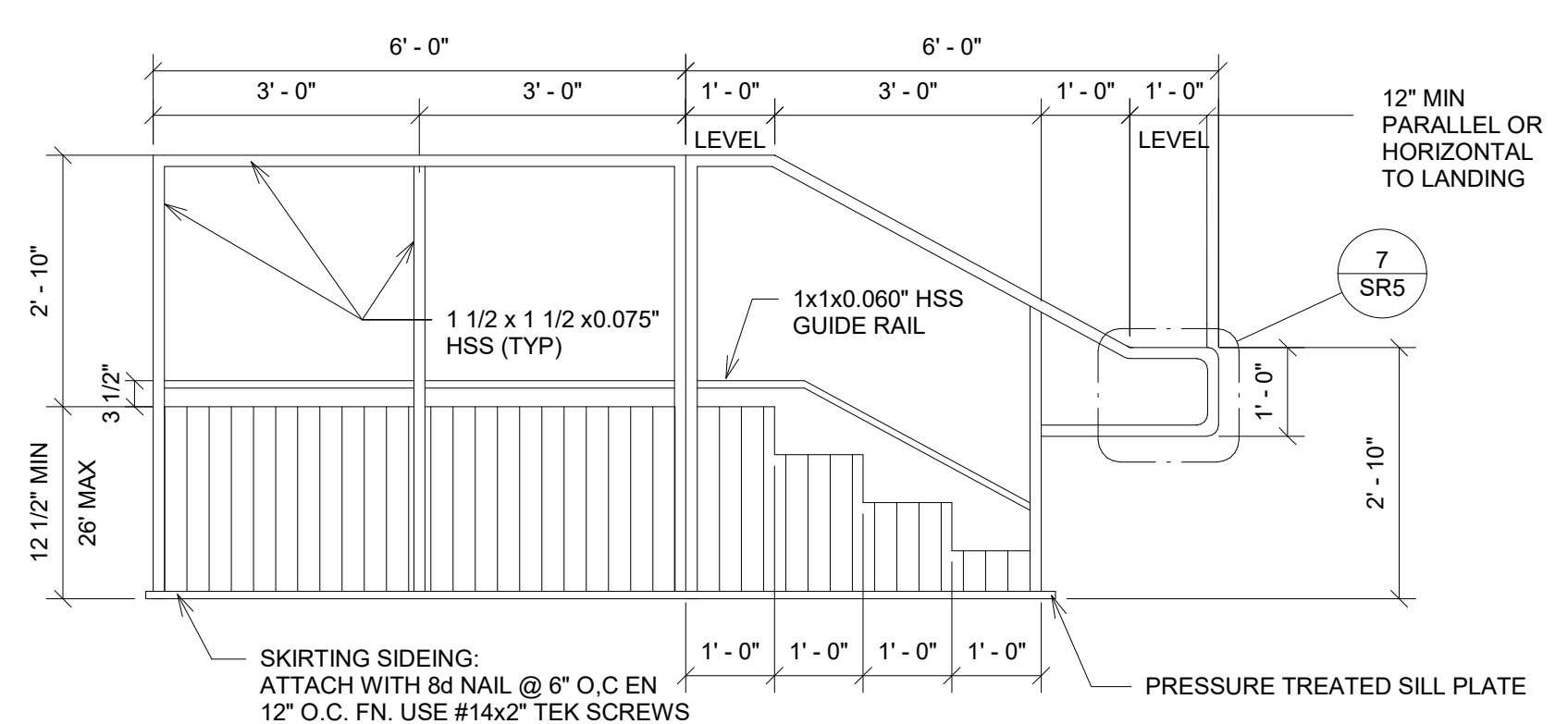


6 1/2" = 1'-0"
 STEPS ELEVATION

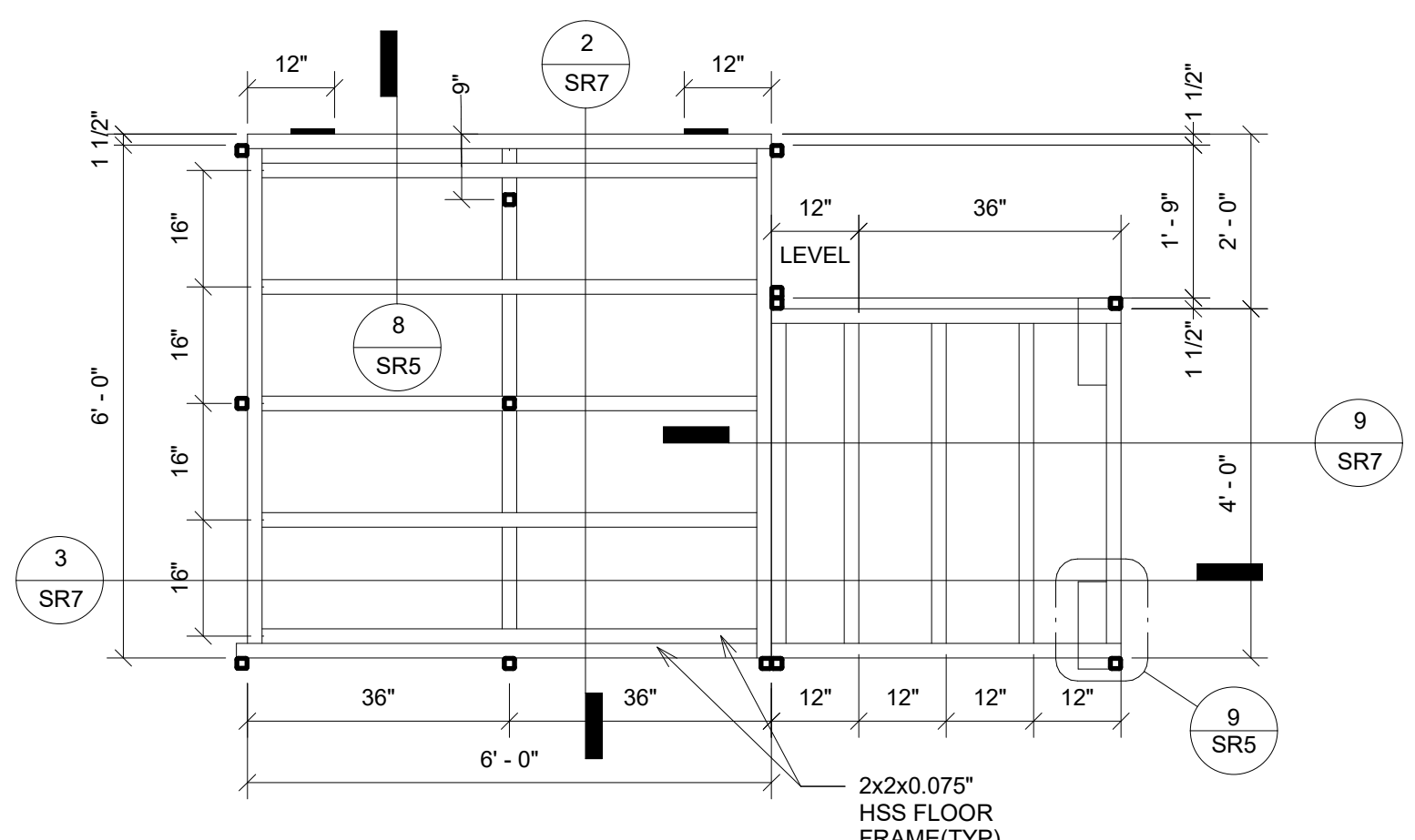


3 1/2" = 1'-0"
 STEP AND LANDING SECTION

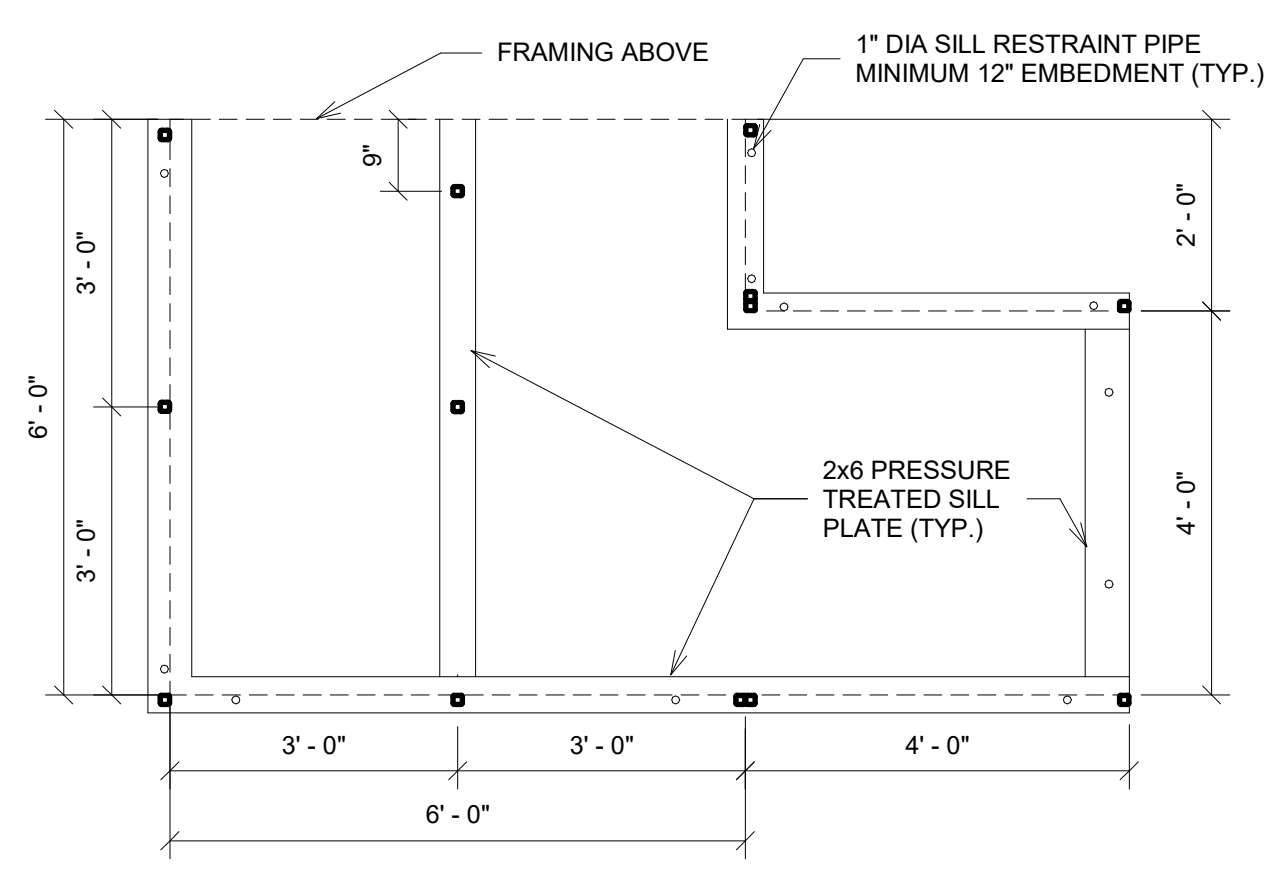
*THE TRIANGULAR OPENING AT THE OPEN SIDES OF A STAIR FORMED BY THE RISER, TREAD, AND BOTTOM RAIL SHALL NOT ALLOW PASSAGE OF A SPHERE 6 INCHES IN DIAMETER PER CBC 1015.4(TYP)



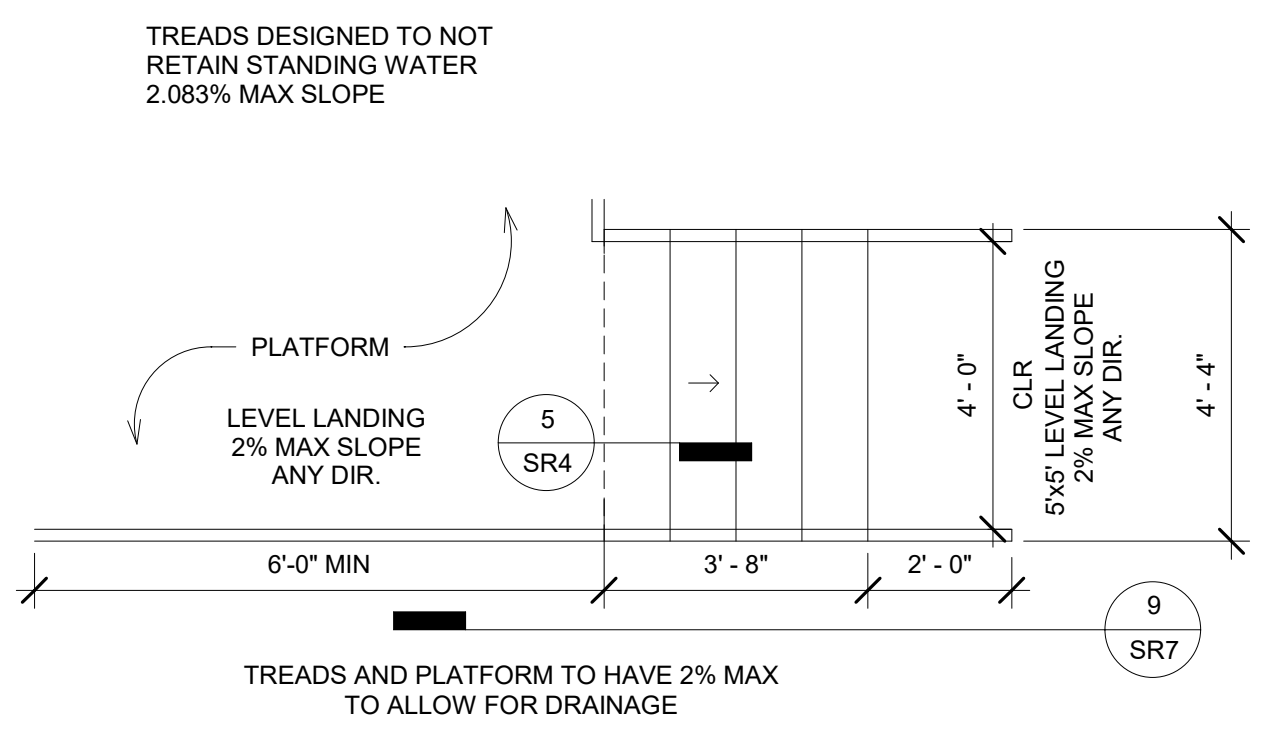
4 1/2" = 1'-0"
 STEPS AND LANDING SECTION



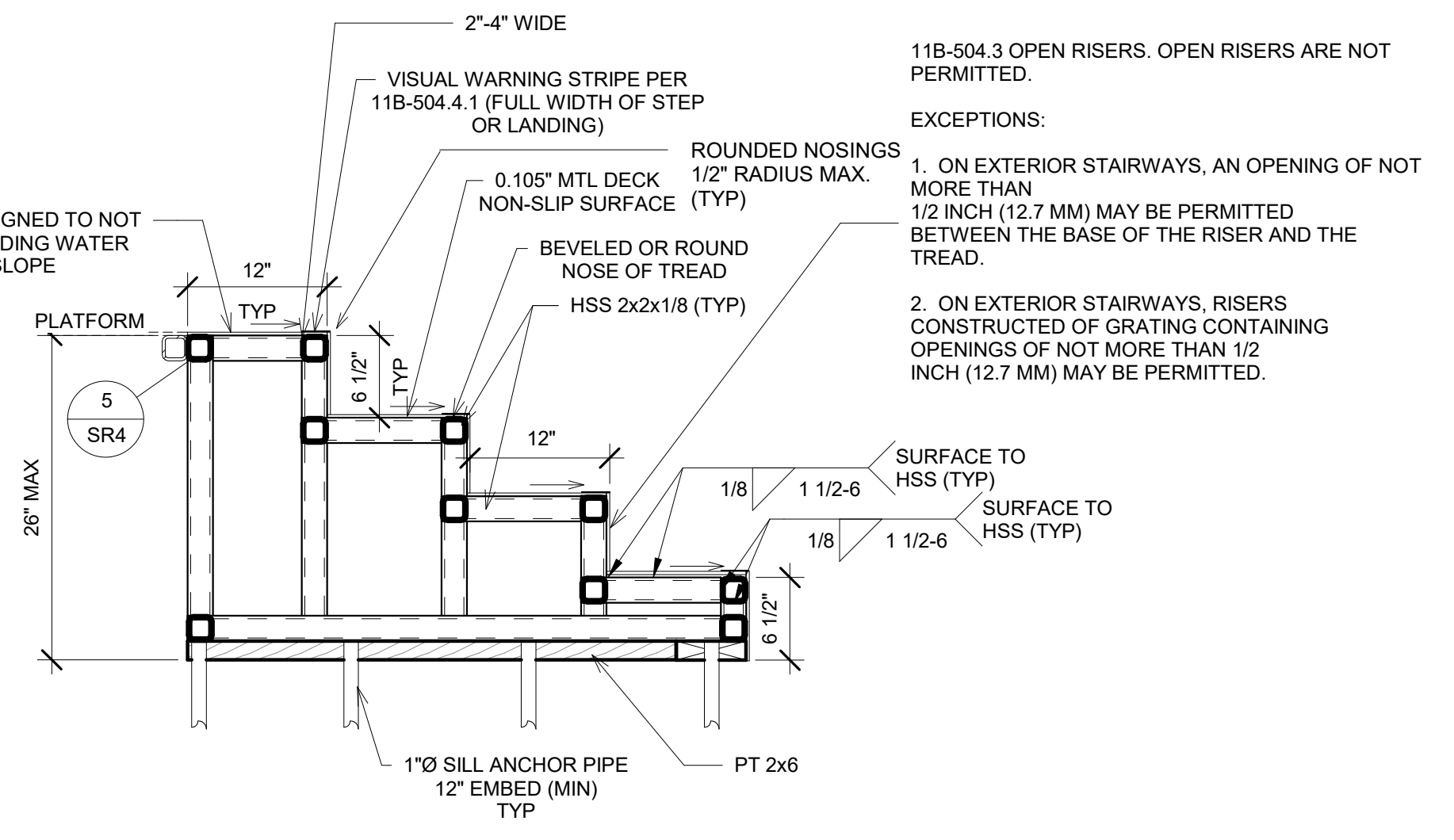
5 1/2" = 1'-0"
 STEPS/LANDING FRAMING PLAN



7 1/2" = 1'-0"
 SILL PLAN

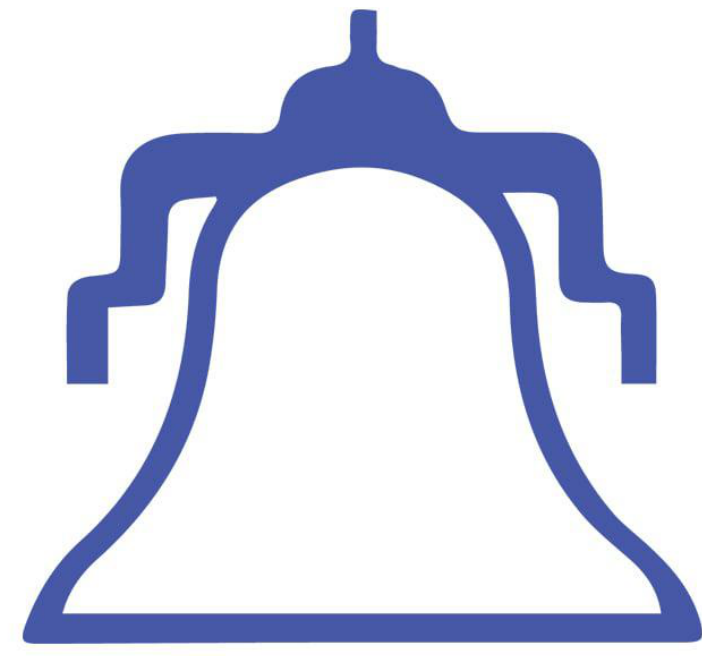


8 3/8" = 1'-0"
 Stair



9 1" = 1'-0"
 Stair Elev

6/15/2021 7:29:30 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REV\TISH\20093 - Aries, Ramps and Stairs PC.rvt

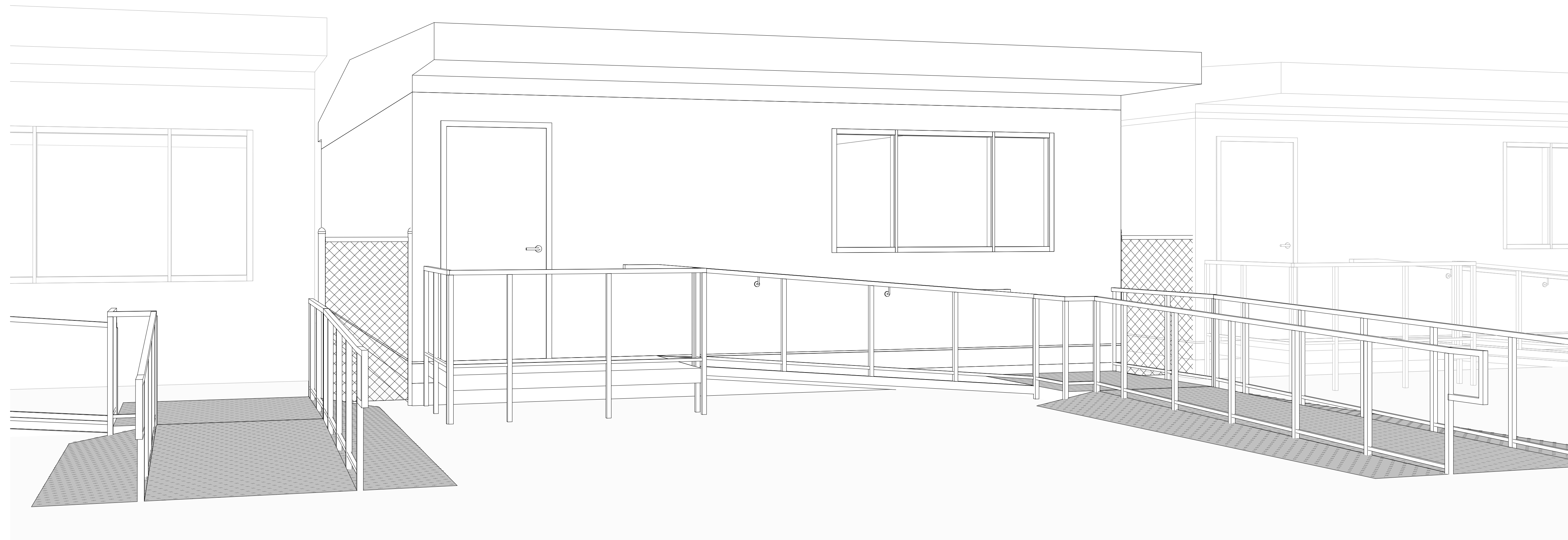


Tustin Unified
School District

TUSD

MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

03-21-2024



OWNER

Tustin Unified School District
19251 Dodge Ave
Santa Ana, CA 92705
t: (949) 293-4850
Contact: Tom Rizzuti

ARCHITECT

PBK Architects
2400 E Katella Avenue, Suite 950
Anaheim, CA 92806
t: (949) 548-5000
Contact: Bruce Ou

CIVIL ENGINEER

FPL and Associates, Inc.
30 Corporate Park, Suite 401
Irvine, CA. 92606
t: (949) 252-1688
Contact: RON CANEDY

MEP ENGINEER

LEAF Engineers
2400 E Katella Avenue, Suite 950
Anaheim, CA 92806
t: (949) 548-5000
Contact: Rex Wang



MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

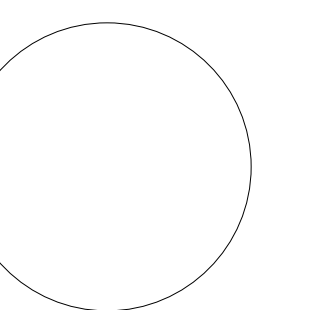
PROJECT ADDRESS:
3181 Tustin Dr.
Irvine, CA 92602

DSA-APPL. NO.: xxxxx DSA-FILE NO.: xxxxx



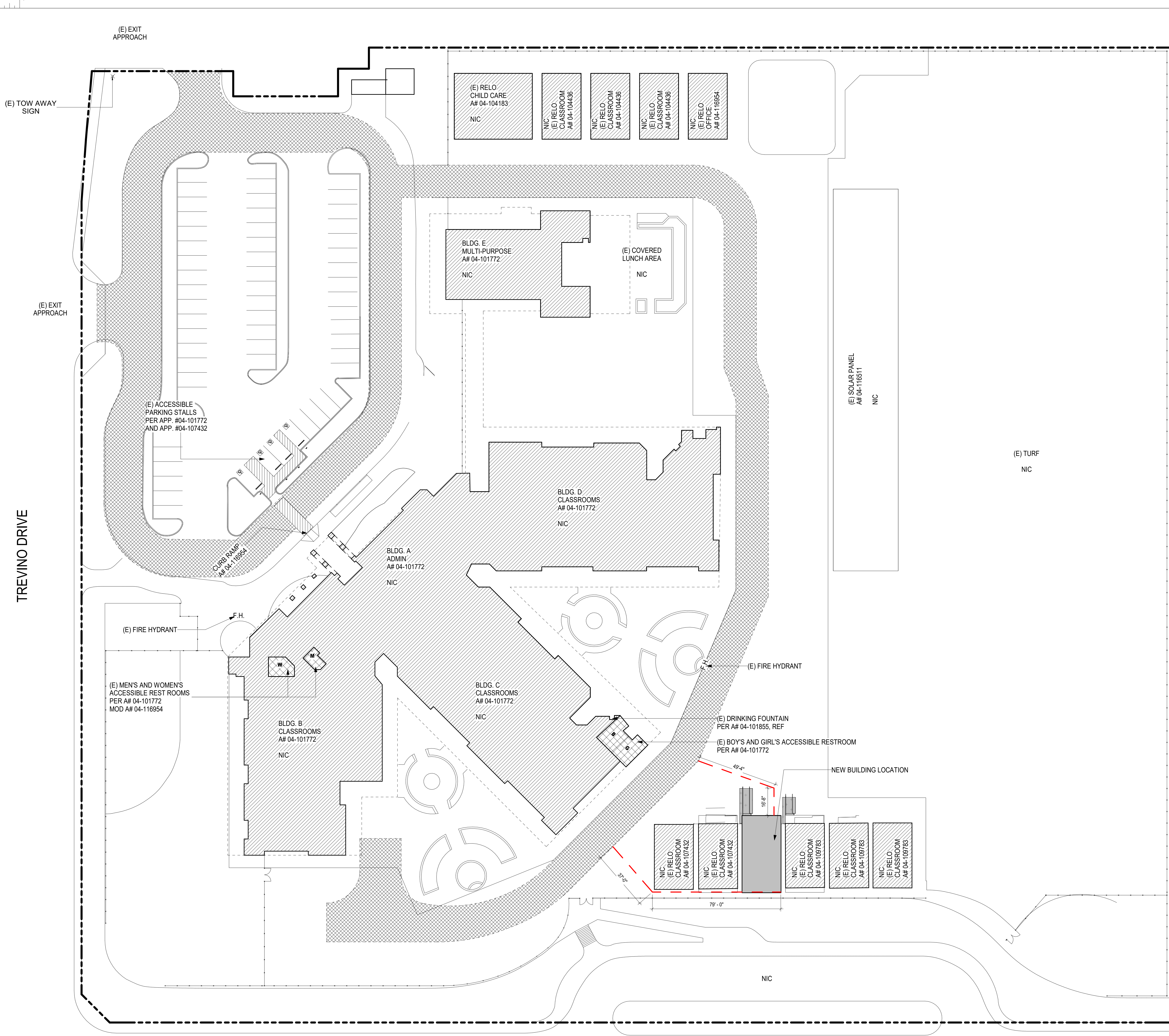
Tustin Unified
School District

Architect



COVER SHEET

GO.00



SITE PLAN LEGEND

- (E) FIRE LANE A#111300
- PROPOSED RELOCATABLE BUILDINGS
- (E) BUILDING NIC
- PROPERTY LINE
- FIRE HOSE PULL

BUILDING FIRE FLOW DATA

BUILDING E100 960 S.F.
 FIRE FLOW REQUIRED (CFC 105.1) 1,500 GPM
 MIN. NUMBER OF HYDRANTS REQUIRED 1

810 FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects consisting of construction of a new campus, construction of new buildings, additions to existing buildings, and for site alternate design means for the department emergency vehicle access, and fire suppression water supply. Information associated with compliance items 1 through 3 below is to be provided for all project types indicated above. Information associated with items 4 through 7 is to be completed when an alternate means is utilized. Acknowledgment by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

The Project Information and Fire & Life Safety Information sections are to be completed for all projects and imaged onto the fire access site plan. When an alternate design/means is proposed, all sections on pages 1 and 2 are to be completed and imaged on the fire access site plan.

For additional information refer to the instructions at the end of this form and DSA Policy PL 09-01: Fire Flow for Buildings.

PROJECT INFORMATION

School District/Owner: Tustin Unified School District
 Project Name/School: Myford Elementary School
 Project Address: 3181 Trevino Dr., Irvine, CA 92602

FIRE & LIFE SAFETY INFORMATION

1. Has a fire hydrant flow test been performed within the past 12 months? (If yes, provide a copy of the test data.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. Was the fire hydrant water flow test performed as part of this LFA review?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
3. Is the project located within a designated fire hazard severity zone (FHSZ) as established by Cal-Fire? (If yes, indicate FHSZ classification below.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Refer to the following website for FHSZ locations: <http://www.fire.ca.gov>

Wildland Interface Area (WIFA) (If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)

Moderate High Very High WIFA

DSG DSA 810 (revised 12/20/20) DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 1 of 4

DSA 810 FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

CONDITION MEANS AND METHODS RESOLUTION	ALTERNATE ACCEPTED			
	Yes	No	N/A	N/D
4. Emergency vehicle access roadways do not meet CFC requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4a. Acceptable Alternate: Emergency vehicle and personnel access as proposed in the project architect is acceptable for providing fire suppression and protection of life and property.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Fire Hydrants: Number and spacing does not meet CFC requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5a. Acceptable Alternate: Number of fire hydrants and spacing as proposed by the project architect is acceptable for fire suppression and protection of life and property.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Fire Hydrants: Water flow and pressure are less than CFC minimum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6a. Acceptable Alternate: The available flow and pressure is acceptable for providing fire suppression and protection of life and property.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Location of fire department connector(s) serving fire sprinkler systems or standpipe systems does not meet CFC requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7a. Acceptable Alternate: The location of fire department connector serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

School District Acceptance of Acceptable Design Alternates
 By signing this form, the school district acknowledges and accepts the proposed design as an alternative to California Building Code (CBC) and California Fire Code (CFC) minimum requirements, as indicated by one or more of the conditions indicated at items 4b, 5a, 6a or 7a, for providing fire and life safety protection of life and property.

Accepted by: _____ Title: _____
 Signature: _____ Date: _____

LOCAL FIRE AUTHORITY (LFA) INFORMATION

LFA Agency Name: _____
 LFA Review Official: _____
 Title: _____ Work Phone: _____
 Work Email: _____
 LFA Reviewer's Signature: _____ Date: _____

DSG DSA 810 (revised 12/20/20) DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 2 of 4

FIRE FLOW TEST

SoCal Flow Testing
 3741 Rose Dr, Yorba Linda, CA 92886
 714-261-4316
 email: info@socalflowtest.com

Hydrant Flow Test Report

Project: Myford Elementary School - Test A Test date: 11/6/23
 Address: 3181 Trevino Dr Test time: 07:15
 City: Irvine State: CA File no. _____

Test hydrant location: East of Bldg D, North of Bldg C

Flow hydrant location: South of Bldg C, East of Bldg E

Outlet	C-value	Diem	Flow	Pressure	Volume
A	0.9	2.0	0	PSI	0 GPM
B	0.9	2.5	41	PSI	1074 GPM
C	0.9	3.0	0	PSI	0 GPM
D	0.83	4.0	0	PSI	0 GPM

Residual Pressure: 81 PSI at an observed volume of 1074 GPM
 Projected Pressure: 20 PSI calculates to a volume of 3994 GPM

Although the results are accurate for the date and time given, they may not accurately reflect higher or lower readings which vary due to seasonal conditions and time of day.
 Per NFPA 24-10, Table C.4.10.1(a), note 1, Q=29.84 x (d^5)^0.87
 Per NFPA 24-10, Paragraph C.4.10.1.2, Q = Q₁ x (h₁/h₂)^{1.87}

Test by: Hildebrandt

Witness: George M. Custodian

Client: Tom Rozell
Tustin Unified School District
(949) 293-4550

cc: trout@tustin.k12.ca.us

Not for permitting or construction

This document is for plan review only

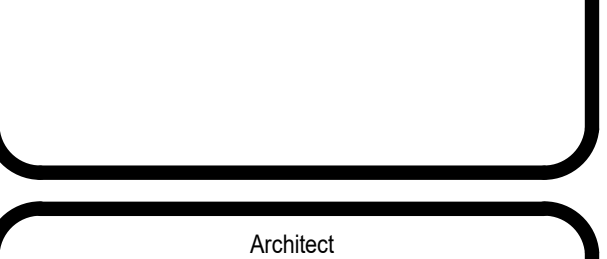
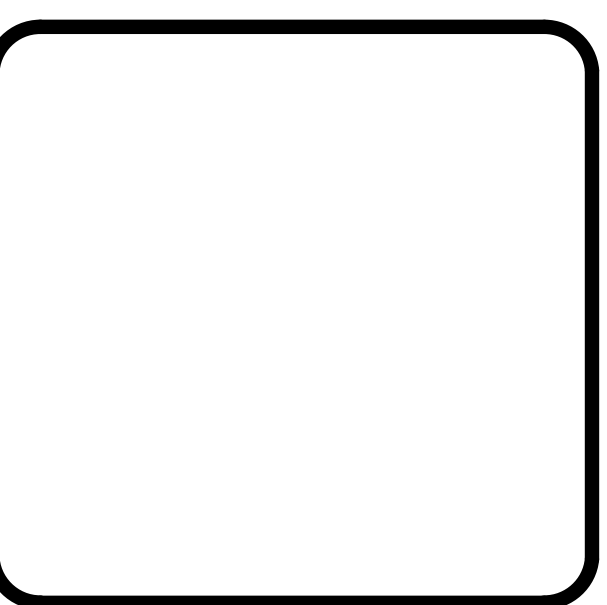


ARCHITECT ANAHEIM PBK Architects, Inc.
 2400 East Katella Ave, Suite 950
 Anaheim, CA 92806
 P 949-548-5000

MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
 3181 Trevino Dr.
 Irvine, CA 92602

DSA FILE NO. 30-51
 DSA APPR. NO. 04-12383

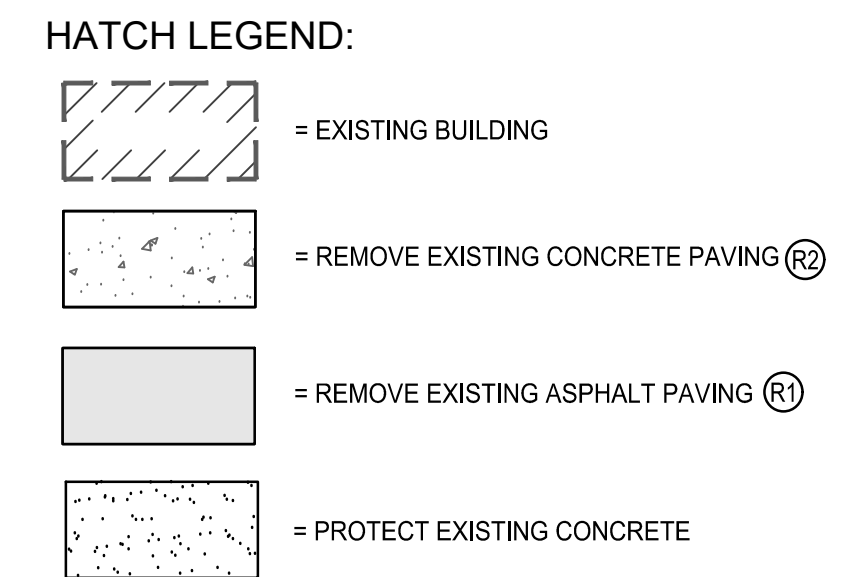
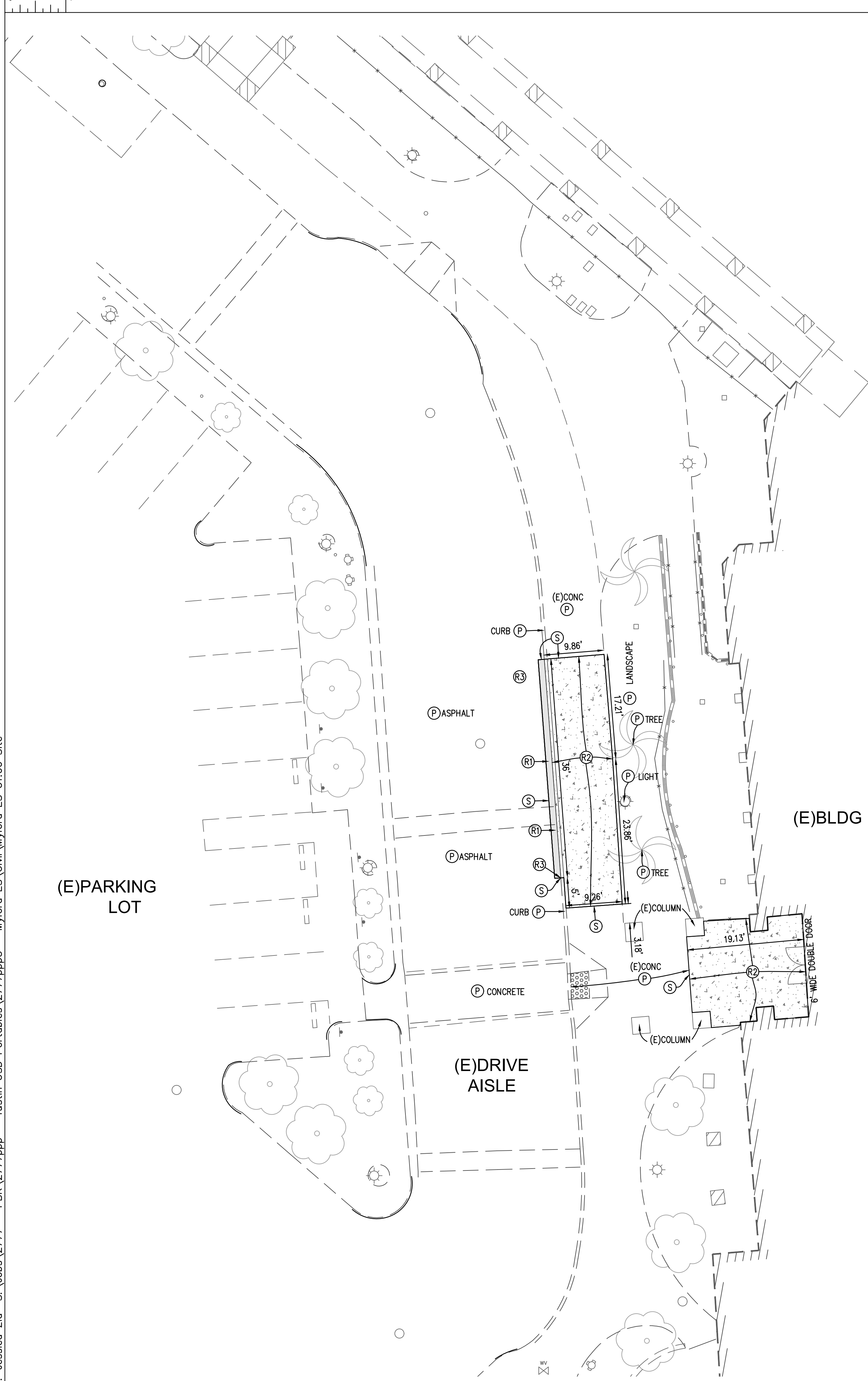


CLIENT TUSD

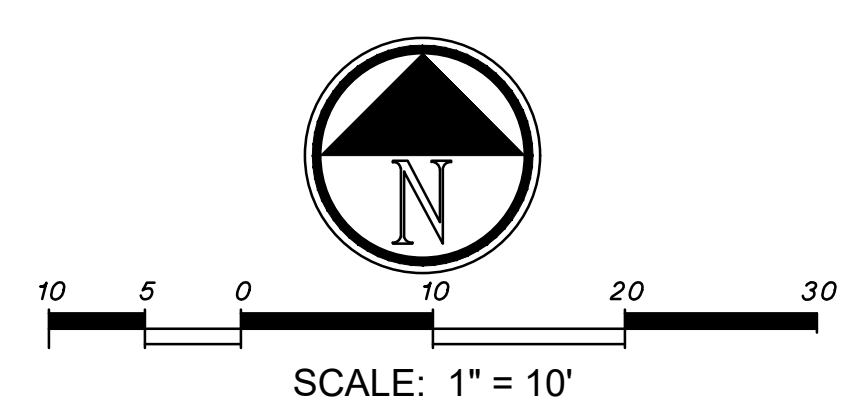
DATE 03-21-2024 PROJECT NUMBER 230380

No.	Description	Date

FIRE ACCESS SITE PLAN



- SITE DEMOLITION NOTES**
- PROTECT EXISTING IMPROVEMENT IN PLACE.
 - SAWCUT EXISTING CONCRETE WITH CLEAN EDGE.
 - ADJUST TO GRADE.
 - REMOVE & DISPOSE OF EXISTING IMPROVEMENT.
 - REMOVE & DISPOSE OF EXISTING 12' WIDE STRIP OF ASPHALT PAVEMENT & BASE.
 - REMOVE & DISPOSE OF EXISTING CONCRETE PAVEMENT.
 - REMOVE & DISPOSE OF EXISTING CONCRETE CURB.
 - REMOVE & DISPOSE OF EXISTING HANDRAIL.



EARTHWORK NOTICE TO CONTRACTOR. NO EARTHWORK ANALYSIS HAS BEEN COMPLETED WITH RESPECT TO VOLUMES OF SOILS TO BE EXCAVATED, PLACED, OR IMPORTED IN ORDER TO PROVIDE THE FINISHED GRADES SHOWN ON THE PLANS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE EARTHWORK QUANTITIES NECESSARY TO COMPLETE THE PROJECT.

CONSTRUCTION STORM WATER NOTE: GRADING WORK ASSOCIATED WITH THIS PROJECT WILL DISTURB LESS THAN 1 ACRE OF SOIL AND THUS SHALL NOT BE SUBJECT TO COMPLY WITH THE NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES (GENERAL PERMIT) ORDER WQ 2022-0057-DWQ.

GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

NOTE TO CONTRACTOR: BEFORE DEMOLITION OR TRENCHING OCCURS, THE CONTRACTOR SHALL COMPLETE AN UNDERGROUND UTILITY MAPPING SURVEY OF THE ENTIRE LIMITS OF WORK TO DETERMINE WHERE EXISTING UTILITIES ARE AND WHERE POSSIBLE UNDERGROUND CONFLICTS MAY OCCUR. PROVIDE SURVEY TO OWNER.

GENERAL DEMOLITION NOTES

- ALL ITEMS SHOWN ON THIS PLAN TO BE REMOVED, SHALL BE VERIFIED BY THE SCHOOL DISTRICT PRIOR TO DEMOLITION. THE CONTRACTOR SHALL MEET WITH THE SCHOOL'S REPRESENTATIVE PRIOR TO CLEARING AND GRUBBING.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND QUANTITY OF EXISTING SURFACE STRUCTURES AND SHALL BE SOLELY RESPONSIBLE FOR ANY UNIDENTIFIED UTILITIES, IMPROVEMENTS, TREES, ETC., TO BE DEMOLISHED AND REMOVED WITHIN THE DEMOLITION LIMIT LINE, INCLUDING APPURTENANT FOUNDATIONS OR SUPPORTS.
- REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIAL.
- ALL CONCRETE & CMU BLOCK WALLS & PLANTERS SHOWN ON THIS PLAN TO BE REMOVED SHALL INCLUDE WALL FOOTINGS & FOUNDATIONS IN THEIR REMOVAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FIELD VERIFY AND FULLY ACKNOWLEDGE THE EXTENT OF THE DEMOLITION WORK. ALL ITEMS TO BE REMOVED SHALL BE MARKED BY THE CONTRACTOR PRIOR TO DEMOLITION.
- DAMAGE TO ANY EXISTING UTILITIES AND SERVICES WHICH ARE TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
- TEMPORARY EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAIN, SANITARY SEWERS AND STREETS.
- DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
- THE PROVISIONS OF CALIFORNIA FIRE CODE CHAPTER 14 AND CALIFORNIA BUILDING CODE CHAPTER 37 SHALL BE ENFORCED ON THIS PROJECT.
- THE CONTRACTOR SHALL PREPARE HIS OWN UNDERGROUND UTILITY MAPPING SURVEY OF THE SITE AND MARK, WITH PAINT, THE LOCATIONS OF ALL EXISTING UTILITIES FOUND PRIOR TO DEMOLITION.
- THE CONTRACTOR SHALL DEMOLISH AND REMOVE ALL LANDSCAPING WATERING SYSTEMS WITHIN THE DEMOLITION LIMIT LINE UNLESS DESIGNATED TO REMAIN IN PLACE ON THE PLANS. WHERE THE DEMOLITION IMPACTS EXISTING LANDSCAPE TO REMAIN, MODIFY THE EXISTING IRRIGATION SYSTEM, INCLUDING ADDING IRRIGATION HEADS AS NECESSARY TO MAINTAIN COMPLETE AND FULL COVERAGE OF EXISTING PLANNING.
- CONTRACTOR SHALL NOT DAMAGE ANY PUBLIC SIDEWALK DURING THE COURSE OF HIS WORK. THE USE OF SHORING ON SCHOOL PROPERTY WILL BE REQUIRED TO PROTECT THE PUBLIC SIDEWALK IF NECESSARY.
- THE CONTRACTOR SHALL BACKFILL SOIL IN THE EXCAVATED TREE ROOT PITS AND THE TRENCHES FOR REMOVED EXISTING UNDERGROUND STRUCTURES, UTILITIES, AND IMPROVEMENTS.
- THE CONTRACTOR SHALL NOT ABANDON-IN-PLACE ANY EXISTING UNDERGROUND STRUCTURE, UTILITY, OR IMPROVEMENT SO DESIGNATED FOR REMOVAL ON THE PROJECT PLANS UNLESS DIRECTED TO BY THE OWNER.
- CONTRACTOR TO SAWCUT ALL EXISTING A.C. AND CONCRETE PAVEMENT AT DEMOLITION LIMIT LINE. CONTRACTOR SHALL REMOVE SIDEWALK, CURB & GUTTER TO THE NEAREST JOINT.
- CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS OUTSIDE THE DEMOLITION LIMIT LINE THAT ARE DAMAGED DURING CONSTRUCTION TO MATCH EXISTING, INCLUDING PERMANENT TRENCH RESURFACING.
- CONTRACTOR SHALL FIELD VERIFY THAT THE REMOVAL OF EXISTING UTILITIES WILL NOT IMPACT AREA OPERATIONS.
- BEFORE EXCAVATING ANY TRENCH 5 FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN TO THE SCHOOL, SHOWING THE DESIGN OF SHORING, BRACING, SLOPING, OR OTHER PROVISIONS TO BE MADE FOR THE WORKERS' PROTECTION FROM THE HAZARD OF CAVING GROUND DURING THE EXCAVATION OF SUCH TRENCH. IF THE PLAN VARIES FROM THE SHORING SYSTEM STANDARDS, THE PLAN SHALL BE PREPARED BY A REGISTERED CIVIL ENGINEER. NO EXCAVATION SHALL START UNTIL THE SCHOOL HAS ACCEPTED THE PLAN AND THE CONTRACTOR HAS OBTAINED A PERMIT FROM THE STATE DIVISION OF INDUSTRIAL SAFETY.
- CONTRACTOR IS RESPONSIBLE TO KEEP ALL UTILITIES OPERATIONAL THAT SERVES FACILITIES OUTSIDE THE SCOPE OF THE DEMOLITION ZONE. CONTRACTOR IS ALSO RESPONSIBLE TO REROUTE UTILITIES IF NECESSARY TO COMPLETE DEMOLITION.
- CONTRACTOR SHALL INSTALL A TEMPORARY MINIMUM 8' HIGH CHAIN LINK CONSTRUCTION FENCE, WITH GREEN SCREEN, AROUND PERIMETER OF DEMOLITION AREA.
- ALL EXISTING DRAINAGE STRUCTURES ON SITE SHALL BE PROTECTED AND REMAIN FUNCTIONAL DURING DEMOLITION AND THROUGH THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THESE STRUCTURES, OR DAMAGE CAUSED TO ADJACENT PROPERTIES DUE TO THE OBSTRUCTION OF THESE STRUCTURES.
- CONTRACTOR SHALL COMPLY WITH CALIFORNIA FIRE CODE CHAPTER 33 - FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION.

PLANS PREPARED BY:
FPL FPL and Associates, Inc.
 Traffic • Transportation • Civil
 30 Corporate Park, Suite 401
 Irvine, CA 92606
 Phone: 949-252-1688

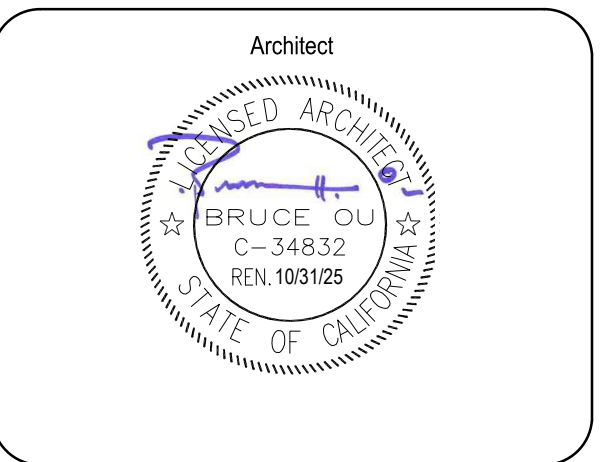
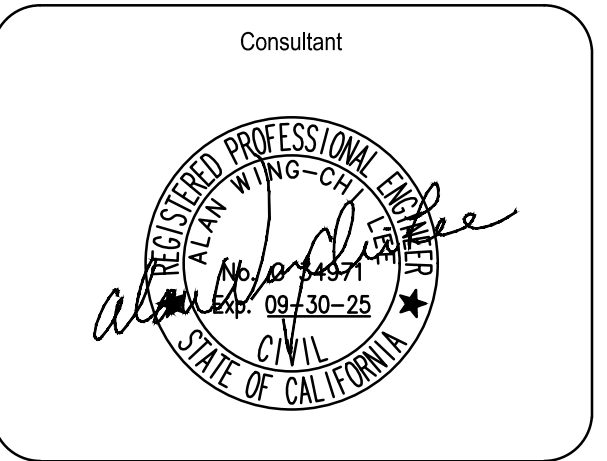
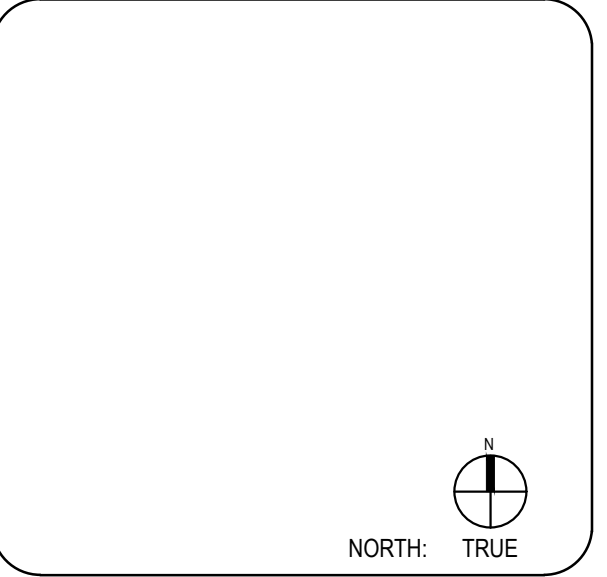


ARCHITECT ANAHEIM PBK Architects, Inc.
 2400 East Katella Ave, Suite 950
 Anaheim, CA 92806
 P 949-548-5000

MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
 3181 Trevino Dr.
 Irvine, CA 92602

DSA APPL. NO.: 04-123383 DSA FILE NO.: 30-51

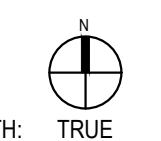


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TUSD	PROJECT NUMBER
DATE	230380
03-21-2024	

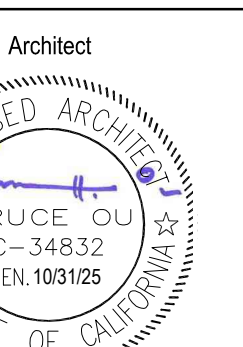
No.	Description	Date

SITE DEMOLITION PLAN

C1.00



Consultant



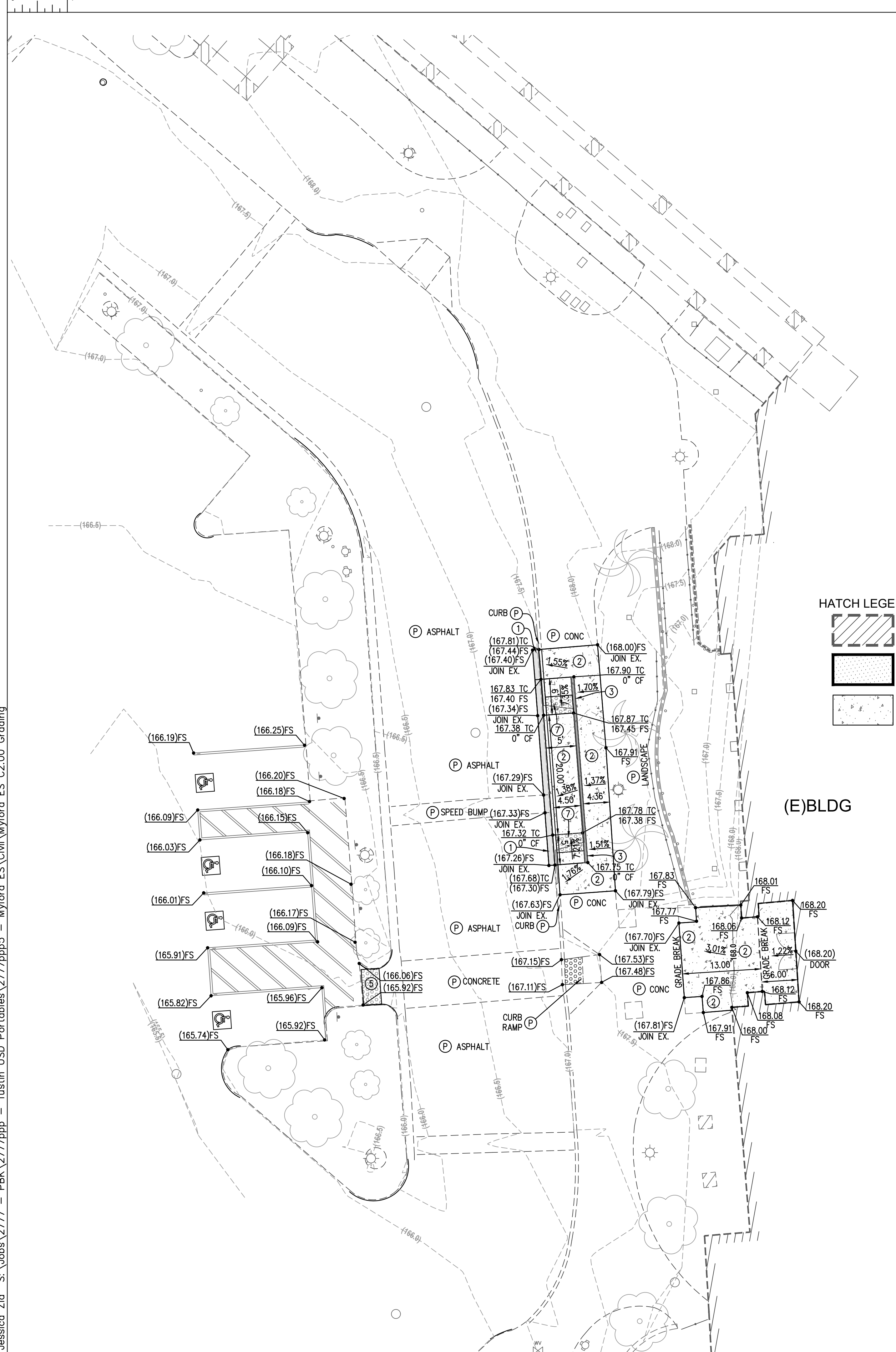
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DATE	PROJECT NUMBER
03-21-2024	230380

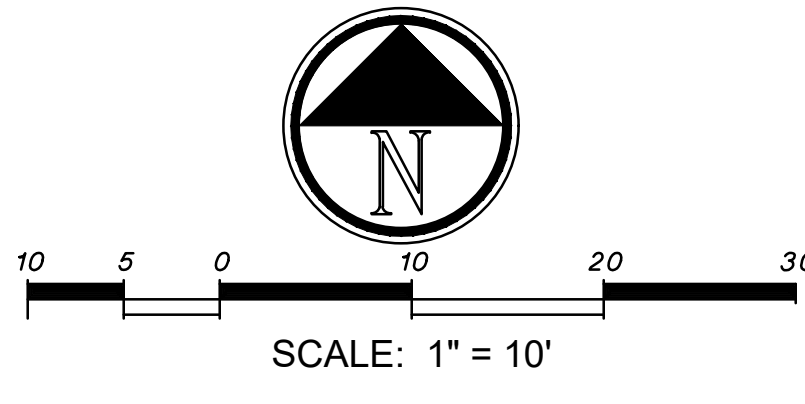
REVISIONS

No.	Description	Date

GRADING PLAN



*** = RAMP LANDING AT TOP:
 2.0% MAX. SLOPE IN ANY DIRECTION
 ** = RAMP LANDING AT BOTTOM:
 2.0% MAX. SLOPE IN ANY DIRECTION
 (MINIMUM 6' LONG x 5' WIDE)
 = 2H:1V MAXIMUM SLOPE
 ON FLARED SIDES



HATCH LEGEND:

	= EXISTING BUILDING		= EXISTING CONCRETE PAVING
	= NEW BUILDING		= NEW ASPHALT PAVING
	= NEW CONCRETE PAVING		= NEW ASPHALT RAMP AND LANDING

GENERAL NOTES TO CONTRACTOR

- THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 7-10, PUBLIC CONVENIENCE AND SAFETY, OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK), IN REGARDS TO SAFETY ORDERS.
- SCOPE OF WORK:
 - PROVIDE ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT & FACILITIES NECESSARY TO FURNISH, FABRICATE, DELIVER, STORE AND INSTALL ALL WORK NOTED ON THE DRAWINGS.
 - THE CONTRACTOR SHALL FURNISH & INSTALL ALL WORK NECESSARY TO MAKE A COMPLETE SYSTEM WHETHER OR NOT SUCH DETAILS ARE MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE PLANS, BUT WHICH ARE OBVIOUSLY NECESSARY TO MAKE A COMPLETE SYSTEM. EXCEPTING ONLY THOSE PORTIONS THAT ARE SPECIFICALLY MENTIONED HEREIN OR PLAINLY MARKED ON THE ACCOMPANYING DRAWINGS AS BEING INSTALLED UNDER ANOTHER SECTION OF THE SPECIFICATION.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY AVAILABLE SPACES FOR INSTALLING THE WORK.
- COORDINATION: THE DRAWINGS ARE DIAGRAMMATIC & INTENDED TO SHOW SCOPE. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES TO PROVIDE BEST ARRANGEMENT OF ALL DUCT, PIPES, CONDUIT, ETC.
- WORKMANSHIP: THE WORK SHALL BE ACCOMPLISHED BY THE USE OF COMPETENT MECHANICS SKILLED IN THEIR TRADE. THE ENGINEER AND ARCHITECT SHALL HAVE THE RIGHT TO INTERPRET COMPLIANCE OF WORKMANSHIP WITH THE CONTRACT DOCUMENTS.
- MATERIALS: ALL MATERIALS, APPLIANCES & EQUIPMENT SHALL BE NEW & THE BEST OF THEIR RESPECTIVE KIND, FREE FROM ALL DEFECTS AND OF THE MAKE, BRAND, AND QUANTITY SPECIFIED.
- CLEAN-UP: UPON COMPLETION OF THE WORK UNDER THIS SECTION THE CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIALS, EQUIPMENT & DEBRIS INCIDENTAL TO THIS WORK & LEAVE THE PREMISES CLEAN AND ORDERLY TO THE SATISFACTION OF THE ARCHITECT / OWNER.

HORIZONTAL CONTROL

A CAD GEOMETRIC ELECTRONIC FILE SHALL BE MADE AVAILABLE TO THE CONTRACTOR UPON REQUEST FOR THE CONTRACTOR'S SURVEYOR TO LAYOUT THE CONSTRUCTION STAKING OF THE PROJECT. THE SURVEYOR OR CONTRACTOR WILL NEED TO SIGN A WAIVER FORM BEFORE RELEASE OF ANY CAD ELECTRONIC DRAWINGS.

EARTHWORK NOTICE TO CONTRACTOR: NO EARTHWORK ANALYSIS HAS BEEN COMPLETED WITH RESPECT TO VOLUMES OF SOILS TO BE EXCAVATED, PLACED, OR IMPORTED IN ORDER TO PROVIDE THE FINISHED GRADES SHOWN ON THE PLANS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE EARTHWORK QUANTITIES NECESSARY TO COMPLETE THE PROJECT.

CONSTRUCTION STORM WATER NOTE: GRADING WORK ASSOCIATED WITH THIS PROJECT WILL DISTURB LESS THAN 1 ACRE OF SOIL AND THIS SHALL NOT BE SUBJECT TO COMPLY WITH THE NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES (GENERAL PERMIT) ORDER WQ 2022-0057-DWQ.

GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

NOTE TO CONTRACTOR: BEFORE DEMOLITION OR TRENCHING OCCURS, THE CONTRACTOR SHALL COMPLETE AN UNDERGROUND UTILITY MAPPING SURVEY OF THE ENTIRE LIMITS OF WORK TO DETERMINE WHERE EXISTING UTILITIES ARE AND WHERE POSSIBLE UNDERGROUND CONFLICTS MAY OCCUR. PROVIDE SURVEY TO OWNER.

CONSTRUCTION NOTES

- PROTECT EXISTING IMPROVEMENT IN PLACE.
- CONSTRUCT ASPHALT PAVEMENT SECTION PER DETAIL 1/C3.00.
- CONSTRUCT CONCRETE PAVEMENT SECTION PER DETAIL 2/C3.00.
- CONSTRUCT CONCRETE CURB PER DETAIL 3/C3.00 AND GRADES HEREON.
- CONSTRUCT PORTABLE BUILDING RAMP PER GRADES HEREON OVER EXISTING ASPHALT PAVEMENT.
- CONSTRUCT TRUNCATED DOMES PER ARCHITECTURAL PLANS.
- CONSTRUCT ASPHALT RAMP LANDING AND RAMP EXTENSION, WITH HANDRAILS, PER ARCHITECTURAL PLANS AND GRADES HEREON. CLEAN SURFACE OF EXISTING ASPHALT, APPLY TACK COAT MEETING SECTION 302-5.4 PROVISIONS PER THE S.S.P.W.C. (GREENBOOK) ON ALL EXISTING SURFACES IN WHICH NEW ASPHALT PAVEMENT WILL BE OVERLAID ON. CONSTRUCT VARIABLE THICKNESS ASPHALT PAVEMENT, TYPE III-C3-PG-64-10, PER S.S.P.W.C. SECTION 203-6.5.4.

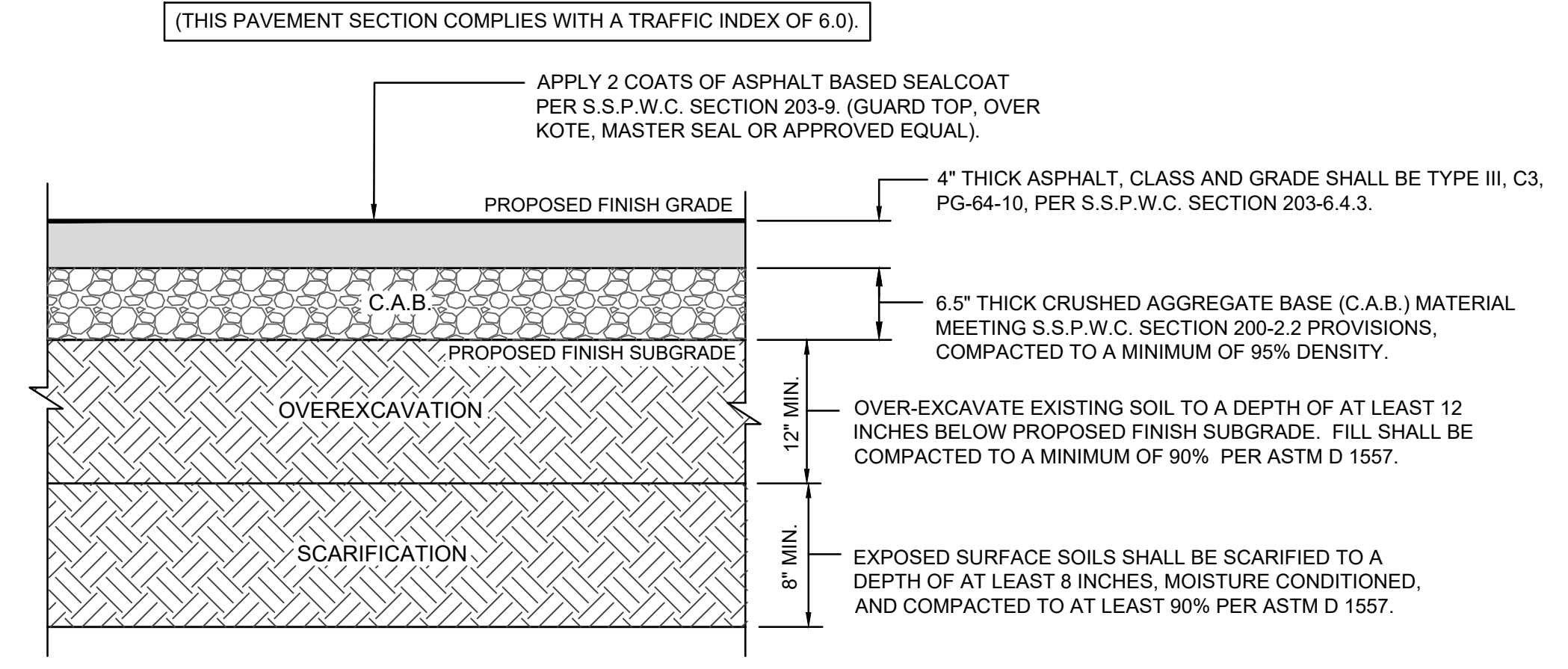
BENCHMARK:
 O.C.S. VERTICAL CONTROL 3A-80-71

DESCRIBED BY OCS 2002 - FOUND 3 3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "3G-39-91", SET IN THE NORTHEASTERLY CORNER OF A 4 FT. BY 4 FT. CONCRETE CATCH BASIN. MONUMENT IS LOCATED IN THE SOUTHWESTERLY CORNER OF THE INTERSECTION OF TREVINO DRIVE AND JAMBOREE ROAD, 0.7 MILES NORTHERLY OF THE CENTERLINE OF IRVINE BOULEVARD AND 55 WESTERLY OF THE CENTERLINE OF JAMBOREE MONUMENT IS SET LEVEL WITH THE SIDEWALK.

ELEVATION=166.099 FT NAVD88 YEAR LEVELED 1991

BASIS OF BEARINGS:
 HORIZONTAL CONTROL BASED ON THE FOLLOWING CONTROL POINTS WITHIN THE ORANGE COUNTY SURVEYOR HORIZONTAL CONTROL NETWORK, CALIFORNIA COORDINATE SYSTEM, CCS83, ZONE VI. THE BASIS OF BEARINGS FOR THIS SURVEY IS O.C.S. HORIZONTAL COORDINATE SYSTEM (NAD83), ZONE 6, AS DETERMINED LOCALLY BY THE LINE BETWEEN REFERENCE STATION GPS#6509R1 & GPS#6510R1. THE BEARING OF SAID LINE BEING N44°12'30"E BETWEEN SAID STATIONS. GRID TO GROUND SCALE FACTOR 1.0000235100 @ PT#5000

Plot Date: 3/19/2024 4:39:46 PM
 Last Save By: ron.conedy
 Login: Jessica Zia S:\Jobs\2777 - PBK\2777\ppp - Tustin USD Portables\2777\ppp5 - Myford ES Civil\Myford ES C3.00 Detail Sheet.dwg



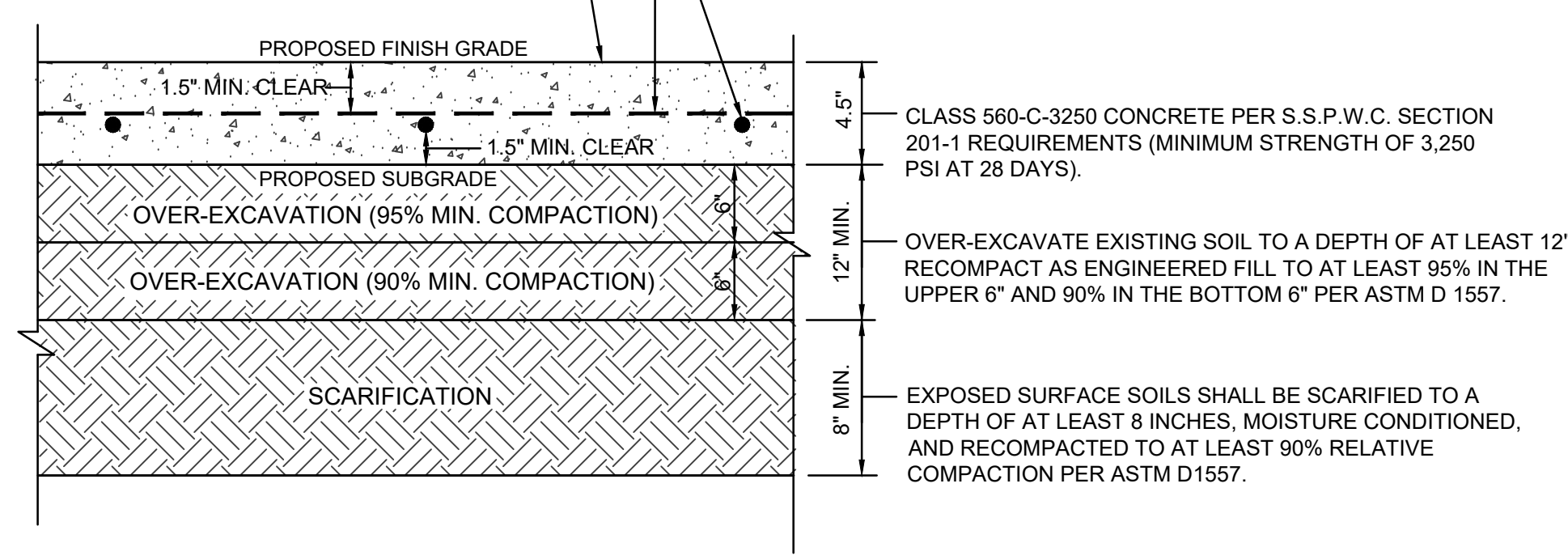
1 ASPHALT PAVEMENT SECTION DETAIL
NOT TO SCALE

FLOOD TEST NOTE:

BEFORE ACCEPTANCE, ALL NEW ASPHALT SHALL BE WATER TESTED TO ENSURE PROPER DRAINAGE AS DIRECTED BY THE INSPECTOR. THE CONTRACTOR SHALL PROVIDE WATER FOR THIS PURPOSE. THE FLOODING SHALL BE DONE BY WATER TANK TRUCK. DEPRESSIONS WHERE THE WATER POUNDS TO A DEPTH OF MORE THAN 0.01 FOOT SHALL BE FILLED WITH TYPE E ASPHALT MIX OR THE SLOPE CORRECTED TO PROVIDE PROPER DRAINAGE. THE EDGES OF THE FILL SHALL BE FEATHERED AND SMOOTHED SO THAT THE JOINT BETWEEN THE FILL AND THE ORIGINAL SURFACE IS INVISIBLE. PRACTICAL FIELD MEASUREMENT: 0.01 FOOT = TWO QUARTERS STACKED. NO STANDING WATER SHALL REMAIN AFTER 60 MINUTES ON A 70 DEGREE F. (OR WARMER) DAY. INSTALL FIRST COAT OF SEAL COAT ON ASPHALT BEFORE FLOOD TESTING OCCURS.

PROVIDE MEDIUM BROOM FINISH ON SURFACES UP TO SIX PERCENT SLOPE BY STRIATING SURFACE 1/32 TO 3/64 INCH DEEP WITH A SOFT BRISTLE BROOM ACROSS CONCRETE SURFACE TO PROVIDE A UNIFORM FINE LINE TEXTURE. PROVIDE HEAVY BROOM FINISH ON SURFACES OVER SIX PERCENT BY STRIATING SURFACE 1/16 INCH TO 1/8 INCH DEEP WITH A STIFF-BRISTLED BROOM.

No. 4 BARS SPACED AT 18" ON CENTER, EACH WAY.



2 CONCRETE PAVEMENT SECTION DETAIL
NOT TO SCALE

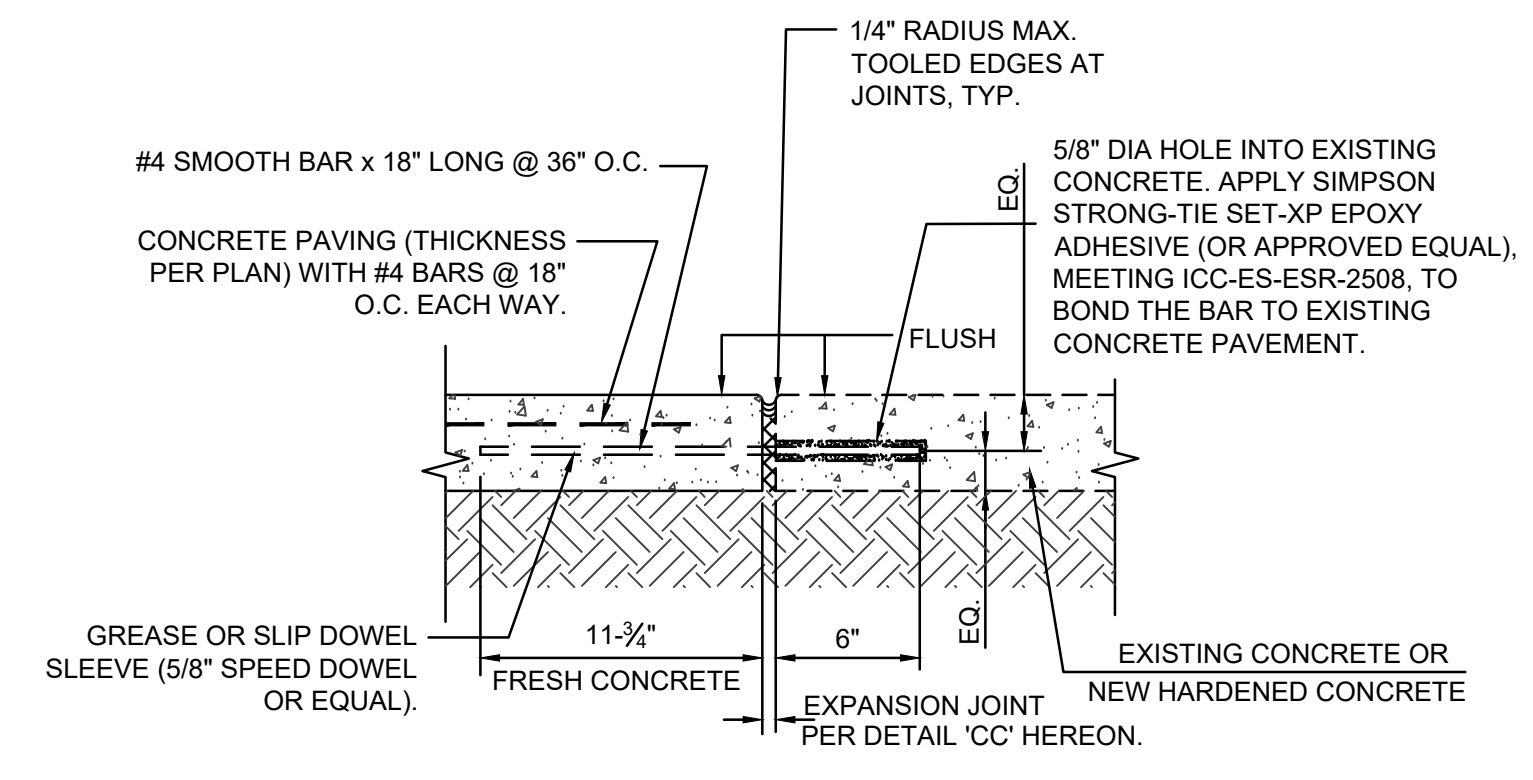
FLOOD TEST NOTE:

BEFORE ACCEPTANCE, ALL NEW CONCRETE SHALL BE WATER TESTED TO ENSURE PROPER DRAINAGE AS DIRECTED BY THE INSPECTOR. THE CONTRACTOR SHALL PROVIDE WATER FOR THIS PURPOSE. THE FLOODING SHALL BE DONE BY WATER TANK TRUCK. DEPRESSIONS WHERE THE WATER POUNDS TO A DEPTH OF MORE THAN 0.01 FOOT SHALL BE FILLED OR THE SLOPE CORRECTED TO PROVIDE PROPER DRAINAGE. THE EDGES OF THE FILL SHALL BE FEATHERED AND SMOOTHED SO THAT THE JOINT BETWEEN THE FILL AND THE ORIGINAL SURFACE IS INVISIBLE. PRACTICAL FIELD MEASUREMENT: 0.01 FOOT = TWO QUARTERS STACKED. NO STANDING WATER SHALL REMAIN AFTER 60 MINUTES ON A 70 DEGREE F. (OR WARMER) DAY.

NOTE TO CONTRACTOR:

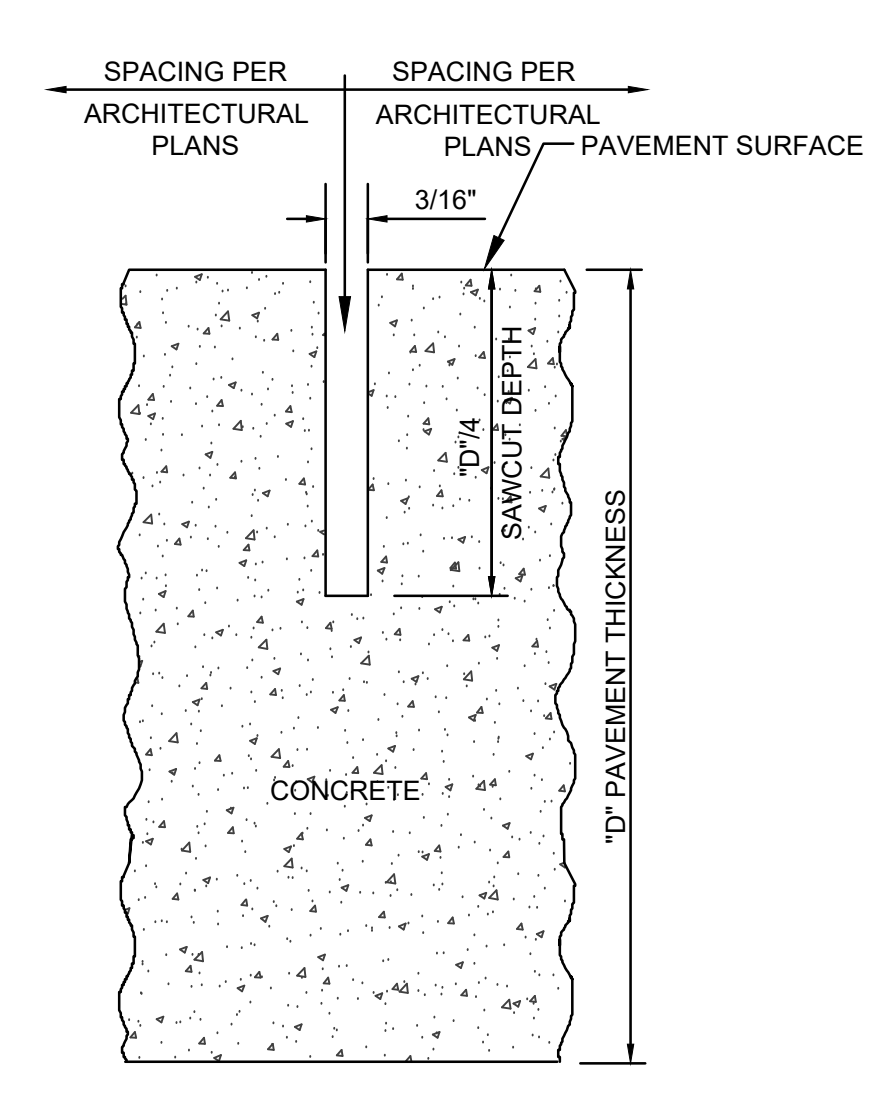
A. THE CONTRACTOR SHALL INSTALL EXPANSION AND CONTROL JOINTS IN CONCRETE FLATWORK PER DETAILS 'AA' THRU 'CC' HEREON. EXPANSION JOINTS IN CONCRETE SHALL NOT EXCEED 30 FEET ON CENTER.

B. CONTRACTOR SHALL FOLLOW DETAILS 'DD' THRU 'FF' HEREON WHEN CONSTRUCTING CONCRETE FLATWORK EDGE TREATMENTS.

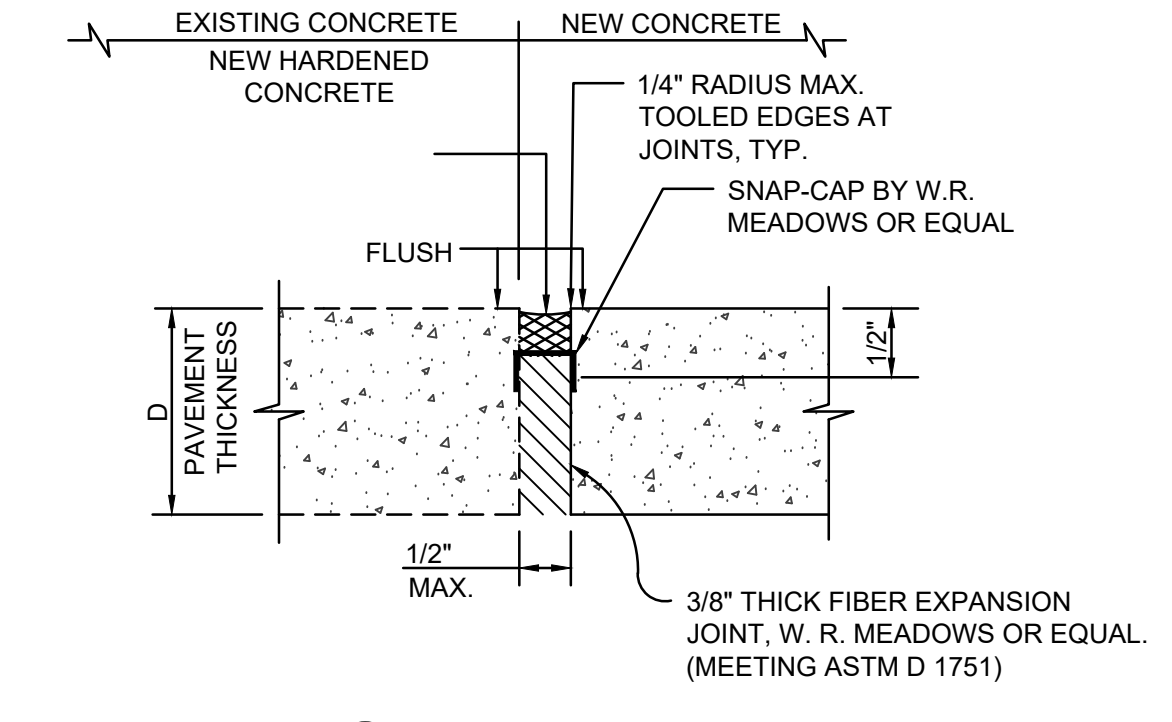


1. VERTICAL CHANGE IN ELEVATION ALONG ACCESSIBLE PATH OF TRAVEL CANNOT EXCEED 1/4" PER CBC 11B-303.2
2. LEVEL CHANGE BETWEEN 1/4"-1/2" MUST BE BEVELED AT 1:2 MAX PER CBC 11B-303.3

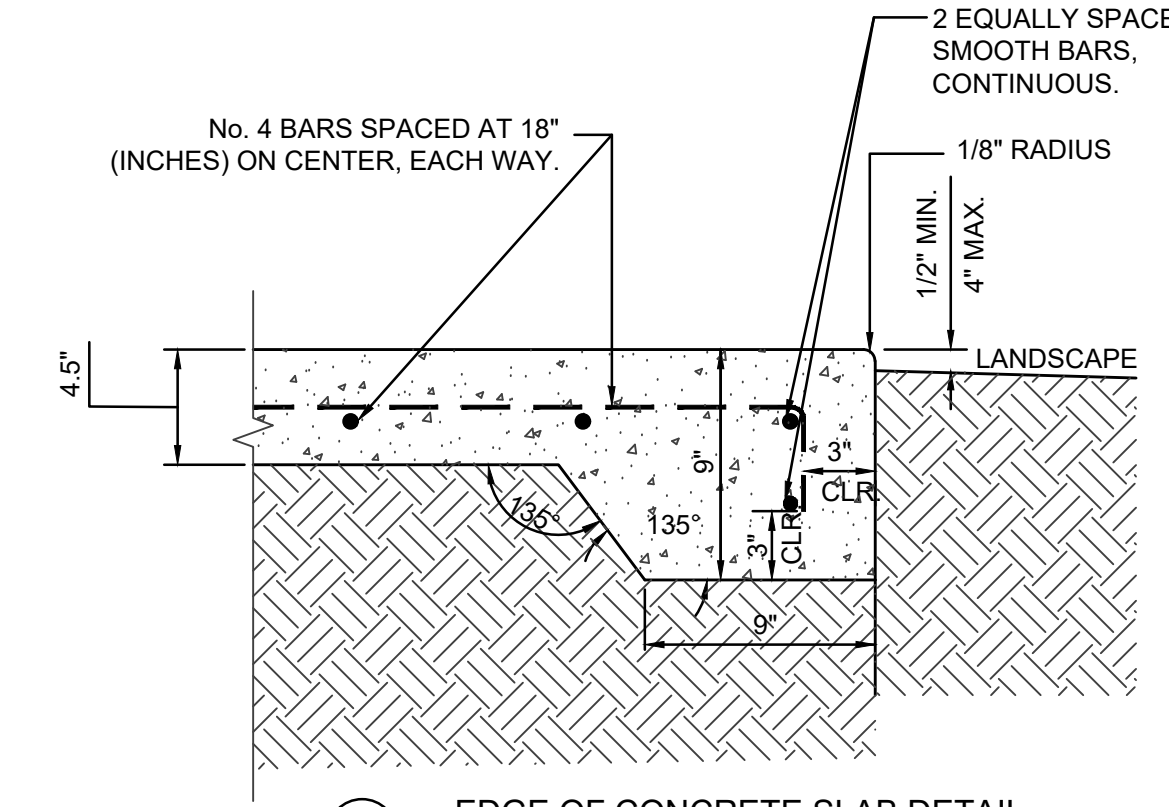
AA EXPANSION JOINT (E.J.) WITH REBAR
NOT TO SCALE



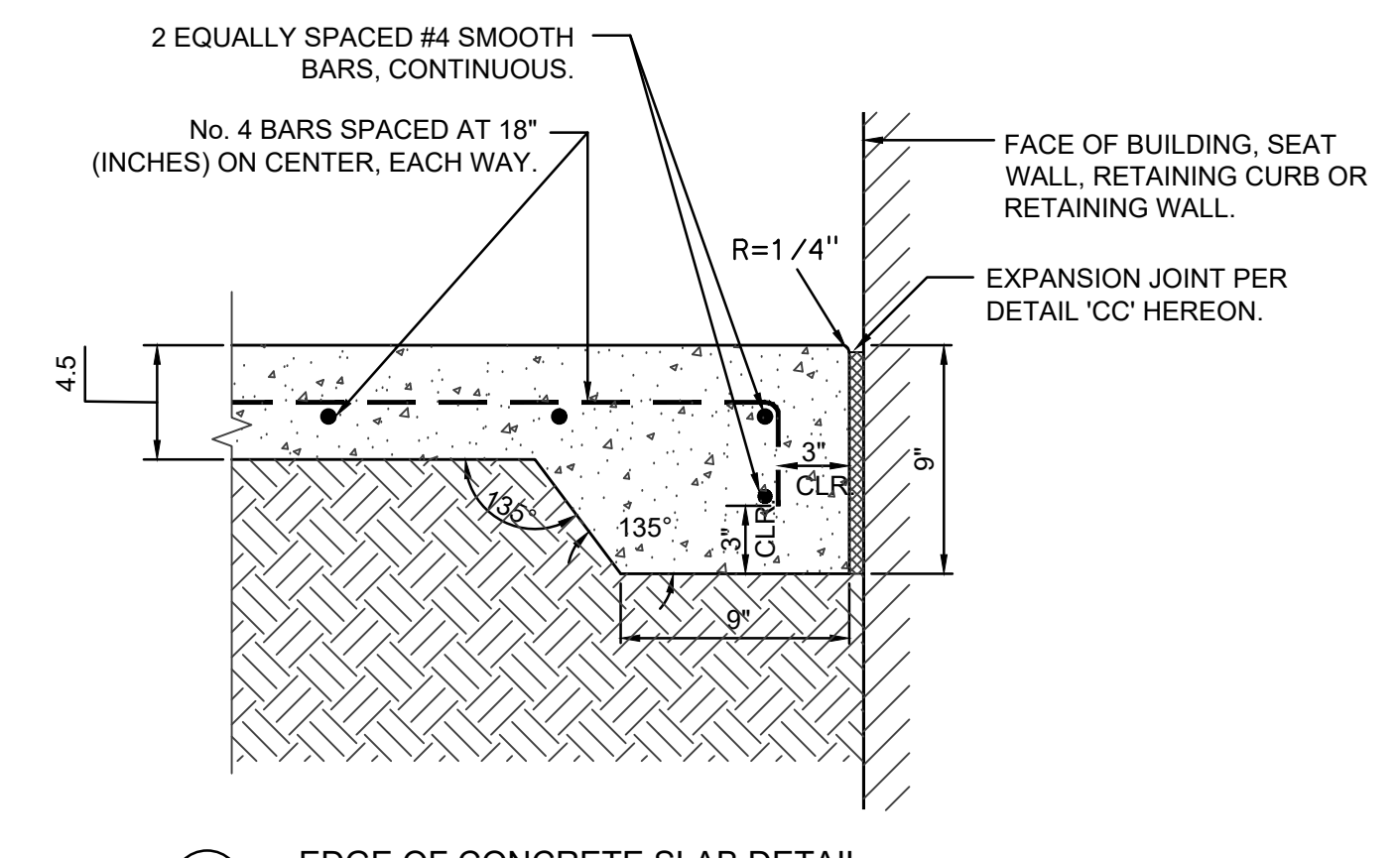
BB CONTROL JOINT (C.J.)
NOT TO SCALE



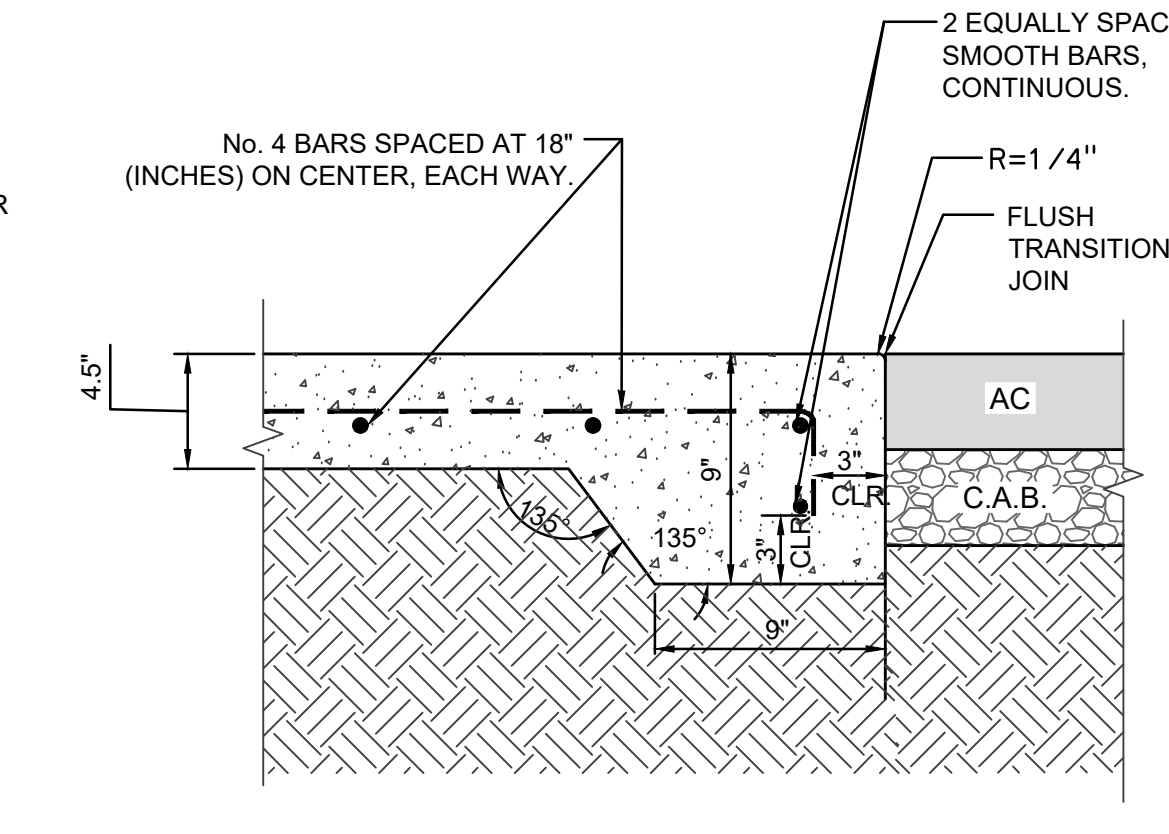
CC EXPANSION JOINT (E.J.)
NOT TO SCALE



DD EDGE OF CONCRETE SLAB DETAIL
WHERE CONCRETE MEETS SOFTSCAPE
NOT TO SCALE

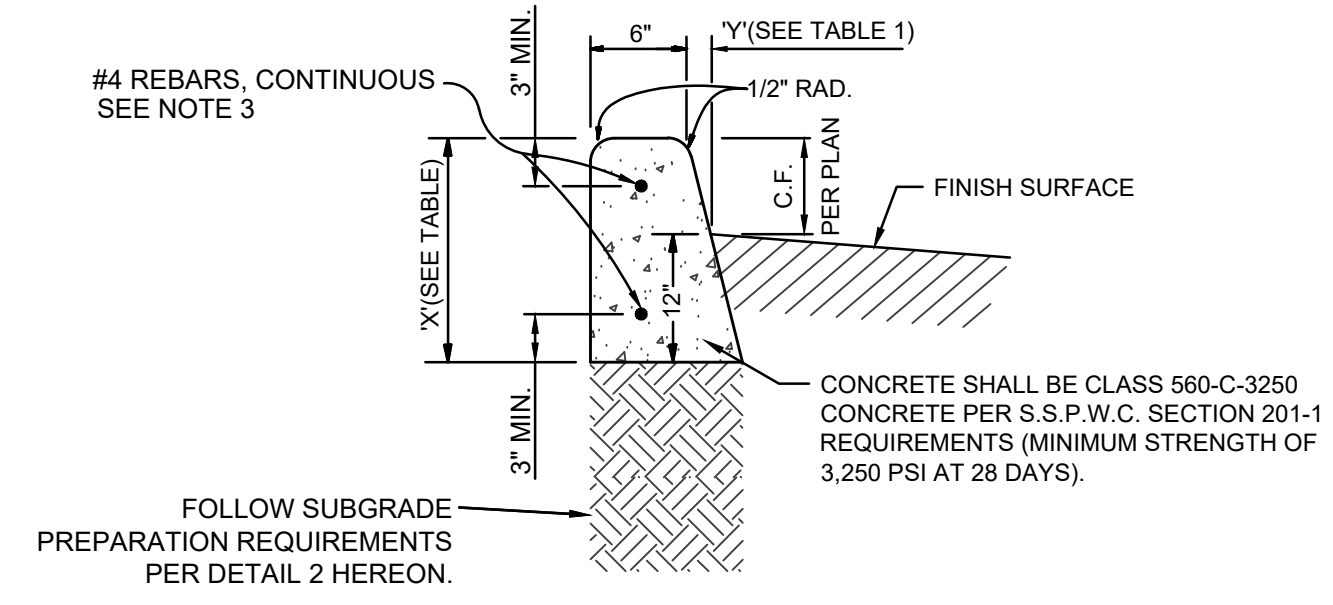


EE EDGE OF CONCRETE SLAB DETAIL
WHERE CONCRETE MEETS FACE OF BUILDING OR WALLS
NOT TO SCALE



FF EDGE OF CONCRETE SLAB DETAIL
WHERE CONCRETE MEETS HARDSCAPE
NOT TO SCALE

CURB FACE	0"	2"	4"	5"	6"	8"
"x"	12"	14"	16"	17"	18"	20"
"y"	0"	0.5"	1"	1.25"	1.5"	2"



3 CONCRETE CURB DETAIL
NOT TO SCALE

- CURB GENERAL NOTES:**
1. ALL EXPOSED EDGES SHALL HAVE A 1/2" RADIUS.
 2. CONTROL JOINTS SHALL BE PLACED IN CURBING AT REGULAR INTERVALS OF 10'. EXPANSION JOINTS AT 30' INTERVALS, AND AT DRIVE APPROACHES, B.C.'S, E.C.'S, CROSS GUTTERS AND CATCH BASIN TRANSITIONS PER JOINT DETAILS ON SHEET C3.00.
 3. PLACE NO. 4 REBARS 3" MINIMUM FROM TOP AND BOTTOM OF CURB.

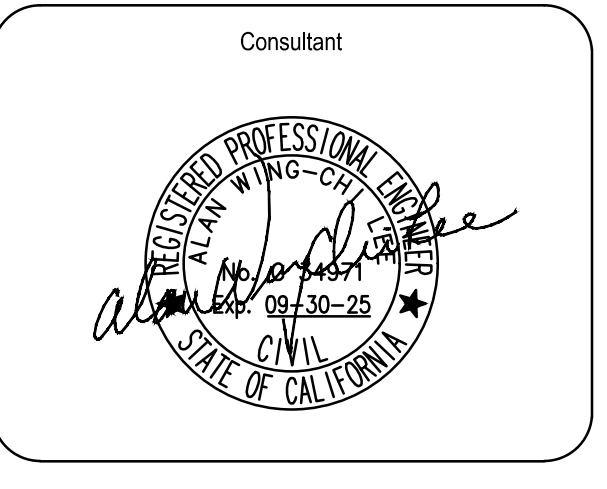
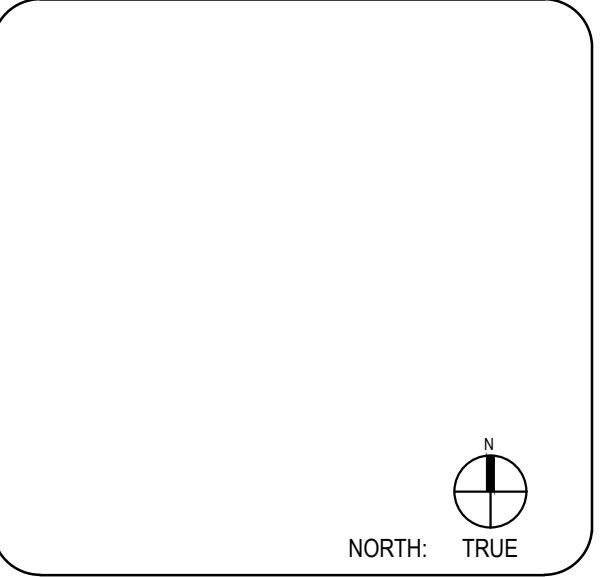


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MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

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DSA APPL. NO. 04-123383 DSA FILE NO. 30-51

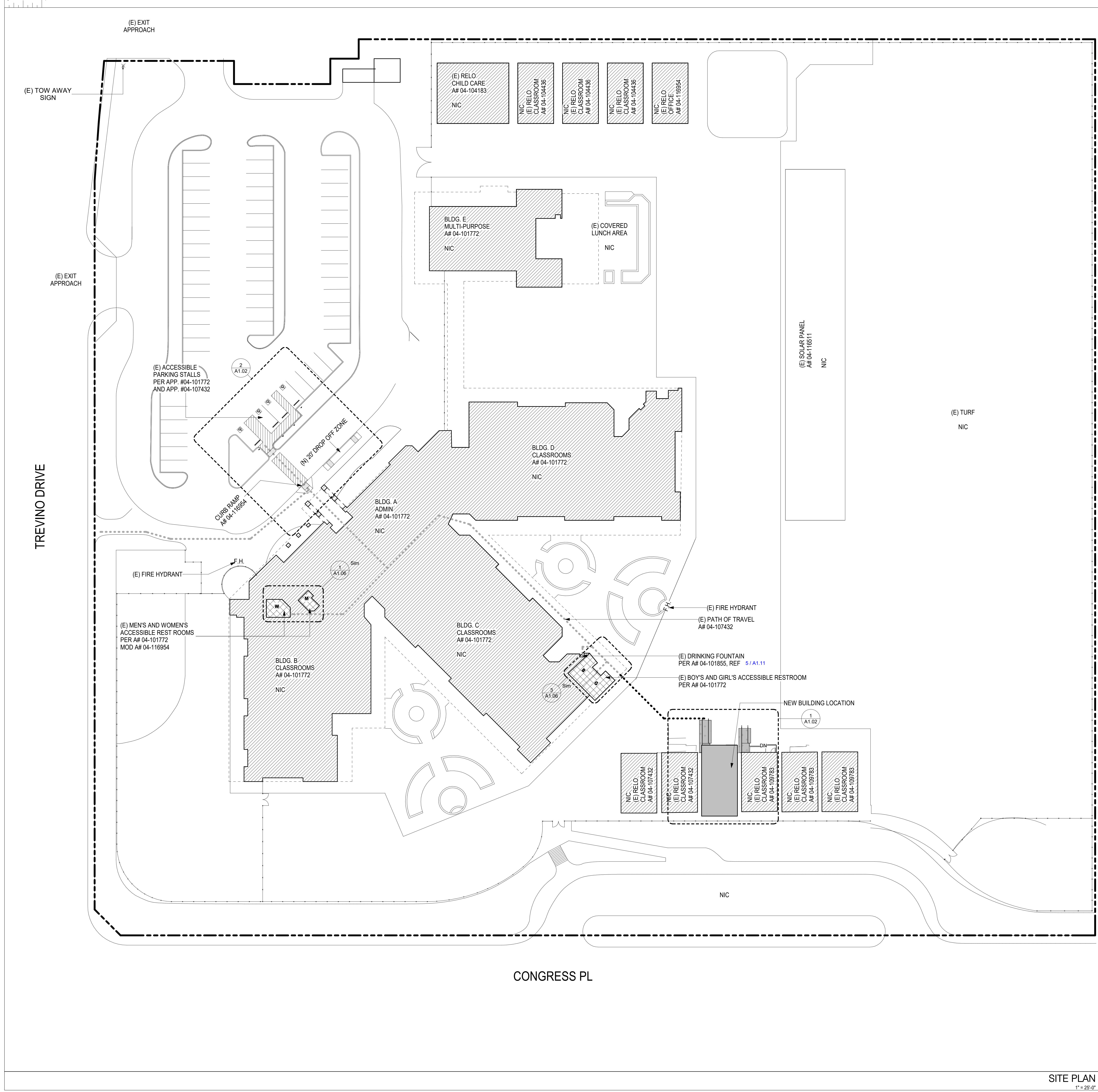


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DETAIL SHEET

PLANS PREPARED BY:
FPL FPL and Associates, Inc.
 Traffic • Transportation • Civil
 30 Corporate Park, Suite 401
 Irvine, CA 92606
 Phone: 949-252-1688

C3.00



SITE GENERAL NOTES

- SEE CIVIL FOR TOPOGRAPHIC DATA, GRADING, DRAINING, AND UTILITY INFORMATION.
- SEE CIVIL FOR DIMENSIONS, DETAILS AND INFORMATION OF ALL FLATWORK.
- ALL NEW WALK SURFACES IN P.O.T. SHALL HAVE FLUSH TRANSITION TO ALL ADJACENT NEW OR EXISTING CONCRETE/PAVING, U.N.O.
- FOR GRATING OR STRAINERS LOCATED IN THE SURFACE OF ANY PEDESTRIAN WAY INCLUDING P.O.T. GRATE OR STRAINER TO HAVE A MAXIMUM OPENING NOT TO EXCEED 1/2" IN THE DIRECTION OF TRAFFIC FLOW WHERE NO DOMINANT DIRECTION OF TRAVEL IS DEFINED, 1/2" MAX OPENINGS IN ALL DIRECTIONS IS REQUIRED.
- CONTRACTOR TO VERIFY EXISTING DOORS COMPLY WITH THE FOLLOWING:
 - THE OPENING FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE 5 POUNDS MAXIMUM PER CBC 11B-309.4
 - HARDWARE SHALL UNLATCH WITH 5 POUNDS MAXIMUM FORCE PER CBC 11B-309.4

PATH OF TRAVEL

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT:
THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS, AS PART OF THE DESIGN OF THIS PROJECT. THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECTS WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARSHNESS ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

PATH OF TRAVEL, TECHNICAL REQUIREMENTS FOR ACCESSIBLE ROUTE:
ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/4" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/2" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP-RESISTANT. CROSS-SLOPE SHALL NOT BE STEEPER THAN 1:48 AND SLOPE IN THE DIRECTION OF TRAVEL SHALL NOT BE STEEPER THAN 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS 10" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM THE WALL, ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

- CLEAR OPENING WIDTH FOR A DOOR SHALL BE 32 INCHES MINIMUM. CBC SECTION 11B-404.2.3
- HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERABLE PARTS ON ACCESSIBLE DOORS SHALL COMPLY WITH CBC 11B-309.4. THE OPERABLE PARTS OF SUCH HARDWARE SHALL BE 34" MINIMUM AND 44" MAXIMUM. CBC SECTION 11B-404.2
- THE LEVELS OF LEVER-ACTUATED LATCHES OR LOCKS FOR DOORS ARE ACCESSIBLE GATES SHALL BE CURVED WITH A RETURN TO WITHIN 1/2 INCHES OF THE GATE SURFACES TO PREVENT CATCHING ON THE CLOTHING OR PERSONS PER CALIFORNIA REFERENCED STANDARDS CODE 1-24 PART 12, SECTION 12-10-002, ITEM (F)
- THE FORCE OF PUSHING OR PULLING OPEN A DOOR SHALL BE PER CBC SECTION 11B-404.2.9. 5 POUNDS (22.2 N) MAXIMUM. 15 POUNDS (66.7 N) MINIMUM.
- THE FORCE REQUIRED FOR ACTIVATING ANY OPERABLE PARTS SUCH AS LEVER HARDWARE, OR DISENGAGING OTHER DEVICES SHALL BE 5 POUNDS (22.2 N) MAXIMUM PER CBC SECTION 11B-309.4
- DOOR CLOSING SPEED SHALL BE PER CBC SECTION 11B-404.2.8. CLOSER SHALL BE ADJUSTED SO THAT THE REQUIRED TIME TO MOVE A DOOR FROM AN OPEN POSITION OF 90 DEGREES TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM. SPRING HINGES SHALL BE ADJUSTED SO THAT THE REQUIRED TIME TO MOVE A DOOR FROM OPEN POSITION OF 70 DEGREES TO CLOSED POSITION IS 1.5 SECONDS MINIMUM.
- THRESHOLDS SHALL COMPLY WITH CBC SECTION 11B-404.2.5
- FLOOR STOPS SHALL NOT BE LOCATED IN THE PATH OF TRAVEL AND 4" MAXIMUM FROM THE WALLS.
- 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 (SUCH CONDITIONS MUST BE CLEARLY DEMONSTRATED AND INDICATED IN THE SPECIFICATIONS):
 - 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).
- SWING DOORS AND GATE SURFACES WITHIN 10" OF THE FINISH FLOOR OR GROUND SHALL HAVE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN THESE SURFACES SHALL BE WITHIN 1/16" OF THE SAME PLANE AS THE OTHER AND BE FREE OF SHARP OR ABRASIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CARVED. CBC SECTION 11B-404.2.10.

CODE ANALYSIS

BUILDING DESIGNATION:	BLDG E 100
OCCUPANCY GROUP:	GROUP E
CONSTRUCTION TYPE:	V-B
ALLOWABLE FLOOR AREA:	9,500 SQ FT
ACTUAL FLOOR AREA:	960 SQ FT
TOTAL FLOOR AREA BLDG E 100 & (5) (E) BLDGS:	5,760 SQ FT
BASIC ALLOWABLE AREA 9,500 SF:	5,760 SF < 9,500 SF = OKAY
ALLOWABLE HEIGHT / NO OF STORES:	35'-0" / TWO
ACTUAL HEIGHT / NO OF STORES:	12'-0" / ONE
SPRINKLER SYSTEM:	NONE

KEYNOTES

#	Description
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SITE PLAN LEGEND

- PROPERTY LINE
- (E) 5'-0" HIGH CHAIN LINK FENCING PER DETAIL
- (N) 5'-0" HIGH CHAIN LINK FENCING PER DETAIL
- (E) BUILDING, NOT IN SCOPE
- SCOPE OF WORK
- (N) RELOCATABLE BLDGS
- RESTROOM PER A1.06
- (N) PATH OF TRAVEL
- (E) PATH OF TRAVEL A# 04-107432

- D.F.** DRINKING FOUNTAIN PER 5 / A1.11
- M** MEN RESTROOM (AGES 13 & ABOVE) PER 1 / A1.06
- W** WOMEN RESTROOM (AGES 13 & ABOVE) PER 1 / A1.06
- B** BOYS RESTROOM (AGES 5 THROUGH 8) PER 3 / A1.06
- G** GIRLS RESTROOM (AGES 5 THROUGH 8) PER 3 / A1.06

PARKING CALCULATION

(E) MYFORD ELEMENTARY SCHOOL PARKING - PER A# 04-116954	
STANDARD STALLS	54
ACCESSIBLE STALLS	4 (INCLUDING 1 VAN)
TOTAL PARKING STALLS	58

Not for permitting or construction

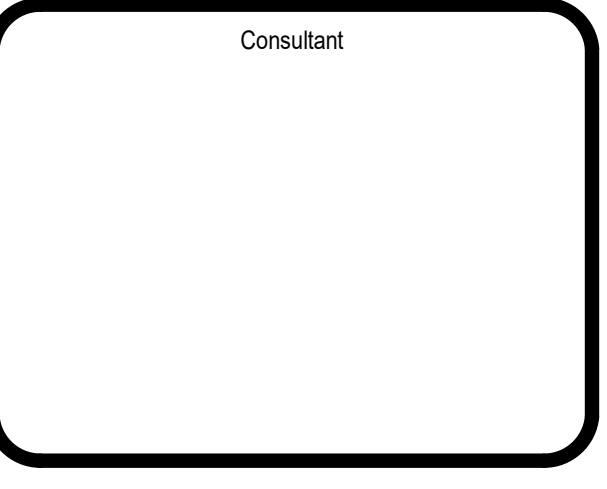
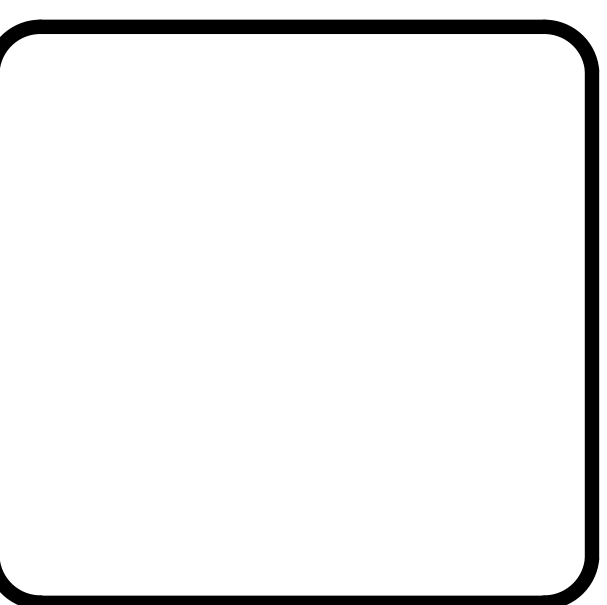


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MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

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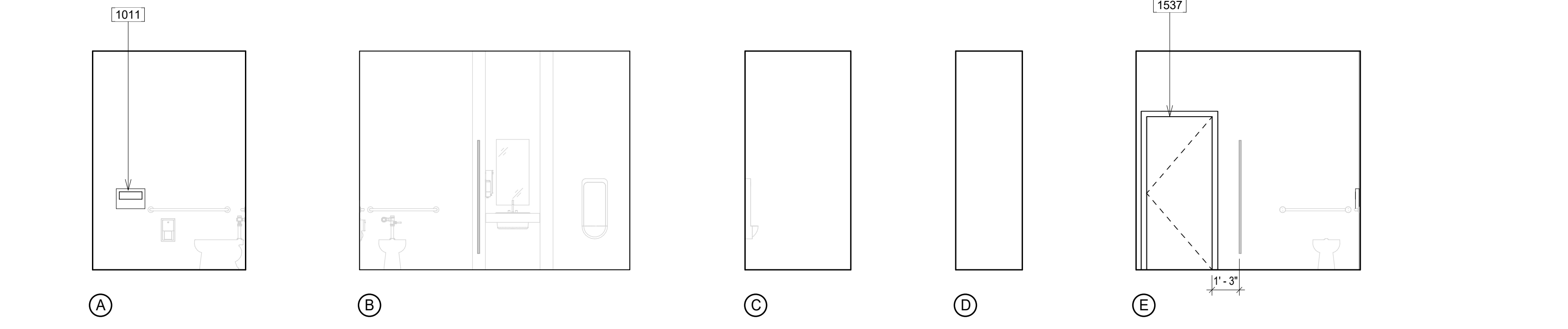
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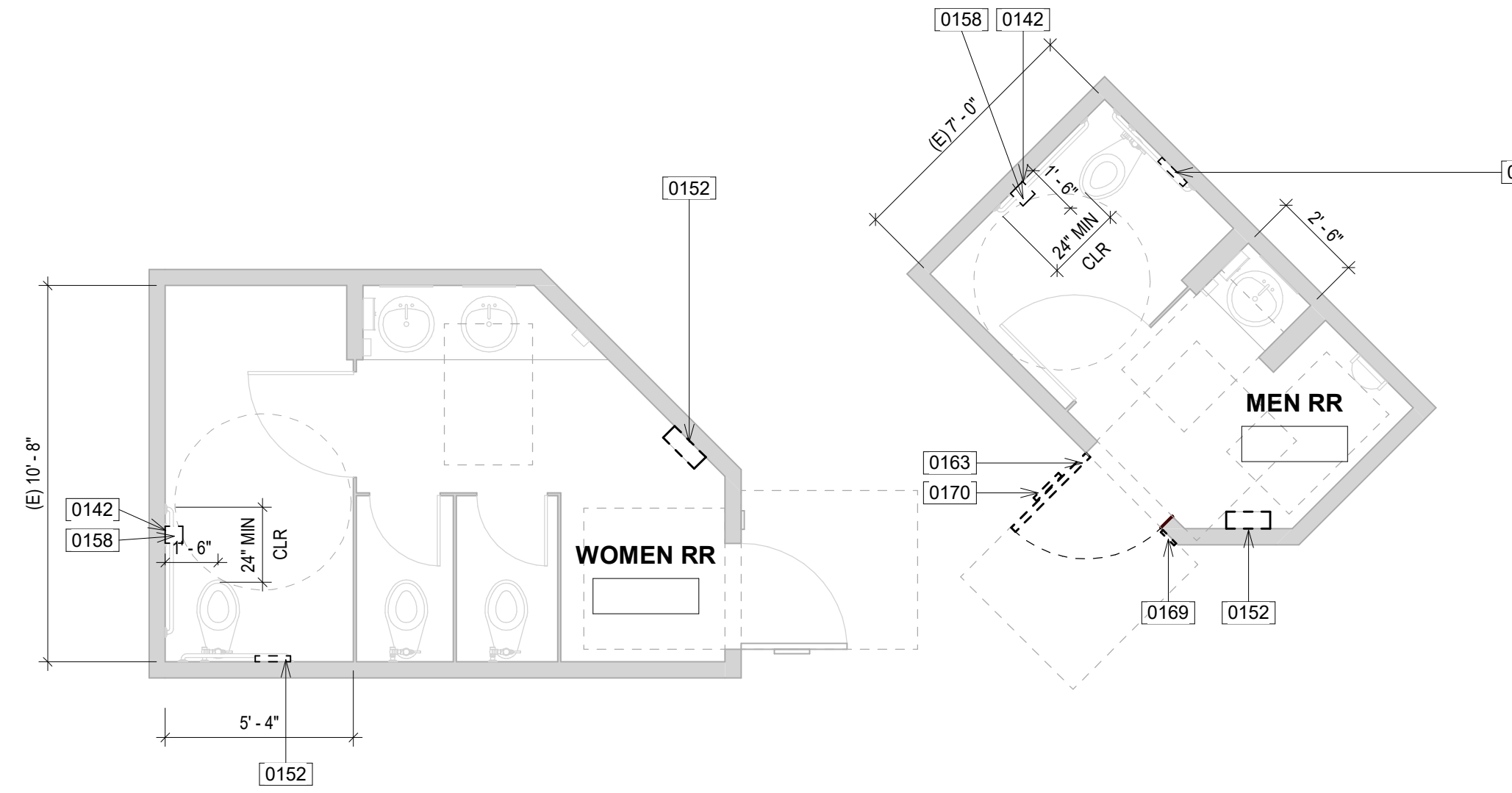
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OVERALL SITE PLAN

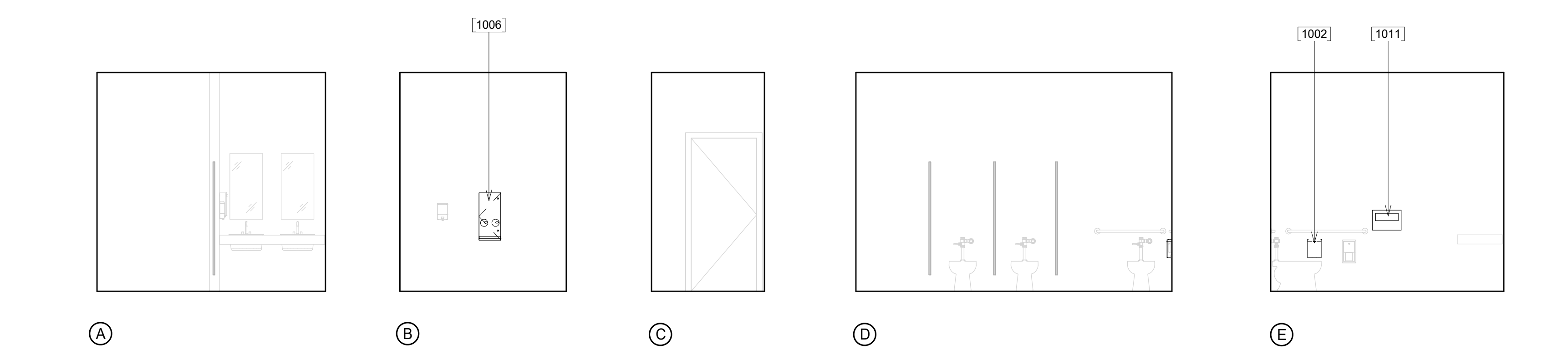
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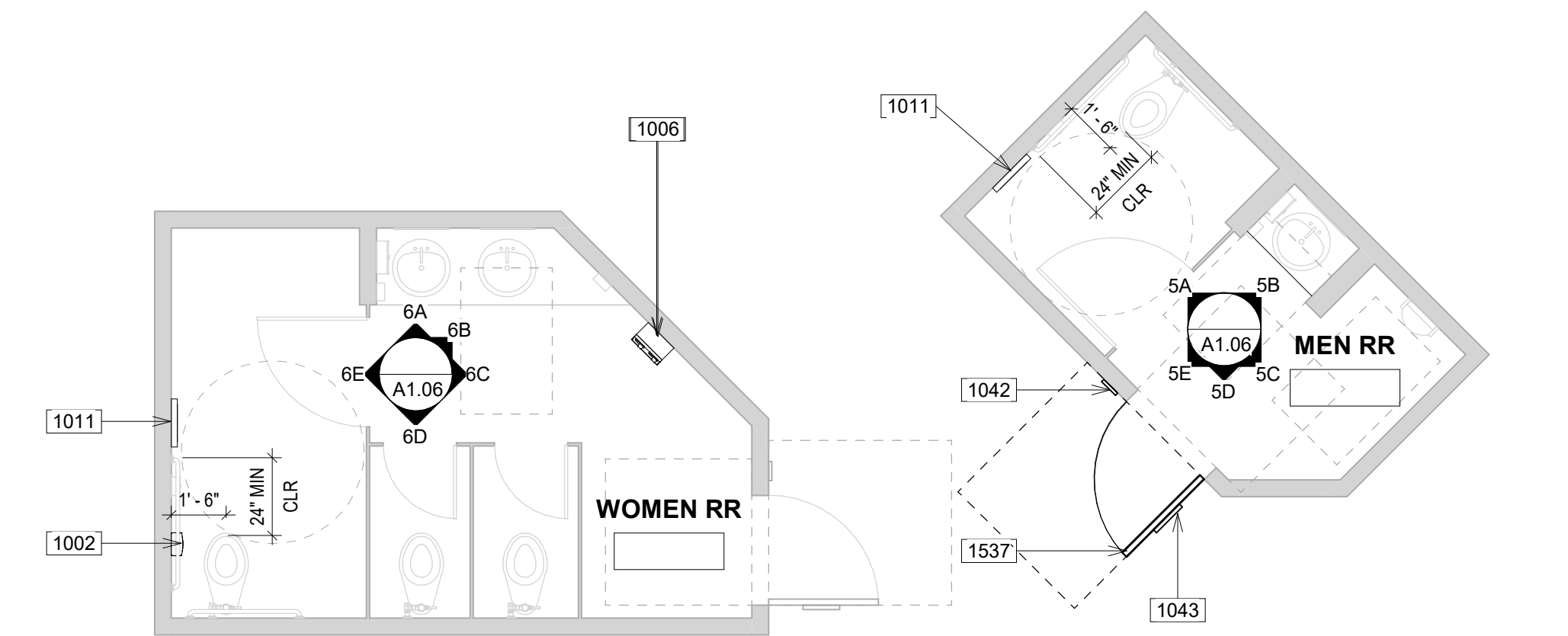
MEN RESTROOM INTERIOR ELEVATIONS
1/4" = 1'-0" **5**



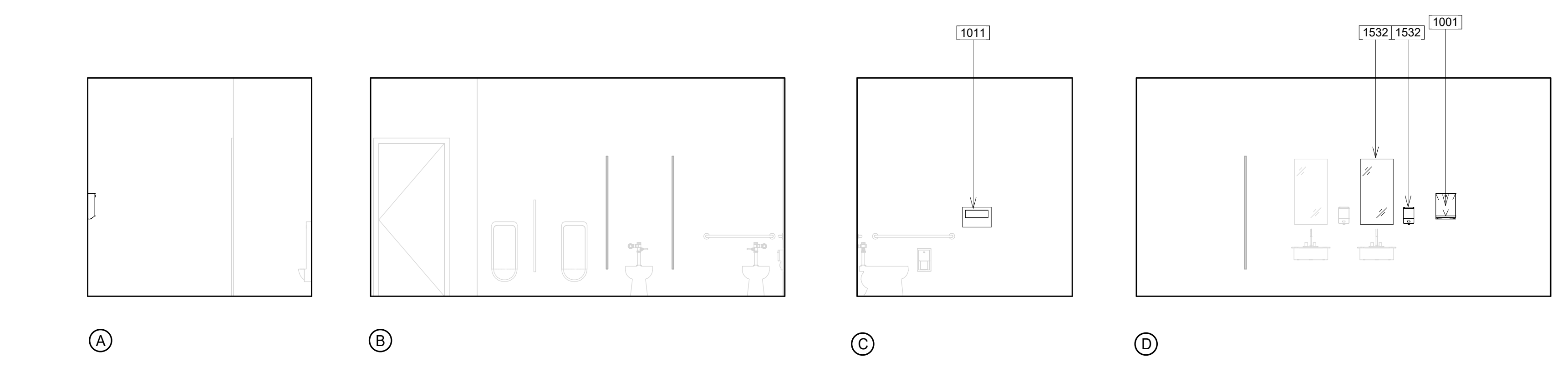
(E) MEN AND WOMEN RESTROOM
1/4" = 1'-0" **1**



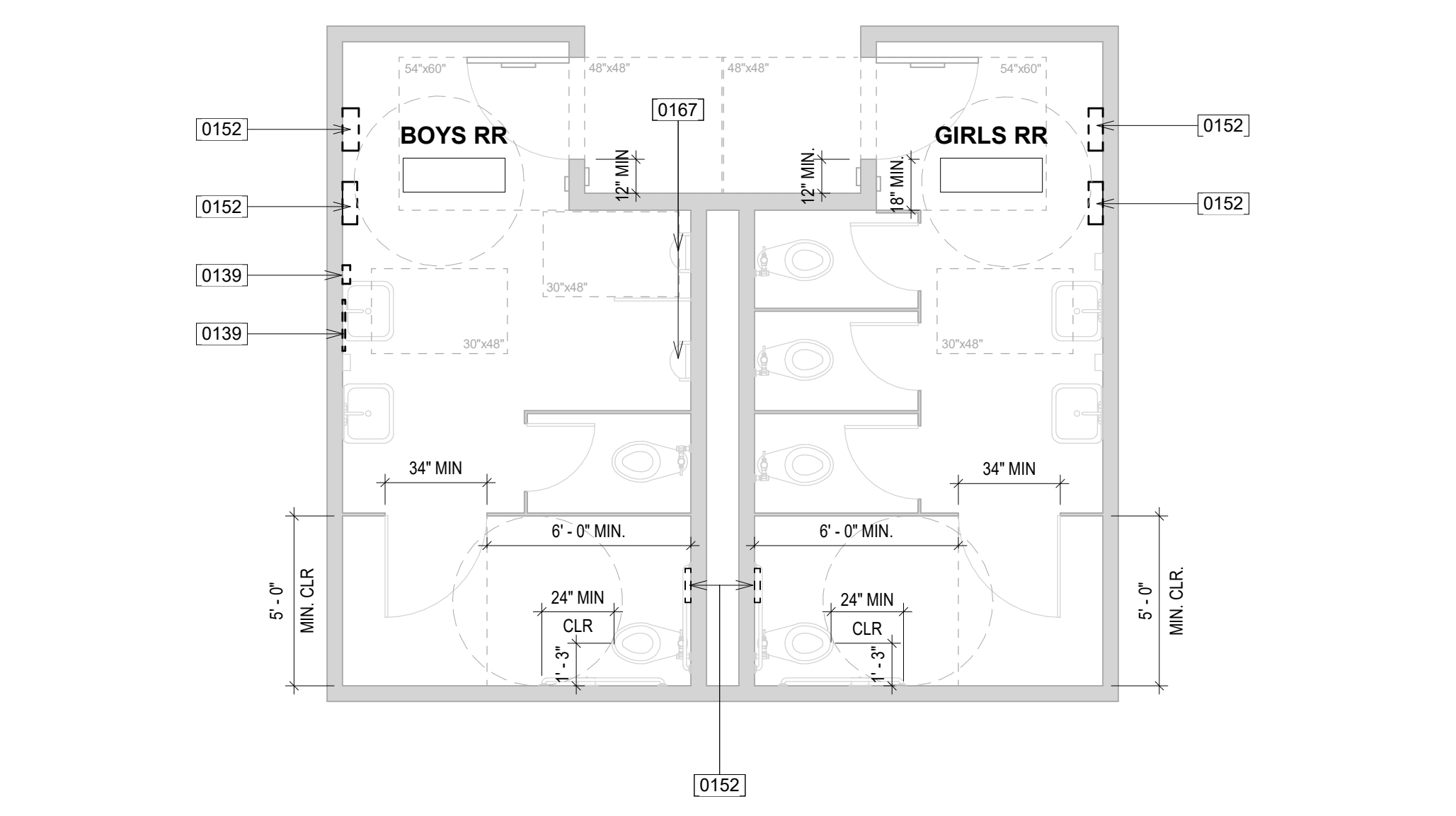
WOMEN RESTROOM INTERIOR ELEVATIONS
1/4" = 1'-0" **6**



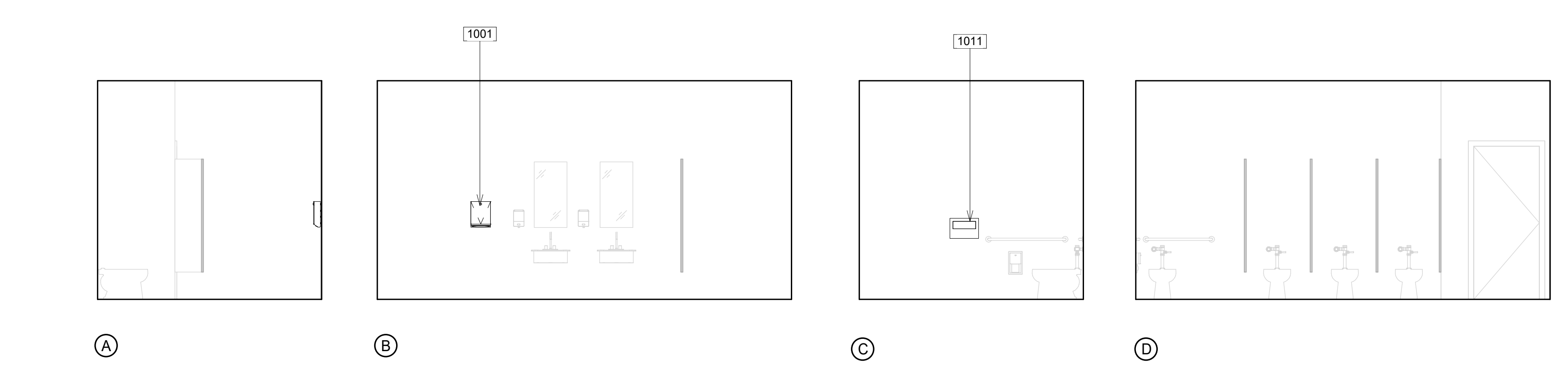
(N) MEN AND WOMEN RESTROOM
1/4" = 1'-0" **2**



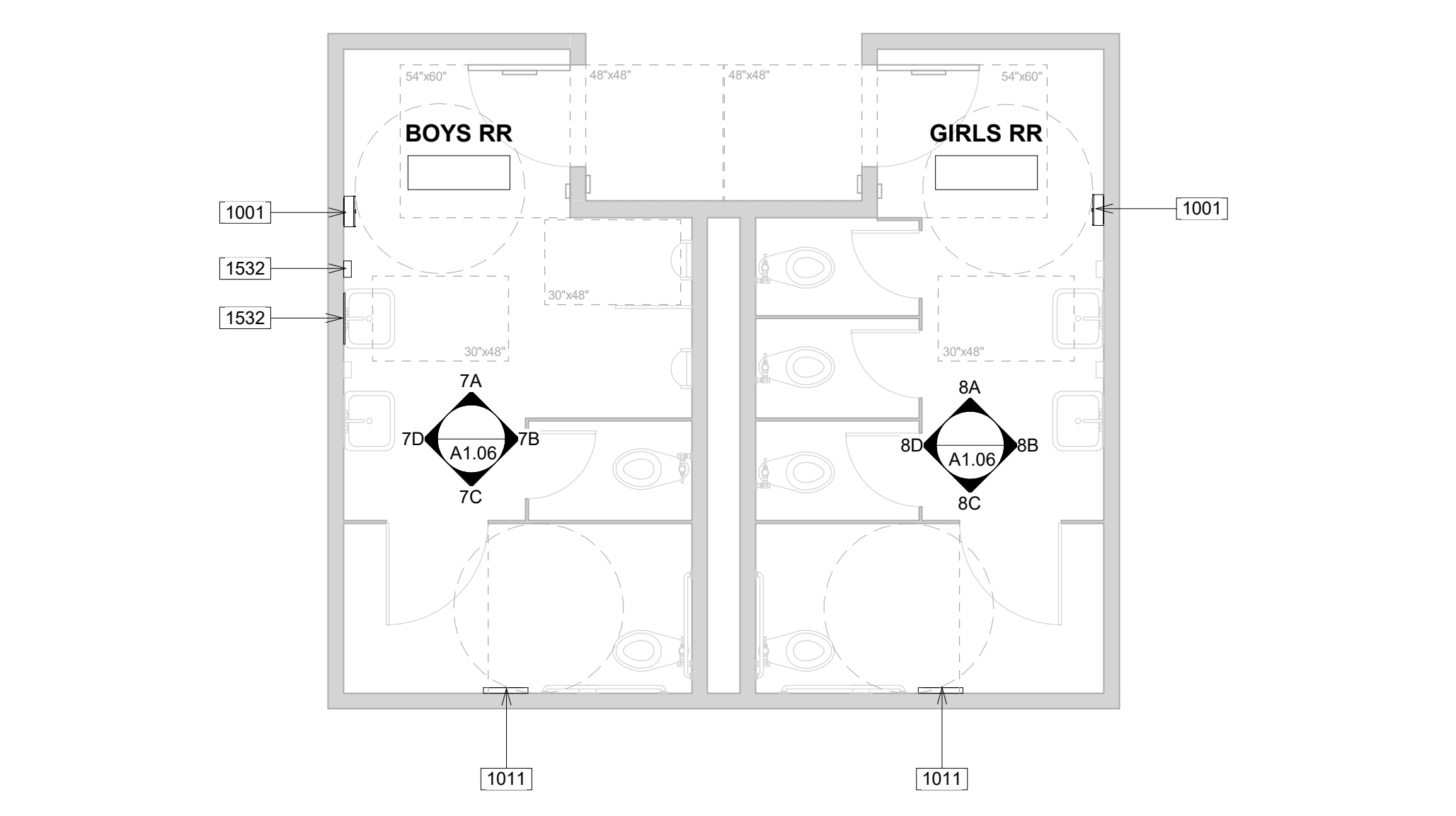
BOYS RESTROOM INTERIOR ELEVATIONS
1/4" = 1'-0" **7**



(E) BOYS AND GIRLS RESTROOM
1/4" = 1'-0" **3**



GIRLS RESTROOM INTERIOR ELEVATIONS
1/4" = 1'-0" **8**



(N) BOYS AND GIRLS RESTROOM
1/4" = 1'-0" **4**

REFERENCE NOTES

KEYNOTE	DESCRIPTION
0139	REMOVE, SALVAGE, AND PROTECT (E) RESTROOM ACCESSORIES FOR REINSTALLATION IN NEW LOCATION. COORDINATE STORAGE WITH DISTRICT RETURN TO DISTRICT
0142	PROTECT IN PLACE (E) TOILET PAPER DISPENSER
0152	REMOVE, SALVAGE, AND PROTECT (E) RESTROOM ACCESSORIES AND RETURN TO DISTRICT
0158	REMOVE, SALVAGE, AND PROTECT (E) ADDITIONAL TOILET PAPER DISPENSER AND RETURN TO DISTRICT
0163	REMOVE, SALVAGE, AND PROTECT (E) DOOR, TO BE REINSTALLED AT NEW LOCATION
0167	PROTECT IN PLACE (E) PLUMBING FIXTURES, UNO
0169	DEMO (E) RESTROOM WALL SIGNAGE, PROTECT IN PLACE, PATCH AND REPAIR (E) FINISH SURFACE AS REQUIRED
0170	DEMO (E) RESTROOM DOOR SIGNAGE, PROTECT IN PLACE, REPAIR AND REPAINT (E) DOOR FINISH SURFACE AS REQUIRED
1001	BOBRICK B-262 PAPER TOWEL WITH 4" MAX PROTRUSION, FOR ACCESSIBLE MOUNTING HEIGHT REF 1 / A1.11 & 2 / A1.11
1002	BOBRICK B-570 SANITARY NAPKIN DISPOSAL WITH 4" MAX PROTRUSION, FOR ACCESSIBLE MOUNTING HEIGHT REF 12 / A1.11
1006	BOBRICK B-370ET SANITARY NAPKIN DISPENSER WITH 4" MAX PROTRUSION, FOR ACCESSIBLE MOUNTING HEIGHT REF 12 / A1.11
1011	BOBRICK B-221 SURFACE MOUNTED TOILET SEAT COVER DISPENSER, REF 3 / A1.11 & 4 / A1.11
1042	(N) RESTROOM WALL SIGN, REF 17 / A1.11
1043	(N) RESTROOM DOOR SIGN, REF 18 / A1.11
1532	REINSTALL SALVAGED RESTROOM ACCESSORIES, REF 1 / A1.11, 2 / A1.11 & 12 / A1.11
1537	REINSTALL SALVAGED (E) RESTROOM DOOR

DEMO GENERAL NOTES

- WHERE TILE AND MORTAR BED IS DEMOLISHED, PATCH AND REPAIR FLOOR AS REQUIRED FOR NEW FINISH.
- FIELD VERIFY ALL DIMENSIONS FOR EXISTING BUILDINGS.
- PROTECT IN PLACE ALL ITEMS, UNO.
- ANY DEMOLITION OF (E) EXTERIOR DOORS, FRAMES, AND WINDOW SYSTEMS IS TO BE DONE AS NOTED ON THE DRAWINGS. WHERE (E) DOOR AND WINDOW FRAME SYSTEMS ARE TO REMAIN IN PLACE THEY ARE TO BE PROTECTED DURING THE ENTIRE PROJECT.
- REMOVE ALL ADHESIVE AND EXCESS MATERIAL LEFT BEHIND DURING THE DEMOLITION OF THE FLOORING IN ORDER TO PROVIDE A CLEAN SURFACE FOR NEW FLOORING. REPAIR AND LEVEL EXISTING FLOORING PRIOR TO INSTALLING NEW FLOORING SYSTEM PER SPECIFICATIONS.
- EXISTING MARKER BOARDS TO BE REMOVED, PROTECTED AND RETURNED TO DISTRICT.

DEMOLITION PLAN LEGEND

- (E) STUD WALL TO REMAIN
- DEMO PLUMBING FIXTURE, SEE PLUMBING.
- (E) ITEM TO BE DEMOLISHED

GENERAL NOTES

- PATCH AND REPAIR CONCRETE FLOOR SLAB BELOW DEMOLISHED WALLS, DOOR FRAMES, AND OTHER REMOVED ITEMS. PREP FOR NEW FINISHES.
- PATCH AND REPAIR (E) ADJOINING WALLS NOT TO BE DEMOLISHED AND PREP FOR NEW FINISHES AS REQUIRED, UNO.
- WALLS ARE FULL HEIGHT TO THE UNDERSIDE OF THE STRUCTURE ABOVE UNO.
- DIMENSIONS ARE TO FACE OF STUD AT EXTERIOR WALLS, CENTER OF STUD AT INTERIOR WALLS, AND FACE OF FINISH AT MASONRY WALLS, METAL DECK SCREEN WALLS, AND CURTAIN WALLS/STOREFRONT WALLS, UNO.

CONSTRUCTION LEGEND

- 24" @ EXT DOORS
18" MIN CLR. DOOR
- 12" MIN CLR. REQUIRED CLEARANCES AT ALL DOORS TYPICAL @ INTERIOR
- (N) ITEM TO BE INSTALLED
- 30" X 48" MIN. ACCESSIBLE CLEARANCE SYMBOL
- 60" DIA. TURN AROUND ACCESSIBLE CLEARANCE SYMBOL

Not for permitting or construction

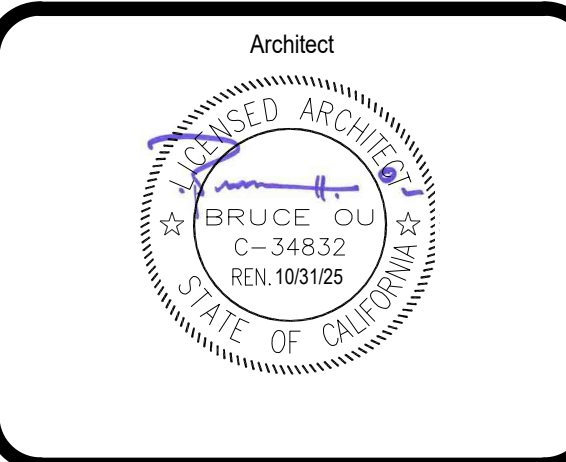
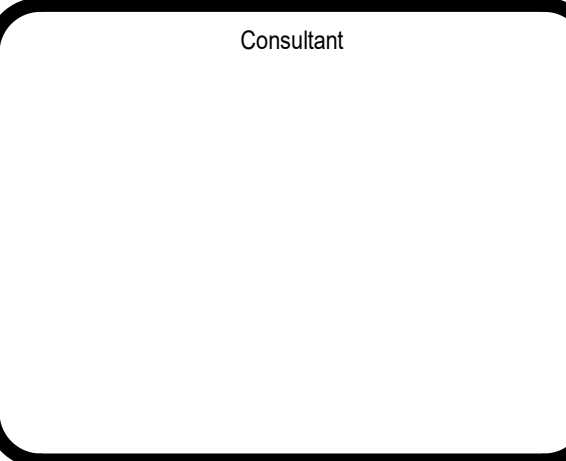
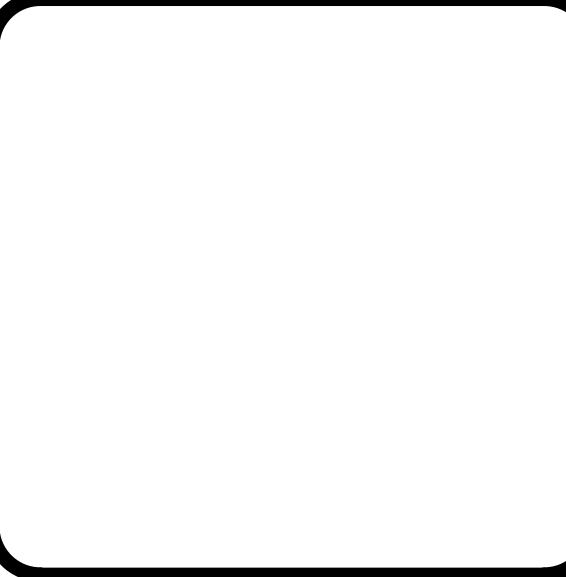


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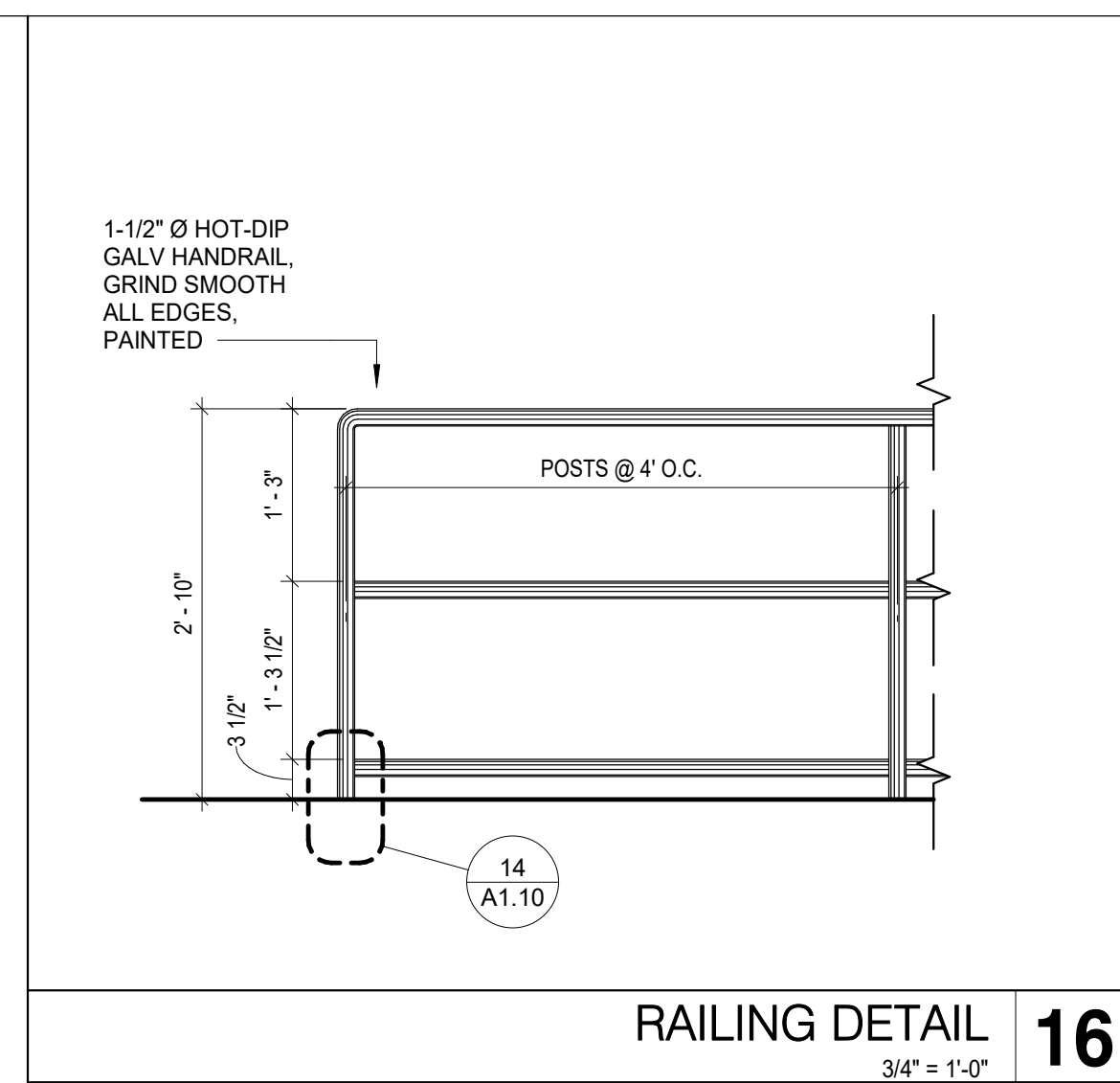


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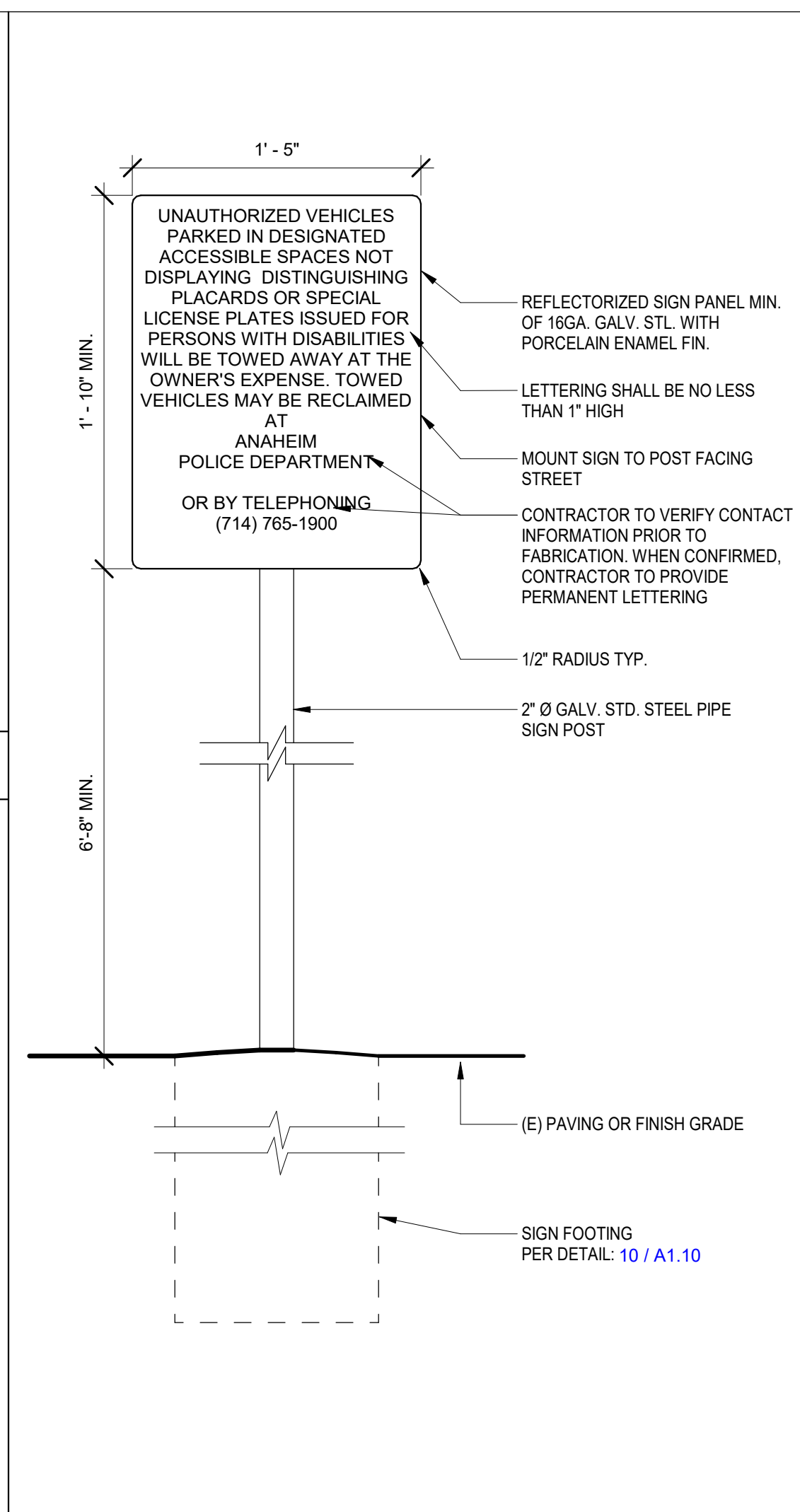
ENLARGED PLANS & ELEVATIONS

A1.06

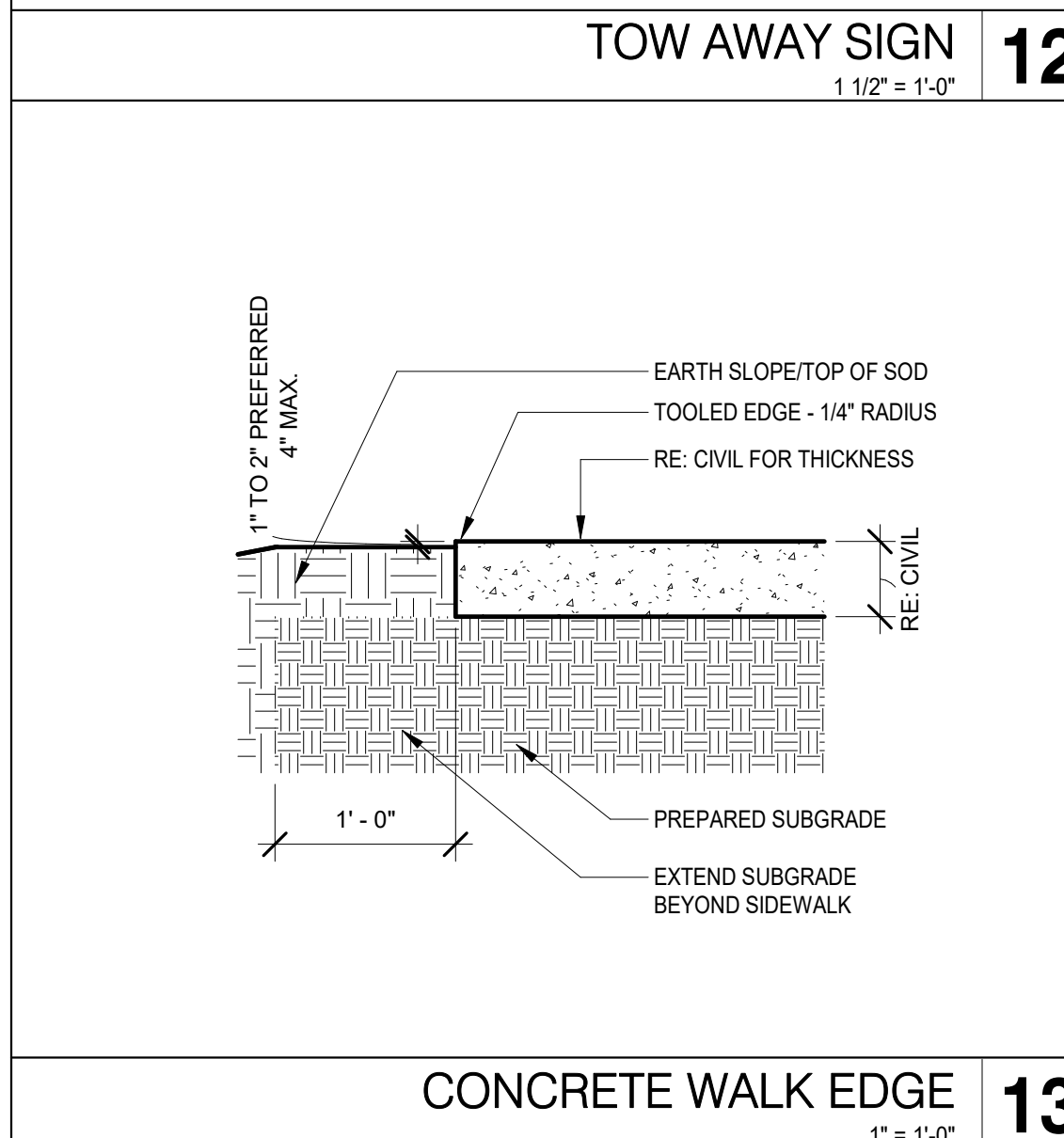
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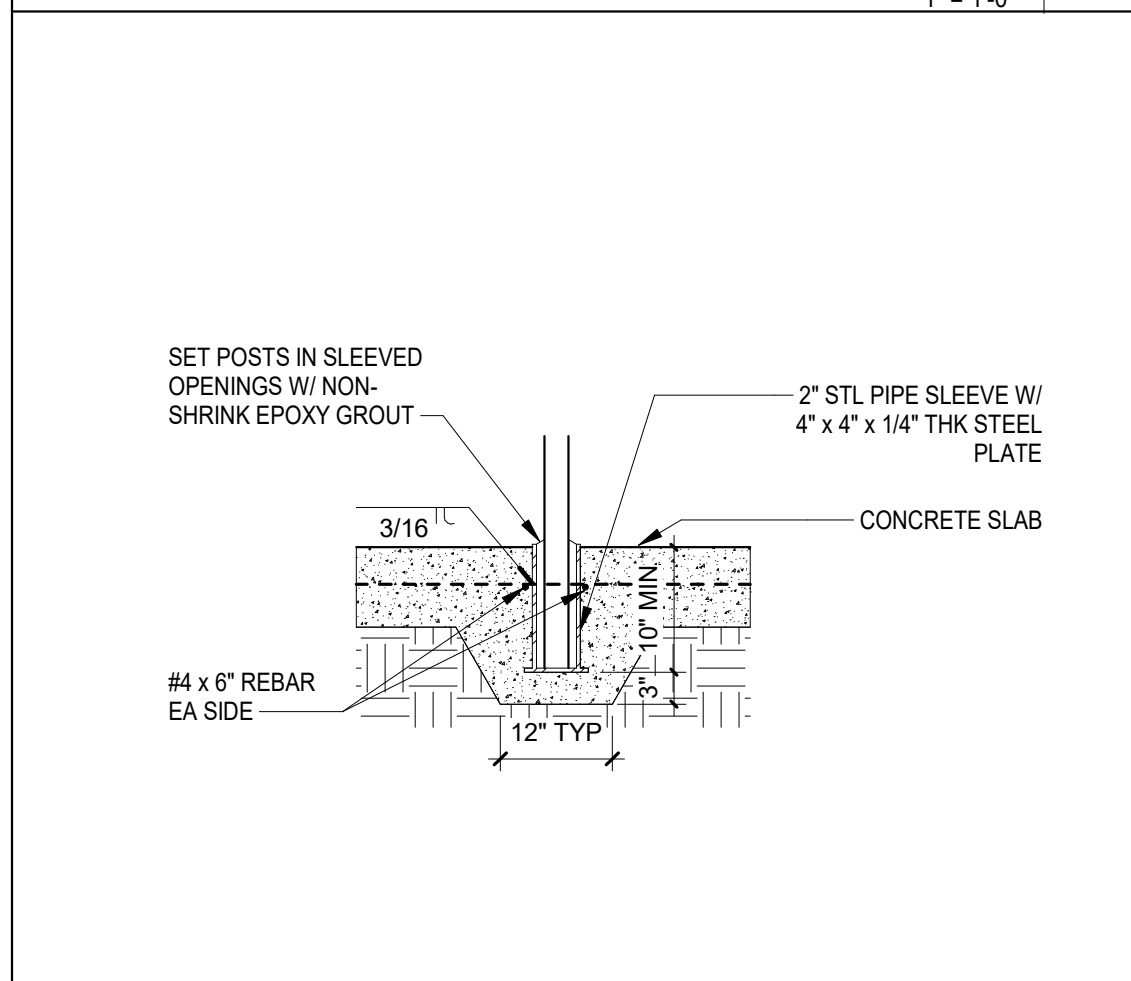
RAILING DETAIL 16
3/4" = 1'-0"



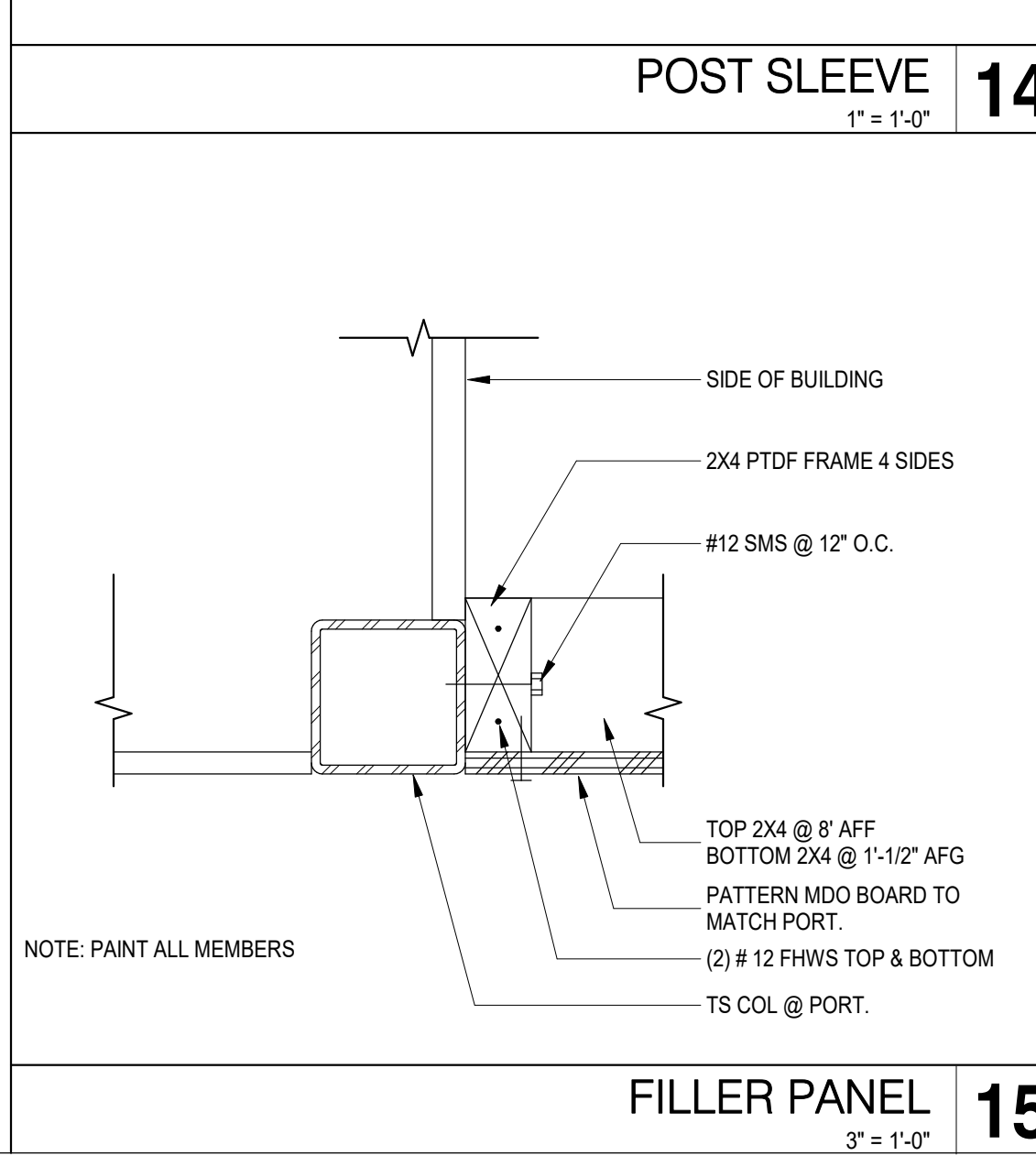
TOW AWAY SIGN 12
1 1/2" = 1'-0"



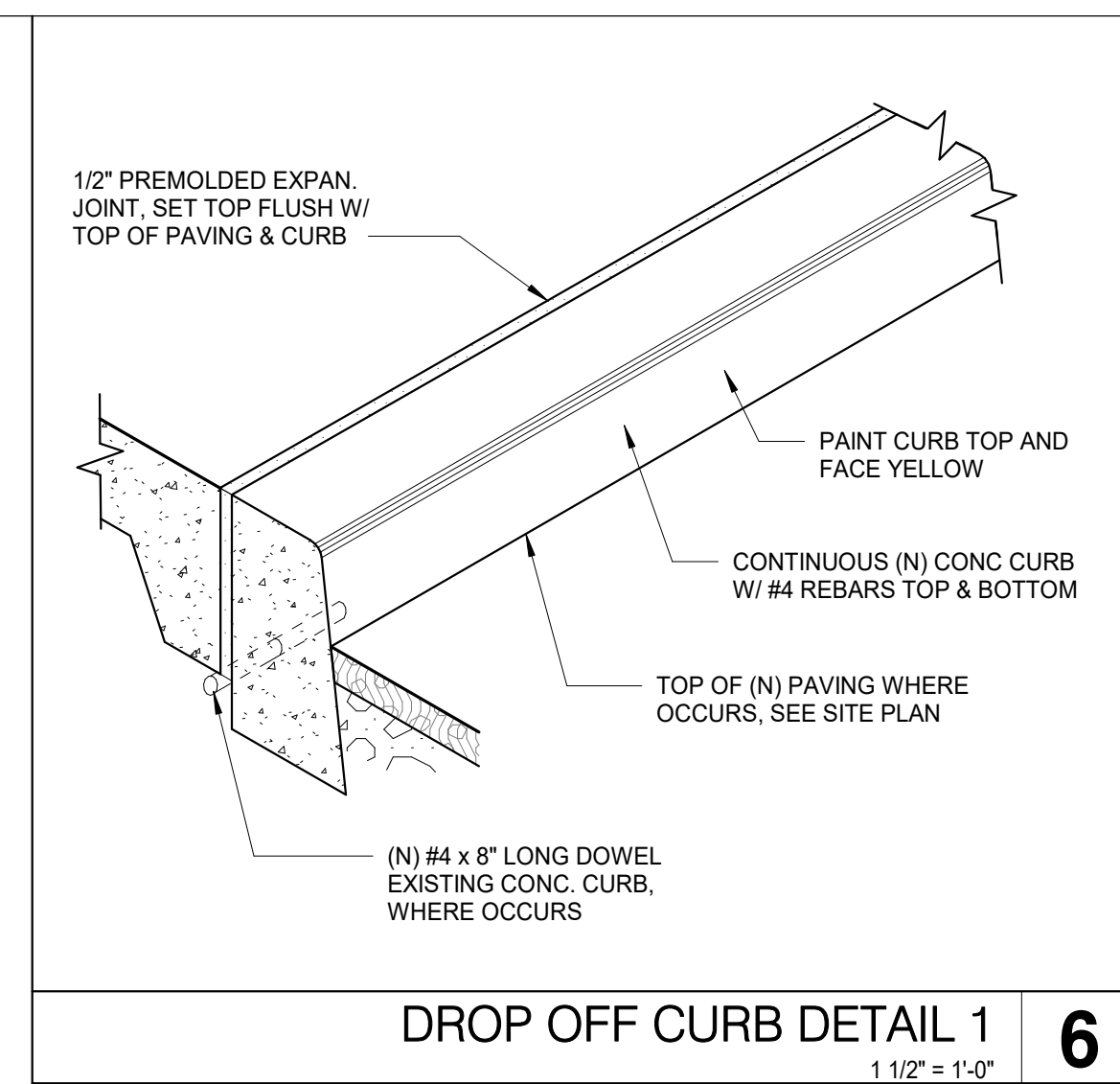
CONCRETE WALK EDGE 13
1" = 1'-0"



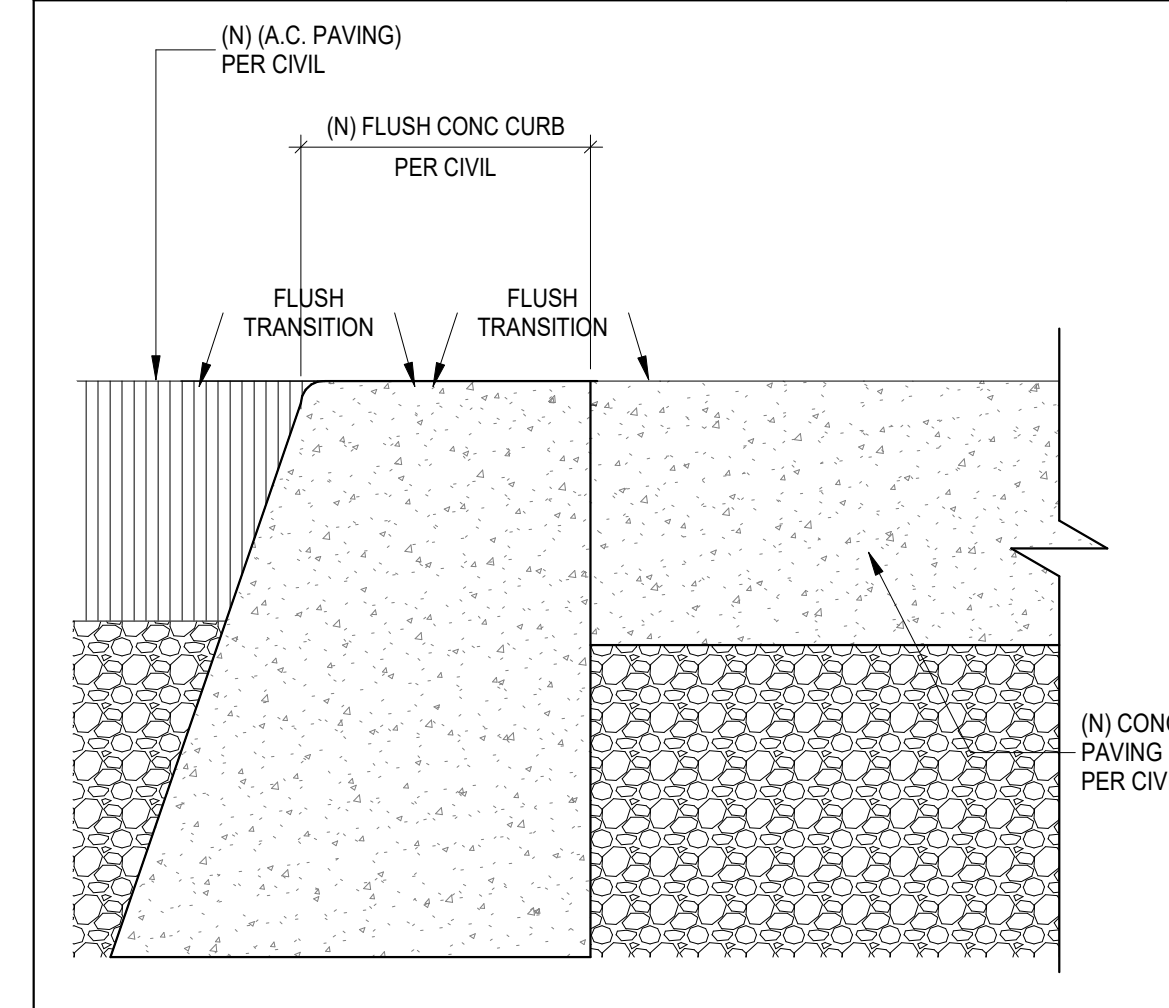
POST SLEEVE 14
1" = 1'-0"



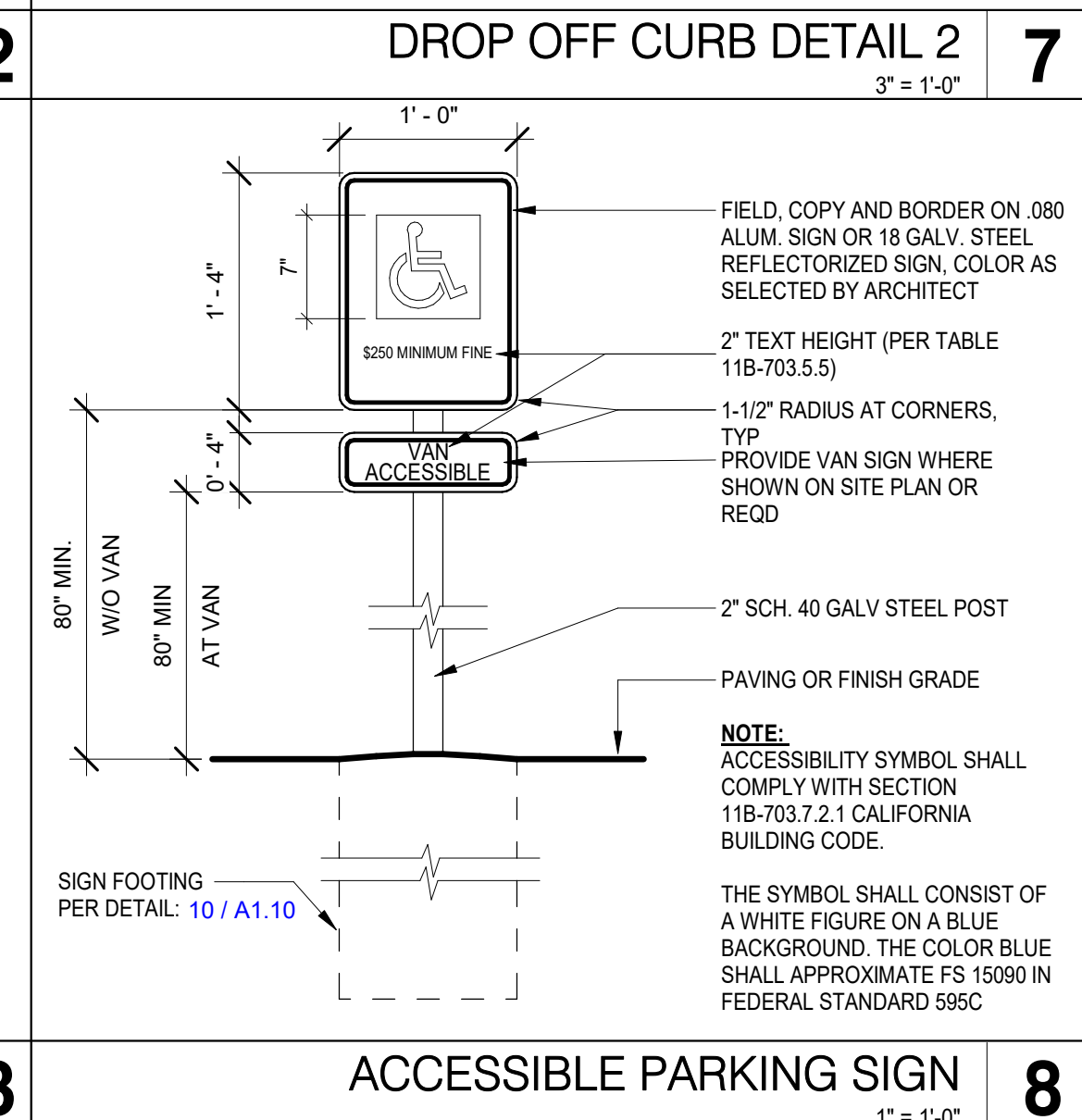
FILLER PANEL 15
3" = 1'-0"



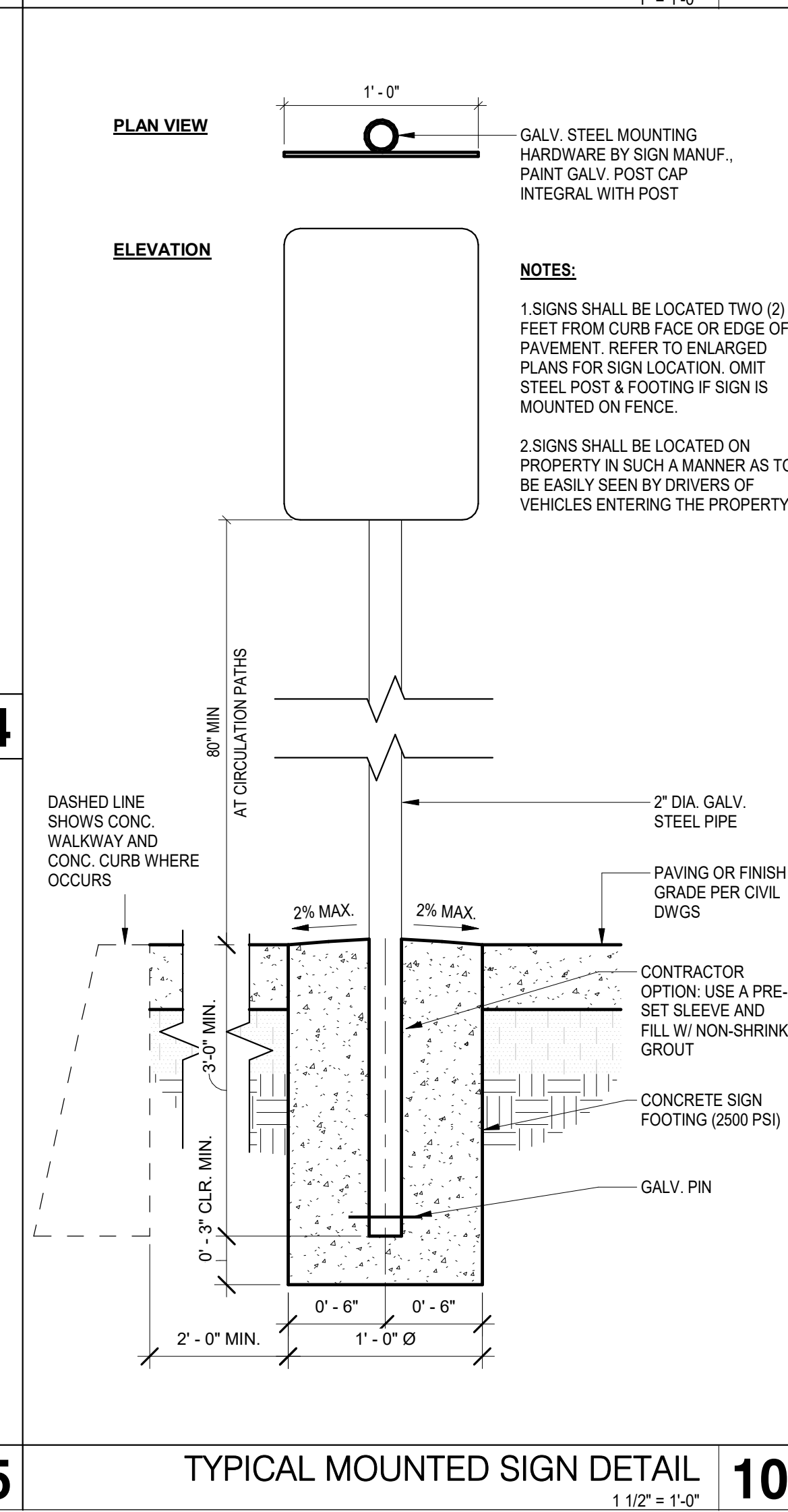
DROP OFF CURB DETAIL 1 6
1 1/2" = 1'-0"



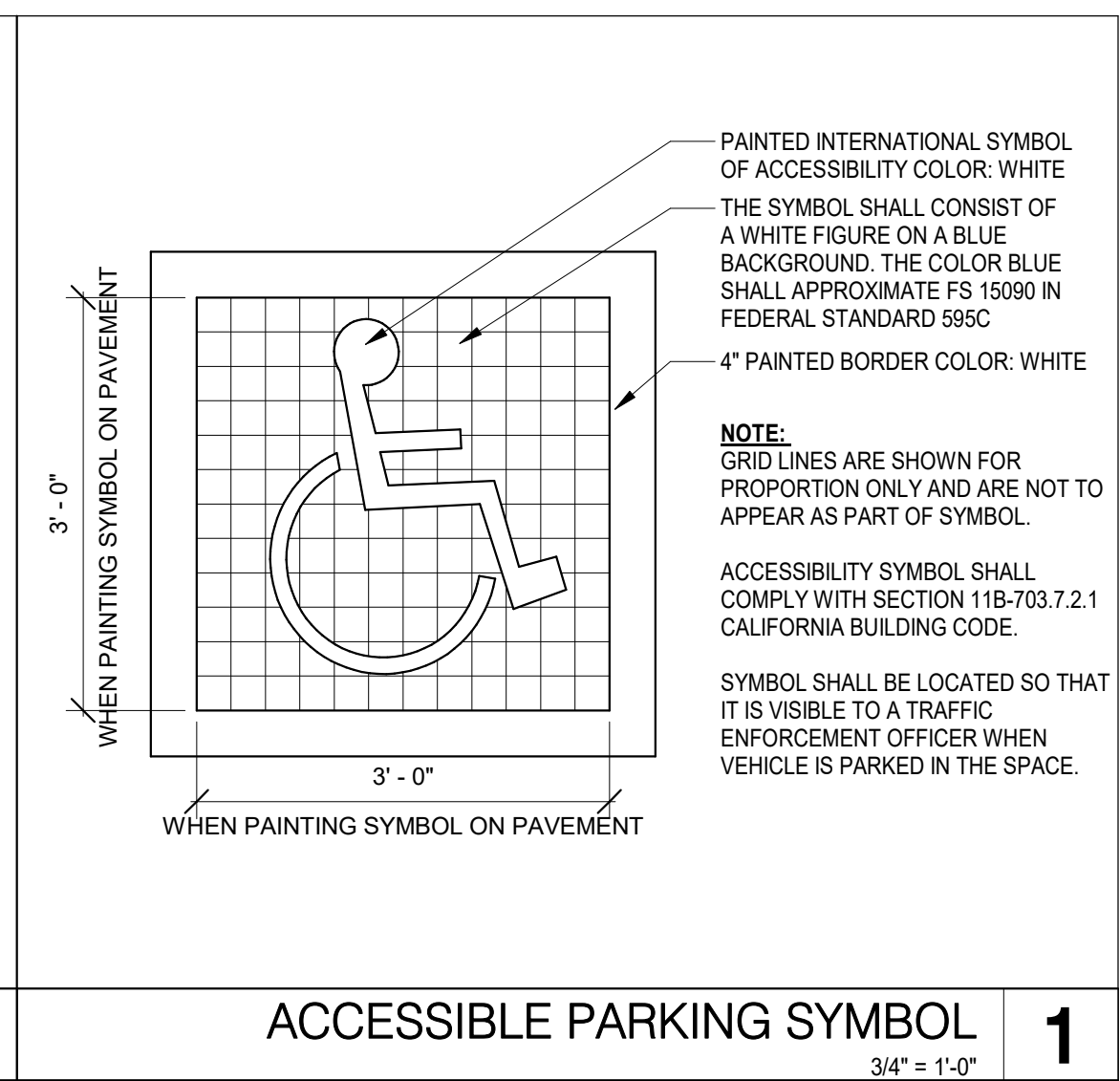
DROP OFF CURB DETAIL 2 7
3" = 1'-0"



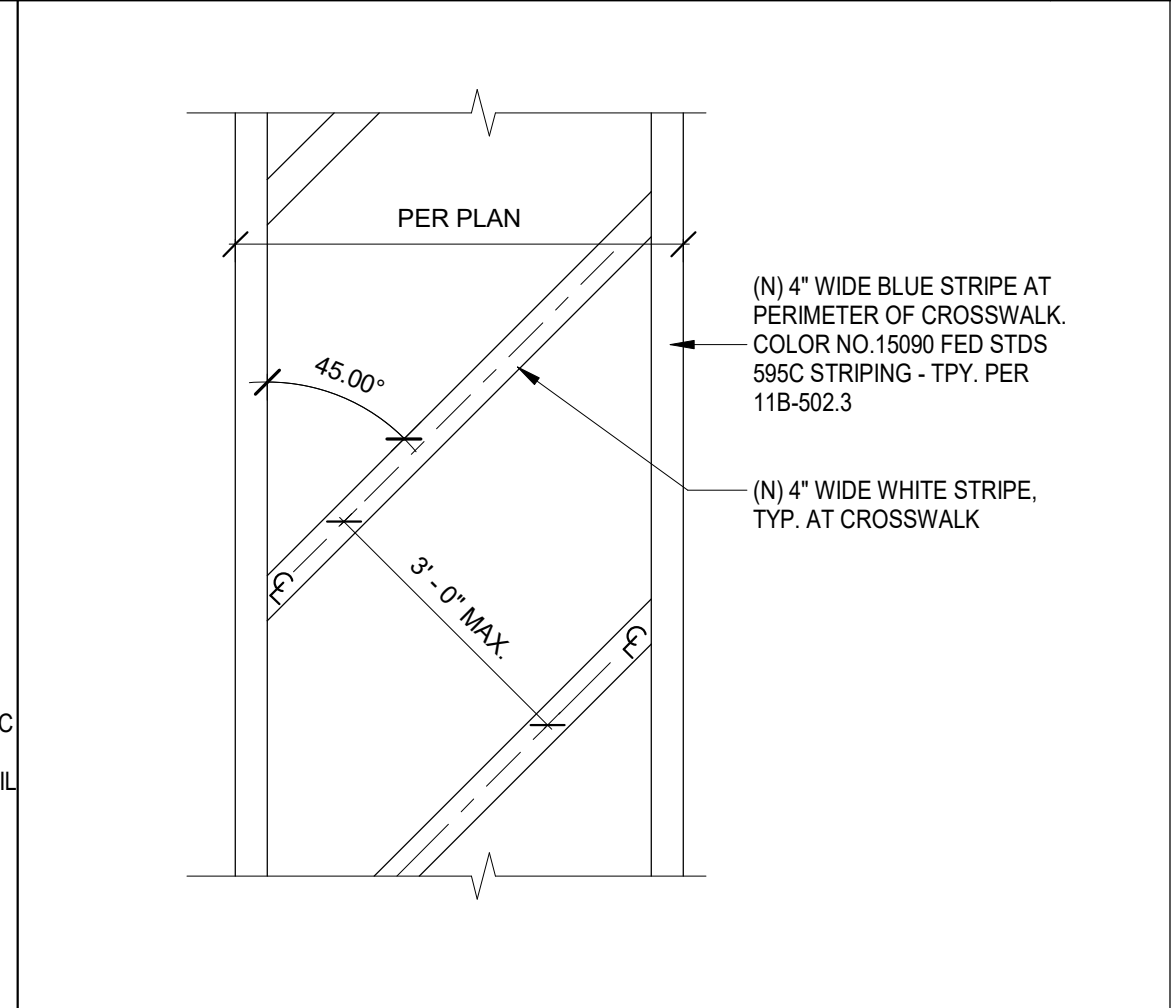
ACCESSIBLE PARKING SIGN 8
1" = 1'-0"



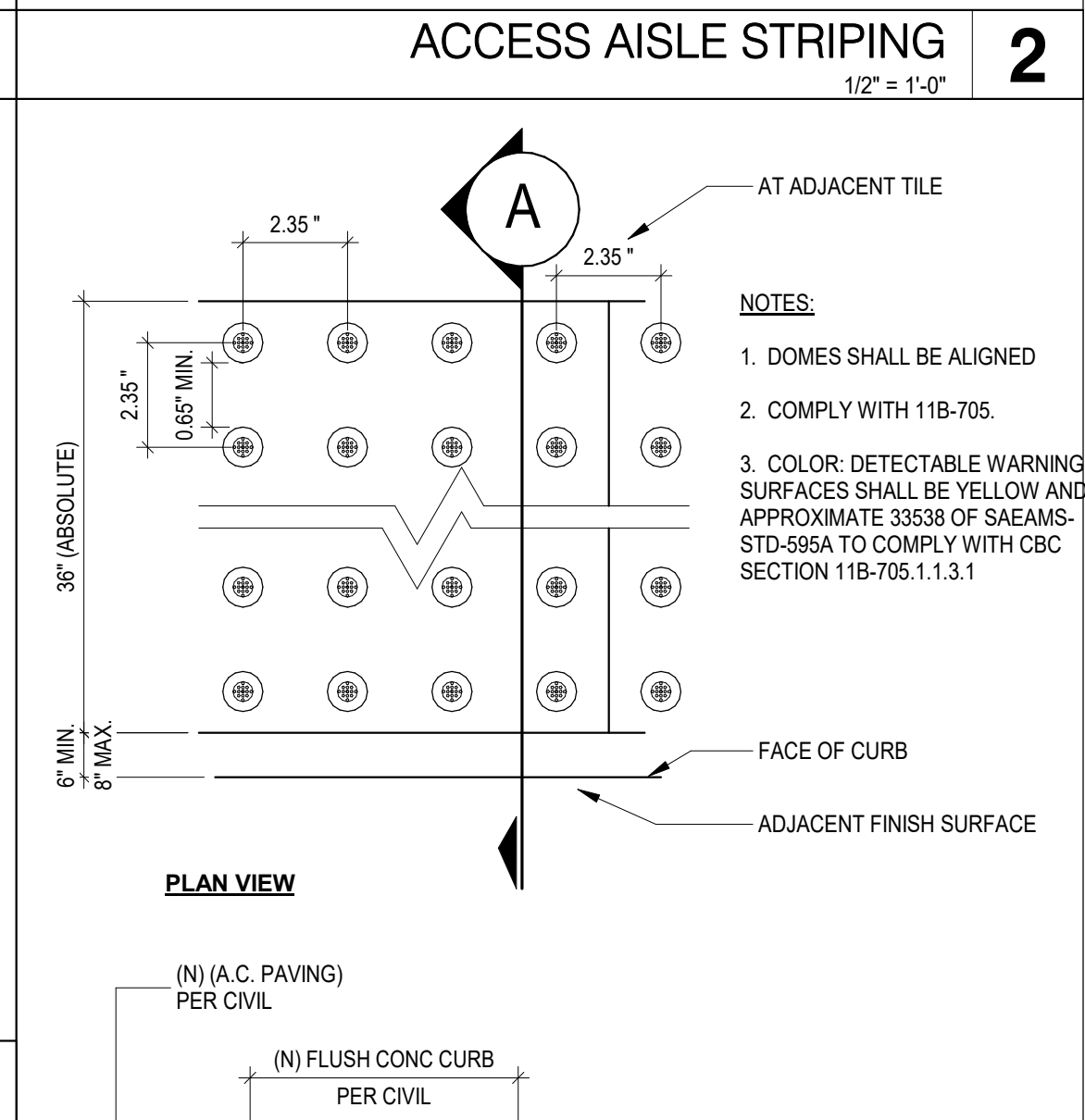
TYPICAL MOUNTED SIGN DETAIL 10
1 1/2" = 1'-0"



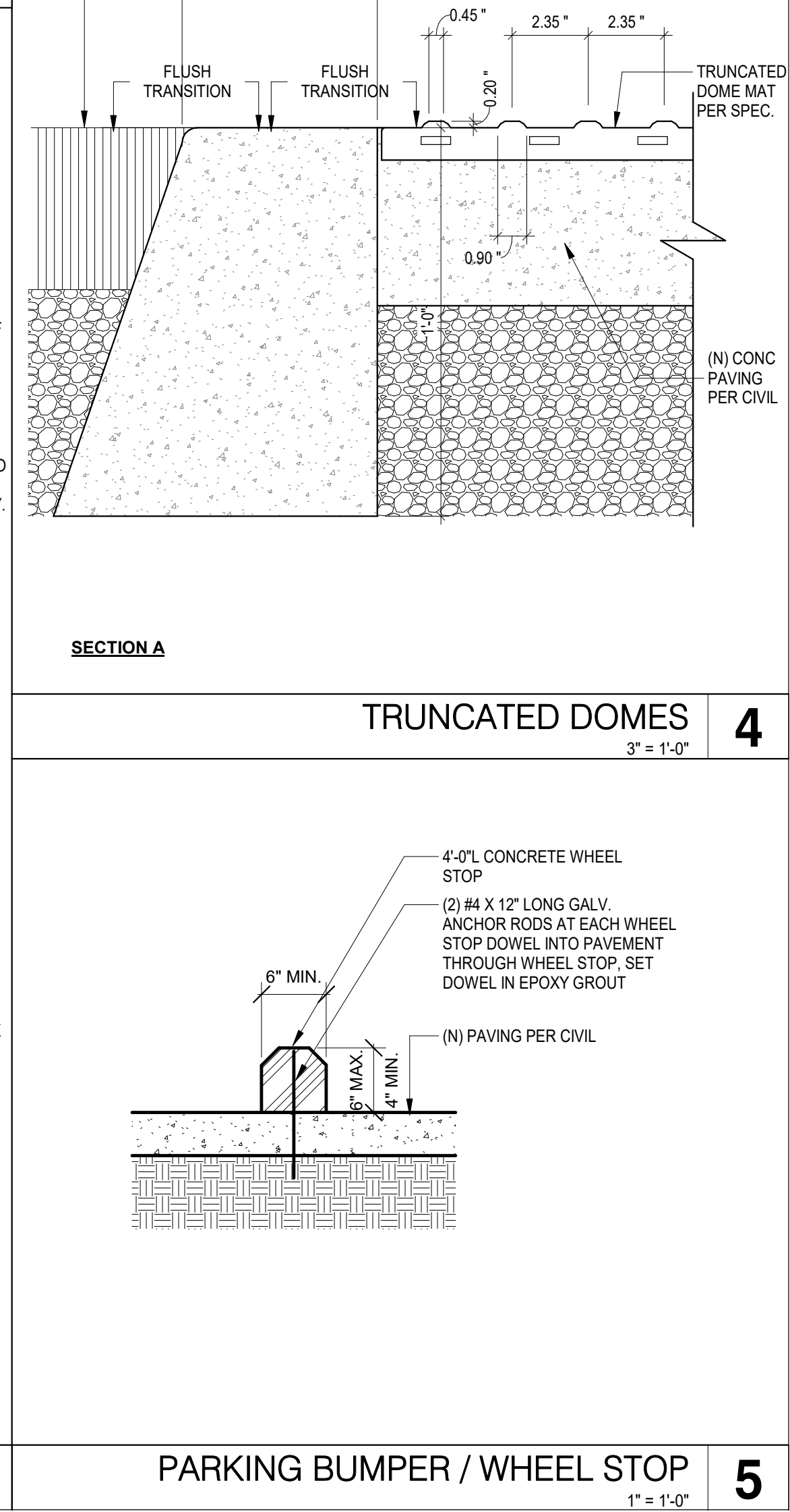
ACCESSIBLE PARKING SYMBOL 1
3/4" = 1'-0"



ACCESS AISLE STRIPING 2
1/2" = 1'-0"



TRUNCATED DOMES 4
3" = 1'-0"



PARKING BUMPER / WHEEL STOP 5
1" = 1'-0"

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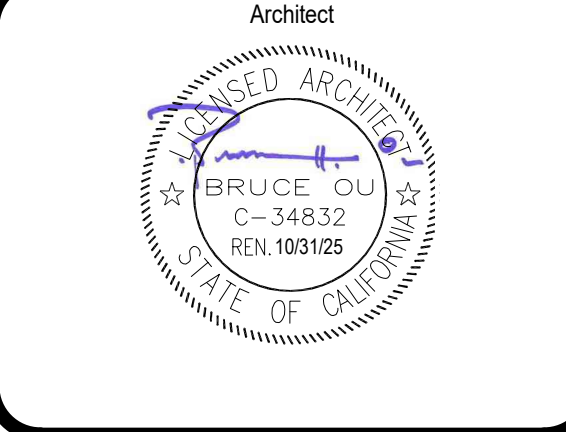
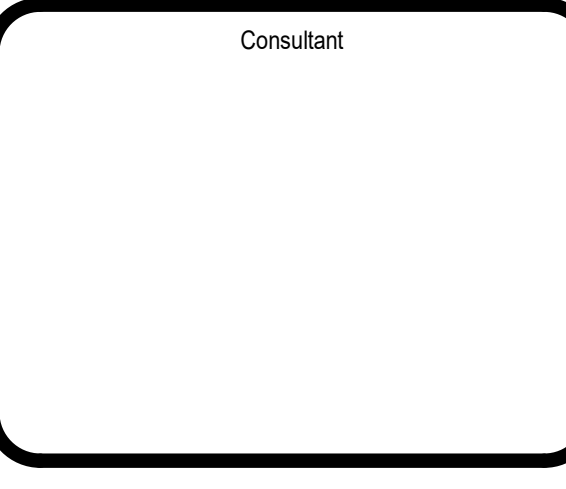
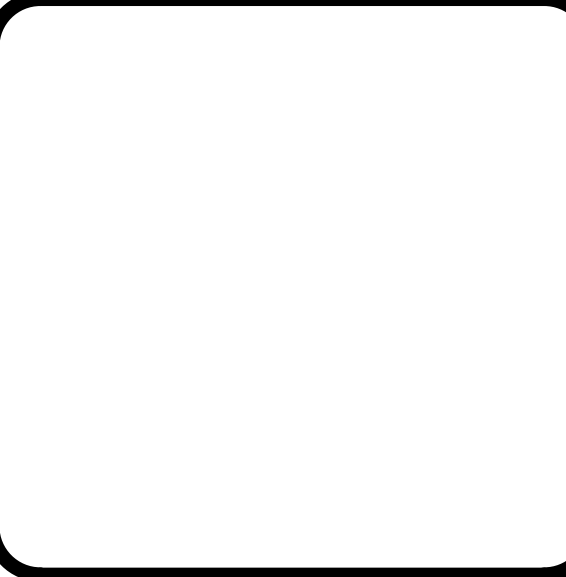


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MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

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DSA-APPL. NO. 04-12383 DSA-FILE NO. 30-51



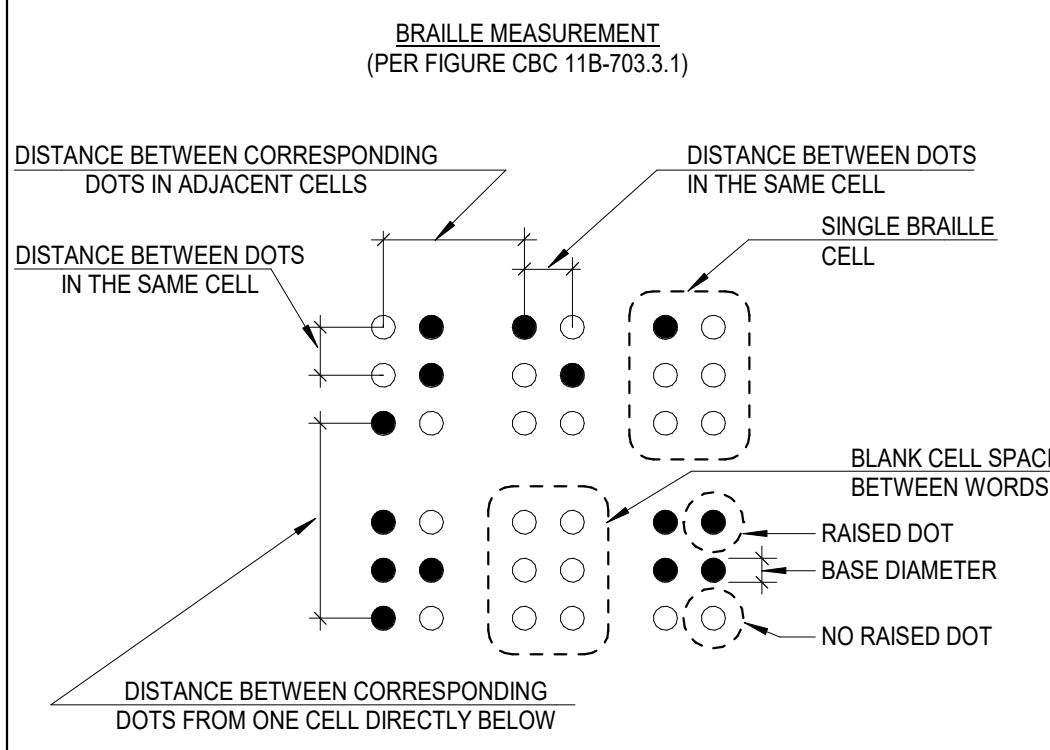
CLIENT		TUSD	
DATE	PROJECT NUMBER	DATE	PROJECT NUMBER
03-21-2024	230380		
REVISIONS			
No.	Description	Date	

ENLARGED PARKING PLANS AND DETAILS

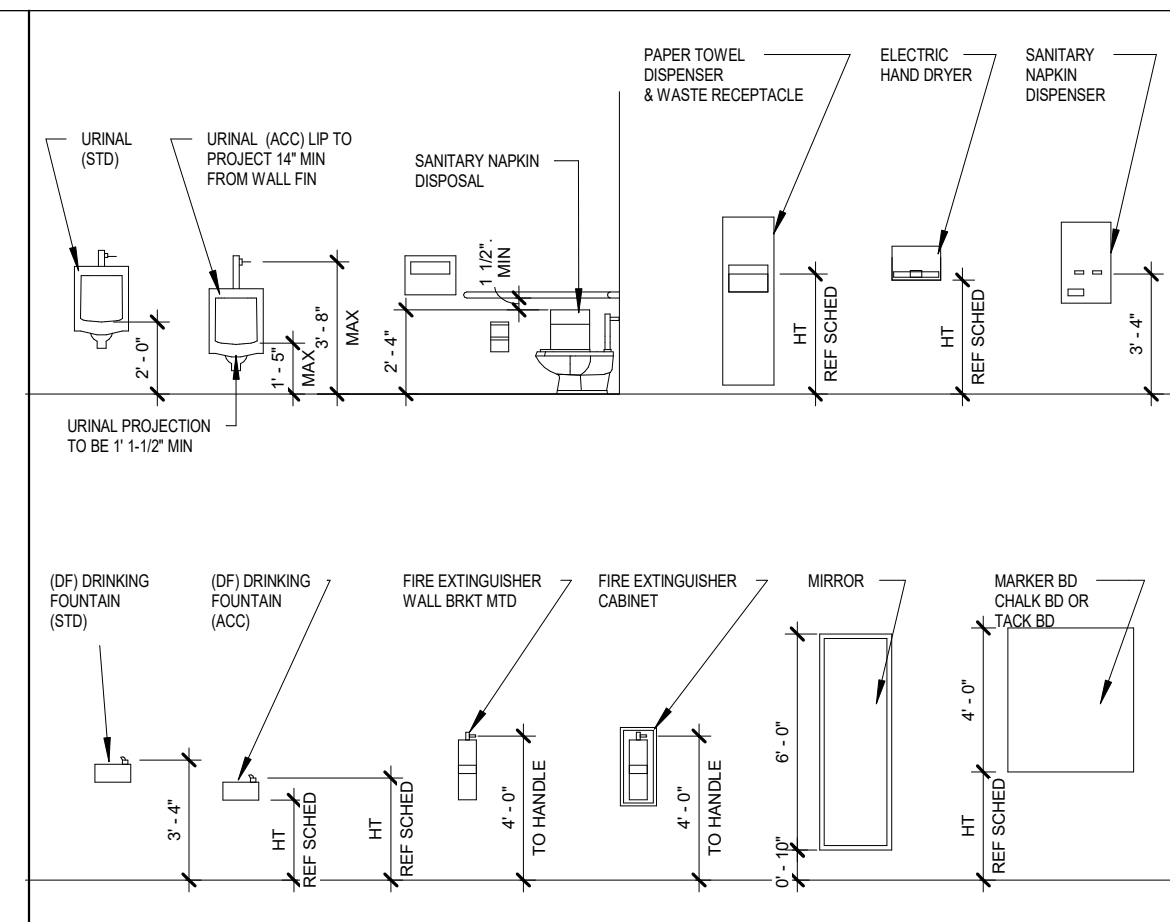
BRAILLE DIMENSIONS
(PER TABLE CBC 11B-703.3.1)

MEASUREMENT RANGE	MINIMUM IN INCHES MAXIMUM IN INCHES
DOT BASE DIAMETER	0.059 (1.5 MM) TO 0.063 (1.6 MM)
DISTANCE BETWEEN TWO DOTS IN THE SAME CELL ¹	0.100 (2.5 MM)
DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS ¹	0.300 (7.6 MM)
DOT HEIGHT	0.025 (0.6 MM) TO 0.037 (0.9 MM)
DISTANCE BETWEEN CORRESPONDING DOTS FROM ONE CELL DIRECTLY BELOW ¹	0.395 (10 MM) TO 0.400 (10.2 MM)

1. MEASURED CENTER TO CENTER



BRAILLE STANDARDS FOR SIGNAGE 22
8" = 1'-0"



FIXTURE

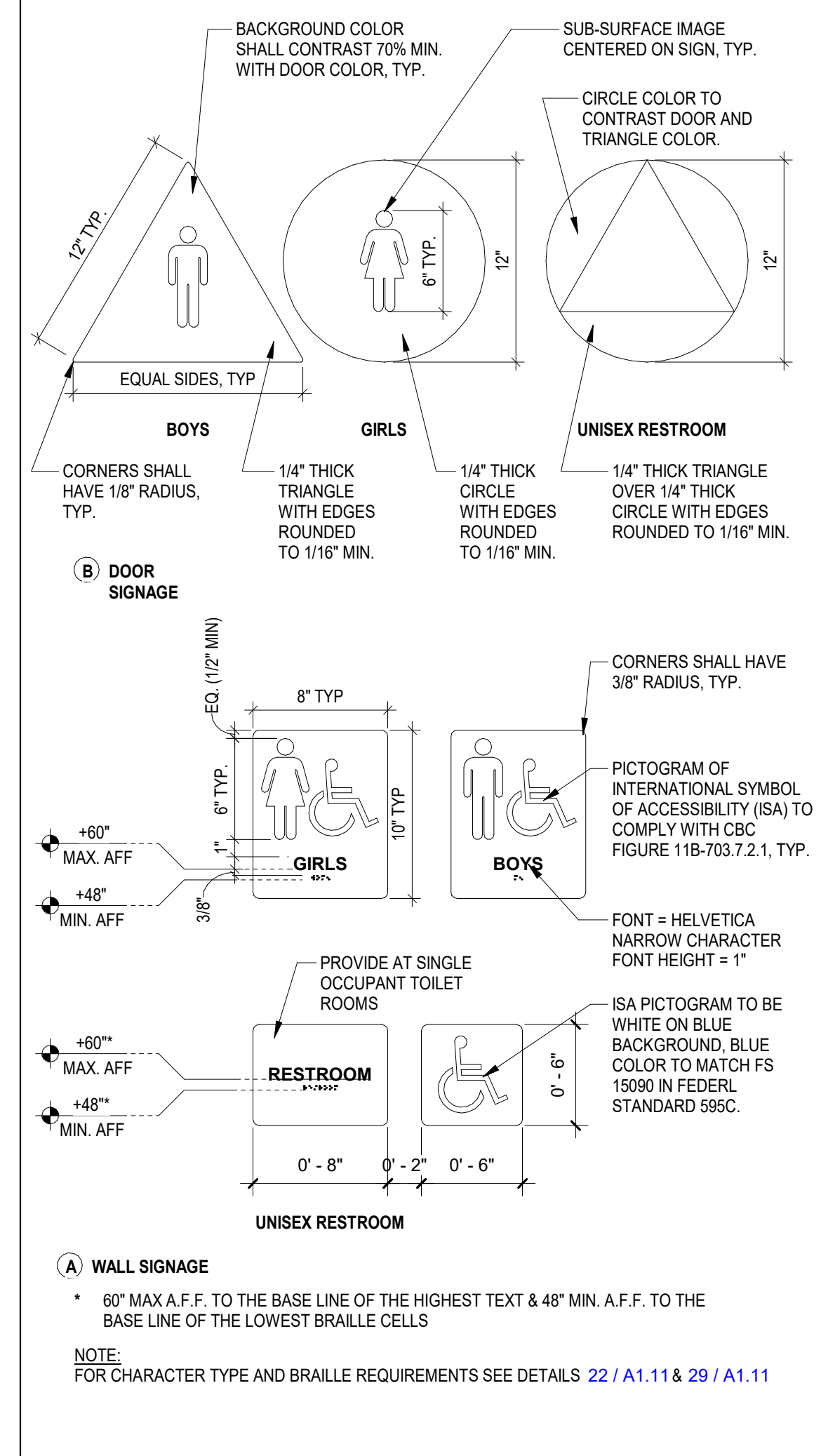
FIXTURE	SUGGESTED DIMENSION		
	A	E	K
TOILET CENTER LINE FROM WALL	1'-5" - 1'-6"	1'-3" - 1'-6"	1'-0" - 1'-7"
TOILET SEAT HEIGHT (TOP OF SEAT)	1'-5" - 1'-7"	1'-3" - 1'-6"	1'-0" - 1'-7"
GRAB BAR HEIGHT (TOP OF BAR)	2'-9" - 3'-0"	1'-8" - 2'-1"	1'-6" - 1'-8"
TOILET PAPER DISPENSER HT TO OUTLET	1'-7" MIN	1'-2" - 1'-5"	1'-2" - 1'-5"
NAKIN DISPOSAL IN BACK OF TOILET	6" MAX	6" MAX	N/A
DISPENSER OR MIRROR HEIGHT	3'-4" MAX	3'-4" MAX	3'-0" MAX
LAVATORY/SINK TOP HEIGHT	2'-10" MAX	2'-7" MAX	2'-8" MAX
LAVATORY APRON CLEARANCE	2'-5" MIN	N/A	N/A
LAVATORY/SINK KNEE CLEARANCE	2'-3" MIN	2'-0" MIN	2'-8" MIN
DF BUBBLER HEIGHT	3'-0" MAX	2'-6" MAX	2'-6" MAX
DF BUBBLER FROM FRONT EDGE	5" MAX	3'-0" MAX	3'-0" MAX
DF CONTROL FROM FRONT EDGE	6" MAX	6" MAX	6" MAX
DF KNEE CLEARANCE	2'-3" MIN	2'-4" MAX	2'-4" MAX
RAMP/STAIR HANDRAIL HEIGHT	2'-10" - 3'-2"	2'-4" MAX	2'-4" MAX
MARKER BOARD HEIGHT	3'-0"	2'-6"	2'-0"

LEGEND

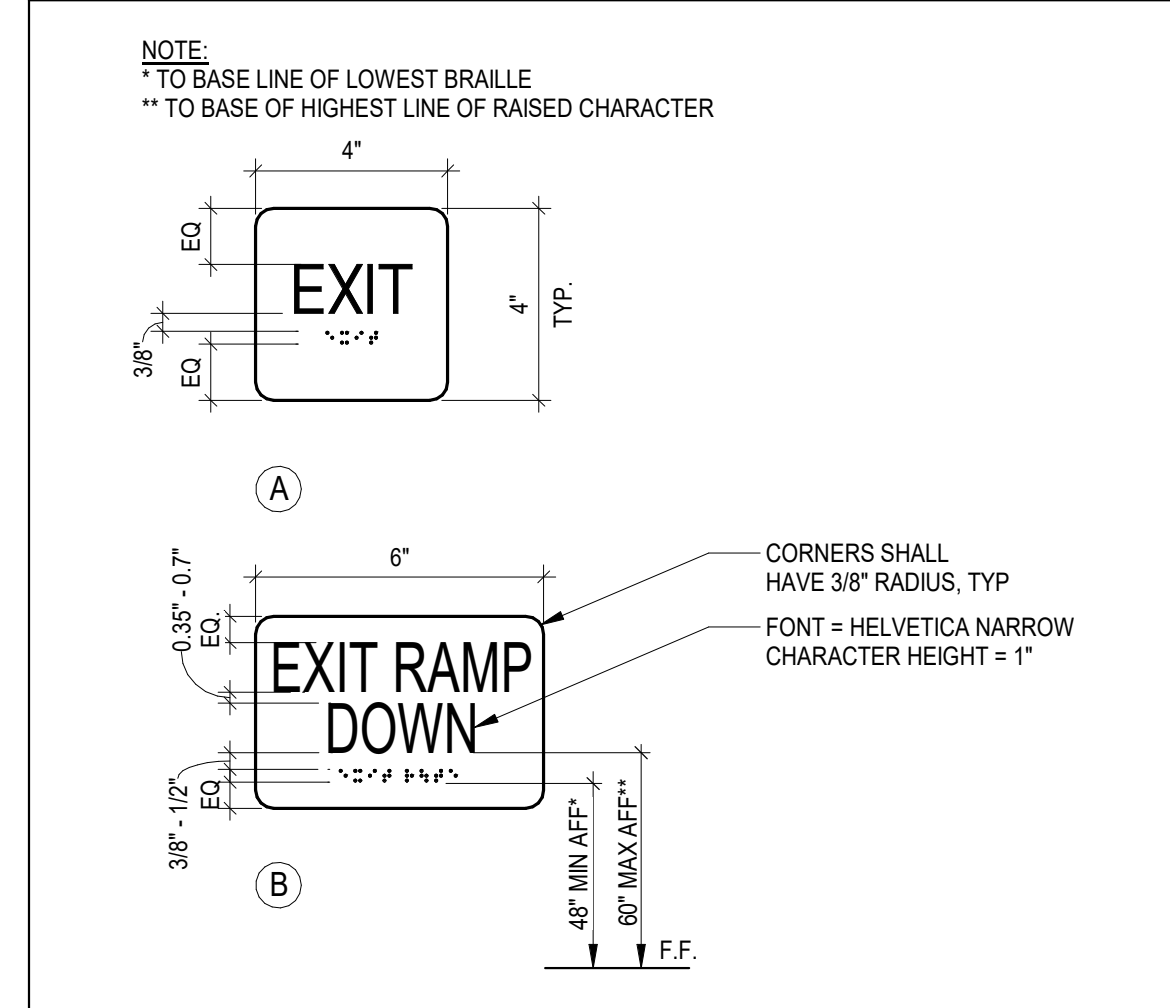
ADULT DIMENSIONS (STAFF, AGE 12 AND OVER)
ELEMENTARY DIMENSIONS (AGE 5 - 8)
K = KINDERGARTEN AND PRE-SCHOOL DIMENSIONS (3 - 4)

- NOTE**
- ALL FIXTURES AND ACCESSORIES ARE ACCESSIBLE UNLESS OTHERWISE NOTED OR DIMENSIONED.
 - THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
 - SEE ENLARGED TOILET PLANS FOR TOILET ACCESSORY LOCATIONS.
 - ALL ACCESSORIES ARE TO BE ACCESSIBLE WITH A MAXIMUM REACH HEIGHT OF 3'-4" FROM FLOOR TO TOP OF FUNCTIONAL POINT UNLESS OTHERWISE NOTED OR DIMENSIONED. MIRROR HEIGHT IS TO BOTTOM OF REFLECTIVE SURFACE.

MOUNTING HEIGHTS SCHEDULE 12
3/16" = 1'-0"



RESTROOM DOOR & WALL SIGNS 17
1 1/2" = 1'-0"



TACTILE EXIT SIGN 6
3" = 1'-0"

SIGNS AND IDENTIFICATION

IDENTIFICATION SIGNS
WHEN SIGNS IDENTIFY PERMANENT ROOMS AND SPACES OF A BUILDING OR SITE, THEY SHALL COMPLY WITH REQUIREMENTS FOR: FINISH AND CONTRAST, PROPORTIONS, RAISED CHARACTERS AND PICTORIAL SYMBOLS, BRAILLE, & MOUNTING LOCATION AND HEIGHT.

DIRECTIONAL AND INFORMATIONAL SIGNS
WHEN SIGNS DIRECT TO OR GIVE INFORMATION ABOUT PERMANENT ROOMS AND FUNCTIONAL SPACES OF A BUILDING OR SITE, THEY SHALL COMPLY WITH REQUIREMENTS FOR: FINISH AND CONTRAST, PROPORTIONS, & CHARACTER HEIGHT.

ACCESSIBILITY SIGNS
WHEN SIGNS IDENTIFY, DIRECT TO OR GIVE INFORMATION ABOUT ACCESSIBLE ELEMENTS AND FEATURES OF A BUILDING OR SITE, THEY SHALL INCLUDE THE APPROPRIATE SYMBOL OF ACCESSIBILITY (PROPORTIONS SHALL MATCH CBC FIGURE 11B-703.2.1) AND SHALL COMPLY WITH FUNCTIONAL SPACES OF A BUILDING OR SITE. THEY SHALL COMPLY WITH REQUIREMENTS FOR: FINISH AND CONTRAST, & INTERNATIONAL SYMBOL OF ACCESSIBILITY.

FINISH AND CONTRAST
CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NONGLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.

VISUAL CHARACTER PROPORTIONS
VISUAL CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE 'O' IS 60 PERCENT MINIMUM AND 110 PERCENT MAXIMUM ON THE HEIGHT OF THE UPPERCASE 'I'. STROKE THICKNESS OF THE UPPERCASE 'I' SHALL BE 10 PERCENT MINIMUM AND 20 PERCENT MAXIMUM OF THE HEIGHT OF THE CHARACTER.

VISUAL CHARACTER REQUIREMENTS
VISUAL CHARACTERS SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS REFERENCED FROM CBC SECTION 11B-703.5. VISUAL CHARACTERS SHALL BE UPPERCASE OR LOWERCASE OR A COMBINATION OF BOTH (11B-703.5.2). VISUAL CHARACTERS SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS (11B-703.5.3). VISUAL CHARACTERS SHALL BE MINIMUM ABOVE FINISH FLOOR OR GROUND (11B-703.5.6). VISUAL CHARACTER SPACING BETWEEN INDIVIDUAL ADJACENT CHARACTERS SHALL BE 10% MIN AND 35% MAX OF CHARACTER HEIGHT (11B-703.5.8). VISUAL CHARACTER LINE SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF CHARACTERS WITHIN A MESSAGE SHALL BE 15% MIN. AND 170% MAX OF THE CHARACTER HEIGHT (11B-703.5.9).

VISUAL CHARACTER HEIGHT
VISUAL CHARACTERS ON DIRECTIONAL, INFORMATIONAL SIGNS, AND ACCESSIBILITY SIGNS SHALL BE SIZED ACCORDING TO THE TABLE BELOW. THE MINIMUM HEIGHT IS MEASURED USING AN UPPERCASE 'I'. LOWERCASE CHARACTERS ARE PERMITTED. VIEWING DISTANCE SHALL BE MEASURED AS THE HORIZONTAL DISTANCE BETWEEN THE CHARACTER AND AN OBSTRUCTION PREVENTING FURTHER APPROACH TOWARDS THE SIGN.

VISUAL CHARACTER HEIGHT

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 INCHES TO LESS THAN OR EQUAL TO 70 INCHES	LESS THAN 72 INCHES	5/8 INCH
GREATER THAN 70 INCHES TO LESS THAN 120 INCHES	72 INCHES AND GREATER	5/8 INCH, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 72 INCHES
GREATER THAN 120 INCHES	LESS THAN 180 INCHES	2 INCHES
GREATER THAN 120 INCHES	180 INCHES AND GREATER	2 INCHES, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 180 INCHES
GREATER THAN 120 INCHES	LESS THAN 21 FEET	3 INCHES
GREATER THAN 120 INCHES	21 FEET AND GREATER	3 INCHES, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 21 FEET

RAISED CHARACTERS AND PICTORIAL SYMBOLS
WHEN RAISED CHARACTERS ARE REQUIRED OR WHEN PICTORIAL SYMBOLS (PICTOGRAMS) ARE USED ON SUCH SIGNS, THEY SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

A. CHARACTER TYPE:
CHARACTERS ON SIGNS SHALL BE RAISED 1/32 INCH MINIMUM AND SHALL BE SANS SERIF UPPERCASE CHARACTERS ACCOMPANIED BY CONTRACTED (GRADE 2) BRAILLE.

B. CHARACTER SIZE:
RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8 INCH AND A MAXIMUM OF 2 INCHES HIGH BASED UPON THE UPPERCASE 'I'. STROKE THICKNESS OF THE UPPERCASE 'I' SHALL BE 15% MAXIMUM OF THE HEIGHT OF THE CHARACTER. SPACING SHALL BE MEASURED BETWEEN THE CLOSEST POINTS.

C. CHARACTER SPACING:
CHARACTER SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSEST POINTS OF ADJACENT RAISED CHARACTERS WITHIN A MESSAGE, EXCLUDING WORD SPACES. WHERE CHARACTERS HAVE RECTANGULAR CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/8 INCH MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM. WHERE CHARACTERS HAVE OTHER CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/16 INCH MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE BASE OF THE CROSS SECTIONS, AND 1/8 INCH MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE TOP OF THE CROSS SECTIONS. CHARACTERS SHALL BE SEPARATED FROM RAISED BORDERS AND DECORATIVE ELEMENTS 3/8 INCH MINIMUM.

D. LINE SPACING:
SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF RAISED CHARACTERS WITHIN A MESSAGE SHALL BE 135 PERCENT MINIMUM AND 170 PERCENT MAXIMUM OF THE RAISED CHARACTER HEIGHT.

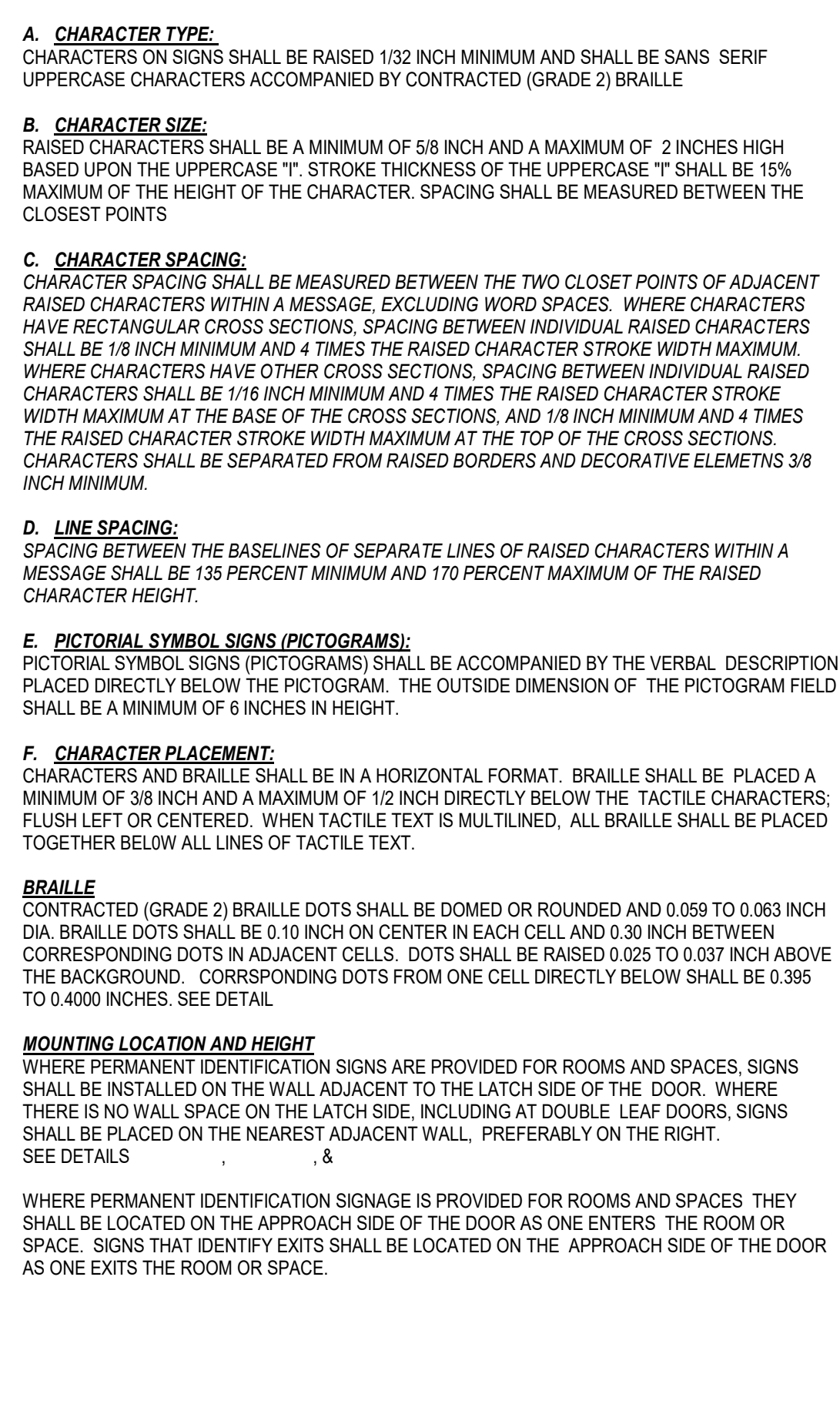
E. PICTORIAL SYMBOL SIGNS (PICTOGRAMS):
PICTORIAL SYMBOL SIGNS (PICTOGRAMS) SHALL BE ACCOMPANIED BY THE VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE OUTSIDE DIMENSION OF THE PICTOGRAM FIELD SHALL BE A MINIMUM OF 6 INCHES IN HEIGHT.

F. CHARACTER PLACEMENT:
CHARACTERS AND BRAILLE SHALL BE IN A HORIZONTAL FORMAT. BRAILLE SHALL BE PLACED A MINIMUM OF 3/8 INCH AND A MAXIMUM OF 1/2 INCH DIRECTLY BELOW THE TACTILE CHARACTERS, FLUSH LEFT OR CENTERED. WHEN TACTILE TEXT IS MULTILINE, ALL BRAILLE SHALL BE PLACED TOGETHER BELOW ALL LINES OF TACTILE TEXT.

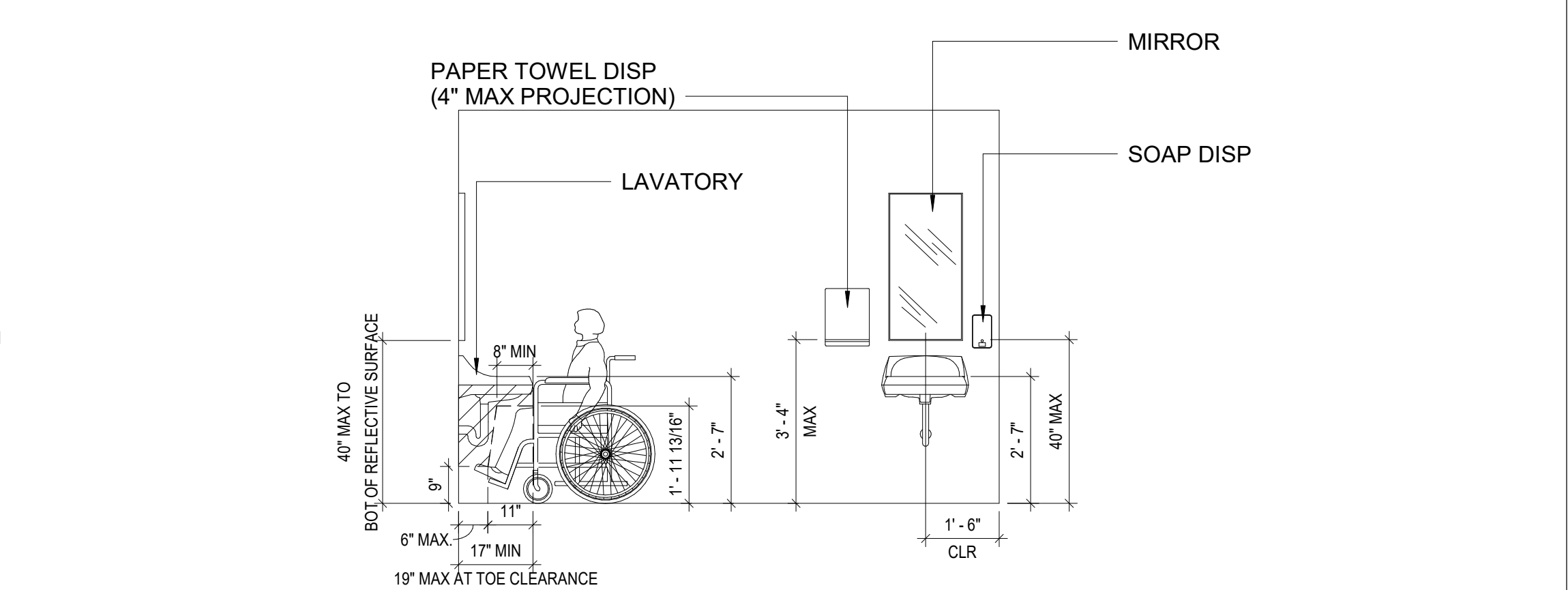
BRAILLE
CONTRACTED (GRADE 2) BRAILLE DOTS SHALL BE DOMED OR ROUNDED AND 0.059 TO 0.063 INCH DIA. BRAILLE DOTS SHALL BE 0.10 INCH ON CENTER IN EACH CELL AND 0.30 INCH BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS. DOTS SHALL BE RAISED 0.025 TO 0.037 INCH ABOVE THE BACKGROUND. CORRESPONDING DOTS FROM ONE CELL DIRECTLY BELOW SHALL BE 0.395 TO 0.400 INCHES. SEE DETAIL.

MOUNTING LOCATION AND HEIGHT
WHERE PERMANENT IDENTIFICATION SIGNS ARE PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE ENTERS THE ROOM OR SPACE. SIGNS THAT IDENTIFY EXITS SHALL BE LOCATED ON THE APPROACH SIDE OF THE DOOR AS ONE ENTERS THE ROOM OR SPACE.

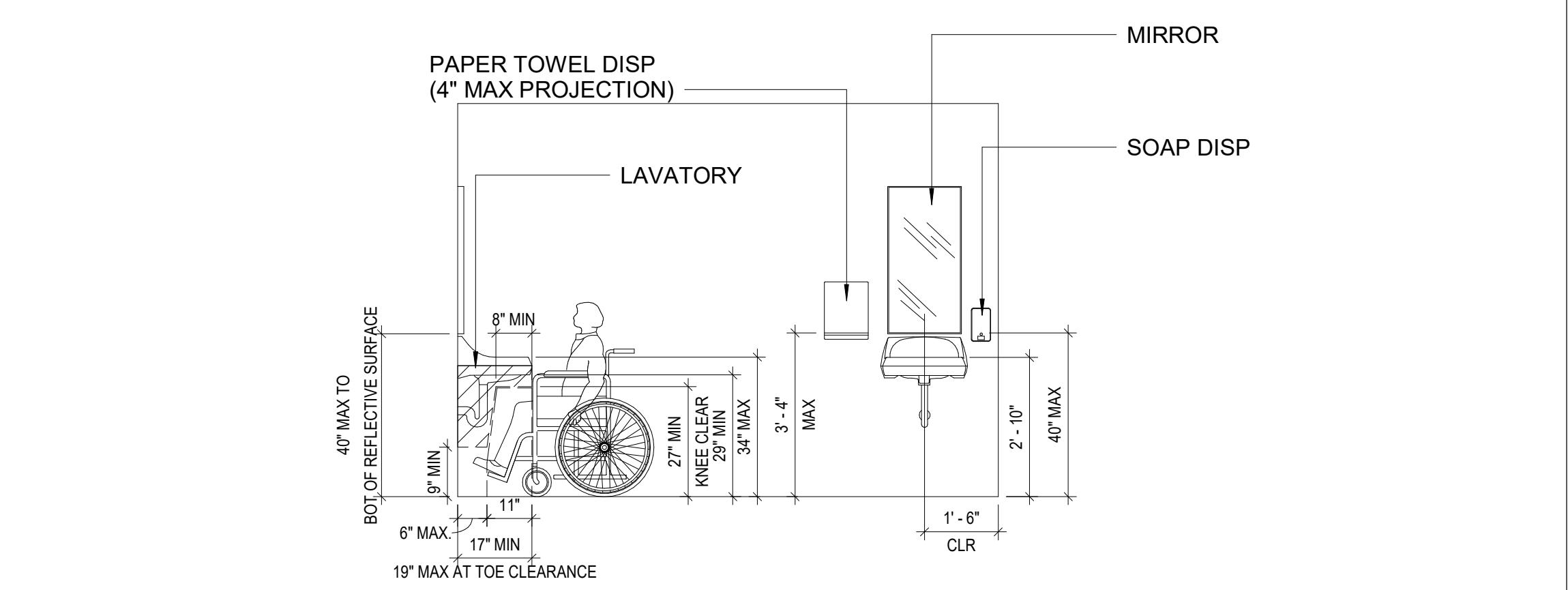
SIGNS AND IDENTIFICATION 29
3" = 1'-0"



SIGNAGE MOUNTING DETAIL 18
1/2" = 1'-0"

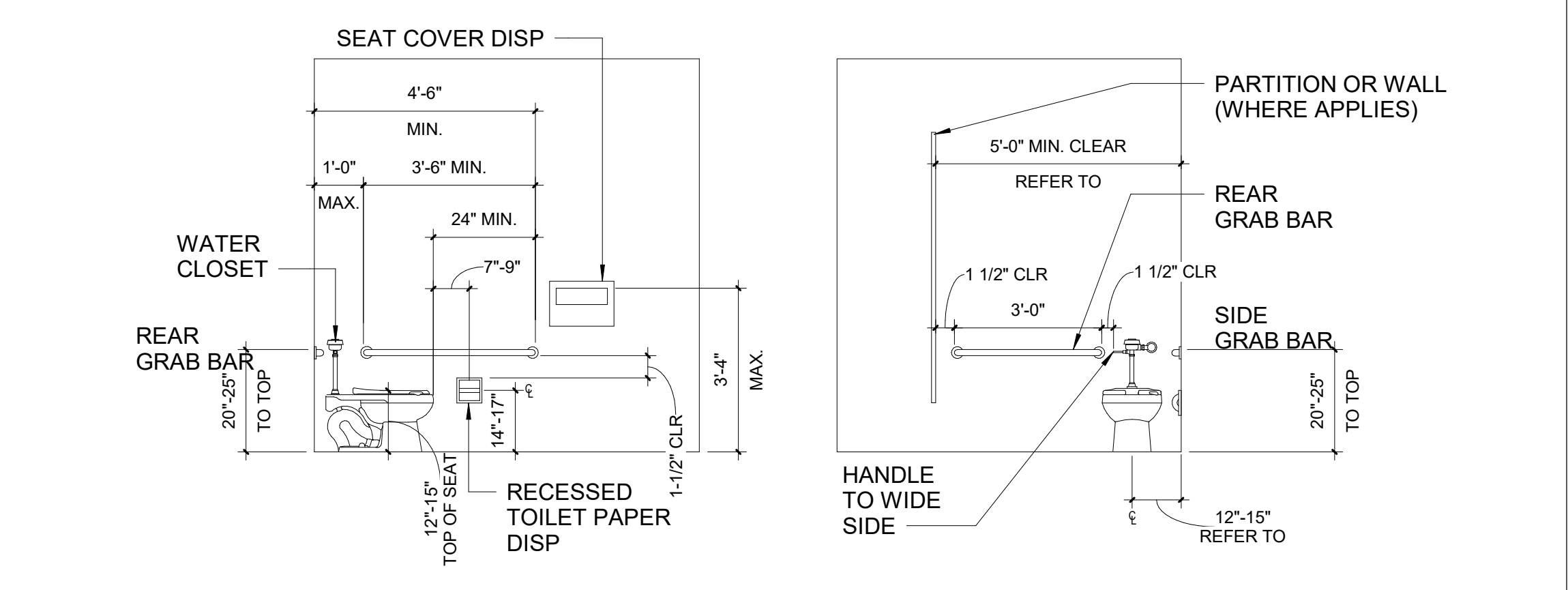


ACCESSIBLE LAVATORY SINK ADULT AGES 3 THROUGH 12 1
3/8" = 1'-0"



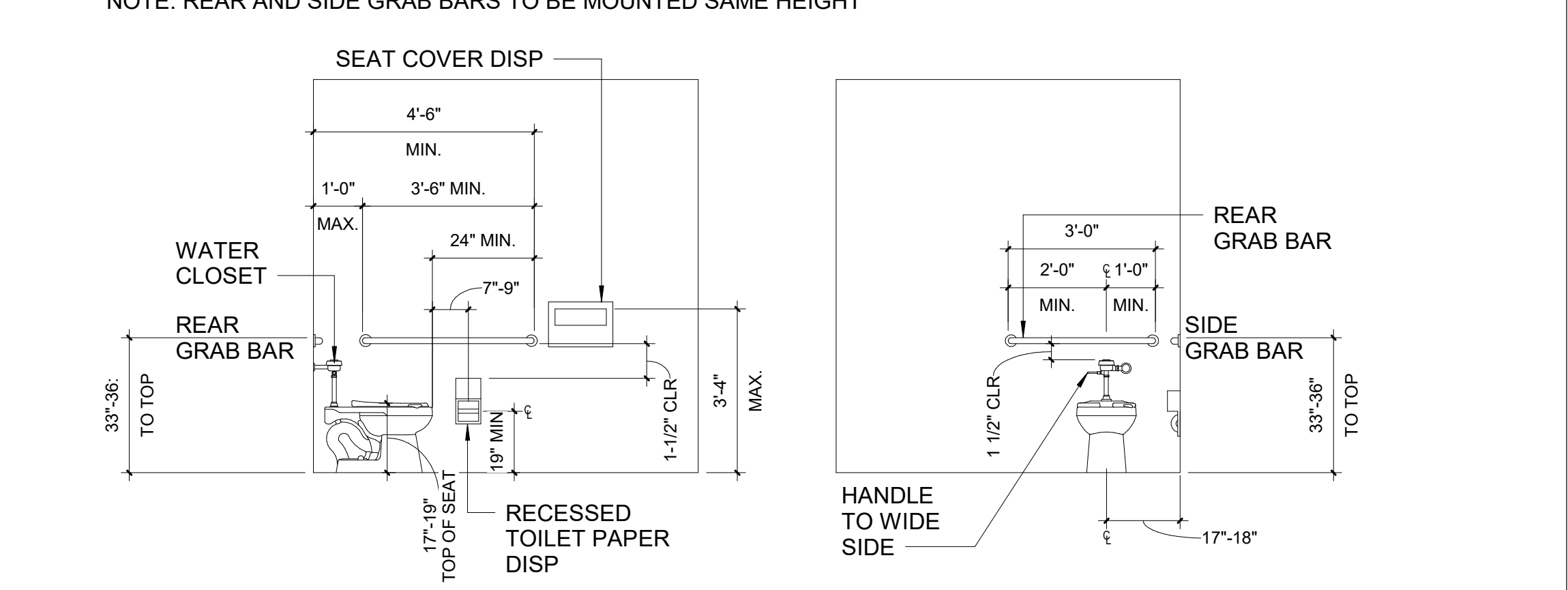
ACCESSIBLE LAVATORY SINK ADULT AGES 13 & UP 2
3/8" = 1'-0"

NOTE: REAR AND SIDE GRAB BARS TO BE MOUNTED SAME HEIGHT

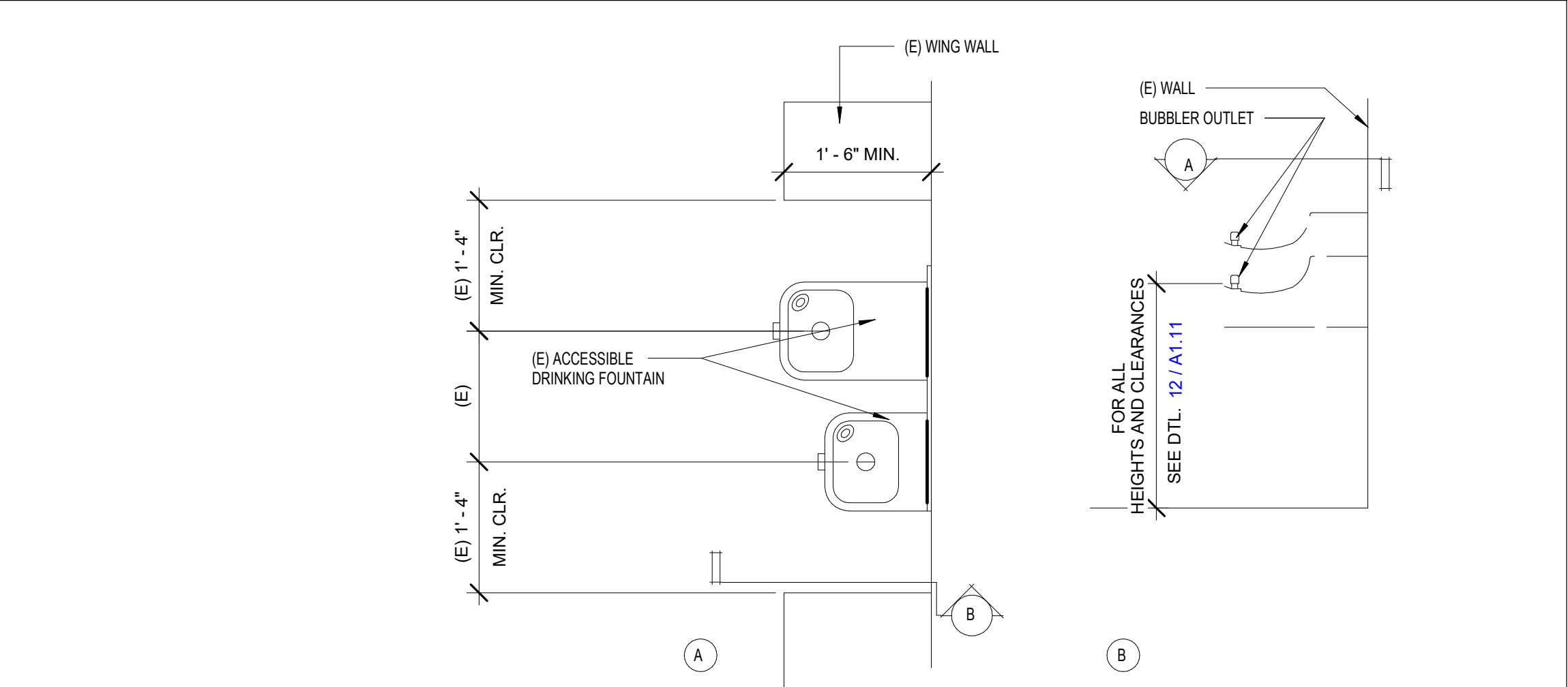


FLR MT FLUSH VALVE WATER CLOSET AGES 3 THRU 12 3
3/8" = 1'-0"

NOTE: REAR AND SIDE GRAB BARS TO BE MOUNTED SAME HEIGHT



FLR MT FLUSH VALVE WATER CLOSET AGES 13 & UP 4
3/8" = 1'-0"



(E) HI-LO FOUNTAIN 5
3/4" = 1'-0"

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MYFORD ELEMENTARY SCHOOL RELOCATABLE ADDITION

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DSA-APPL. NO. 04-12383 DSA-FILE NO. 30-51



Consultant

Architect

CLIENT
TUSD

DATE
03-21-2024

PROJECT NUMBER
230380

No.	Description	Date

SPECIALTY DETAILS

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ELECTRICAL SYMBOL LEGEND

1. EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON DRAWINGS.

LIGHTING

LED LIGHTING FIXTURE: LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL, NUMBER INDICATES CIRCUIT, CROSS HATCHING INDICATES FIXTURE ON EMERGENCY SYSTEM, FOR SOLID CIRCLE WITHIN FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL.

EXIT LIGHT FIXTURE: LETTER INDICATES TYPE, NUMBER INDICATES CIRCUIT, NUMBER AND LOCATION OF SHADED TRIANGLE SECTIONS INDICATE NUMBER OF EXIT SIGN FACES AND DIRECTION OF EACH FACE. PROVIDE CHEVRON DIRECTIONAL INDICATORS AS SHOWN ON DRAWINGS

CONTROL

SWITCH: SMALL LETTER INDICATES FIXTURES CONTROLLED, "P" INDICATES PILOT LIGHT, "WP" INDICATES WEATHER-PROOF, "K" INDICATES KEY OPERATED, "MO" INDICATES SPOT MOMENTARY CONTACT, "Z" INDICATES SPOT, "3" INDICATES 3-WAY, "4" INDICATES 4-WAY, "M" INDICATES MANUAL MOTOR STARTER, CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

WALL BOX DIMMER SWITCH: "MARK" INDICATES WATTAGE IF OTHER THAN 600, "30" INDICATES 3-WAY DIMMER

PHOTOELECTRIC CONTROL

WALL MOUNT OCCUPANCY SENSOR

DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR

POWER OUTLETS:

20A-125V DUPLEX RECEPTACLE

20A-125V GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE: "WP" INDICATES WEATHER PROOF DEVICE

20A-125V DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP: REFER TO ARCHITECT FOR EXACT HEIGHT ABOVE COUNTER

20A-125V FOURPLEX RECEPTACLE: SAME SYMBOLGY AS DUPLEX RECEPTACLE

CIRCUIT DESIGNATION NEXT TO RECEPTACLE DEVICES INDICATES BRANCH CIRCUIT NUMBER. SEE PANEL SCHEDULES FOR INFORMATION.

REMODEL

EQUIPMENT WITH "E" ADJACENT IS EXISTING TO REMAIN.

EXISTING EQUIPMENT WITH "R" ADJACENT IS TO BE COMPLETELY DISCONNECTED AND REMOVED.

EXISTING EQUIPMENT WITH "RR" ADJACENT IS TO BE DISCONNECTED, REMOVED AND RELOCATED TO NEW LOCATION AND RECONNECTED AS REQUIRED.

EQUIPMENT WITH "ER" ADJACENT IS RELOCATED EQUIPMENT SHOWN IN NEW LOCATION.

NO TAG INDICATES NEW EQUIPMENT.

CIRCUIT DESIGNATION WITH PREFIX "E" DENOTES EXISTING CIRCUIT AND EQUIPMENT IS TO REMAIN.

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE INCLUDING ALL AREAS INDICATED ON THE DRAWINGS. HE SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND BY SUBMITTING A BID, ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK.

2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS AND ADDENDA (DRAWINGS AND SPECIFICATIONS) HE SHALL CHECK THE CONTRACT DOCUMENTS OF THE OTHER TRADES AND DETERMINE HIS RESPONSIBILITIES. FAILURE TO DO SO SHALL NOT RELEASE THE CONTRACTOR FROM COMPLETING ALL RESPONSIBLE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

3. THE CONTRACTOR SECURE AND PAY FOR ALL PERMITS, FEES, CHARGES, AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENT AGENCIES.

4. ALL ELECTRICAL WORK REFERENCED HEREIN SHALL BE COORDINATED WITH OTHER TRADES AND SITE CONDITIONS. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE CONTRACT DOCUMENTS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING BID TIME FOR CLARIFICATION. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

5. PROVIDE TEMPORARY POWER FACILITIES AND CONNECTIONS FOR ALL FEEDERS, BRANCH CIRCUITS OR SIGNAL AND COMMUNICATIONS SYSTEMS BEING DISCONNECTED IN ORDER TO MAINTAIN SYSTEMS IN OPERATION.

6. ALL INTERRUPTION OF ELECTRICAL POWER SHALL BE KEPT TO A MINIMUM. HOWEVER WHEN AN INTERRUPTION IS NECESSARY, THE SHUTDOWN MUST BE COORDINATED WITH THE OWNER AND ENGINEER 14 DAYS PRIOR TO THE OUTAGE AND OVERTIME PAY SHALL BE INCLUDED IN THE CONTRACTOR'S BID. WORK IN EXISTING SWITCHBOARDS OR PANEL BOARDS SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVING ACCESS PANELS OR DOORS.

7. AFTER ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNERS WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

8. FURNISH A ONE YEAR WRITTEN GUARANTEE OF MATERIALS AND WORKMANSHIP FROM THE DATE OF PUNCH LIST COMPLETION.

9. ALL FINAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT SHALL BE MADE BY THE CONTRACTOR.

10. EXACT METHOD AND LOCATION OF CONDUIT PENETRATION AND OPENINGS IN CONCRETE OR MASONRY WALLS, GRADEBEAMS, FLOORS OR STRUCTURAL STEEL MEMBER SHALL BE AS DIRECTED BY THE STRUCTURAL ENGINEER. PERFORM CORING, SAWCUTTING, PATCHING, AND REFINISHING OF WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR OR CEILING EXACT METHOD AND LOCATION OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS SHALL BE UL APPROVED.

11. FINAL CONNECTIONS TO VIBRATING EQUIPMENT AND AT SEISMIC SEPARATIONS SHALL BE FLEXIBLE STEEL CONDUIT IN DRY INTERIOR LOCATIONS, AND LIQUID-TIGHT FLEXIBLE STEEL CONDUIT IN AREAS EXPOSED TO WEATHER, DAMP LOCATIONS, CONNECTIONS TO TRANSFORMER ENCLOSURES, AND FINAL CONNECTIONS TO MOTORS.

12. EQUIPMENT OUTLETS, LIGHTING FIXTURES, CONDUIT, WIRE AND CONNECTION METHODS IN HVAC AIR-PLenums SHALL BE APPROVED FOR USE IN PLENUMS AND SHALL CONFORM TO THE CALIFORNIA ELECTRICAL CODE.

13. ROUTE EXPOSED CONDUIT AND CONDUIT ABOVE ACCESSIBLE CEILING SPACES PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING, ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.

14. CONDUIT SHALL NOT BE INSTALLED IN ANY FLOOR SLAB. CONDUIT SHALL BE INSTALLED CONCEALED IN THE CEILING SPACE, CONCEALED WALLS, OR 2" MINIMUM BELOW SLAB ON GRADE UNLESS NOTED OTHERWISE.

15. LOCATE ELECTRICAL EQUIPMENT AND BOXES IN ACCESSIBLE CEILING SPACE OR PROVIDE AN ACCESS PANEL FOR INACCESSIBLE CEILING SYSTEMS. ACCESS DOORS SHALL BE A MINIMUM DIMENSION OF 24" x 24" ACCESS DOOR LOCATIONS SHALL SUIT ACCESSIBILITY AND CONSTRUCTION CONDITIONS. ACCESS DOORS SHALL HAVE A FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.

16. COORDINATE REQUIRED ACCESS DOORS IN NON-ACCESSIBLE CEILING TO SUIT FIELD CONDITIONS. THE EXACT SIZES AND PHYSICAL LOCATIONS OF ACCESS DOORS SHALL BE PROVIDED IN THE CONTRACT DOCUMENTS. ACCESS DOORS SHALL BE PROVIDED IN OTHER SECTIONS OF THE SPECIFICATIONS. ACCESS DOORS SHALL HAVE A FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.

17. WHENEVER A DISCREPANCY OF ANY SYSTEM AND/OR EQUIPMENT ARISES ON THE CONTRACT DOCUMENTS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ARCHITECT/ENGINEER.

18. STRAIGHT FEEDER BRANCH CIRCUIT AND CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS.

19. PANEL SCHEDULES SHALL BE REVISED TO REFLECT FINAL ROOM NAMES AND NUMBERS USING OWNER'S ROOM NAMES AND NUMBERS DESIGNATIONS. CONTRACTOR TO PROVIDE FINAL PANEL SCHEDULE TO EOR AT COMPLETION OF PROJECT.

20. WHERE OUTLETS OCCUR AT TACKABLE WALL PANELS OR OTHER WALL FINISHES, PROVIDE EXTENSION RINGS AS REQUIRED SO THAT NO SPACE WILL EXIST BETWEEN DEVICE PLATE AND BACKBOX PER CALIFORNIA ELECTRICAL CODE 314.20 SEE ARCHITECTURAL ELEVATIONS FOR WALL FINISHES AND LOCATIONS.

21. COORDINATE LOCATIONS OF ALL SEISMIC SEPARATIONS.

22. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF ALL LOW VOLTAGE / TECHNOLOGY SYSTEMS SHALL BE A DEDICATED CIRCUIT AND ON EMERGENCY POWER WHEN AVAILABLE. CABLING CONTRACTOR SHALL COORDINATE ALL 120V POWER REQUIREMENTS AND LOCATIONS WITH ELECTRICAL CONTRACTOR FOR ALL EQUIPMENT.

23. SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AS ESTABLISHED BY THE IEA AND THE CEC.

24. ALL AC POWER CABLES ARE TO BE INSTALLED WITH A MINIMUM OF 12 INCHES OF SEPARATION FROM TECHNOLOGY LOW VOLTAGE CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.

25. CONTRACTOR SHALL PROVIDE AND INSTALL ALL SLEEVES REQUIRED TO INSTALL COMMUNICATION CABLING THROUGH RATED WALLS. ALL TECHNOLOGY SYSTEM CONDUIT SLEEVES SHALL HAVE PROTECTIVE BUSHING ON BOTH ENDS, BE DEDICATED FOR TECHNOLOGY SYSTEMS ONLY AND SHALL NOT SHARE WITH OTHER BUILDING TRADES.

26. CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.

27. ALL CONDUCTORS SHALL BE UL LISTED, COPPER #12 MINIMUM SIZE, TYPE THHN/THWN THERMOPLASTIC, 600 VOLT, 75 DEGREES CELSIUS WET AND 90 DEGREES CELSIUS DRY, UNLESS NOTED OTHERWISE.

28. ALL CABLING SHALL BE ROUTED IN CONDUIT. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH MAXIMUM 40% CABLE FILL. MINIMUM CONDUIT SIZE SHALL BE 3/4" INTERIOR & 1" EXTERIOR.

29. ALL CONDUIT STUB OUTS AND SLEEVES SHALL HAVE PROTECTIVE BUSHINGS TO PREVENT CABLE DAMAGE. BUSHING TO BE INSTALLED PRIOR TO CABLE INSTALLATION. CUTTING BUSHING AND INSTALLING AFTER CABLE IS INSTALLED WILL NOT BE ACCEPTED.

DRAWING INDEX

Table with 2 columns: SHEET, DESCRIPTION. Lists sheets E0.00 through E1.01 and their corresponding descriptions.

DIAGRAMMATIC NOTE

DRAWINGS ARE DIAGRAMMATIC AND DO NOT INDICATE DETAILED CONDUIT ROUTING OR LENGTHS REQUIRED FOR COMPLETE INSTALLATION. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR BUT SHALL BE IN STRICT COMPLIANCE WITH STRUCTURAL REQUIREMENTS, CONTRACT DOCUMENTS AND SPECS UNLESS OTHERWISE NOTED. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES. DO NOT SCALE THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL, ARCHITECTURAL, STRUCTURAL AND/OR MECHANICAL ITEMS OR FEATURES. REFER TO ARCHITECTURAL AND STRUCTURAL CONTRACT DOCUMENTS FOR FEATURES. REFER TO ARCHITECTURAL AND STRUCTURAL CONTRACT DOCUMENTS FOR DIMENSIONS.

DEVICE LOCATIONS NOTE

THE LOCATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECTURAL ELEVATIONS, DETAILS, OR SECTIONS PRIOR TO INSTALLATION. ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE RECESSED IN WALLS UNLESS OTHERWISE NOTED. OUTLETS NOT INDICATED ON ARCHITECTURAL ELEVATIONS SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO ROUGH-IN, UNLESS OTHERWISE NOTED. ELECTRICAL DEVICES SHALL BE MOUNTED PER ACCESSIBLE DEVICE MOUNTING HEIGHT DETAIL.

COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT SUPPLY POWER AND MAKE CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON THE SINGLE LINE DIAGRAM, ELECTRICAL DRAWINGS, AND DRAWINGS OF OTHER TRADES. REVIEW THE DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, SIZE AND LOCATION OF EQUIPMENT, DISCONNECT SWITCHES, STARTERS, WIRING, CONTROLS, AND CONDUIT FOR MECHANICAL AND PLUMBING OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGHING IN ALL CONDUIT TO THIS EQUIPMENT.

UTILITY PENETRATIONS NOTE

UTILITY PENETRATIONS OF ANY KIND IN FIRE AND SMOKE PARTITIONS AND CEILING ASSEMBLIES SHALL BE FIRESTOPPED AND SEALED WITH AN APPROVED UL LISTED SYSTEM OR MATERIAL.

STEEL ELECTRICAL OUTLET BOXES WHICH DO NOT EXCEED 18 SQUARE INCHES IN AREA, NEED NOT BE PROTECTED IN ONE-HOUR OR TWO-HOUR FIRE RATED WALLS, PARTITIONS, CEILING, OR AREA SEPARATION UNLESS THEY:

1. OCCUR ON OPPOSITE SIDES OF THE WALL WITHIN 24 INCH HORIZONTAL DISTANCE OF ONE ANOTHER IN THIS CASE, ONLY ONE OUTLET BOX NEEDS TO BE PROTECTED BY AN APPROVED FIRESTOP MATERIAL OR DETAIL TO CORRECT THIS CONDITION.

2. OCCUR IN COMBINATION WITH OUTLET BOXES OF ANY SIZE SUCH THAT THE AGGREGATE AREA OF UNPROTECTED OUTLET BOXES EXCEEDS 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL AREA IN THIS CASE, ONLY A SUFFICIENT NUMBER OF OUTLET BOXES NEED TO BE PROTECTED BY AN APPROVED MATERIAL OR DETAIL TO DECREASE THE AGGREGATE AREA OF UNPROTECTED UTILITY BOXES TO LESS THAN 100 SQUARE FEET OF WALL.

STEEL ELECTRICAL OUTLET BOXES WHICH EXCEED 18 SQUARE INCHES IN AREA, AND ALL OTHER STEEL UTILITY OUTLET BOXES REGARDLESS OF SIZE, SHALL BE PROTECTED BY AN APPROVED FIRESTOP MATERIAL AS LISTED OR EQUAL.

FIRESTOPPING MATERIAL:

MPP-1 MOLDABLE PUTTY PADS

3M CONTRACTOR PRODUCTS

MINNEAPOLIS

MN 3M TEST REPORT NO. 1167

DATED AUGUST 21, 1987

FSP FIRESTOP PUTTY PADS

HEVI-DUTY NELSON PRODUCTS

TULSA, OK

STEEL UTILITY BOXES WHICH EXCEED 100 SQUARE INCHES IN AREA SHALL BE PROTECTED BY ENCASEMENT.

UTILITY AND ELECTRICAL OUTLETS OR BOXES SHALL BE SECURELY FASTENED TO THE STUD FRAMING OF THE WALL, PARTITION OR CEILING ASSEMBLY. THE OPENING IN THE GYPSUM BOARD FACING SHALL BE CUT SO THAT THE CLEARANCE BETWEEN THE BOX AND THE GYPSUM BOARD DOES NOT EXCEED 1/8 INCH IN SMOKE WALLS OR PARTITIONS, THE 1/8 INCH CLEARANCE SHALL BE FILLED WITH AN APPROVED FIRE-RATED SEALANT.

APPLICABLE CODES

LIST OF APPLICABLE CODES

- 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (FC), PART 9, TITLE 24 CCR
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS
FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 36 AND CPC CHAPTER 80.

EQUIPMENT ANCHORAGE NOTES

MEP COMPONENT ANCHORAGE NOTES:

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 2022 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 2022 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., HCA OPM FOR2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOB SITE 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 & DETAILS.

MP [] MD [] PP [] E [] OPTION 2: SHALL COMPLY WITH THE APPLICABLE GSHPD PRE-APPROVAL (OPM #) #

UL LISTINGS NOTE

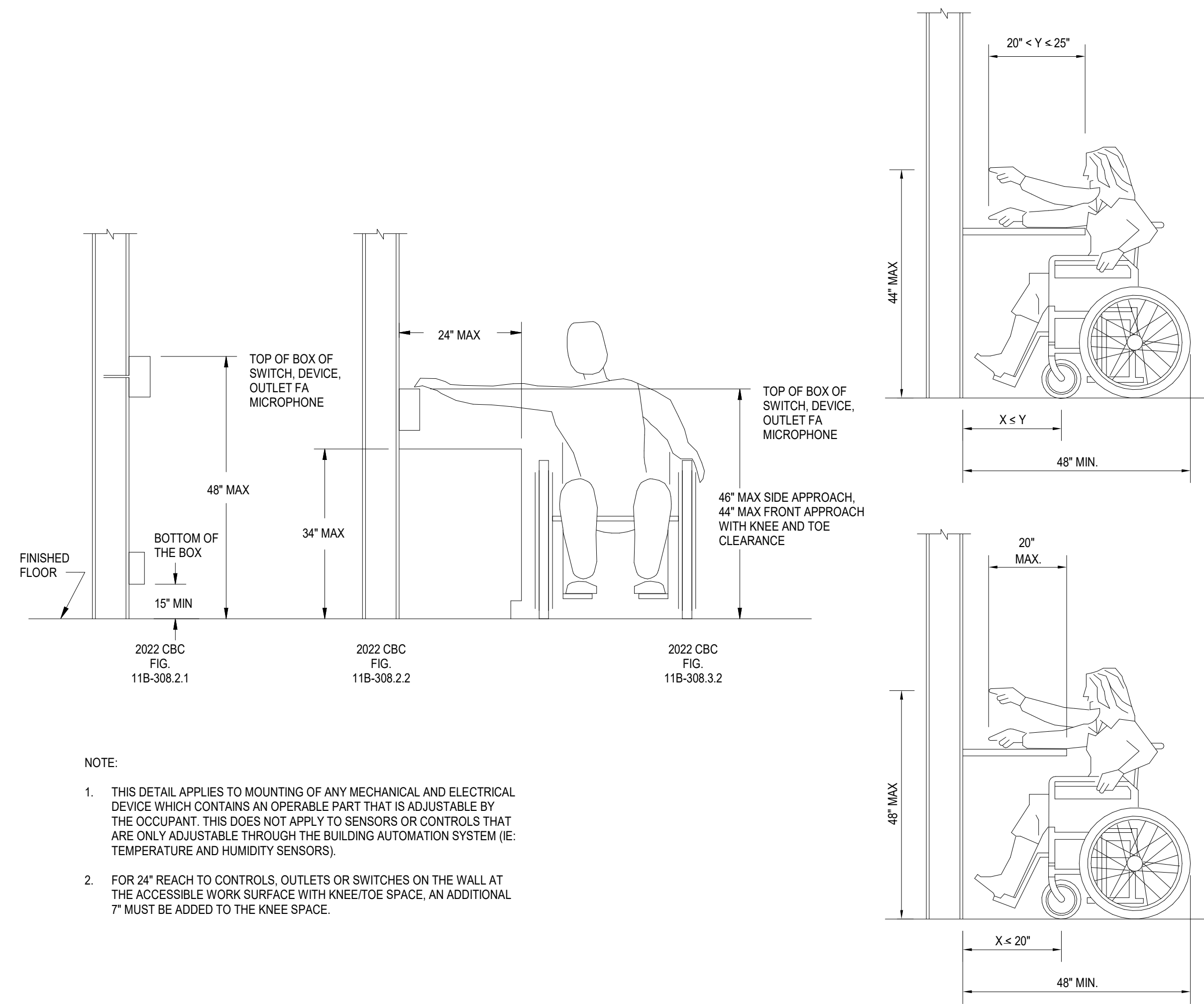
ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY.

ALL EQUIPMENT/DEVICES INSTALLED RECESSED IN FIRE RATED CEILING OR WALLS SHALL BE ENCLOSED WITH AN APPROVED UL LISTED ENCLOSURE CARRYING THE SAME FIRE RATING AS THE CEILING OR WALL.

STRUCTURAL NOTE

UNLESS SPECIFICALLY SHOWN ON THESE PLANS, STRUCTURAL MEMBERS SHALL NOT BE CUT, DRILLED, OR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DIVISION OF THE STATE ARCHITECT.

MOUNTING OVER OBSTRUCTION DETAILS



NOTE:

- 1. THIS DETAIL APPLIES TO MOUNTING OF ANY MECHANICAL AND ELECTRICAL DEVICE WHICH CONTAINS AN OPERABLE PART THAT IS ADJUSTABLE BY THE OCCUPANT. THIS DOES NOT APPLY TO SENSORS OR CONTROLS THAT ARE ONLY ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM (IE. TEMPERATURE AND HUMIDITY SENSORS).
2. FOR 24\"/>



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MYFORD ELEMENTARY SCHOOL

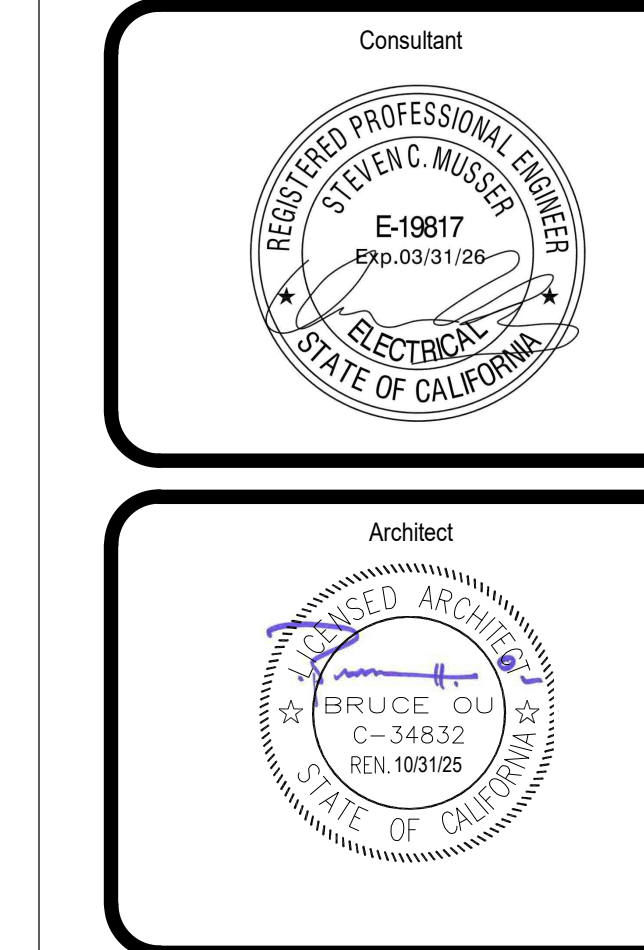
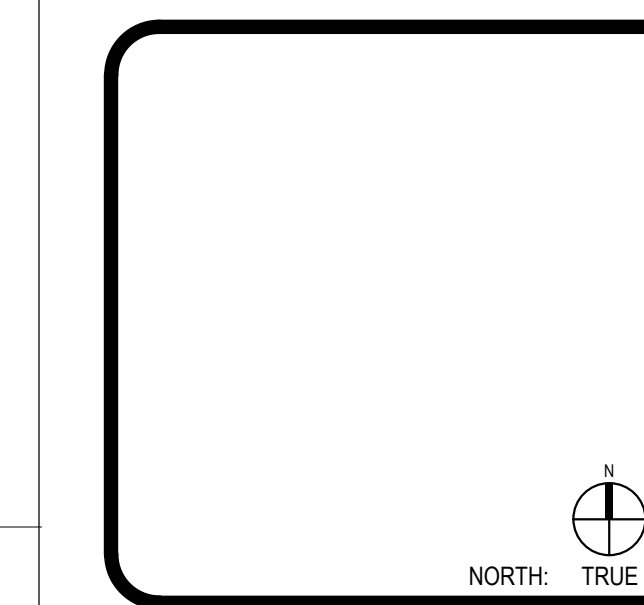


Table with columns: No., Description, Date. Includes CLIENT TUSD and PROJECT NUMBER 230380.

ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES

SECTION 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section Includes:
1. Materials and equipment shall be furnished and installed in support of electrical work described in these plans and specifications including but not limited to, raceways, boxes, enclosures, feeders, branch circuiting, supports, terminal cabinets, sleeves, gutters, panels, transformers, switchgear, lighting fixtures, controls, relays, contactors, in order to complete and make fully functional the systems described.
2. Lighting systems, both interior and exterior, including but not limited to as specified herein, including controls, occupancy sensors, luminaires, photocell controls, LED's supports, fasteners, signs, and miscellaneous mounting hardware and support structures for such equipment.
3. HVAC and plumbing electrical: Conduit, conductors and terminations for all line voltage power, line voltage controls and fuses and/or non-fuseable safety disconnect switches for HVAC equipment, including but not limited to air conditioners, furnaces, fans, heat pumps, system pumps, condensing units. Provide protective equipment unless otherwise noted, etc. including protective devices.
4. Power and Lighting Distribution: Furnish and install power and lighting distribution systems including but not limited to panels, feeders, transformers, branch circuits, devices, fixtures, disconnect switches, contactors, controls, etc. for a complete working system.
5. Data systems infrastructure including all boxes, raceways, cable tray, wire basket tray, dedicated branch circuits, sleeves and penetrations, etc. as described and as shown in plans, risers, specifications and/or required for a complete and operating system.
6. Allocation of time to adequately train the Owner on the use and operation of all systems installed within the facility or on the property.

B. System Description:

- 1. The electrical plans indicate the general layout and arrangement; the architectural drawings and field conditions shall determine exact locations. Field verify all conditions and modify as required to satisfy design requirements as well as code minimums. Maintain all required working clearances as described in NEC Article 110 as well as other applicable articles.
2. Discrepancies shall be brought immediately to the attention of the Architect for clarification. The Architect shall approve any changes. Prior to rough-in, refer to architectural plans that shall take precedence over electrical plans with respect to locations.

1.3 SUBMITTALS AND SHOP DRAWINGS

- A. Before construction, submit in accordance with the General Conditions of this Specification.
B. Manufacturers' specifications, catalog cuts and shop drawings as required to demonstrate compliance with the specifications. Identify specific intended use for each component where submitted may be ambiguous. Submit entire bond submitted at one time; partial submittals are not acceptable.

COMMON WORK RESULTS FOR ELECTRICAL 26 05 00 - 1

D. Splices:

- 1. Branch Circuit Splices: Ideal, Scotch-Lock, 3M, or approved.
2. Feeder Splices: Compression barrel splice with two layers Scotch 23 and four layers of Scotch 33 as vapor barrier.
3. Screw Terminal Lugs.
4. Keamey Split Bot.

2.2 WIRES AND CABLES FOR LINE VOLTAGE SYSTEM AND CONTROL.

- A. Wire and Cable Shall Be:
1. Copper, 600 volt rated throughout. Conductors 12AWG to 10AWG, solid or stranded. Conductors 8AWG and larger, stranded.
2. Phase color to be consistent at all feeder terminations; A-B-C, top to bottom, left to right, front to back. Phasing tape shall be permitted on sizes #8 and larger.
3. Color Code Conductor as follows:
PHASE: 208 VOLT: 240 VOLT DELTA: 480 VOLT
A: Black Black Brown
B: Red Orange (High Leg) Orange
C: Blue Blue Yellow
Neutral White White white colored strip
Ground Green Green
Isolated Ground Green w/yellow trace Green w/yellow trace N/A
4. All conductors shall be copper unless otherwise noted. Minimum size for individual conductors shall be #12 AWG unless otherwise noted. Sizes #8 AWG and larger shall be stranded conductor. Individual conductors shall be insulated with type, XHHW, THW, THHN/THWN 600-volt insulation unless otherwise noted. Control signal, communication conductors shall be as dictated by the vendor of that equipment or as specified here-in. Proper insulation type shall be used for the proper environmental application (i.e., waterproof, wet location, plenum, temperature rated). If a condition exists where the application is uncertain, contact the Engineer for direction. Contractor is responsible to follow specific cabling requirements described in other sections of this specification relative to various communications and controls systems as well as the respective riser diagrams shown on plans. If a discrepancy occurs, communicate such discrepancy to the Architect and Engineer immediately for resolution.
5. Insulation types THWN, THHN or XHHW. Minimum insulation rating of 90C for branch circuits.
6. Refer to signal and communications specification sections for cable requirements.

2.3 CONNECTORS

- A. Copper Pads: Drilled and tapped for multiple conductor terminals.
B. Lugs: Indent/compression type for use with stranded branch circuit or control conductors.
C. Solid Conductor Branch Circuits: Spring connectors, wire nuts, for conductors 12 through 8AWG.

2.4 LUGS AND PADS

- A. Ampacity: Cross-sectional area of pad for multiple conductor terminations to match ampere rating of panelboard bus or equipment line terminals.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES 26 05 19 - 2

6. Thomas & Betts, Electrical 7. VFC

- B. UL Listed for grounding applications.
C. Provide "ACORN" style ground clamp only for all driven ground rods unless noted to be exothermic connected in this specification. UL listed for connecting ground conductor to a driven ground rod.
D. Description: Brass connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

2.6 EXOTHERMIC CONNECTIONS

- A. Manufacturers:
1. Cadweld by, Erco, Inc.
B. Product Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

2.7 GROUNDING BUSES

- A. When indicated, provide copper ground buses on walls in areas where special grounding needs will arise. Bus shall consist of copper bar as follows:
1. Ground bar cross section of nominal four (4) inches by 1/4 inch; 24 inches length.
2. Drill to accommodate NEMA Pattern D 2-hole compression lugs for ground wires to be installed. Leave remainder of bar for mounting brackets with Hanger 4200-Series two (2) inch insulators.
3. Copper compression lugs to connect conductors to the bar. Lugs shall be 2-hole type for double bolting to ground bar.
4. Install all bolts for compression with top and bottom steel washers plus a Belleville spring washer between top washer and bolt head.
5. Grounding electrode conductor(s) shall be fasten-welded on bus (and not lagged on).
6. Mounting Free air, no enclosure required. Install Hanger WBK7-1 brackets to mount bar to wall. Isolate green ground bar from mounting brackets with Hanger 4200-Series two (2) inch insulators.
7. Fasten clear plexiglass cover on standoff bolts over ground bar. Engrave cover "GROUND BUS". Cover by Hanger Lighting Protection, Inc., or Engineer approved substitute.
8. Ground bar assembly shall be:
a. Hanger Lighting Protection, Inc. GBI Series (800) 842-7437 www.hanger.com
b. Erco Inc., (800) 248-9353.
c. Or Engineer approved substitute.

2.8 DRIVEN ELECTRICAL ACCESS WELL AND COVER

- A. Eight (12) inch diameter concrete pipe with belled end.
B. 24 inches long or longer to reach ground and set flush in grade.
C. Provide cast iron cover with "GROUND" embossed on top.

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 26 05 26 - 3

- will not be accepted. At a minimum, submittals will be required for the following:
1. Distribution equipment including transformers, distribution panels and breakers, motor controls, distribution and branch circuit panels, grounding, surge protection device, etc.
2. Electrical equipment including disconnects, fuses, raceways, straps and racks, fittings, conductors, boxes, gutters, devices, plates, etc.
3. Lighting equipment including fixtures, LED's, mounting accessories, color charts (where required), etc.
4. Lighting control equipment including low voltage switching system, dimmer switch/bank / accessories, occupancy sensing equipment, time clocks, contactors, photocells, luminaires sensors, etc.
5. Complete system component submittals for:
a. Voice Public Address System / Intercom / Clock.
b. Communication Systems including but not limited to: cable, fiber, terminations, cable management, cable tray, patch panels, equipment racks, cabinets, jacks, plates, cable labeling.
6. Conduit including all fittings, etc.
7. Wiring and cable, etc.
C. The intent of these specifications is to establish a standard of quality for materials and equipment. Therefore, some items are identified by manufacturer or trade name designation. Substitutions shall be subject to the Architect's approval. Where the substitution will affect other trades, coordinate all changes with those trades concerned and pay any additional costs incurred by them as a result of this substitution. Approval of substitutions shall not relieve the Contractor from providing an operational system in accordance with all applicable codes and ordinances.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Storage of equipment for the job is the responsibility of the Electrical Contractor and shall be scheduled for delivery to the site, as the equipment is required. Damage to the equipment delivered to the site or in transport to the job shall be the responsibility of the Electrical Contractor.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Materials shall be new and bear the label of or be listed by a nationally recognized testing laboratory. The quality and suitability of all materials shall conform to the standards and practices of this trade.
B. Supplied materials shall be of a current manufactured product line. Discontinued products are not acceptable. Where products are identified on the contract documents by part number, EC may supply the current product model or series which meets the specification and intended use of the specified component.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Professionalism and appearance of installations shall be in accordance with accepted practices of this trade. Installation methods shall conform to manufacturers' specifications and recommendations. The Contractor shall provide and maintain the safety of workers and helpers in this trade for the duration of the job. It is the Contractor's responsibility to

COMMON WORK RESULTS FOR ELECTRICAL 26 05 00 - 2

PART 3 EXECUTION

3.1 INSTALLATION

- A. Installation: Conductors shall not be installed until after conduit systems are permanently in place. Use an approved non-hardening type wire pulling lubricant if lubricant is to be used. Maintain all conduits and wire pulls free from foreign material. If due to field conditions, more than a total of 300 degrees of bend are required, a pull box shall be furnished and installed for ease of installation. Said pull boxes must be sized and rated for the appropriate application and must remain easily accessible upon completion of the project (approval of the location shall be obtained from the Architect prior to installation). Show these pullboxes on the field record drawings. Conductors installed in underground raceways on site shall be duct sealed and taped where they exit the raceway to prevent the entrance of foreign material and moisture after the conductors are installed. Proper drainage shall be provided for underground pull and splice boxes.
B. Insulation: Use proper insulation types where temperature and environment are a factor.
C. Labeling: All conductors in panels, switchboards, terminal cabinets, vaults, pull boxes, and junction boxes shall be labeled with tape number markers indicating circuit number and identifying system. All labeling shall be permanent. See Section 26 05 53, Identification of Electrical Systems.
D. All conductors, wiring, cable where installed below floor, slab or underground shall be considered wet locations, and shall be rated accordingly. Non-waterproof cabling is not allowed in any below grade or wet application.
E. Cables routed together in cable tray shall be stacked, organized and tie wrapped together in a neat and workman like manner. Random cable routing is not acceptable.
F. Cable and conductors routed through pull boxes and vaults shall be properly supported. Bend radius of cable or conductor shall not be less than six times the overall cable diameter.
G. Wires and Cables:
1. Conductor installation:
a. Install conductors in raceways having adequate, code size cross-sectional area for wires indicated.
b. Install conductors with care to avoid damage to insulation.
c. Do not apply greater tension on conductors than recommended by manufacturer during installation.
d. Use of pulling compounds is permitted. Clean residue from exposed conductors and raceway entrances after conductor installation.
2. Conductor Size and Quantity:
a. Install no conductors smaller than 12AWG unless otherwise shown (e.g. - Fire alarm and communications systems, as defined in their respective specifications sections and/or drawings).
b. Provide all required conductors for a fully operable system.
3. Provide dedicated neutrals (one neutral conductor for each phase conductor). Exceptions may only be granted with Electrical Engineer approval.
4. Conductors in Cabinets:
a. Cable and train all wires in panels and cabinets for power and control neatly and uniformly. Use plastic ties in panels and cabinets.
b. Tie and bundle feeder conductors in wireways of panelboards.
c. Hold conductors away from sharp metal edges.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES 26 05 19 - 3

PART 3 EXECUTION

3.1 GENERAL

- A. Ground in accordance with the NEC, as shown on drawings, and as hereinafter specified.
B. Equipment Grounding: Metallic structures (including ductwork and building steel), enclosures, fire sprinklers, plumbing piping, raceways, junction boxes, outlet boxes, cabinets, machine frames, and other conductive items in close proximity with electrical circuits shall be bonded and grounded.

3.2 SECONDARY EQUIPMENT AND CIRCUITS

- A. Conduit Systems:
1. Ground all metallic conduit systems. All metallic conduit systems shall contain an equipment grounding conductor sized per NEC.
2. Nonmetallic conduit systems shall contain an equipment grounding conductor, except that non-metallic feeder conduits which carry a grounded conductor from exterior transformers to interior or building-mounted service entrance equipment need not contain an equipment grounding conductor.
3. Metal conduit containing only a grounding conductor, and which is provided for mechanical protection of the conductor, shall be bonded to that conductor at the entrance and exit from the conduit.
B. Feeders and Branch Circuits: Install equipment grounding conductors with all feeders, power and lighting branch circuits.
C. Boxes, Cabinets, Enclosures, and Panelboards:
1. Bond the equipment grounding conductor to each pullbox, junction box, outlet box, device box, cabinets, and other enclosures through which the conductor passes.
2. Provide lugs in each box and enclosure for equipment grounding conductor termination.
D. Receptacles shall not be grounded through their mounting screws. Ground with a jumper from the receptacle green ground lead to the device box ground screw and the branch circuit equipment grounding conductor.
E. Bond all ground electrodes together to form the grounding electrode system including metal underground water pipe, metal frame of the building or structure, concrete encased electrodes, rod and pipe electrodes and plate electrodes.
F. Install grounding and bonding conductors concealed from view.
G. Install grounding electrode conductor and connect to reinforcing steel in foundation footing.
H. Install a green equipment grounding conductor in all feeders and branch circuits, minimum size per NEC Table 250.122.

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 26 05 26 - 4

- I. Grounding Buses:
1. Provide a copper bus bar where indicated on Drawings. Provide grounding electrode conductor and connection to the grounding electrode system. AWG No. 2 minimum.
2. Provide in each IDF and MDF room.
3. Provide at each CATV / MATV head and mounting board.
4. Provide at each building communications rack.
5. Provide at each sound reinforcement equipment rack.

- communicate with and keep the job superintendent apprised of changes or clarifications, etc.
B. Employment of any person on any job in the capacity of an electrician is not permitted unless such person has qualified for and holds a valid Journeyman Electrician Pocket Card or General Journeyman Electrician Certificate issued by the State of California Division of Apprenticeship Standards except. Contractor may employ electrical helpers or apprentices on any job of electrical construction, new or existing, when the work of such helpers or apprentices is performed under the direct and constant personal supervision of a journeyman electrician holding a valid Pocket Card accepted by the State of California Division of Apprenticeship Standards:
1. Each Pocket Card carrying journeyman electrician will be permitted to be responsible for the quality of workmanship for a maximum of one helper or apprentice during any same time period, provided the nature of work is such that good supervision can be maintained and the quality of workmanship is the best, as expected by Owner and implied by the latest edition of the National Electrical Code.
C. Materials shall be installed in accordance with the manufacturers' specification and recommendations. They must conform to the approved AHJ adopted codes and standards, but not less than the 2019 NEC and all applicable codes and standards, including but not necessarily limited to California Code of Regulations Title 24, NFPA, National Electrical Manufacturers Association, ANSI, CBC, and any other adopted ordinances of applicable agencies having jurisdiction.
D. Electrical Contractor shall by work out in advance in order to avoid unnecessary cutting, chasing, and drilling of floors, walls, ceilings and other surfaces. Work of this nature shall be carefully done so as not to damage work already performed by other trades. Such alterations shall not detract the integrity of the structure. Approval for cuts or penetrations in structural members shall be by the Architect.
E. Supporting Devices:
1. Verify mounting height of all luminaires or items prior to installation when heights are not detailed.
2. Install vertical support members for equipment and luminaires, straight and parallel to building walls.
3. Support conduits within 18" of outlets, boxes, panels, cabinets and deflections. Maximum distance between supports not to exceed spacing per CEC.
4. Securely suspend all junction boxes, pull boxes or other conduit terminating housings located above suspended ceiling from the floor above or roof structure to prevent sagging and swaying.
5. Provide seismic bracing per CBC requirements for this building location.
6. Supporting Devices: Safety factor of 4 required for every fastening device or support for electrical equipment installed. Support to withstand four times weight of equipment it supports. Bracing to comply with seismic design category as per Structural/Engineer.

- F. Coordinate work with other trades as required to eliminate any delays during construction. Coordinate changes with other prime contractors to avoid construction conflicts.
G. Engineer's Field Observation: Site visits during construction for field observations and reports will be conducted by electrical engineer when directed by the Architect. A list of items that need to be addressed will be submitted to the Architect for forwarding to the Contractor.
H. Drawings of Record: Provide a full and accurate set of field record drawings marked up in a neat and understandable manner submitted to the Owner Representative, Construction Manager, or Architect upon completion of the work and prior to issuance of a certificate of

COMMON WORK RESULTS FOR ELECTRICAL 26 05 00 - 3

PART 3 EXECUTION

3.1 INSTALLATION

- A. Tests:
1. Test conductor insulation on feeders of 400 amp and greater for conformity with 1000 volt megohmmeter. Use Insulated Cable Engineers Association testing procedures. Minimum insulation resistance acceptable is 1 megohm for systems 600 volts and below.
2. Test Report: Prepare a typed tabular report indicating the testing instrument, the feeder tested, ampere rating of the feeder, insulation type, voltage, the approximate length application and must remain easily accessible upon completion of the project (approval of the location shall be obtained from the Architect prior to installation). Show these pullboxes on the field record drawings. Conductors installed in underground raceways on site shall be duct sealed and taped where they exit the raceway to prevent the entrance of foreign material and moisture after the conductors are installed. Proper drainage shall be provided for underground pull and splice boxes.

END OF SECTION 26 05 19

- A. Institute of Electrical and Electronics Engineers:
1. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
2. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.
B. NFPA 70 - National Electrical Code.
C. Grounding systems use the following elements as grounding electrodes:
1. Metal underground water pipe.
2. Metal building frame.
3. Concrete-encased electrode.
4. Rod electrode.

1.5 SUBMITTALS

- A. Product Data: Submit data on grounding electrodes and connections.
B. Quality Assurance:
A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.

1.7 MADE ELECTRODE INSPECTION

- A. Convene prior to cover up of work of this section.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES 26 05 19 - 4

PART 3 EXECUTION

3.1 GENERAL

- A. Bond all conductive piping systems, interior and exterior, to the building to the grounding electrode system. Bonding connections shall be made as close as practical to the equipment ground bus.
B. TELECOMMUNICATIONS SYSTEM
A. Bond telecommunications system grounding equipment to the electrical grounding electrode system.

3.5 GROUND RESISTANCE

- A. Grounding system resistance to ground shall not exceed 15 ohms. Make necessary modifications or additions to the grounding electrode system for compliance without additional cost to the Owner. Final tests shall assure that this requirement is met, and test results shall be submitted to the Owner with final close out documents.
B. Resistance of the grounding electrode system shall be measured using a four-terminal fall-of-potential method as defined in IEEE Standard 81. Ground resistance measurements shall be made before the electrical distribution system is energized and shall be made in normally dry conditions not less than 48 hours after the last rainfall. Resistance measurements of separate grounding electrode systems shall be made before the systems are bonded together below grade. The combined resistance of separate systems may be used to meet the required resistance, but the specified number of electrodes must still be provided.
C. Furnish a copy of tests to Owner at completion of project.

END OF SECTION 26 05 26

- A. Manufacturers:
1. Allied Tube & Conduit Corp.
2. Electronic Manufacturing Company
3. O-Z Gentry Co.
4. Apolite
B. Hanger Rods: Threaded high tensile strength galvanized carbon steel with free running threads.
C. Beam Clamps: Malleable iron, with tapered hole in base and back to accept either bolt or hanger rod. Set screw: hardened steel.
D. Conduit clamps for trapeze hangers: Galvanized steel, notched to fit trapeze with single bolt to tighten.
E. Conduit clamps - general purpose: One hole malleable iron for surface mounted conduits.
F. Cable Ties: High strength nylon temperature rated to 185 degrees F. Self locking.

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 26 05 26 - 5

- The drawings shall dimension all electrical facilities including but not limited to underground conduit, vaults, boxes as well as conduit routing scaled to within 1/2" of actual field conditions and shall be kept up to date reflecting changes or deviations. Electrical facilities shall be accurately drawn on the plan to scale. Refer to the general conditions of these specifications for additional requirements. Record drawings shall be required to identify both horizontal and vertical dimensions to visible and fixed points such as concrete, asphalt, buildings, sidewalks, etc.
I. Identification: Provide engraved laminated plastic nameplates for all switchboards, panelboards, fire alarm terminal cabinets, telephone and cable television backboards, main devices, control panels, time clocks, contactors and safety disconnect switches accurately identifying each device. Labels shall be attached to the equipment by means of screws or rivets. Self-adhering labels will not be acceptable. Refer to Section 26 05 53, Identification of Electrical Systems.
J. Safety: The Electrical Contractor is responsible to maintain equipment in a safe and responsible manner. Keep dead front equipment in place while equipment is energized. Conduct construction operations in a safe manner for employees as well as other work persons or anyone visiting the job site. Provide barriers, trench plates, flag, trap, etc.
K. Guarantees: Equipment and labor shall be guaranteed and warranted free of defects, unless otherwise stated to be more restrictive, for a period of one year from the date of final acceptance by the Owner. A written warranty shall be presented to the Architect at the time of completion prior to final acceptance. Equipment deemed to be damaged, broken or failed should be repaired or replaced at no additional cost to the Owner. Materials or system requiring longer than a one-year warranty as described herein shall be separately warranted in separate letters of guarantee stating the duration of warranty.

- L. Operating and Installation Manuals: Provide two copies each of manuals, operating and installation instructions for equipment indicated in submittal packages. Instruct the Owner's representative as to the operation and location of equipment necessary to allow them to operate the facility upon final acceptance. This instruction period shall be prearranged with the Owner's representative prior to occupancy of the facility and the weeks prior to training scheduled.

END OF SECTION 26 05 00

COMMON WORK RESULTS FOR ELECTRICAL 26 05 00 - 4

SECTION 26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section Includes:
1. Grounding and bonding requirements of electrical installations for personnel safety and to provide a low impedance path for possible ground fault currents as described in NEC Article 250.
2. The terms "conduit" and "bond" are used interchangeably in this specification and have the same meaning.
B. Provide a continuous low-impedance grounding system for the entire electrical wiring system.
C. Related Sections:
1. Section 26 05 00: Common Work Results for Electrical.
2. Section 26 05 19: Low-Voltage Electrical Power Conductors and Cables.

1.3 REFERENCES

- A. Institute of Electrical and Electronics Engineers:
1. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
2. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.
B. NFPA 70 - National Electrical Code.

1.4 SYSTEM DESCRIPTION

- A. Grounding systems use the following elements as grounding electrodes:
1. Metal underground water pipe.
2. Metal building frame.
3. Concrete-encased electrode.
4. Rod electrode.

1.5 SUBMITTALS

- A. Product Data: Submit data on grounding electrodes and connections.

1.6 QUALITY ASSURANCE

- A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.

1.7 MADE ELECTRODE INSPECTION

- A. Convene prior to cover up of work of this section.

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 26 05 26 - 1

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
1. Conduit supports.
2. Formed steel channel.
3. Spring steel clips.
4. Sleeves.
5. Mechanical sleeve seals.
6. Equipment bases and supports.

1.3 SUBMITTALS

- A. Product Data:
1. Hangers and Supports: Submit manufacturers catalog data including load capacity.
B. Perform Work in accordance with the Building Code.

PART 2 - PRODUCTS

2.1 CONDUIT SUPPORTS

- A. Manufacturers:
1. Allied Tube & Conduit Corp.
2. Electronic Manufacturing Company
3. O-Z Gentry Co.
4. Apolite
B. Hanger Rods: Threaded high tensile strength galvanized carbon steel with free running threads.
C. Beam Clamps: Malleable iron, with tapered hole in base and back to accept either bolt or hanger rod. Set screw: hardened steel.
D. Conduit clamps for trapeze hangers: Galvanized steel, notched to fit trapeze with single bolt to tighten.
E. Conduit clamps - general purpose: One hole malleable iron for surface mounted conduits.
F. Cable Ties: High strength nylon temperature rated to 185 degrees F. Self locking.

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS 26 05 29 - 1

SECTION 26 05 19 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
1. Wires and cables.
2. Connectors.
3. Lugs and pads.
B. System Description:
1. Provide wires, cables, connectors, lugs, strain reliefs, racking insulators for a complete and operational electrical system.

1.3 SUBMITTALS

- A. Provide product data for the following equipment:
1. Wires.
2. Cables.
3. Connectors.
4. Lugs.
5. Strain clamps.
B. Provide the insulation cable testing report in project closeout documentation, refer to Closeout Requirements in the General Conditions portion of this specification.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements:
1. Conform to requirements of the CEC, latest adopted version with amendments by local Authority Having Jurisdiction (AHJ).
2. Furnish products listed by UL or other testing firm acceptable to AHJ.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Wires and Cables: General Cable, Okonite, Southwire, or approved equal.
B. Connectors: Bumdy, Ilco, Thomas & Betts, or approved equal.
C. Wire connectors shall be minimum 75 degree centigrade rated and properly sized for the number of conductors being connected, terminated, spliced etc. All above grade connections shall be solderless lug or plastic wire nut type, screw on, pressure cable type (wire nut or spring nut type), 600 volt, 105-degree C, with skirt to cover all portions of stripped wires. Connector shall be UL listed for number and size of conductors being joined together as a splice.

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES 26 05 19 - 1

PART 2 PRODUCTS

2.1 GROUNDING AND BONDING CONDUCTORS

- A. Equipment grounding conductors shall be UL B3 insulated stranded copper, except that sizes No. 10 AWG and smaller shall be solid copper. Insulation color shall be continuous green for all equipment grounding conductors, except that wire sizes No. 4 AWG and larger shall be permitted to be identified per CEC.
B. Bonding conductors shall be ASTM B36 bare stranded copper, except that sizes No. 10 AWG and smaller shall be ASTM B1 solid bare copper wire.
C. Conductor sizes shall not be less than what is shown on the drawings and not less than required by the CEC, whichever is greater.

2.2 SPLICES AND TERMINATION COMPONENTS

- A. Components shall meet or exceed UL 467 and be clearly marked with the manufacturer, catalog number, and permitted conductor size(s).

2.3 ROD ELECTRODES

- A. Manufacturers:
1. Apache Grounding/Erco Inc.
2. Copperveld, Inc.
3. Erco, Inc.
4. O-Z Gentry Co.
5. Thomas & Betts
6. VFC
B. Product Description:
1. Material: Copper-clad steel
2. Diameter: 3/4 inch
3. Length: ten (10) feet

2.4 WIRE

- A. Material: Stranded copper.
B. Foundation Electrodes: #2 AWG.
C. Grounding Electrode Conductor: Copper conductor bare.
D. Bonding Conductor: Copper conductor bare.

2.5 MECHANICAL CONNECTORS

- A. Manufacturers:
1. Apache Grounding/Erco Inc.
2. Copperveld, Inc.
3. Erco, Inc.
4. ILSCO Corporation
5. O-Z Gentry Co.

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 26 05 26 - 2

PART 2 PRODUCTS

2.2 FORMED STEEL CHANNEL

- A. Manufacturers:
1. Allied Tube & Conduit Corp.
2. B-Line Systems
3. Malboro Ross Corporation, Electrical Products Division
4. Unifit Corp.
B. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

2.3 SLEEVES

- Hollow Masonry, Plaster, and Gypsum Board Partitions: Provide toggle bolts or hollow wall fasteners as required.
 - Wood Masonry Wall: Provide expansion anchors or precast inserts as required.
 - Sheet Metal: Provide sheet metal screws.
 - Wood Elements: Provide wood screws.
- B. Inserts:
- Install inserts for placement in concrete forms.
 - Install inserts for placement on reinforcement concrete slabs and sides of reinforced concrete beams.
 - Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 (four) inches.
 - Where concrete slabs form finished ceiling, locate inserts flush with slab surface. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut recessed into and grouted flush with slab.
- C. Install conduit and raceway support and spacing in accordance with CEC.
- D. Do not fasten supports to suspended ceiling support system, pipes, ducts, mechanical equipment, or conduit.
- E. Install multiple conduit runs on common hangers.
- F. Support methods:
- Fabricate supports from structural steel or formed steel channel. Install hanger head bolts to present neat appearance with adequate strength and rigidity. Install spring lock washers under nuts.
 - Install surface mounted cabinets and panels with minimum of four anchors.
 - In wet and damp locations install steel channel supports to stand cabinets and panels on top (1) inch wall.
 - Support vertical conduit at every floor.

END OF SECTION 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
26 05 29 - 3

SECTION 26 05 33 RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- PART 1 GENERAL**
- 1.1 RELATED DOCUMENTS**
- Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY**
- A. Section Includes:
- Conduit and fittings.
 - Outlet boxes.
 - Weatherproof outlet boxes.
 - Conduit and pull boxes.
 - Floor boxes.
 - Cabinets, termination cabinets.
 - Gutters.
- B. Related Work:
- Installation of all wire, cable, conductor, boxes/gutters, pull ropes, fire optic cable raceway, conduit, in-duct, cable sleeves and dust as described on the plans and as specified here-in. This scope shall include pathways to be installed underground onsite and offsite, underground, above ground, both concealed and exposed, overhead concealed and exposed, as appropriate applied. Raceway/boxes shall be installed in accordance with their intended and allowed uses and as specified here-in whenever is more restrictive. Size and capacity of all raceway/boxes shall be as specified here-in or as depicted on the drawings, but shall not be less than that required by code. Larger raceway sizes may be specified than code would permit. The specifications shall govern.
 - Listed products for termination, coupling, extending, bending supports of raceways shall be used.
 - Raceway/boxes described by this section shall include, but not be limited to, power for site utilities and lighting, site and building communications, controls, fire alarm, data system, power distribution, lighting, lighting controls, video, intercom, and other building low voltage/communications systems controls as may be required.
 - Protection of and cleanliness of pathways routing through structural footings, retaining walls, columns, beams, purlins, grade beams, etc.
 - It is the Contractor's responsibility to insure that all raceway and boxes systems penetrate fire assemblies and sound rated partitions in an approved manner using the appropriate and listed products for the purpose.
 - Minimum conduit size shall be as specified if plan shows or code requires larger size. Exception: Use minimum 1" for under-slab and below grade applications outside of building exterior walls.
 - All electrical systems shall be installed in an approved conduit system. This shall include but not be limited to all systems described in Section B.3 above.
 - All live voltage wiring above-grade within the building shall be installed in metallic raceway and boxes for electrical systems.

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
26 05 33 - 1

- Conduit.
- Empty or future conduits shall be properly plugged with plastic caps or inserts with a 3/8" polyethylene pull rope. Plastic or "duct" tape will not be acceptable.
- All live voltage systems including data, voice, intercom, fire alarm, public address, etc. shall be in raceways separated from line voltage cable. Voice / Data and Direct Digital Control (DDC) systems for HVAC cabling shall be routed as specified in Section 27.41.16 and 23.05.23 respectively, and as recommended by EMTA standards. It shall be the contractor's responsibility to provide raceway down walls to outlet boxes and to provide sleeves across inaccessible ceiling spaces.
- Underground conduits entering building shall have the open end of conduit within building above the elevation of the conduit outside the building such that water cannot enter building through conduit. If such a condition exists, a pull box outside of building footprint shall be installed in conduit route before conduit enters building whereby top of pull box is below finish floor of building and moisture may not be before entering building.
- No single conduit run of any type shall exceed 300 degrees of radius bend from termination box to termination box.
- Separate Raceway System - Provide a separate raceway system for each of the following systems installed. Do not combine different systems into a raceway or cable tray system, unless otherwise noted or allowed. Mechanical controls and raceway shall be provided by others in separate raceway from the below systems:
 - Fire Alarm.
 - Line Voltage.
 - All other low voltage systems provided by electrical contractor.
- Spare, Future Conduits: Conduits labeled conduit only, spare, or for future use, shall be provided with a pulltop, capped at each end, labeled as such with destination marked, and turned over to the Owner in an unused state. Contractor shall not utilize these conduits for the installation of building or conduits as part of this scope of work. Contractor to verify and install an additional conduit to the Owner, additional conduits as required for the installation of the systems being installed.
- Outlet System: Provide electrical boxes and fittings as required for a complete installation, including but not limited to outlet boxes, junction boxes, pull boxes, electrical boxes, locknuts, covers and all other necessary components.
- Code Compliance: Comply with CEC as applicable to construction and installation of electrical boxes and fittings and size boxes according to CEC 312, 314 and 366 as noted elsewhere.
- Outlets to be flush mounted. Maintain integrity of insulation and vapor barrier. Unless otherwise noted, flush mount all outlet boxes.
- Provide putty pads of proper type and quantity around outlet boxes as detailed on plan to meet sound transmission restrictions and fire ratings of walls.

1.3 SUBMITTALS

- A. Provide Product Data for the Following Equipment:
- Conduit and fittings.
 - Outlet boxes.
 - Weatherproof outlet boxes.
 - Junction and pull boxes.
 - Floor boxes.
 - Cabinets, termination cabinets.
 - Gutters.
 - Putty pads.
 - Raceways.

1.4 QUALITY ASSURANCE

- A. Provide Product Data for the Following Equipment:
- Conduit and fittings.
 - Outlet boxes.
 - Weatherproof outlet boxes.
 - Junction and pull boxes.
 - Floor boxes.
 - Cabinets, termination cabinets.
 - Gutters.
 - Putty pads.
 - Raceways.

- A. Regulatory Requirements:
- Conform to requirements of the CEC, latest adopted version with amendments by local AHJ's.
 - Listed products listed by UL or other independent and nationally recognized testing firm.

PART 2 PRODUCTS

2.1 MATERIALS

- Heavy wall Rigid Non-Metallic Conduit, shall be PVC schedule 40 manufactured in accordance with NEMA Standard TC-2, UL-651 and WC 1094A specifications.
- Extra heavy wall non-metallic conduit shall be PVC schedule 80 manufactured in accordance with NEMA Standard TC-2, UL-651 and WC 1094A specifications.
- Galvanized Rigid Steel (GRS) conduit shall be hot dipped galvanized, zinc coated and shall comply with Underwriters Laboratories UL-6, ANSI Specification C-80.1 and Federal Specification WW-C-581E.
- Electrical Metallic Tubing (EMT) shall be zinc coated, with a protective coating applied to the inside surface and shall comply with Underwriters Laboratories UL-797 ANSI Specification C-69.3 and Federal Specification WW-C-565A.
- Electrical Non-Metallic Tubing (ENT) shall be listed to requirements of UL J. 1653, in accordance with CEC Article 362, and meet requirements of B1 National Standard CAN/CSA C22.2 No. 227.14.1.1.153. ENT shall be rated for 90 degrees C conductors and shall be recognized for use in 2-hour fire resistance non-load bearing and load bearing wall assemblies. ENT shall be recognized for through-penetration firestop systems as classified to meet U.L. and CEC building codes.
- Flexible Metal Conduit (FMC), AIAlex, American Flexible Conduit or equal.
- Liquid tight flexible metal conduit, UAL, Electroflex equivalent or equal.
- Floor Boxes, Single Gang, Walker/Wiremold 680 CS Series or approved equal.
- Floor Boxes, Multiple Gang, Walker/Wiremold RFB Series or Walker Omnixbox multi-concrete floor box with carpet flange, and/or water resistant device cover.
- Masonry Boxes, outlets in concrete, Raco Series 690 or equal.
- Wire basket tray, B-Line, OS Metals, Cabelfix, Chatsworth, Flex Tray or equal.
- Raco runway tray, B-Line, CPI, Homaco, Chatsworth, Flex Tray or equal.

2.2 OUTLET BOXES

- NEMA 1 gutter, junction and pull boxes shall be fabricated from code gage steel finished in grey enamel with screw cover fronts and concentric knockouts in all sides.
- NEMA 3R gutter, junction and pull boxes shall be fabricated from code gage galvanized steel with screw cover fronts and concentric knockouts in the bottom only. Any penetrations to the side, top or back shall be weatherproofed in an approved manner by all "MERS" gasketed type hub or equal.
- Steel outlet boxes and plaster rings shall be galvanized rigid assemblies, either one piece pressed or factory welded construction containing the size and number of knockouts required. Steel outlet boxes shall be manufactured, sized and installed in accordance with CEC Article 314. Device: Installation of one or two devices at common location, minimum 4" square, minimum 1 1/2" depth. Single or 2-gang flush device plaster ring, Raco or equal.
- Luminaire Outlet: minimum 4" square with correct plaster ring depth, minimum 1 1/2" deep with 3/8" luminaire stud if required. Provide proper depth plaster ring on bracket outlets and on ceiling outlets.
- Construction: Provide galvanized steel interior outlet wiring boxes, of the type, shape and size, including depth of cover, and all the respective location and installation: construction with stamped knockouts in back and sides, and with threaded holes with screws for securing box covers or wiring devices. Boxes shall be properly secured to the structure such that they are flush with the finish surface. Boxes shall be made structurally secure by means of the proper fastening devices.
- Accessories: Provide outlet box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, plaster rings, luminaire studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual wiring situations.

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
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2.3 JUNCTION AND PULL BOXES

- A. Construction: Provide galvanized sheet steel junction and pull boxes, with screw-on covers of the type shape and size, to suit each respective location and installation, with welded seams and equipped with steel nuts, bolts, screws and washers.
- B. Location:
- Install junction boxes above accessible ceilings for drops into walls for receptacle outlets from overhead.
 - Install junction boxes and pull boxes as required to facilitate the installation of conductors and limiting the accumulated angular sum of bends between boxes, cabinets and appliances to 300 degrees.
 - Locations: Junction boxes shall be located only where necessary and only in equipment rooms, closets, and accessible attic and underfloor spaces. A horizontal distance of 24" shall separate outlet boxes on opposite sides of occupancy separation walls, fire-rated walls or partitions.
 - Labeling: Junction box covers shall be marked with indelible ink indicated the circuit numbers passing through the box.

2.4 CONDUIT FITTINGS

- A. Requirements: Provide corrosion-resistant punched-steel box knock-out covers, conduit locknuts and plastic conduit bushings of the type and size to suit each respective use and installation.
- B. Steel boxes may allow for field knock-out modifications, but shall in all other ways conform to code requirements.

2.5 FLOOR BOXES - SINGLE GANG

- A. Construction: Deep cast iron, fully adjustable before and after concrete pour with all required components for complete activation. Verify required components for application of service fittings, covers, mountments, and the like, attached to floors.
- B. Activities:
- Flush: Provide brass duplex or single signal cover, hinged with set screw lock. Carpet or fire finish ring.
 - Mount: Provide stainless steel mountments with power receptacle or data grommet as noted.
 - Coordinate specific application of systems as noted on Drawings.

2.6 FLOOR BOXES - MULTIPLE GANG

- A. Construction: Deep cast iron, fully adjustable before and after pour. Equal to Walker/Wiremold RFB Series or Walker Omnixbox multi-service floor box with carpet flange, and/or water resistant device covers. Verify code. Partitions for different power or signal applications. Provide required power receptacle devices and signal grommets or receptacles as noted. Flange top shall be compatible with floor covering for either carpet or vinyl as required and shall be brass type not polycarbonate.
- B. Floor mounted boxes shall be water tight and cast iron when installed in grade level concrete slab floor, fully adjustable with interior and exterior leveling screws. Receptacle flange shall be brass with a duplex fit. Flange type shall be compatible with floor type. Before installation, coordinate exact location with Architect.

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
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RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
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2.7 PUTTY PADS

- A. Innumescent moldable firestop putty designed to protect electrical outlet boxes.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Conduit systems listed below are for use in installations where they are permitted to be used by CEC and other occupancy restrictions. The below installation methods do not intend to suggest that these materials be installed in conflict with any applicable code. Special attention to applications shall be made in building types such as: fire location, hazardous locations, assembly occupancy and multi-story, but not limited to these. Requirements which are more restrictive than the CEC may be called for by the drawings and / or these specifications. These requirements must be adhered to. The Electrical Contractor shall be responsible to obtain the proper conduit system for the application. Exposed conduit is not allowed below ceilings or above slab of floor, without prior approval from Electrical Engineer. All conduits shall be concealed except in electrical and telecommunication rooms or where shown to be surface mounted. Exposed conduit shall be color coded: Blue for fire alarm and plumb with building lines in an approved manner. Support rooftop conduits, where allowed, with minimum 12" wide approved rooftop supports (B-Line Durabloc, or approved equal) unless otherwise detailed in roof requirements or as specified in roofing specification. Strap conduits to blocks with proper sized conduit straps. Spacing of support shall be a minimum as provided for in the CEC. All exposed conduit mounted below 8' above finished grade shall be strapped at a minimum of 5' spacing.
- B. Electrical Non-Metallic Tubing (ENT) shall be installed in accordance with its listed application. Only listed cement shall be used for connectors, coupling, fitting requiring cement. Unless otherwise noted, ENT systems shall be color coded: Blue for branch and/or feeder power wiring, yellow for communications systems, and red for fire alarm and emergency power systems. Use only approved and listed accessories:
- Electrical Nonmetallic Tubing (ENT) is designed to replace EMT, flexible metal conduit or other raceway or cable systems, for installation in accordance with Article 362 of the National Electrical Code, Section 12-1500 of the CEC, other applicable sections of the Code, and local codes.
 - Any ENT used shall be listed to the requirements of UL Standard UL 1653 in accordance with Article 362 of the NEC and Section 12-1500 of the CEC.
 - Any ENT used shall meet the requirements of B1 National Standard CAN/CSA C22.2 No. 227.14.1.1.153 and shall be listed/Certified in accordance to the Electrical Codes. Carlson's ENT shall be installed per the technical assessment prepared by fire cause analysis for use in 2-hour and 2-hour rated construction.
 - Penetration of fire rated walls, doors or ceilings shall use Classified Through-Penetration Fitting Systems described in the current Underwriters Laboratories Fire Resistance Directory.
 - Fittings and outlet boxes shall be designed for use with ENT with listed. All fittings, boxes and accessories shall be from one manufacturer.
 - Only Carlson ENT Blue cement recommended specifically for use with ENT and rigid nonmetallic fittings shall be used by the manufacturer.
 - Unless indicated differently on drawings, ENT systems shall be color coded: BLUE for branch and feeder circuit wiring, YELLOW for communications, and RED for fire alarm and emergency systems, or colors can designate different voltage.
 - ENT, fittings, and accessories shall be manufactured by Carlson.
 - ENT shall not be used or allowed in any application where not allowed by CEC Article 362.

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
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1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual routing and elevations of underground conduit and duct, and locations and sizes of manholes and handholes. Provide dimensions of fixed elements.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Deliver ducts to Project site with ends capped. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.
- B. Store precast concrete units at Project site as recommended by manufacturer to prevent physical damage.
- C. Arrange so identification markings are visible.
- D. Lift and support precast concrete units only at designated lifting or supporting points.
- 1.6 PROJECT CONDITIONS
- A. Existing Utilities: Do not interrupt utilities serving occupied facilities unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements in Division 05.
- Comply with Owner's power shut-down procedures.
 - Do not proceed with utility interruptions without Owner's Representative written permission.
- 1.7 COORDINATION
- A. Coordinate layout and installation of ducts, manholes, and handholes with final arrangement of other utilities and site grading, as determined in the field.
- B. Coordinate elevations of ducts and duct-bank entrances into manholes and handholes with final profiles of conduits as determined by coordination with other utilities and construction for obstructions.
- C. Design and fabricate structure according to ASTM C858.
- D. Structural Design Loading: ASTM C857, Class A-16 (ASHTO H20).
- E. Base section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
- F. Riser Sections: 4-inch minimum thickness, and lengths to provide required depth.
- G. Top Section: Eccentric-cone type unless concentric-cone or flat-slab-top type is indicated. Top one of cone sizes that matches grade rings.
- H. Steps: ASTM A615, deformed, 1/2-inch steel reinforcing rods encased in ASTM D4101, PP, white enough to allow worker to place both feet on 1 step and designed for lateral slipage off of step. Cast or anchor steps into sidewalks at 12- to 16-inch intervals. Omit handholes if total depth from floor of manhole to finished grade is less than 36 inches. Adjust to custom manhole locations.
- I. Grade Rings: Reinforced-concrete rings, 6- to 9-inch total thickness, to match diameter of manhole frame and cover.
- J. Joint Sealant: ASTM C950, bitumen or butyl rubber.
- K. Protective Coating: Plant-applied, coal-tar, epoxy-polyamide paint 15-mil minimum thickness applied to exterior and interior surfaces.
- L. Source Quality Control: Inspect structures according to ASTM C1037.
- M. Access Ladder: Provide permanent metal access ladder.

2.4 PRECAST MANHOLES

- A. Precast Units: Interlocking mating sections, complete with accessories, hardware, and features as indicated. Include concrete knockout panels for conduit entrance and sleeve for ground rod.
- B. Joint width diameter: 3/16 inches minimum.
- C. Design and fabricate structure according to ASTM C858.
- D. Structural Design Loading: ASTM C857, Class A-16 (ASHTO H20).
- E. Base section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
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- L. Source Quality Control: Inspect structures according to ASTM C1037.
- M. Access Ladder: Provide permanent metal access ladder.
- 2.5 ACCESSORIES
- A. Duct Spacers: Rigid PVC interlocking spacers, selected to provide minimum duct spacings and cover depths indicated while supporting ducts during concreting and backfilling; produced by the same manufacturer as the ducts.
- B. Manhole Frames and Covers: Comply with ASHTO loading specified for manhole. Frames 36 inch clear ID by 6 inch minimum riser with 4-inch minimum wall flange and 38-inch-diameter cover.

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- A. Deliver ducts to Project site with ends capped. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.
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- A. Duct Spacers: Rigid PVC interlocking spacers, selected to provide minimum duct spacings and cover depths indicated while supporting ducts during concreting and backfilling; produced by the same manufacturer as the ducts.
- B. Manhole Frames and Covers: Comply with ASHTO loading specified for manhole. Frames 36 inch clear ID by 6 inch minimum riser with 4-inch minimum wall flange and 38-inch-diameter cover.

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SECTION 26 05 43 - UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
- Ducts in concrete-encased duct banks.
 - Handholds and handhole accessories.
 - Manholes and manhole accessories.
- 1.2 SYSTEM DESCRIPTION
- A. Interconnected system of encased conduits, ducts, manholes and handholes to distribute power and telecommunications.
- B. Conduit and duct routing, manhole, and handhole locations are shown in approximate locations unless dimensions are indicated. Route and locate to complete duct bank system.
- C. Use concrete encased rigid steel or concrete encased rigid plastic conduits for all underground ducts.
- 1.3 SUBMITTALS
- A. Product Data: For the following:
- Manholes.
 - Handholes.
 - Hardware.
 - Conduit and ducts, including spacers, bell ends, bends, fittings, and solvent cement.
 - Duct-bank materials, including allows and miscellaneous components.
 - Warning tape, Detectable type.
- B. Shop Drawings: Show fabrication and installation details for underground ducts and utility structures and include the following:
- For manholes:
 - Duct sizes and locations of duct entries.
 - Reinforcement details.
 - Manholes cover design and engraving.
 - Step details.
 - Grounding details.
 - Dimensioned locations of cable rack inserts, pulling-in irons, and lumps.
 - Coordination Detailing Activity Drawings: Show duct profiles and coordination with other utilities and underground structures. Include plans and sections drawn to scale, and show all bends and location of expansion fittings.
 - Product Certificates: For concrete and steel used in underground precast manholes, according to ASTM C 666.

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UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM
26 05 43 - 2

UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM
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UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM
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UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM
26 05 43 - 5

Not for permitting or construction



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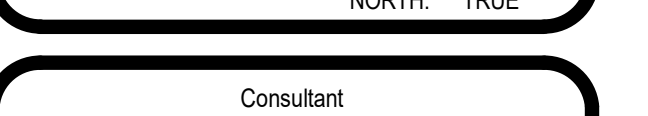
MYFORD ELEMENTARY SCHOOL



PROJECT ADDRESS: 3181 Torino Dr. Irvine, CA 92602

DSR-APPL. NO.: XXXX DSR-FILE NO.: XXXX

END OF SECTION 26 05 33



Consultant REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA E-18187 Exp. 03/31/26 ELECTRICAL

Architect REGISTERED ARCHITECT STATE OF CALIFORNIA C-34832 REL. 10/19/25

CLIENT TUSD PROJECT NUMBER 230380

REVISIONS No. Description Date

1. APPLICATION A. Underground Ducts for Electrical Cables Higher than 600V; Type EPC-40-PVC, concrete-encased duct bank.

B. Manholes: Underground precast concrete utility structures.

C. Manholes: Cast-in-place concrete.

2. EARTHWORK A. Restore surface features at areas disturbed by excavation and reestablish original grades, unless otherwise indicated. Soil compaction at all locations shall be as specified by civil and structural specifications.

B. Restore all areas disturbed by trenching, storing top soil, leveling, laying, and seeding. Restore vegetation and include necessary topsoil, fertilizing, liming, and other work, sprigging, and mulching.

C. Restore disturbed pavement.

3.3 CONDUIT AND DUCT INSTALLATION A. Exercise care in excavating, trenching, and working near existing utilities. Locate any existing buried utilities before excavating.

B. Duct bank trench shall be shored, framed and braced for installing ducts. Frames, forms, and braces shall be either wood or steel. Variations in outside dimensions of the installed duct bank shall not exceed 2 inches on the vertical or the horizontal from the design.

C. Manholes: Manufacture long radius bends may be used in runs of 100 feet or less on approval from the Owner's representative. Vertical feeder sweep into buildings shall be coated steel. Multiple conduit sweeps shall be concentric and maintain spacing throughout. Medium-voltage conduit sweeps shall be 12" minimum radius sweeps.

D. Curves and Bends: Use manufactured 48 inches minimum elbows for stub-ups at equipment, and enclosures, and at building entrances. Use manufactured long sweep bends with a minimum radius of 4 feet minimum, both horizontally and vertically, at all locations. Manufactured long radius bends may be used in runs of 100 feet or less on approval from the Owner's representative. Vertical feeder sweep into buildings shall be coated steel. Multiple conduit sweeps shall be concentric and maintain spacing throughout. Medium-voltage conduit sweeps shall be 12" minimum radius sweeps.

F. Use solvent-cement joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings to those of adjacent ducts do not lie in the same plane.

G. Duct Entrances to Manholes and Handholes: Space end bells approximately 10 inches

ELECTRICAL SPECS

E0.02

This document is for plan review only

o.c. for 5-inch ducts and vary proportionately for other duct sizes. Change from regular spacing to end-bell spacing 10 feet from the end bell without reducing duct line slope and without forming a trap in the line. Grout end bells into manhole walls from both sides to provide watertight entrances. Where connection to bulkhead of duct bank is made to vaults or existing duct banks, the concrete encasement shall be doweled with on No. 4 reinforcement not 36 inches long per conduit to the existing encasement.

- H. Building Entrances: Make a transition from underground duct to rigid steel conduit 5 feet outside the building wall. Use fittings manufactured for this purpose. Follow the appropriate installation instructions below:
1. Concrete-Encased Ducts: Install reinforcement in duct banks passing through disturbed earth near buildings and other excavations. Coordinate duct bank with structural design to support duct bank at wall without reducing structural or watertight integrity of building wall. Expose duct bank at building entry to provide 6" spacing between sealing system sleeves. Coordinate sleeve placement with structural reinforcement bar placement.
2. Provide methane penetration EYS sealing fitting at each conduit penetration into building - both vertical and horizontal. Arrange so that sealant parts remain accessible.
3. Waterproofed Wall and Floor Penetrations: Install a watertight entrance-sealing device with sealing gland assembly on the inside. Anchor device into masonry construction with one or more integral flanges. Secure membrane waterproofing to the device to make permanently watertight. Seals shall be Link Seal Assembly with precast CS model - non-metallic sleeve by Link Seal or equal.

UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM 26 05 43 - 6

finish.
D. Arc flash labels shall be provided as required by NEC Article 70E.
E. Conductor tape number markers: TayMac MX4280 Series non-fading permanent/adhesive.
2.3 MANUFACTURERS
A. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to the following:
1. Panduit Corp.
2. American Labelmark Co.
3. Markal Corp.
4. Calpico, Inc.
5. Ideal Industries, Inc.

PART 3 EXECUTION 3.1 MOUNTING

- A. Equipment labels shall be mounted by self-tapping, threaded screws and bolts, or by rivets. Adhesive types are not acceptable unless specifically noted in this section.
B. Conductor tape markers shall be consistently placed for ready conductor identification.
3.2 HEIGHTS ON LABELS
A. Individual Circuit Breakers, Switches, and Motor Starters in Panelboards, Switchboards, and Motor Control Centers: 3/16" identify circuit and load served in accordance with location of equipment.
B. Enclosed Circuit Breakers, Enclosed Switches, and Motor Starters: 3/16" identify load served.
3.3 WARNING SIGNS
A. Warning signs shall be permanently mounted with cadmium plated steel screws or nickel-plated brass bolts.
B. Warning signs to read "DANGER - HIGH VOLTAGE", with letters 1 1/2" high, 3/16" stroke minimum.
C. Provide warning sign on all doors or immediately next to door for equipment rooms, enclosures or closets containing equipment energized above 150 volts to ground as per NEC, and/or as directed by the Architect. For interior finish spaces and interior doors, signage shall be coordinated and approved with the Architect in advance of installation.

3.4 PRINTED PANELBOARD DIRECTORY

- 1. Provide framed, typed circuit schedules with explicit description and identification of items controlled by each individual breaker for that panel, switchboard, or motor control center.
2. Panelboard directory shall include a legend indicating insulation color corresponding each phase and voltage in the building electrical system.

IDENTIFICATION OF ELECTRICAL SYSTEMS 26 05 53 - 2

directory frame, and flush lock keyed alike. Finish in manufacturer's standard gray enamel.
I. Provide ground-fault circuit breaker for each heat trace branch circuit.
J. Panelboards indicated to have thru-feed lugs shall be furnished with thru-feed lugs in all sections of panelboard.

PART 3 EXECUTION 3.1 MOUNTING

- A. General: All equipment shall be securely fastened in place.
B. Locations: In all cases mounting locations shall comply with the requirements of the California Electrical Code. This shall include providing suitable working clearances.
C. Wall Mounted Equipment: Wall mounted equipment shall be suitably positioned on the wall. Equipment mounted on exterior basement wall shall have Unistrut channels between the wall and the equipment to prevent condensation problems. Where wall mounted equipment is specified, but a convenient wall not available, a suitable Unistrut mounting stanchion anchored in concrete shall be provided. In lieu of this stanchion, small devices may be mounted on the equipment served if approved by the equipment manufacturer.
D. Motor related disconnects: Install disconnects in a vertical orientation with off in the down position.
3.2 DELIVERY, STORAGE AND HANDLING:
A. General:
1. Store all types of electrical power distribution equipment in a clean, heated building affording appropriate physical protection. Control access to prevent unauthorized tampering with the equipment. However, equipment may be stored in other inside or outside environments under approved conditions.
2. Inspect equipment when received at Project site for shipping damage. Report as required by freight carrier to recover repair or replacement costs from the freight carrier in the event damage was sustained.
3. Covers are required unless indoor, ventilated storage conditions exist. Canvas tarpaulins or the equivalent are preferred over other coverings because they provide better humidity control and enclosure suff protection. Where exposed to moisture, covers shall be waterproof.
4. The manufacturer's shipping skids shall be left on the equipment to provide structural support until the equipment is set in final resting place.
5. Refer to Section 26 05 00 for additional requirements. Contractor shall furnish new equipment to replace any equipment that is exposed to weather or subjected to other deleterious effects of construction.
3.3 LABELING:
A. Nameplate: Provide a nameplate for each piece of distribution equipment; see Section 26 05 53, Electrical Identification.

END OF SECTION 26 20 00

ELECTRICAL DISTRIBUTION EQUIPMENT 26 20 00 - 5

LIGHTING 26 50 00 - 1

- where indicated.
5. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inhibitors; otherwise, use forms.
6. Minimum Clearances Between Ducts: 3 inches between ducts and exterior envelope wall, 2 inches between ducts for fire services, and 4 inches between power and signal ducts.
7. Depth: Install top of duct bank at least 24 inches below finished grade in no traffic areas and at least 30 inches below finished grade in vehicular traffic areas, unless otherwise indicated.

END OF SECTION 26 05 43

- J. Direct-Buried Ducts: Direct-Buried Ducts are for temporary construction only and as determined and approved by the Owner. Support ducts on duct spacers, spaced as recommended by manufacturer and coordinated with duct size, duct spacing, and outdoor temperature. Install as follows:
1. Separator Installation: Space separators not more than 4 feet center-to-center along entire length of duct bank including top pipes.
2. Install expansion fittings as required.
3. Trench Bottom: Continuous, firm, and uniform support for duct bank. Prepare trench bottoms for pipes less than 6 inches in nominal diameter.
4. Backfill: Install backfill. After installing first tier of ducts, backfill and compact. Repeat backfilling after placing each tier. After placing last tier, hand-place backfill to 4 inches over ducts and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, complete backfilling normally. Do not place backfill for a period of at least 24 hours after pouring of concrete.
5. Minimum Clearances Between Ducts: 3 inches between ducts for fire services and 6 inches between power and signal ducts.
6. Depth: Install top of duct bank at least 36 inches below finished grade, unless otherwise indicated.
K. Warning Tape: Buy metal backed detectable warning tape approximately 12 inches above all concrete-encased duct banks. Align tape parallel to and within 3 inches of the centerline of each duct bank.
L. Stub-ups: Use rigid steel conduit for stub-ups to equipment. For equipment mounted on outdoor concrete bases, extend steel conduit a minimum of 5 feet from edge of base. Install insulated grounding bushings on terminations. Couple steel conduits to ducts with adapters designed for this purpose and encase coupling with 3 inches of concrete. Galvanized steel conduits installed below grade shall be painted with two coats of Koppers Bitumastic paint before installing in ground.
M. Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig hydrostatic pressure.
N. Pulling Core: Install 100-lb test nylon cord in all ducts, including spares. Identify opposite terminal points of duct.
O. Ductbanks shall be designed with 25% spare raceways for future use. In ductbanks with three (3) or less, provide one (1) spare conduit/minimum.

UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM 26 05 43 - 7

3. Copy in Owner's Manual.
3.5 ABOVE CEILING JUNCTION BOXES
A. Labeling: Provide label on all above ceiling junction boxes.
1. Provide permanent labeling with indelible black marker, in neat, legible print indicating the panelboard name, branch circuit number(s) and voltage of conductors within the junction box.

END OF SECTION 26 05 53

SECTION 26 20 00 LOW-VOLTAGE ELECTRICAL DISTRIBUTION

PART 1 GENERAL 1.1 RELATED DOCUMENTS

- A. Conditions of the Contract Documents and Division 1 - General Requirements as applicable, apply to this Section.

1.2 SUMMARY

- A. Provide all electrical distribution and motor control equipment and accessories required to distribute electrical power to all motors, outlets and systems requiring power.
B. New: Provide all new equipment.
B. Single Manufacturer: All equipment of each type shall be the product of one manufacturer.
C. UL: Equipment shall be UL listed. Service entrance equipment shall bear UL Service Entrance label.
D. NEC: Equipment and installation shall comply with the National Electrical Code and California Electrical Code.
E. Wet Locations: Equipment and enclosures installed outdoors and in wet locations shall be approved for the purpose.
F. IEEE: Institute of Electrical and Electronics Engineers Standard 1015-1997 (Blue Book) Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems.

1.4 LABELING

- A. Nameplates and labeling shall be provided in accordance with Section 26 05 53. All feeders shall be labeled at the feeder device.

1.5 FINISHES

- A. All equipment shall have a factory applied gray finish applied over a rust inhibiting treatment. Any items which have the finish marred shall be touched up or refinished to a new condition before final acceptance. This shall include, but shall not be limited to, sanding and properly removing rust or other contaminants and completely repainting equipment if damage is extensive. Overall acceptance is subject to approval of the Engineer.

1.6 SUBMITTALS

- A. Provide complete product data for each equipment type. Provide electric service studies when required.
B. Submittal shall include written recommendation from manufacturer of settings for all electronic trip adjustment setting on all equipment furnished with adjustable trip settings.

LOW-VOLTAGE ELECTRICAL DISTRIBUTION 26 20 00 - 1

SECTION 26 50 00 LIGHTING
PART 1 GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes luminaires, drivers, and accessories. Provide all luminaires complete with all new drivers, completely wired, controlled, and securely attached to supports.
B. Lumen Maintenance:
1. Minimum L70 at 50K hours based on TM-21 Addendum A Lifetime report at an ambient temperature of 25° C, outdoors at an ambient temperature of 40° C.
D. Thermal Testing:
1. ISTM testing in accordance to UL 1598-2008.
E. Driver:
1. 0-10V dimmed.
2. Output Class 2 rated.
3. Dimming range: 5-100%.
4. Constant current.
5. THD @ max load: <20%.
6. Power factor: >0.95
7. Environment protection rating: UL Damp and dry.
8. Approbations: certified to UL8750, UL1310, UL935, CSA-C22.2 No. 250.13-12, CSA 22.2 No. 223.
9. ROHS Compliant.
F. Fixture Philosophy:
1. Conducted by a NULVAP accredited testing lab with IESNA LM 79-08.
2. System flux measured in delivered lumens.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements:
1. Provide luminaires listed by U.L.
2. Luminaires installed in outdoor areas unprotected from weather to be U.L. Listed for wet locations.
B. Certification: Certify that fixtures submittal have trim compatible with ceilings being installed.

PART 2 PRODUCTS 2.1 LUMINAIRES

- A. Acceptable Manufacture: Provide per Fixture Schedule on drawings.
1. Engineer approved substitute: Contractor may submit luminaires from other manufacturers. Contractor shall provide a full set of submittals per paragraph 1.2 of this specification section for Engineer and Architects approval. Contractor must have approved submittals stamped and dated from the Engineer and Architect minimum 10 days prior to bid.
B. Product Description: Complete luminaire assemblies, with features, options, and accessories as scheduled.
C. All luminaires shall be new and of specification grade.
D. Manufacturer nomenclature in fixture schedule or otherwise described on the Drawings is given only to show the general fixture series. Contractor shall provide fixture with all required accessories and mounting frame type.
E. Wire guard at fixtures in mechanical, electrical, and high abuse areas.

END OF SECTION 26 50 00

LOW-VOLTAGE ELECTRICAL DISTRIBUTION 26 20 00 - 6

LIGHTING 26 50 00 - 1

3.4 MANHOLE AND HANDHOLE INSTALLATION

- A. Elevation: Install manholes with rooftop at least 15 inches below finished grade. Install handholes with depth as required. Place and align precast manholes to provide horizontal tolerance of 2 inches in any direction and vertical alignment with not greater than 1/8 inch maximum tolerance for 6 foot of depth. Completed manhole shall be rigid, true to dimensions and alignment, and shall be watertight.
B. Drainage: Install drains in bottom of units where indicated. Coordinate with drainage provisions indicated. Sumps shall be knocked out at time of installation.
C. Access: Install cast-iron frame and cover.
1. Install precast covers and rings to support frame and cover and to connect cover with roof opening. Provide moisture-tight masonry joints and waterproof grouting for cast-iron frame chimney.
2. Set frames in paved areas and traffic ways flush with finished grade. Set other frames 1 inch above finished grade.
D. Waterproofing: Apply waterproofing to exterior surfaces of units after concrete has cured at least three days. After ducts have been connected and grouted, and before backfilling, waterproof joints and connections and touch up abrasions and scars. Waterproof exterior of manhole and hand hole chimneys after brick mortar has cured at least three days. Seal manhole section joints with sealing compound recommended by the manhole manufacturer. Penetration into manholes and/or boxes shall be sealed. Provide conduit duct plugs for unused termination openings of spare conduits in manhole. Do not water seal top removable cover until cables pulling has been completed.
E. Damp proofing: Apply damp proofing to exterior surfaces of units after concrete has cured at least three days. After ducts have been connected and grouted, and before backfilling, damp proof joints and connections and touch up abrasions and scars. Damp proof exterior of manhole and hand hole chimneys after brick mortar has cured at least three days.
F. Hardware: Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated.
G. Field-Installed Boring Anchors: Do not drill deeper than 3-7/8 inches for anchor bolts installed in the field. Use a minimum of two anchors for each cable stanchion.
H. Grounding: Install ground rod through floor in each structure with top protruding 6 inches above floor.
1. Seal floor opening against water penetration with waterproof nonshrunk grout around exposed bases, extend steel conduit a minimum of 5 feet from edge of base. Install insulated grounding bushings on terminations. Couple steel conduits to ducts with adapters designed for this purpose and encase coupling with 3 inches of concrete. Galvanized steel conduits installed below grade shall be painted with two coats of Koppers Bitumastic paint before installing in ground.
I. Precast Concrete Manhole Anchors: comply with ASTM C891.

- 1. Install units level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrance.
2. Unless otherwise indicated, support units on a 12" level bed of crushed stone or gravel, graded from 1-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth. Provide a minimum 6-inch level base of 1/2 inch crushed rock under manhole to ensure uniform distribution of soil pressure on floor.
3. Manholes below building floor shall have all earth work compacted to match compaction required by structural specifications.

UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM 26 05 43 - 8

CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ALL ELECTRONIC TRIP SETTINGS PER MANUFACTURER RECOMMENDATIONS.
C. Electrical connections to all equipment furnished by any other division shall be coordinated with final approved equipment submittals from other divisions including but not limited to circuit breaker sizes, conduit sizes, wire sizes, fuse sizes, disconnect switch sizes and starter sizes that differ from those shown on the drawings prior to submitting Electrical Distribution Equipment submittal.

1.7 SHORT CIRCUIT CURRENT RATINGS

- A. General: All switchboards and panelboards shall be fully rated and marked with a maximum short circuit current rating. The equipment manufacturer shall have verified this rating with high-impedance testing. All short circuit current ratings are expressed as amperes RMS symmetrical at the applied voltage unless otherwise noted. All equipment shall withstand the specified level of fault current. All overcurrent devices shall interrupt the specified level of fault current.
3. symmetrical amperes when used with or protected by Class J fuses.
Non-Fuseable: 10,000 rms symmetrical amps.
F. Fuse Clips: NEMA FU 1, Class J fuses.

2.3 SINGLE CIRCUIT BREAKERS WITH ENCLLOSURES

- A. Product Description: Enclosed, molded-case circuit breaker conforming to NEMA AB 1, suitable for use as service entrance equipment where applied.
B. Circuit Breakers: Molded case, quick make, quick break, trip free, common thermal magnetic trip.
C. Ratings: Continuous current, poles as required, 480 volt system breaker shall interrupt short circuits up to 14,000 rms amperes symmetrical; on 120/208 - 240 volt system, 10,000 amperes symmetrical.
D. Enclosure: NEMA AB 1, to meet conditions. Fabricate enclosure from steel finished with manufacturer's standard gray enamel.
1. Interior Dry Locations: Type 1.
2. Exterior Locations: Type 3R.
E. Nameplate: Provide a nameplate showing load served.

2.4 BRANCH CIRCUIT PANELBOARDS

- A. Manufacturers: Square D Type NQ for 208/120V, type NF for 480/277V.
B. Product Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.
C. Panelboard Bus: Copper current carrying components, ratings as indicated on Drawings. Furnish copper ground bus in each panelboard.
D. For non-linear load applications subject to harmonics furnish 173 percent rated, plated copper, solid neutral.
E. Minimum Integrated Short Circuit Rating: 14,000 amperes rms symmetrical for 208-240/120 volt panelboards; 22,000 amperes rms symmetrical for 480 volt panelboards.
F. Molded Case Circuit Breakers: NEMA AB 1, both-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air conditioning equipment circuits, Class A ground fault interrupter circuit breakers as indicated on Drawings. Do not use tandem circuit breakers.
G. Enclosure: NEMA PB 1, Type 1 or Type 3R. All panelboards located in kitchen areas shall be flush mount with NEMA 4X Stainless Steel enclosures.
H. Cabinet Front: Safety dead front type with concealed trim clamps, concealed hinge, metal ductory frame, and flush lock keyed alike. Finish in manufacturer's standard gray enamel.
I. Provide ground-fault circuit breaker for each heat trace branch circuit.
J. Panelboards indicated to have thru-feed lugs shall be furnished with thru-feed lugs in all sections of panelboard.

2.2 MANUFACTURERS

- A. Unless indicated otherwise, all equipment in this section shall be provided from a single manufacturer. The product designations listed are to establish a level of quality. Acceptable manufacturers are:
1. Square D
2. Siemens
3. G.E.
4. Cutler-Hammer

2.2 BRANCH CIRCUIT PANELBOARDS

- A. Manufacturers: Square D Type NQ for 208/120V, type NF for 480/277V.
B. Product Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.
C. Panelboard Bus: Copper current carrying components, ratings as indicated on Drawings. Furnish copper ground bus in each panelboard.
D. For non-linear load applications subject to harmonics furnish 173 percent rated, plated copper, solid neutral.
E. Minimum Integrated Short Circuit Rating: 14,000 amperes rms symmetrical for 208-240/120 volt panelboards; 22,000 amperes rms symmetrical for 480 volt panelboards.
F. Molded Case Circuit Breakers: NEMA AB 1, both-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air conditioning equipment circuits, Class A ground fault interrupter circuit breakers as indicated on Drawings. Do not use tandem circuit breakers.
G. Enclosure: NEMA PB 1, Type 1 or Type 3R. All panelboards located in kitchen areas shall be flush mount with NEMA 4X Stainless Steel enclosures.
H. Cabinet Front: Safety dead front type with concealed trim clamps, concealed hinge, metal

LOW-VOLTAGE ELECTRICAL DISTRIBUTION 26 20 00 - 2

SECTION 26 50 00 LIGHTING
PART 1 GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes luminaires, drivers, and accessories. Provide all luminaires complete with all new drivers, completely wired, controlled, and securely attached to supports.
B. Lumen Maintenance:
1. Minimum L70 at 50K hours based on TM-21 Addendum A Lifetime report at an ambient temperature of 25° C, outdoors at an ambient temperature of 40° C.
D. Thermal Testing:
1. ISTM testing in accordance to UL 1598-2008.
E. Driver:
1. 0-10V dimmed.
2. Output Class 2 rated.
3. Dimming range: 5-100%.
4. Constant current.
5. THD @ max load: <20%.
6. Power factor: >0.95
7. Environment protection rating: UL Damp and dry.
8. Approbations: certified to UL8750, UL1310, UL935, CSA-C22.2 No. 250.13-12, CSA 22.2 No. 223.
9. ROHS Compliant.
F. Fixture Philosophy:
1. Conducted by a NULVAP accredited testing lab with IESNA LM 79-08.
2. System flux measured in delivered lumens.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements:
1. Provide luminaires listed by U.L.
2. Luminaires installed in outdoor areas unprotected from weather to be U.L. Listed for wet locations.
B. Certification: Certify that fixtures submittal have trim compatible with ceilings being installed.

PART 2 PRODUCTS 2.1 LUMINAIRES

- A. Acceptable Manufacture: Provide per Fixture Schedule on drawings.
1. Engineer approved substitute: Contractor may submit luminaires from other manufacturers. Contractor shall provide a full set of submittals per paragraph 1.2 of this specification section for Engineer and Architects approval. Contractor must have approved submittals stamped and dated from the Engineer and Architect minimum 10 days prior to bid.
B. Product Description: Complete luminaire assemblies, with features, options, and accessories as scheduled.
C. All luminaires shall be new and of specification grade.
D. Manufacturer nomenclature in fixture schedule or otherwise described on the Drawings is given only to show the general fixture series. Contractor shall provide fixture with all required accessories and mounting frame type.
E. Wire guard at fixtures in mechanical, electrical, and high abuse areas.

END OF SECTION 26 50 00

LOW-VOLTAGE ELECTRICAL DISTRIBUTION 26 20 00 - 6

LIGHTING 26 50 00 - 1

3.5 FIELD QUALITY CONTROL

- A. Testing: Demonstrate capability and compliance with requirements on completion of installation of underground ducts and utility structures.
B. Grounding: Test manhole grounding to ensure electrical continuity of grounding and bonding connections. Measure and report ground resistance.
C. Duct Integrity: Pull aluminum or wood test mandrel through duct to prove joint integrity and test for off-ground duct. Provide mandrel equal to 80 percent fill of the duct. If obstructions are indicated, remove obstructions and retest.
D. Correct installations if possible and refer to demonstrate compliance. Remove and replace defective products and retest.

END OF SECTION 26 05 43

- 1. Install precast covers and rings to support frame and cover and to connect cover with roof opening. Provide moisture-tight masonry joints and waterproof grouting for cast-iron frame chimney.
2. Set frames in paved areas and traffic ways flush with finished grade. Set other frames 1 inch above finished grade.
D. Waterproofing: Apply waterproofing to exterior surfaces of units after concrete has cured at least three days. After ducts have been connected and grouted, and before backfilling, waterproof joints and connections and touch up abrasions and scars. Waterproof exterior of manhole and hand hole chimneys after brick mortar has cured at least three days. Seal manhole section joints with sealing compound recommended by the manhole manufacturer. Penetration into manholes and/or boxes shall be sealed. Provide conduit duct plugs for unused termination openings of spare conduits in manhole. Do not water seal top removable cover until cables pulling has been completed.
E. Damp proofing: Apply damp proofing to exterior surfaces of units after concrete has cured at least three days. After ducts have been connected and grouted, and before backfilling, damp proof joints and connections and touch up abrasions and scars. Damp proof exterior of manhole and hand hole chimneys after brick mortar has cured at least three days.
F. Hardware: Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated.
G. Field-Installed Boring Anchors: Do not drill deeper than 3-7/8 inches for anchor bolts installed in the field. Use a minimum of two anchors for each cable stanchion.
H. Grounding: Install ground rod through floor in each structure with top protruding 6 inches above floor.
1. Seal floor opening against water penetration with waterproof nonshrunk grout around exposed bases, extend steel conduit a minimum of 5 feet from edge of base. Install insulated grounding bushings on terminations. Couple steel conduits to ducts with adapters designed for this purpose and encase coupling with 3 inches of concrete. Galvanized steel conduits installed below grade shall be painted with two coats of Koppers Bitumastic paint before installing in ground.
I. Precast Concrete Manhole Anchors: comply with ASTM C891.

- 1. Install units level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrance.
2. Unless otherwise indicated, support units on a 12" level bed of crushed stone or gravel, graded from 1-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth. Provide a minimum 6-inch level base of 1/2 inch crushed rock under manhole to ensure uniform distribution of soil pressure on floor.
3. Manholes below building floor shall have all earth work compacted to match compaction required by structural specifications.

UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEM 26 05 43 - 9

CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ALL ELECTRONIC TRIP SETTINGS PER MANUFACTURER RECOMMENDATIONS.
C. Electrical connections to all equipment furnished by any other division shall be coordinated with final approved equipment submittals from other divisions including but not limited to circuit breaker sizes, conduit sizes, wire sizes, fuse sizes, disconnect switch sizes and starter sizes that differ from those shown on the drawings prior to submitting Electrical Distribution Equipment submittal.

1.7 SHORT CIRCUIT CURRENT RATINGS

- A. General: All switchboards and panelboards shall be fully rated and marked with a maximum short circuit current rating. The equipment manufacturer shall have verified this rating with high-impedance testing. All short circuit current ratings are expressed as amperes RMS symmetrical at the applied voltage unless otherwise noted. All equipment shall withstand the specified level of fault current. All overcurrent devices shall interrupt the specified level of fault current.
3. symmetrical amperes when used with or protected by Class J fuses.
Non-Fuseable: 10,000 rms symmetrical amps.
F. Fuse Clips: NEMA FU 1, Class J fuses.

2.3 SINGLE CIRCUIT BREAKERS WITH ENCLLOSURES

- A. Product Description: Enclosed, molded-case circuit breaker conforming to NEMA AB 1, suitable for use as service entrance equipment where applied.
B. Circuit Breakers: Molded case, quick make, quick break, trip free, common thermal magnetic trip.
C. Ratings: Continuous current, poles as required, 480 volt system breaker shall interrupt short circuits up to 14,000 rms amperes symmetrical; on 120/208 - 240 volt system, 10,000 amperes symmetrical.
D. Enclosure: NEMA AB 1, to meet conditions. Fabricate enclosure from steel finished with manufacturer's standard gray enamel.
1. Interior Dry Locations: Type 1.
2. Exterior Locations: Type 3R.
E. Nameplate: Provide a nameplate showing load served.

2.4 BRANCH CIRCUIT PANELBOARDS

- A. Manufacturers: Square D Type NQ for 208/120V, type NF for 480/277V.
B. Product Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.
C. Panelboard Bus: Copper current carrying components, ratings as indicated on Drawings. Furnish copper ground bus in each panelboard.
D. For non-linear load applications subject to harmonics furnish 173 percent rated, plated copper, solid neutral.
E. Minimum Integrated Short Circuit Rating: 14,000 amperes rms symmetrical for 208-240/120 volt panelboards; 22,000 amperes rms symmetrical for 480 volt panelboards.
F. Molded Case Circuit Breakers: NEMA AB 1, both-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air conditioning equipment circuits, Class A ground fault interrupter circuit breakers as indicated on Drawings. Do not use tandem circuit breakers.
G. Enclosure: NEMA PB 1, Type 1 or Type 3R. All panelboards located in kitchen areas shall be flush mount with NEMA 4X Stainless Steel enclosures.
H. Cabinet Front: Safety dead front type with concealed trim clamps, concealed hinge, metal

2.2 MANUFACTURERS

- A. Unless indicated otherwise, all equipment in this section shall be provided from a single manufacturer. The product designations listed are to establish a level of quality. Acceptable manufacturers are:
1. Square D
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F. Molded Case Circuit Breakers: NEMA AB 1, both-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air conditioning equipment circuits, Class A ground fault interrupter circuit breakers as indicated on Drawings. Do not use tandem circuit breakers.
G. Enclosure: NEMA PB 1, Type 1 or Type 3R. All panelboards located in kitchen areas shall be flush mount with NEMA 4X Stainless Steel enclosures.
H. Cabinet Front: Safety dead front type with concealed trim clamps, concealed hinge, metal

LOW-VOLTAGE ELECTRICAL DISTRIBUTION 26 20 00 - 2

SECTION 26 50 00 LIGHTING
PART 1 GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes luminaires, drivers, and accessories. Provide all luminaires complete with all new drivers, completely wired, controlled, and securely attached to supports.
B. Lumen Maintenance:
1. Minimum L70 at 50K hours based on TM-21 Addendum A Lifetime report at an ambient temperature of 25° C, outdoors at an ambient temperature of 40° C.
D. Thermal Testing:
1. ISTM testing in accordance to UL 1598-2008.
E. Driver:
1. 0-10V dimmed.
2. Output Class 2 rated.
3. Dimming range: 5-100%.
4. Constant current.
5. THD @ max load: <20%.
6. Power factor: >0.95
7. Environment protection rating: UL Damp and dry.
8. Approbations: certified to UL8750, UL1310, UL935, CSA-C22.2 No. 250.13-12, CSA 22.2 No. 223.
9. ROHS Compliant.
F. Fixture Philosophy:
1. Conducted by a NULVAP accredited testing lab with IESNA LM 79-08.
2. System flux measured in delivered lumens.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements:
1. Provide luminaires listed by U.L.
2. Luminaires installed in outdoor areas unprotected from weather to be U.L. Listed for wet locations.
B. Certification: Certify that fixtures submittal have trim compatible with ceilings being installed.

PART 2 PRODUCTS 2.1 LUMINAIRES

- A. Acceptable Manufacture: Provide per Fixture Schedule on drawings.
1. Engineer approved substitute: Contractor may submit luminaires from other manufacturers. Contractor shall provide a full set of submittals per paragraph 1.2 of this specification section for Engineer and Architects approval. Contractor must have approved submittals stamped and dated from the Engineer and Architect minimum 10 days prior to bid.
B. Product Description: Complete luminaire assemblies, with features, options, and accessories as scheduled.
C. All luminaires shall be new and of specification grade.
D. Manufacturer nomenclature in fixture schedule or otherwise described on the Drawings is given only to show the general fixture series. Contractor shall provide fixture with all required accessories and mounting frame type.
E. Wire guard at fixtures in mechanical, electrical, and high abuse areas.

END OF SECTION 26 50 00

LOW-VOLTAGE ELECTRICAL DISTRIBUTION 26 20 00 - 6

LIGHTING 26 50 00 - 1

SECTION 26 05 53 IDENTIFICATION OF ELECTRICAL SYSTEMS

PART 1 GENERAL

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

1.2 SUMMARY