Tustin Unified
School District

TUSD

BARBARA BENSON ELEMENTARY SCHOOL

04-11-2024

OWNER

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BARBARA BENSON ELEMENTARY SCHOOL

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified
School District

Architect

REGISTERED ARCHITECT
BRUCE OU
C-34832
REN. 10/31/25
STATE OF CALIFORNIA

COVER SHEET

G0.00

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 2603.

C. ALL EXTERIOR JOINTS AND OPENINGS IN THE BUILDING ENVELOPE THAT ARE POTENTIAL AND OBSERVABLE SOURCES OF AIR LEAKAGE SHALL BE CAULKED, GASKETED, WEATHERSTRIPPED, OR OTHERWISE SEALED.

D. SITE CONSTRUCTED DOORS, WINDOWS, AND SKYLIGHTS SHALL BE CAULKED 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 (NFRC) 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-8.

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 COMNDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT IDENTIFIED BY THE CONTRACT DOCUMENTS WHERIN 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 THE ACCESSIBILITY STANDARDS OF THE CALIFORNIA BUILDING CODE, (CBC) 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 COMPLIANT RESOLUTION WILL BE FORMULATED.

26. FEMA NOTES:
FEMA FIRM PANEL #06059C0168J
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	☐ is/are in general conformance and ☐ have been coordinated
Signature: [signature] Date: APRIL 5, 2024	Signature: Date:
Architect or Engineer designated to be in general responsible charge: BRUCE OU	Architect or Engineer deligated responsibility for this portion of the work:
Print Name:	Print Name:
License Number: C34832 Expiration Date: OCTOBER 31, 2025	License Number: Expiration Date:

SCOPE OF WORK

RELOCATION OF (1) 24'X48' MODULAR CLASSROOM BUILDING FROM STOCKPILE (A#04-122805). SR1,# SR1# C232682A & C232682A. ASSOCIATED BUILDING WORK INCLUDES LOW VOLTAGE. AND FIRE ALARM. ASSOCIATED SITE WORK INCLUDES PAVING, ACCESSIBLE PARKING, MANUFACTURED RAMPS (A# 04-121419), BUILDING B AND C, RESTROOM UPGRADES.

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 9, 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 Marshall 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 Standpipe 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 253 Critical Radiant Flux of Floor Covering Systems	(2019 Edition)
NFPA 2001 Clean Agent Fire Extinguishing Systems (CA amended)	(2018 Edition)
ICC 300 ICC Stds on Bleachers, Folding and Telescoping Seating and Grand stands	(2017 Edition)
UL 300 Fire Testing of Fire Extinguishing Sys for Protection of Restaurant Cooking Areas	2005 (R2010)
UL 464 Audible Signal Appliances	(2003 Edition)
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.

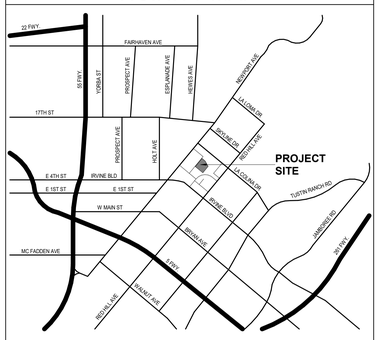
PROJECT DATA

PROJECT ADDRESS:
1382 Mitchell Ave
Tustin, CA 92780

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 I, 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



SHEET NUMBERING

A2.01A
- **BUILDING AREA**
- **SEQUENCE (.01 - .99.....etc.)**
- **SHEET DISCIPLINE TYPE**

DISCIPLINE

G - GENERAL (Cover, A0 Sheets)	0 - GENERAL
C - CIVIL	1 - SITE PLANS & DETAILS
L - LANDSCAPE	2 - FLOOR PLANS (Note: Flip Sheets are Schedules)
D - DEMO	3 - ROOF
A - ARCHITECTURAL	4 - ADA & ENLARGED PLANS
S - STRUCTURAL	5 - PLAN DETAILS
I - INTERIORS	6 - EXTERIOR/INTERIOR ELEVATIONS
M - MECHANICAL	7 - PARTITION TYPES & WALL SECTIONS
E - ELECTRICAL	8 - CASEWORK ELEVATIONS
P - PLUMBING	9 - WINDOWS, DOORS, FRAME ELEVATIONS & DETAILS
T - TECHNOLOGY	10 - REFLECTED CEILING PLANS & DETAILS

ABBREVIATIONS

A.D.	AREA DRAIN
A.D.A.	AMERICANS WITH DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
A.H.J.	ATHORITY HAVING JURISDICTION
A/C	AIR CONDITIONING
ACP.	ACOUSTICAL PANEL
ACT.	ACOUSTICAL TILE
ADJ.	ABADJUSTABLE
ALT.	ALTERNATE
ALUM.	ALUMINUM
ASPH.	ASPHALT
∠	ANGLE
B.U.R.	BUILT-UP ROOF
BD.	BOARD
BLDG.	BUILDING
BLK.	BLOCK
BM.	BEAM
C	CHANNEL
C.J.	CONTROL JOINT
C.M.U.	CONCRETE MASONRY UNIT
C.W.	COLD WATER
CAB., CABT	CABINET
CFMF	COLD FORMED METAL FRAMING
CL	CENTERLINE
CLG.	CEILING
CLR	CLEAR
COL.	COLUMN
COMP.	COMPRESSIBLE
CONC.	CONCRETE
COND.	CONDITION
CORR.	CORRIDOR
CPT.	CARPET (ED)
CT.	CERAMIC TILE
CTG	CLEAR TEMPERED GLAZING
CTSK.	COUNTER SINK
D	DRYER
D.F.	DRINKING FOUNTAIN
D.P.	DAMPPROOFING
D.S.	DOWN SPOUT
DIA.	DIAMETER
DIM.	DIMENSION
DTL.	DETAIL
DWG.	DRAWING
E.J.	EXPANSION JOINT
E.Q.	EQUAL
EA.	EACH
EDF	ELECTRIC DRINKING FOUNTAIN
EL.	ELEVATION (HEIGHT)
ELECT.	ELECTRICAL
ELEV	ELEVATION (DRAWING)
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.H.C.	FIRE HOSE CABINET
FB.	FACE BRICK
FD.	FLOOR DRAIN
FIN.	FINISH (ED)
FIXT.	FIXTURE
FLR.	FLOOR (ING)
FLSHG.	FLASHING
FLUOR	FLUORESCENT
G.B.	GRAB BAR
G.I.	GALVANIZED IRON
GA.	GAUGE
GALV.	GALVANIZED
GCMU	GLAZED CONCRETE MASONRY UNIT
GEN.	GENERAL
GEN.	GENERAL
GL.	GLASS / GLAZING
GL.	GLASS
GR.	GRADE
GTP.	GLAZED TILE PAVER
GYP.	GYPSUM DRYWALL
H.W.	HOT WATER
HM	HOLLOW METAL FRAME
HORIZ.	HORIZONTAL
HT.	HEIGHT
I.D.	INSIDE DIAMETER
I.P.S.	IRON PIPE SIZE
INSUL	INSULATE (ED), (ION)
INT.	INTERIOR
ISA	INTERNATIONL SYMBOL OF ACCESSIBILITY
JT.	JOINT
L.P.	LIGHT POLE
LAM.	LAMINATE (D)
LAV.	LAVATORY
LT.	LIGHT
LT. WT.	LIGHTWEIGHT
M.O.	MASONRY OPENING
MAS.	MASONRY
MATL.	MATERIAL (S)
MAX.	MAXIMUM
MB.	MARKER BOARD
MECH.	MECHANICAL
MEM	MEMBRANE
MEM. WP.	MEMBRANE WATERPROOFING
MEP	MECHANICAL, ELECTRICAL AND PLUMBING
MEZZ.	MEZZANINE
MFR.	MANUFACTURE (R)
MH.	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MOD	MODULAR
MTL	METAL
MTP.	METAL TOILET PARTITION
N.D.	NAPKIN DISPOSAL
N.I.C.	NOT IN CONTRACT
N.R.	NOT RATED
N.T.S.	NOT TO SCALE
N.V.	NAPKIN VENDOR
NO.	NUMBER
O.C.	ON CENTER (S)
O.C.E.W.	ON CENTER EACH WAY
O.D.	OUTSIDE DIAMETER
O.F.C.I.	OWNER FURNISHED, CONTRACTOR INSTALLED
O.H.	OPPOSITE HAND
OPNG.	OPENING
OPP.	OPPOSITE
P. LAM.	PLASTIC LAMINATE
P.C.	PRECAST
P.H.	PAPER HOLDER
P.L.	PROPERTY LINE
P.P.	POWER POLE
P.W.B.	PREFINISHED WALL BOARD
PL.	PLATE
PLUMB.	PLUMBING
PLYWD.	PLYWOOD
POL.	POLISHED
PR.	PAIR
PREFIN.	PRE-FINISHED
PT.	POINT
PTD.	PAINTED
Q.T.	QUARRY TILE
R / RAD	RADIUS
RD	ROOF DRAIN
RE. , REF.	REFER TO / REFERENCE / SEE
RECP.	RECEPTACLE
REINF.	REINFORCE (D), (ING)
REQ'D.	REQUIRED
RES.	RESILIENT
REV.	REVISION (S), REVISED
RF	RECREATIONAL RESILIENT FLOORING
RPG.	RELOCATABLE PAINTED GYPSUM BOARD
RSS.	ROD STOCK AND SEALANT
S.C.	SEALED CONCRETE
S.D.	SOAP DISPENSER
SCHED	SCHEDULE
SCPL	SOLID CORE PLASTIC LAMINATE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SPC	SPECIAL COATING SYSTEM
SPEC	SPECIFICATION (S)
SQ.	SQUARE
SS.	SOUND STRIP
SS. STL.	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUC	STRUCTURAL
SUSP	SUSPENDED
SVDF	SHEET VINYL DANCE FLOORING
SYS	SYSTEM
T.B.	TACK BOARD
T.D.R.	TOWEL DISPENSER AND RECEPTACL
T.O.	TOP OF
T.O.B.	TOP OF (WOOD) BLOCKING
T.O.M.	TOP OF MASONRY
T.O.S.	TOP OF STEEL
T.T.D.	TOILET TISSUE DISPENSER
TCNA	TILE COUNCIL OF NORTH AMERICA
TEL	TELEPHONE
TERR	TERRAZZO
THK	THICK (NESS)
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UR.	URINAL
V	VENT
V.C.T.	VINYL COMPOSITION TILE
V.I.F.	VERIFY IN FIELD
VENT.	VENTILATING, VENTILATED
VER.	VERIFY
VERT.	VERTICAL
VGB	(PREFINISHED) VINYL CLAD GYPSUM BOARD
VWC	VINYL WALL COVERING
W	WASHING MACHINE
W.P.	WATER PROOFING
W.S.	WEATHERSTRIP
W.W.	WATER WELL
W.W.F	WELDED WIRE FABRIC
W/	WITH
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WT	WEIGHT

DRAWING INDEX

TOTAL SHEET COUNT:

Not for permitting or construction

PBK

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Anaheim, CA 92806
P 949-548-5000

BARBARA BENSON ELEMENTARY SCHOOL

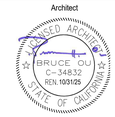
PROJECT ADDRESS:
12712 Elizabeth Way
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect



CLIENT
TUSD

DATE	PROJECT NUMBER
04-11-2024	230379

REVISIONS

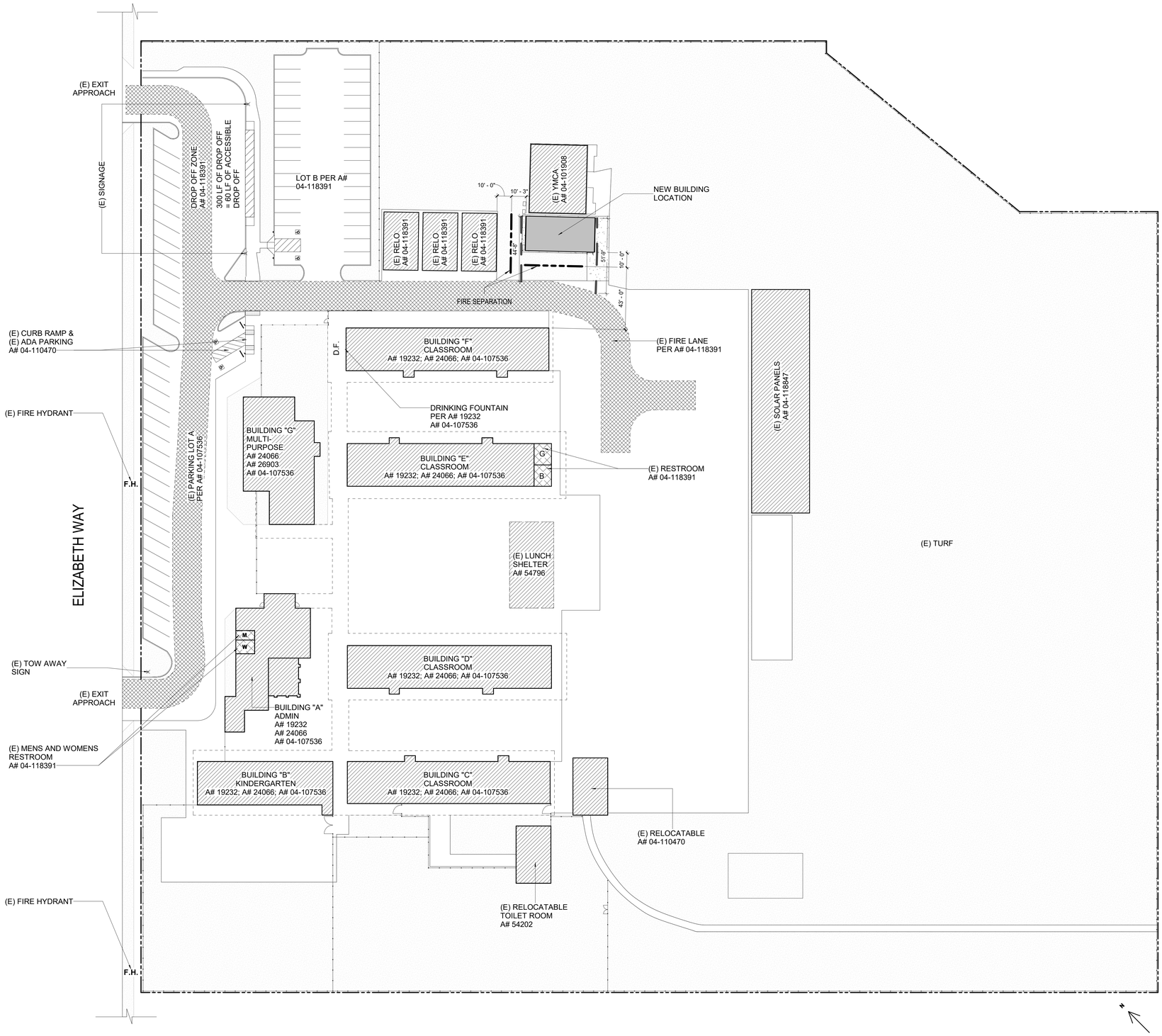
No.	Description	Date

This document is for plan review only

SHEET INDEX / GENERAL NOTES

G0.01

0" 1"



FRE ACCESS PLAN
1" = 30'-0"

1

SITE PLAN LEGEND

- (E) FIRE LANE A#04-118391
- PROPOSED RELOCATABLE BUILDINGS
- (E) BUILDING NIC
- PROPERTY LINE
- FIRE HOSE PULL

BUILDING FIRE FLOW DATA

BUILDING	960 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 consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for 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 7 is to be completed when an alternate means is utilized. Acknowledgement 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:	Barbara Benson Elementary School
Project Address:	12712 Elizabeth Way, Tustin, CA 92780

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 ☑		No ☐
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes ☐		No ☑
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 ☐		No ☑
	Refer to the following website for FHSZ locations: http://egis.fire.ca.gov/FHSZ/	Moderate ☐	High ☐	Very High ☐
	Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)*			WIFA ☐

DGS DSA 810 (revised 12/29/20)
DIVISION OF THE STATE ARCHITECT
DEPARTMENT OF GENERAL SERVICES
Page 1 of 4
STATE OF CALIFORNIA

FIRE FLOW TEST

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

Hydrant Flow Test Report

Project: **Benson Elementary School** Test date: **11/6/23**
Address: **12712 Elizabeth Way** Test time: **09:30**
City: **Tustin** State: **CA** File no.:

Test hydrant location: **In front of 12712 Elizabeth Way (center of parking lot)** Hydr #: Elev (ft +/-): **Grade**
Flow hydrant location: **In front of 12712 Elizabeth Way (west corner of fields)** Hydr #: Elev (ft +/-): **Grade**

Static Pressure **61** PSI Report Date **11/6/23**

Outlet	C-value	Diam	Pitot		Volume	
A	0.9	2.0	**0**	PSI	**0**	GPM
B	0.9	2.5	**21**	PSI	**769**	GPM
C	0.9	3.0	**0**	PSI	**0**	GPM
D	0.83	4.0	**0**	PSI	**0**	GPM

Residual Pressure **59** PSI at an observed volume of **769** GPM

Projected Pressure **20** PSI calculates to a volume of **3929** GPM

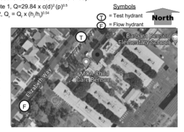
Although the results are accurate for the date and time given, they may not accurately reflect higher or lower readings which vary due to seasonal conditions and time of day.
Per NFPA 24-10, Table C.4.10.1(a), note 1, $Q=29.84 \times c(d)^2 (p)^{0.5}$
Per NFPA 24-10, Paragraph C.4.10.1.2, $Q_r = Q_t \times (h_r/h_t)^{0.54}$
Test by: Hildebrandt

Witness Dave Wallick
Tustin Water
(714) 573-3379

Client Tom Rizzuti
Tustin Unified School District
(949) 293-4850

cc: rmedina@tustinca.org
trizzuti@tustin.k12.ca.us

Symbols
S = Test hydrant
R = Flow hydrant



Not for permitting or construction

PBK

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

BARBARA BENSON ELEMENTARY SCHOOL

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

LICENSED ARCHITECT BRUCE OU C-34832 REN: 10/31/25 STATE OF CALIFORNIA

CLIENT
TUSD

DATE
04-11-2024

PROJECT NUMBER
230379

REVISIONS

No.	Description	Date

This document is for plan review only

FIRE ACCESS SITE PLAN

G0.03

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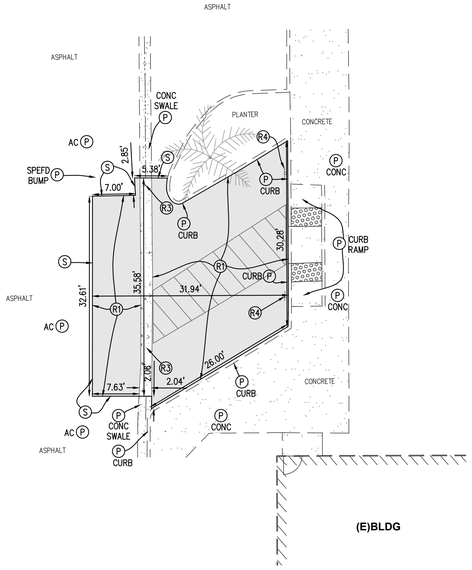

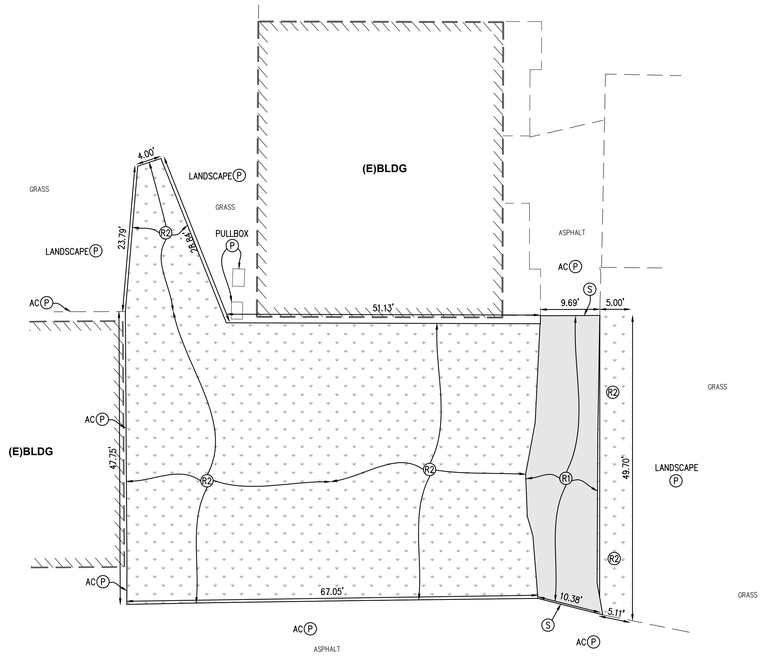

HATCH LEGEND:

= PROTECT EXISTING BUILDING

= REMOVE EXISTING CONCRETE SWALE (R3)

= REMOVE EXISTING ASPHALT (R1) PAVEMENT

= CLEAR & GRUB EXISTING (R2) LANDSCAPE

SITE DEMOLITION NOTES

- (P) PROTECT EXISTING IMPROVEMENT IN PLACE.
- (S) SAWCUT EXISTING ASPHALT PAVEMENT WITH CLEAN EDGE.
- (R) REMOVE & DISPOSE OF EXISTING IMPROVEMENT.
- (R1) REMOVE & DISPOSE EXISTING ASPHALT PAVEMENT.
- (R2) CLEAR & GRUB EXISTING LANDSCAPE.
- (R3) REMOVE & DISPOSE OF CONCRETE SWALE.
- (R4) REMOVE, STORE AND REINSTALL EXISTING ADA PARKING STALL SIGNAGE AFTER NEW ASPHALT INSTALLATION.

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

GENERAL DEMOLITION NOTES

1. 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 SCHOOLS REPRESENTATIVE PRIOR TO CLEARING AND GRUBBING.
2. 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.
3. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIAL.
4. ALL CONCRETE & CMU BLOCK WALLS & PLANTERS SHOWN ON THIS PLAN TO BE REMOVED SHALL INCLUDE WALL FOOTINGS & FOUNDATIONS IN THEIR REMOVAL.
5. 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.
6. 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.
7. TEMPORARY EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAIN, SANITARY SEWERS AND STREETS.
8. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
9. THE PROVISIONS OF CALIFORNIA FIRE CODE CHAPTER 14 AND CALIFORNIA BUILDING CODE CHAPTER 37 SHALL BE ENFORCED ON THIS PROJECT.
10. 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.
11. 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.
12. 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.
13. THE CONTRACTOR SHALL BACKFILL SOIL IN THE EXCAVATED TREE ROOT PITS AND THE TRENCHES FOR REMOVED EXISTING UNDERGROUND STRUCTURES, UTILITIES, AND IMPROVEMENTS.
14. 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.
15. CONTRACTOR TO SAWCUT ALL EXISTING A.C. AND CONCRETE PAVEMENT AT DEMOLITION LIMIT LINE. CONTRACTOR SHALL REMOVE SIDEWALK, CURB & GUTTER TO THE NEAREST JOINT.
16. CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS OUTSIDE THE DEMOLITION LIMIT LINE THAT ARE DAMAGED DURING CONSTRUCTION TO MATCH EXISTING, INCLUDING PERMANENT TRENCH RESURFACING.
17. CONTRACTOR SHALL FIELD VERIFY THAT THE REMOVAL OF EXISTING UTILITIES WILL NOT IMPACT AREA OPERATIONS.
18. 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.
19. CONTRACTOR IS RESPONSIBLE TO KEEP ALL UTILITES OPERATIONAL THAT SERVES FACILITIES OUTSIDE THE SCOPE OF THE DEMOLITION ZONE. CONTRACTOR IS ALSO RESPONSIBLE TO REROUTE UTILITIES IF NECESSARY TO COMPLETE DEMOLITION.
20. CONTRACTOR SHALL INSTALL A TEMPORARY MINIMUM 8' HIGH CHAIN LINK CONSTRUCTION FENCE, WITH GREEN SCREEN, AROUND PERIMETER OF DEMOLITION AREA.
21. 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.
22. CONTRACTOR SHALL COMPLY WITH CALIFORNIA FIRE CODE CHAPTER 33 - FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION.

10 5 0 10 20 30

SCALE: 1" = 10'

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

PBK

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

BARBARA BENSON ELEMENTARY SCHOOL

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

REGISTERED PROFESSIONAL ENGINEER
No. C 34971
Exp. 06-30-25
CIVIL
STATE OF CALIFORNIA

Architect

REGISTERED ARCHITECT
BRUCE OU
C-34832
REN. 10/31/25
STATE OF CALIFORNIA

CLIENT
TUSD

DATE	PROJECT NUMBER
XXXX	230379

REVISIONS

No.	Description	Date

SITE DEMOLITION PLAN

C1.00

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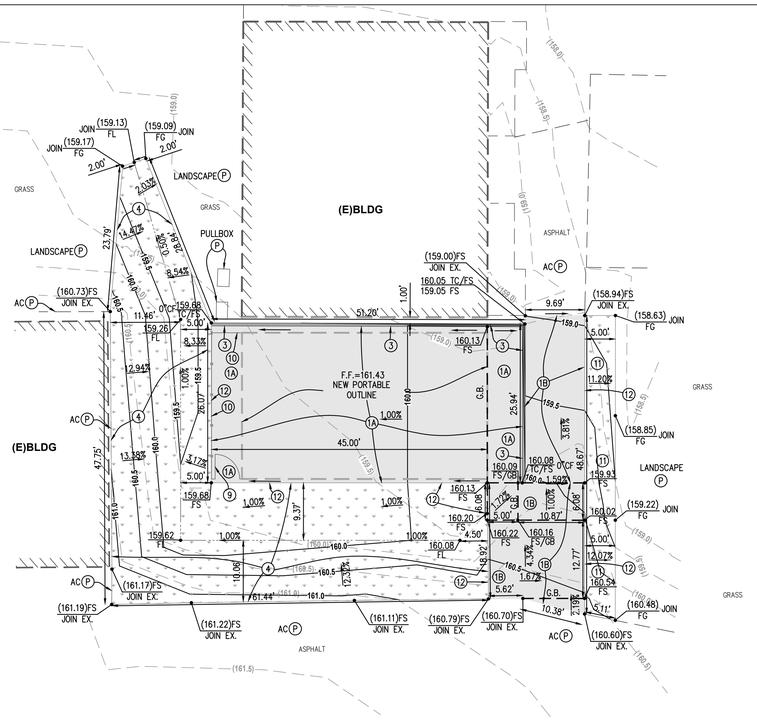
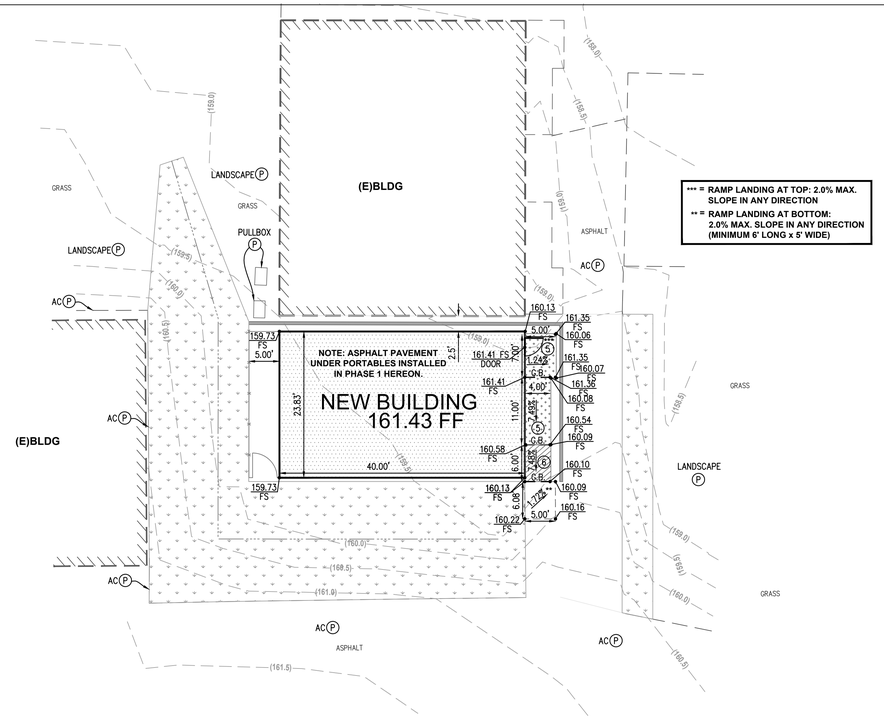


PHASE 1 ASPHALT PAVEMENT INSTALLATION

SCALE: 1" = 10'



*** = 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)

PHASE 2 PORTABLE BUILDING INSTALLATION

SCALE: 1" = 10'

HATCH LEGEND:

- = PROPOSED PORTABLE BUILDING
- = NEW ASPHALT PAVING
- = PROPOSED PORTABLE BUILDING RAMP OVER ASPHALT PAVEMENT CONSTRUCTED IN PHASE 1
- = ASPHALT RAMP
- = PROTECT EXISTING BUILDING
- = REGRADE EXISTING LANDSCAPE/ INSTALL NEW LANDSCAPE

10 5 0 10 20 30

SCALE: 1" = 10'

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.
(2) CONSTRUCT CONCRETE SWALE PER DETAIL 2/C3.00 AND GRADES HEREON.
(3) CONSTRUCT VARIABLE HEIGHT CONCRETE CURB PER DETAIL 3/C3.00 AND GRADES HEREON.
(4) REGRADE EXISTING LANDSCAPE AND INSTALL NEW LANDSCAPE TO CONSTRUCT A GRASS SWALE PER GRADES HEREON. ADJUST IRRIGATION AS NEEDED.
(5) CONSTRUCT PORTABLE BUILDING RAMP PER GRADES HEREON OVER EXISTING ASPHALT.
(6) CONSTRUCT ASPHALT RAMP WITH METAL HANDRAILS PER ARCHITECTURAL DETAILS AND GRADES HEREON.
(7) CONSTRUCT TRUNCATED DOMES PER ARCHITECTURAL PLANS.
(8) CONSTRUCT WHEEL STOP PER ARCHITECTURAL PLANS.
(9) CONSTRUCT GATE PER ARCHITECTURAL PLANS.
(10) CONSTRUCT CHAIN LINK FENCE PER ARCHITECTURAL PLANS.
(11) REGRADE EXISTING LANDSCAPE AND INSTALL NEW LANDSCAPE TO MATCH EXISTING. ADJUST IRRIGATON AS NEEDED.
(12) CONSTRUCT REDWOOD HEADER PER DETAIL 12/C3.00.

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.

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 STORMWATER CONSTRUCTION GENERAL PERMIT 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 TRENCHING OR DEMOLITION OCCURS, THE CONTRACTOR SHALL COMPLETE AN UNDERGROUND UTILITY MAPPING SURVEY OF THE PROJECT AREA TO DETERMINE WERE EXISTING UTILITIES ARE AND WHERE POSSIBLE UNDERGROUND CONFLICTS MAY OCCUR.

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.

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 SW'LY CORNER OF A 5' X 5' CATCH BASIN, MONUMENT IS LOCATED 40' S'LY OF THE CENTERLINE OF 17TH STREET, 150' W'LY OF THE CENTERLINE OF HEWES AVENUE AT THE 18692 17TH STREET ADDRESS.

ELEVATION=192.843 FT NGVD88 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 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 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

GENERAL NOTES TO CONTRACTOR

1. 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.
2. SCOPE OF WORK:
   A. PROVIDE ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT & FACILITIES NECESSARY TO FURNISH, FABRICATE, DELIVER, STORE AND INSTALL ALL WORK NOTED ON THE DRAWINGS.
   B. 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.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY AVAILABLE SPACES FOR INSTALLING THE WORK.
4. 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.
5. 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.
6. 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.
7. 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.

GENERAL NOTES FOR GRADING

1. ALL WORK SHALL CONFORM WITH THE "GREENBOOK" STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), 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.
2. 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.
3. 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 FENCES OR OTHER METHODS AS DIRECTED BY THE CONSTRUCTION MANAGER OR FIELD INSPECTOR THROUGHOUT THE CONSTRUCTION OPERATION AND SHALL INCORPORATE IN BASE BID.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. EITHER WATER OR DUST PALLIATIVE, OR BOTH, MUST BE APPLIED FOR THE ALLEVIATION OR PREVENTION OF EXCESSIVE DUST RESULTING FROM THE LOADING OR TRANSPORTATION OF EARTH FROM OR TO THE PROJECT SITE OR PRIVATE AND PUBLIC ROADWAYS.
10. 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.

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CLIENT
TUSD

DATE	PROJECT NUMBER
XXXX	230379

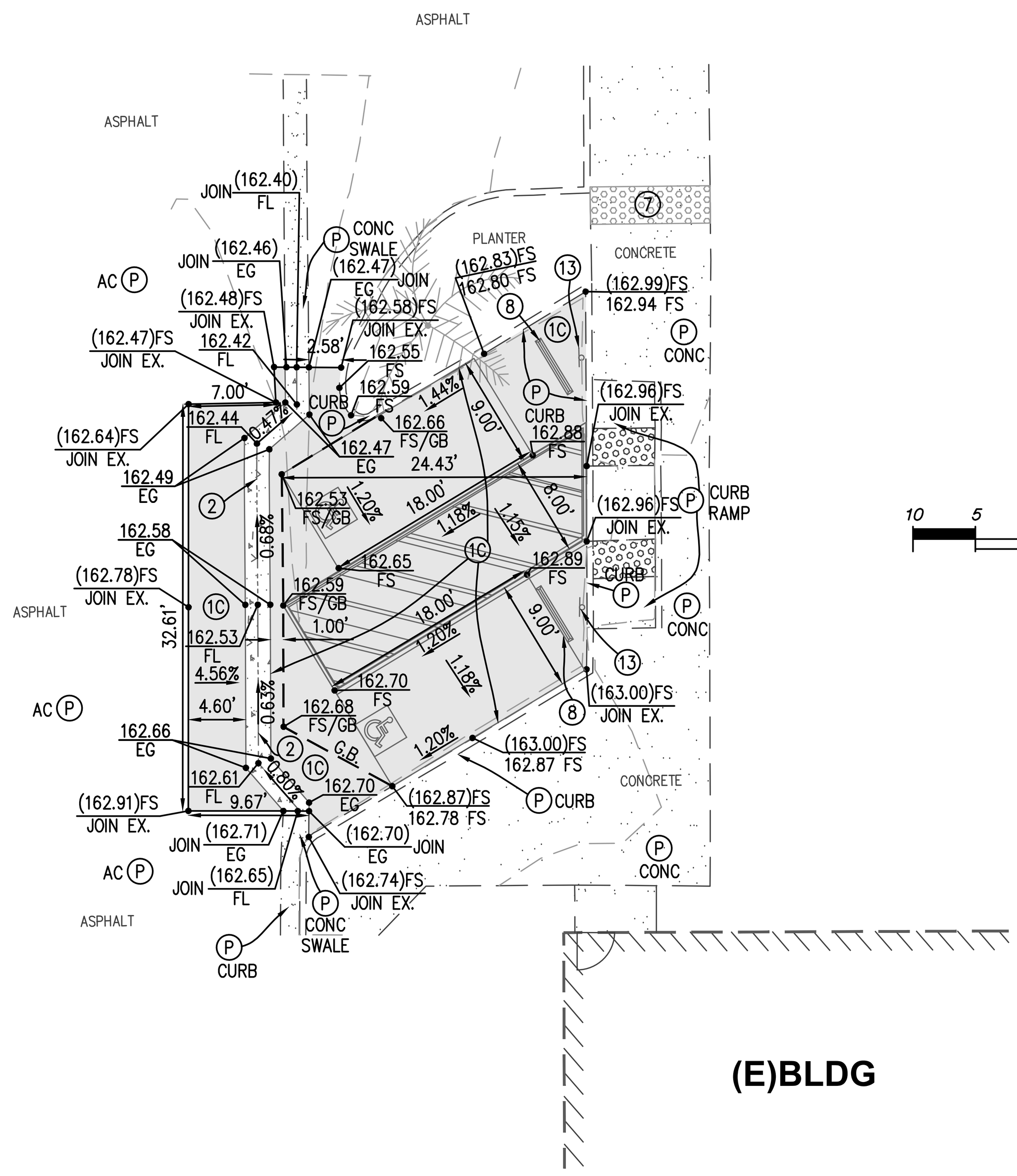
REVISIONS

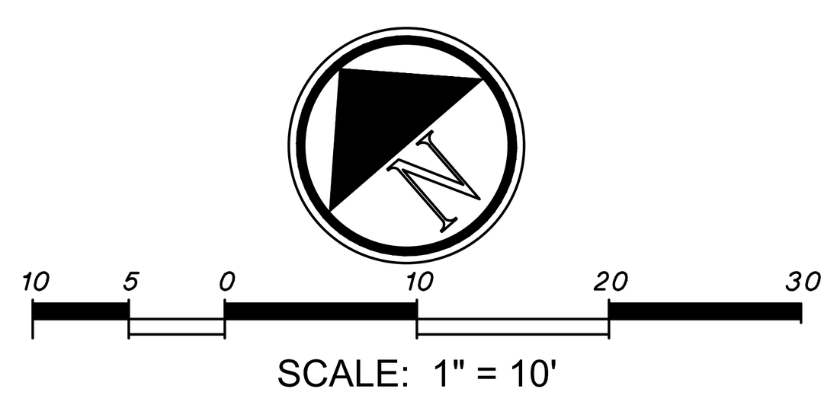
No.	Description	Date

GRADING PLAN

C2.00

Plot Date: 3/25/2024 3:59:23 PM Last Save By: ron.conedy Login: Ron Conedy S:\Jobs\2777 - PBK\2777.pgp - Tustin USD Portables\2777.pgp1 - Benson ES\Civil\Benson ES C2.00 - Grading Plan.dwg





HATCH LEGEND:

= NEW ASPHALT PAVING

= EXISTING BUILDING

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.
- (2) CONSTRUCT CONCRETE SWALE PER DETAIL 2/C3.00 AND GRADES HEREON.
- (3) CONSTRUCT VARIABLE HEIGHT CONCRETE CURB PER DETAIL 3/C3.00 AND GRADES HEREON.
- (4) REGRADE EXISTING LANDSCAPE AND INSTALL NEW LANDSCAPE TO CONSTRUCT A GRASS SWALE PER GRADES HEREON. ADJUST IRRIGATION AS NEEDED.
- (5) CONSTRUCT PORTABLE BUILDING RAMP PER GRADES HEREON OVER EXISTING ASPHALT.
- (6) CONSTRUCT ASPHALT RAMP WITH METAL HANDRAILS PER ARCHITECTURAL DETAILS AND GRADES HEREON.
- (7) CONSTRUCT TRUNCATED DOMES PER ARCHITECTURAL PLANS.
- (8) CONSTRUCT WHEEL STOP PER ARCHITECTURAL PLANS.
- (9) CONSTRUCT GATE PER ARCHITECTURAL PLANS.
- (10) CONSTRUCT CHAIN LINK FENCE PER ARCHITECTURAL PLANS.
- (11) REGRADE EXISTING LANDSCAPE AND INSTALL NEW LANDSCAPE TO MATCH EXISTING. ADJUST IRRIGATON AS NEEDED.
- (12) CONSTRUCT REDWOOD HEADER PER DETAIL 12/C3.00.
- (13) REINSTALL EXISTING ADA PARKING SIGNAGE & POSTS.

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 SW'LY CORNER OF A 5' X 8' CATCH BASIN,
MONUMENT IS LOCATED 40' S'LY OF THE CENTERLINE OF 17TH STREET, 150' W'LY OF THE CENTERLINE OF HEWES AVENUE AT THE 18692 17TH STREET ADDRESS.

ELEVATION=192.843 FT NGVD88 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 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 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

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 STORMWATER CONSTRUCTION GENERAL PERMIT 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 TRENCHING OR DEMOLITION OCCURS, THE CONTRACTOR SHALL COMPLETE AN UNDERGROUND UTILITY MAPPING SURVEY OF THE PROJECT AREA TO DETERMINE WERE EXISTING UTILITIES ARE AND WHERE POSSIBLE UNDERGROUND CONFLICTS MAY OCCUR.

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.

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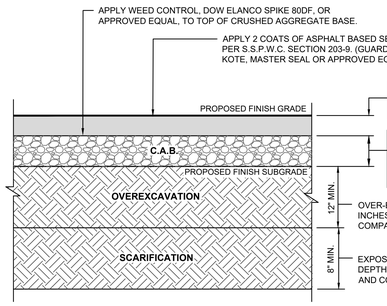
GRADING PLAN

C2.01

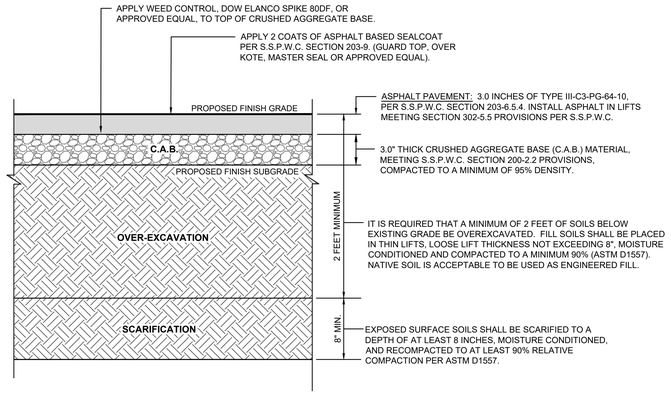
0" 1"



1B 1C ASPHALT PAVEMENT SECTION DETAIL
NOT TO SCALE

FLOOD TEST NOTE:

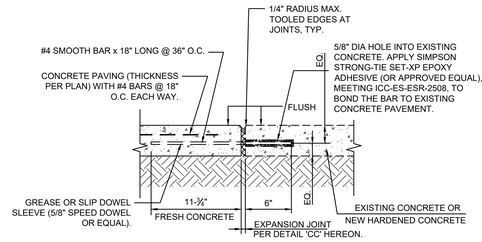
BEFORE ACCEPTANCE, ALL NEW ASPHALT SHALL BE WATER TESTED TO ENSURE PROPER DRAINAGE AS DIRECTED BY THE INSPECTOR. THE CONTRACTOR SHALL PROVIDE WATER FOR THIS PURPOSE. THE FLOODING SHALL BE DONE BY WATER TANK TRUCK. DEPRESSIONS WHERE THE WATER PONDS TO A DEPTH OF MORE THAN 0.01 FOOT SHALL BE FILLED WITH 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.



1A ASPHALT PAVEMENT SECTION DETAIL
NOT TO SCALE

FLOOD TEST NOTE:

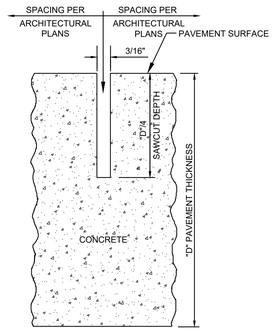
BEFORE ACCEPTANCE, ALL NEW ASPHALT SHALL BE WATER TESTED TO ENSURE PROPER DRAINAGE AS DIRECTED BY THE INSPECTOR. THE CONTRACTOR SHALL PROVIDE WATER FOR THIS PURPOSE. THE FLOODING SHALL BE DONE BY WATER TANK TRUCK. DEPRESSIONS WHERE THE WATER PONDS TO A DEPTH OF MORE THAN 0.01 FOOT SHALL BE FILLED WITH 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.



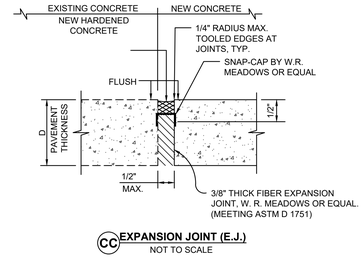
NOTE:1. VERTICAL CHANGE IN ELEVATION ALONG ACCESSIBLE PATH OF TRAVEL CANNOT EXCEED 1/4" PER CBC 11B-303.2

2. LEVEL CHANGE BETWEEN 1/4"-1/2" MUST BE BEVELED AT 1:2 MAX PER CBC 11B-303.3

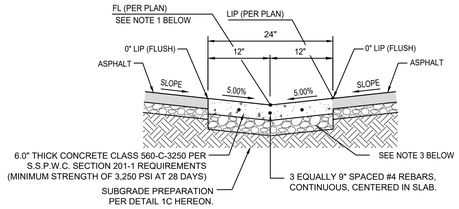
AA EXPANSION JOINT (E.J.) WITH REBAR
NOT TO SCALE



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



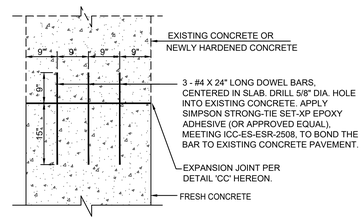
CC EXPANSION JOINT (E.J.)
NOT TO SCALE



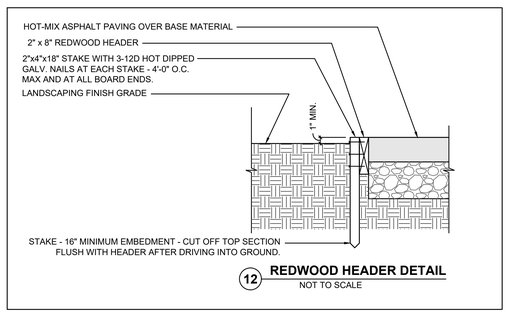
2 CONCRETE SWALE DETAIL
NOT TO SCALE

CONCRETE SWALE NOTES:

1. CONCRETE SWALE SHALL HAVE A 4" WIDE FLOWLINE SMOOTH STEEL TROWEL FINISH.
2. CONSTRUCT CONTROL JOINTS IN SWALE AT REGULAR INTERVALS OF 10'. CONSTRUCT EXPANSION JOINTS AT 30' INTERVALS. FOLLOW JOINT DETAILS HEREON.
3. A 4" THICK LAYER OF CRUSHED AGGREGATE BASE MATERIAL SHALL BE PLACED UNDER THE CONCRETE SWALE. MINIMUM COMPACTION OF 95% ON SUBGRADE IS REQUIRED.



DOWELED JOINT DETAIL IN SWALE
PLAN VIEW
NOT TO SCALE



12 REDWOOD HEADER DETAIL
NOT TO SCALE

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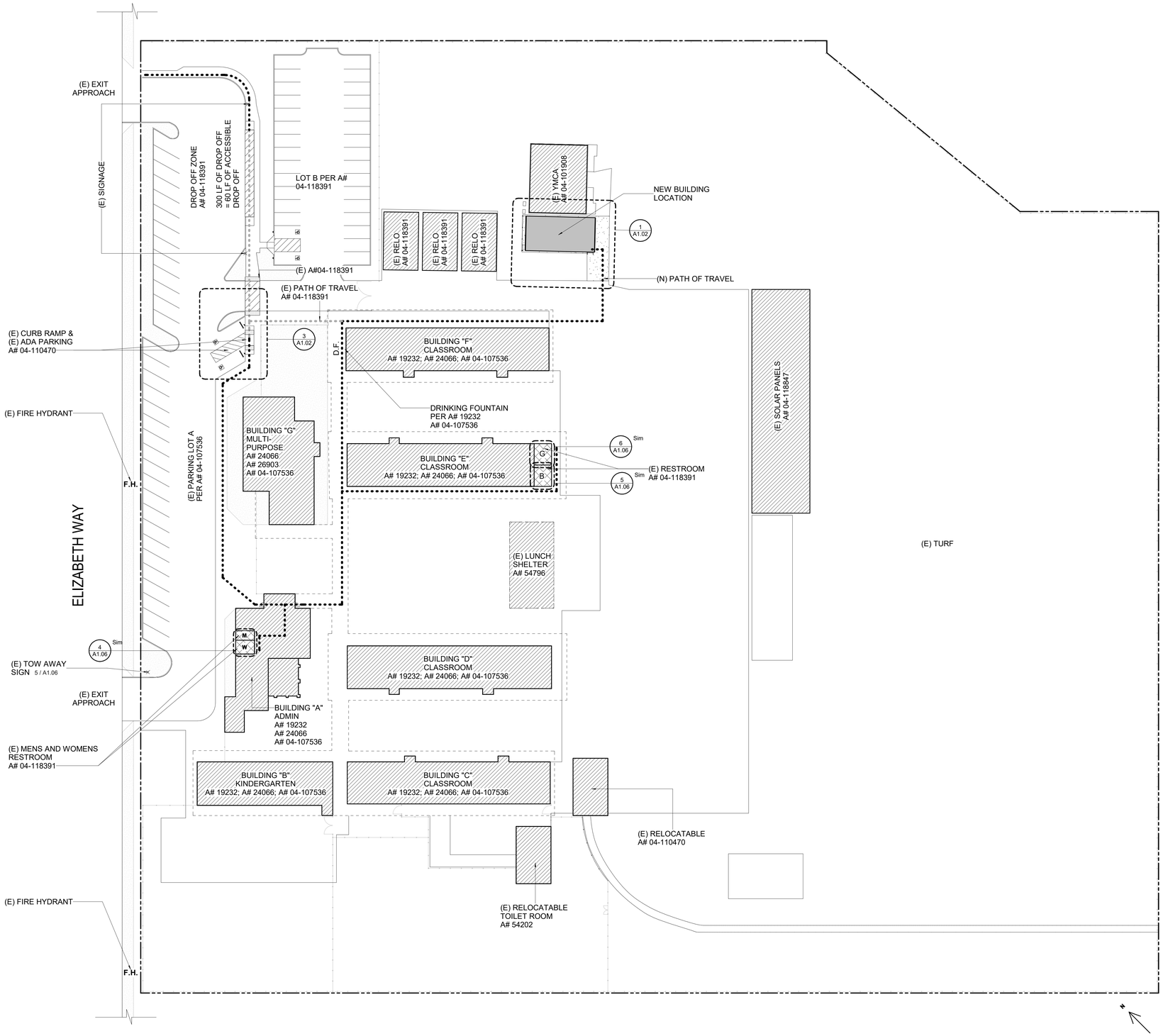
DETAIL SHEET

C3.00

0" 1"



SITE GENERAL NOTES

1. SEE CIVIL FOR TOPOGRAPHIC DATA, GRADING, DRAINING, AND UTILITY INFORMATION.
2. SEE CIVIL FOR DIMENSIONS, DETAILS AND INFORMATION OF ALL FLATWORK.
3. ALL NEW WALK SURAFCES IN P.O.T. SHALL HAVE FLUSH TRANSITION TO ALL ADJACENT NEW OR EXISTING CONCRETE/AC PAVING, U.N.O.
4. 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.
5. 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 ½" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING ¼" 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:

1. CLEAR OPENING WIDTH FOR A DOOR SHALL BE 32 INCHES MINIMUM. CBC SECTION 11B-404.2.3
2. 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-404.2.7
3. THE LEVERS 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 CLOTHEING OR PERSONS PER CALIFORNIA REFERENCED STANDARDS CODE. T-24 PART 12, SECTION 12-10-202, ITEM (F).
4. 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. SLB. MAX. FORCE FOR DOOR OPERATION.
5. 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.
6. 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 OPTEN POSITION OF 90 DEGREES TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM. SPRING HINGES AHLL 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.
7. THRESHOLDS SHALL COMPLY WITH CBC SECTION 11B-404.2.5.
8. FLOOR STOPS SHALL NOT BE LOCATED IN THE PATH OF TRAVEL AND 4" MAXIMUM FROM THE WALLS.
9. HARWARE (INCLUDING PANIC HARWARE) 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 HARWARE 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).
10. 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 ABRAISIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED. CBC SECTION 11B-404.2.10.

SITE PLAN LEGEND

- PROPERTY LINE
- (E) BUILDING, NOT IN SCOPE
- SCOPE OF WORK (N) RELOCATABLE BLDGS
- RESTROOM
- (N) PATH OF TRAVEL
- (E) PATH OF TRAVEL A# 04-118391

D.F.	DRINKING FOUNTAIN PER 28 / A1.10
M	MEN RESTROOM (AGES 13 & ABOVE) PER 4 / A1.06
W	WOMEN RESTROOM (AGES 13 & ABOVE) PER 4 / A1.06
B	BOYS RESTROOM (AGES 5 THROUGH 8) PER 5 / A1.06
G	GIRLS RESTROOM (AGES 5 THROUGH 8) PER 6 / A1.06

(E) PARKING CALCULATION

(E) BARBARA BENSON ELEMENTARY SCHOOL PARKING CALCULATION

PARKING LOT A

TOTAL STALLS	35
REGULAR STALLS	33
ACCESSIBLE STALLS	2 (INCLUDING 1 VAN)

PARKING LOT B

TOTAL STALLS	31
REGULAR STALLS	29
ACCESSIBLE STALLS	2 (INCLUDING 1 VAN)

SITE PLAN 1" = 30'-0" | 1

Not for permitting or construction

PBK

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Tustin Unified School District

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Architect

REGISTERED ARCHITECT BRUCE OU C-34832 REN. 10/31/25 STATE OF CALIFORNIA

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TUSD

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04-11-2024	230379

REVISIONS

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OVERALL SITE PLAN

This document is for plan review only

A1.01

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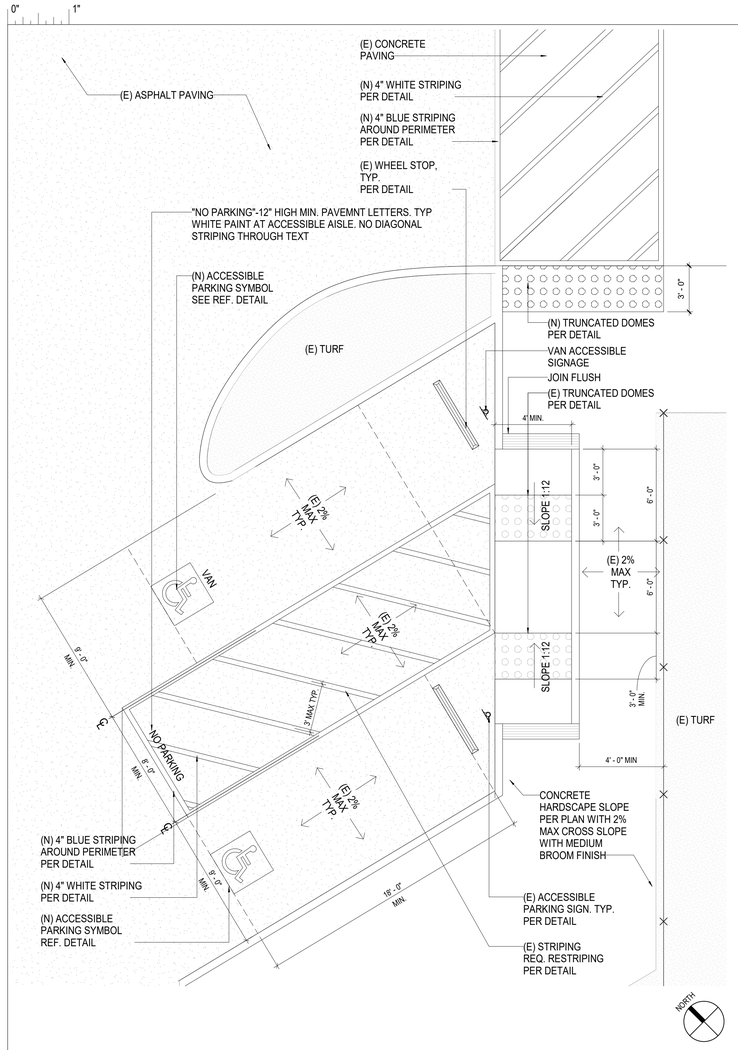
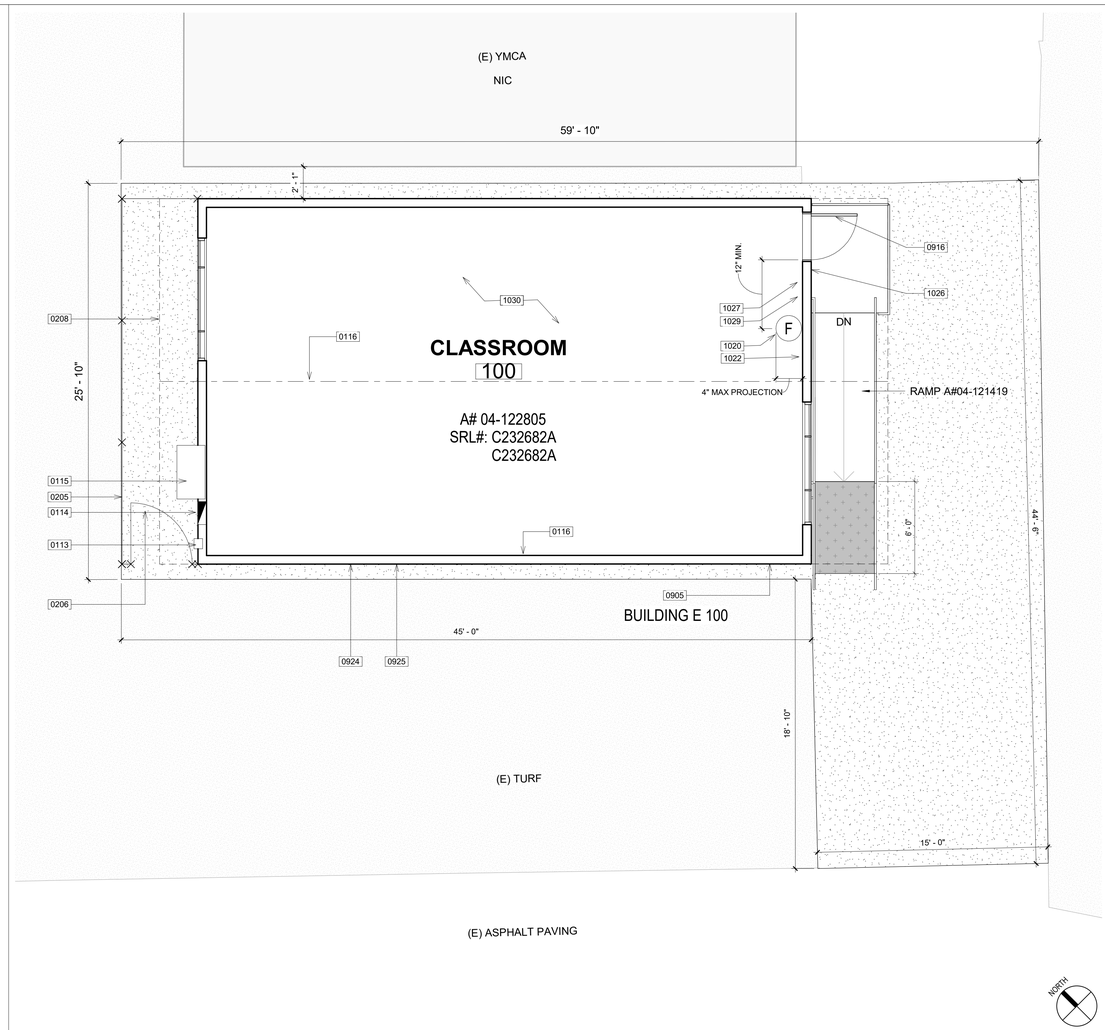
A1.02 - ENLARGED SITE PLAN



ENLARGED ADA PARKING PLAN 3
1/4" = 1'-0"



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

GENERAL NOTES

ALL FINISH MATERIALS MUST MEET THE FLAME SPREAD RATNGS PER THE BUILDING CODE.

1. REFER TO INTERIOR ELEVATIONS FOR SPECIFIC MATERIAL LOCATIONS.
2. PAINT ALL EXPOSED DUCTWORK, CONDUIT, ELECTRICAL EQUIPMENT, ETC TO MATCH ADJACENT SURFACES.
3. PAINT ALL NON-FACTORY FINISHED EXPOSED METAL.
4. REFER TO TYPICAL FLOORING TRANSITION DETAILS FOR ALL FLOORING MATERIALS.
5. FLOORING TRANSITIONS AT DOORS SHOULD BE LOCATED UNDER THE DOOR IN THE CLOSED POSITION, UNLESS NOTED OTHERWISE.
6. CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING FINISHED FLOORING SURFACES FROM DAMAGE DURING ALL CONSTRUCTION PHASES.
7. PROVIDE BULLNOSE TRIM AT TRANSITIONS FROM CERAMIC WALL TILE TO OTHER MATERIAL, UNLESS NOTED OTHERWISE.
8. REFER TO REFLECTED CEILING PLANS FOR CEILING HEIGHTS.
9. ALL ELECTRICAL DEVICE COVERS ARE TO BE WHITE UNLESS NOTED OTHERWISE.
10. CARPET PATTERNS TO RUN PARALLEL TO CORRIDOR, UNLESS NOTED OTHERWISE.
11. ALL HOLLOW METAL DOOR FRAMES TO BE PAINTED TO MATCH ADJACENT WALL COLOR.
12. IF PC DOOR HARWARE 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 ND75PB RHO (RHODES) CLASSROOM SERCURITY LEVEL LOCK, 626 FINISH. THE PC DOOR HARWARE IS TO BE REMOVED AND TO BE PROTECTED AND RETURNED TO THE OWNER.
13. CONTRACTOR TO VERIFY ALL WINDOWS ARE SCREWED SHUT AND NON-OPERABLE.
14. CONTROL JOINT (CJ) SPACING SHALL NOT EXCEED 8'-0" ON CENTER AND EXPANSION JOINTS (EJ) ARE PLACED AT EVERY 3RD CONTROL JOINT PER C4.00

KEYNOTE	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
0205	(E) CHAINLINK FENCE & GATES, PROTECT IN PLACE
0206	(N) 5'-0" HIGH 3'-0" WIDE GATE, PER DETAIL9 / A1.10
0208	(N) 5'-0" CHAIN LINK FENCE PER DETAIL6 / A1.10
0905	PROVIDE BUILDING IDENTIFICATION ON EXTERIOR OF BUILDING. PAINT 12" HIGH LETTERING OF CONTRASTING COLOR TO BACKGROUND
0916	PAINT EXTERIOR DOOR,VISTA PAINT, VP24-19071 (semi-gloss)
0924	PAINT EXTERIOR WALLS,VISTA PAINT, VP24-11941 (flat)
0925	PAINT EXTERIOR TRIMS,VISTA PAINT, VP24-11938 (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.1 / A1.11
1029	ASSISTIVE LISTENING SIGN PER DTL2 / A1.11
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
- (N) 5'-0" HIGH CHAIN LINK FENCING
- (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

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Tustin Unified School District

Consultant

Architect

LICENSED ARCHITECT BRUCE OU C-34832 REN: 10/31/25 STATE OF CALIFORNIA

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ENLARGED SITE PLAN

A1.02

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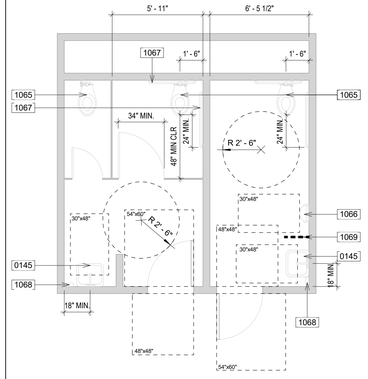
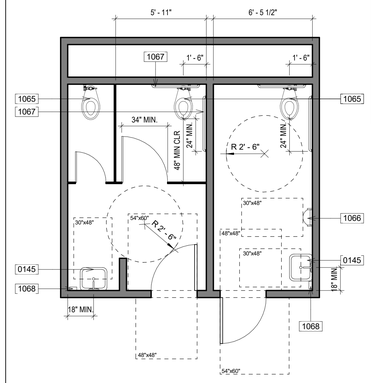
0" 1"



(E) ENLARGED MEN & WOMEN RR 4
1/4" = 1'-0"



(N) ENLARGED MEN & WOMEN RR 1
1/4" = 1'-0"

REFERENCE NOTES

KEYNOTE	DESCRIPTION
0101	ACCESSIBLE HI-LO DRINKING FOUNTAIN, PROTECT IN PLACE
0102	(N) CURB PER CIVIL PAINT RED PER CFC 503.3
0103	(E) ACCESSIBLE CURB RAMP
0104	(E) ACCESSIBLE PARKING
0105	(E) VAN ACCESSIBLE PARKING
0145	PROTECT IN PLACE (E) SINK
1065	
1066	
1067	
1068	
1069	
1070	
1071	

DEMO GENERAL NOTES

1. WHERE TILE AND MORTAR BED IS DEMOLISHED, PATCH AND REPAIR FLOOR AS REQUIRED FOR NEW FINISH.
2. FIELD VERIFY ALL DIMENSIONS FOR EXISTING BUILDINGS.
3. PROTECT IN PLACE ALL ITEMS, UNO.
4. 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.
5. 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.
6. EXISTING MARKER BOARDS TO BE REMOVED, PROTECTED AND RETURNED TO DISTRICT.

DEMO PLAN LEGEND

(E) STUD WALL TO REMAIN

DEMO PLUMBING FIXTURE, SEE PLUMBING.

(E) ITEM TO BE DEMOLISHED

GENERAL NOTES

1. PATCH AND REPAIR CONCRETE FLOOR SLAB BELOW DEMOLISHED WALLS, DOOR FRAMES, AND OTHER REMOVED ITEMS. PREP FOR NEW FINISHES.
2. PATCH AND REPAIR (E) ADJOINING WALLS NOT TO BE DEMOLISHED AND PREP FOR NEW FINISHES AS REQUIRED, UNO.
3. WALLS ARE FULL HEIGHT TO THE UNDERSIDE OF THE STRUCTURE ABOVE UNO.
4. 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

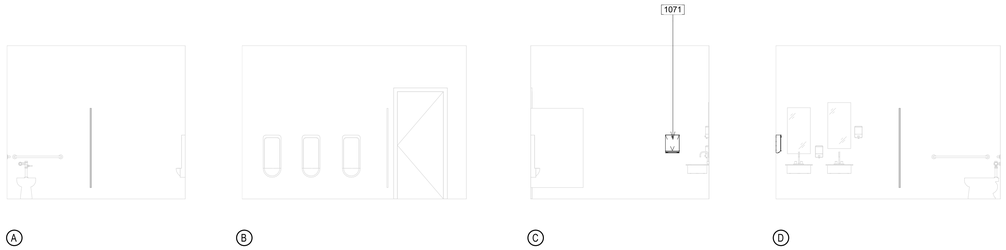
24" @ EXT DOORS
18" MIN CLR — DOOR

12" MIN CLR — REQUIRED CLEARANCES AT ALL DOORS TYPICAL @ INTERIOR

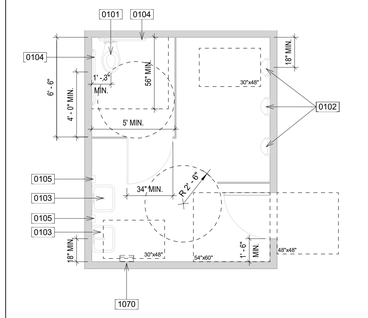
(N) ITEM TO BE INSTALLED

30" X 48" MIN. ACCESSIBLE CLEARANCE SYMBOL

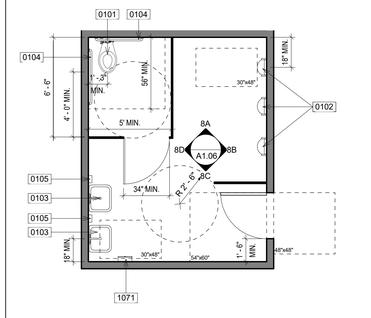
60" DIA. TURN AROUND ACCESSIBLE CLEARANCE SYMBOL



BOY'S RESTROOM INTERIOR ELEVATIONS 8
1/2" = 1'-0"

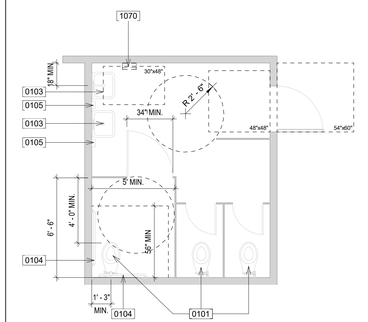


(E) ENLARGED BOYS RR (AGE 5-8) 5
1/4" = 1'-0"

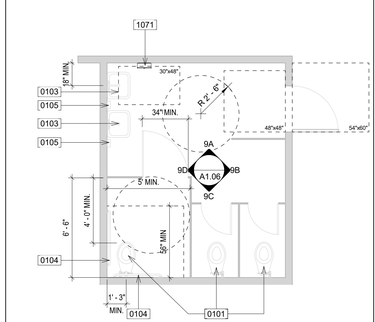


(N) ENLARGED BOYS RR (AGE 5-8) 2
1/4" = 1'-0"

GIRL'S RESTROOM INTERIOR ELEVATIONS 9
1/2" = 1'-0"



(E) ENLARGED GIRLS RR (AGE 5-8) 6
1/4" = 1'-0"



(N) ENLARGED GIRLS RR (AGE 5-8) 3
1/4" = 1'-0"

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Tustin Unified School District

Consultant

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REN: 10/31/25
STATE OF CALIFORNIA

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ENLARGED PLANS AND ELEVATIONS

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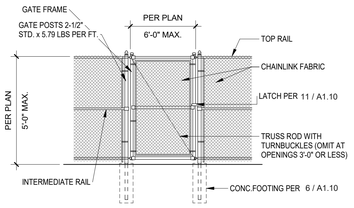
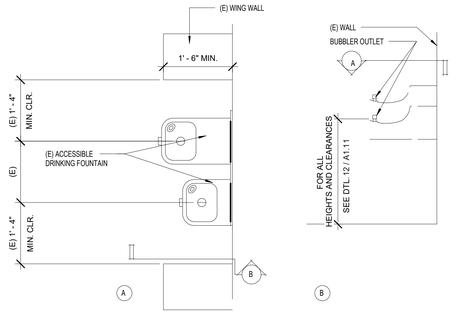
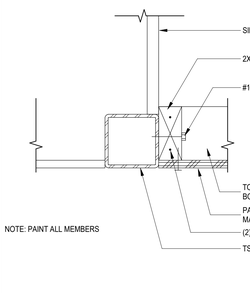


CHAIN LINK SINGLE GATE 9
NOT TO SCALE

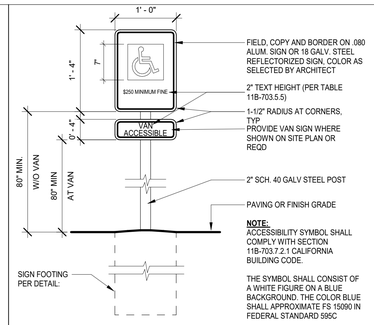
NOTES:
1. THE SPOUT SHALL PROVIDE A FLOW OF WATER 4 INCHES HIGH MINIMUM AND SHALL BE LOCATED 5 INCHES MAXIMUM FROM THE FRONT OF THE UNIT.
2. IF THE SPOUT IS LOCATED LESS THAN 3 INCHES FROM THE FRONT OF THE UNIT, THE ANGLE OF THE STREAM SHALL BE 30 DEGREES MAXIMUM.
3. WHERE LOCATED BETWEEN 3INCHES AND 5 INCHES FROM THE FRONT OF THE UNIT, THE ANGLE OF THE STREAM SHALL BE 15 DEGREES MAXIMUM RELATIVE TO THE FRONT FACE (ORIENTATION OF WALL SURFACE).



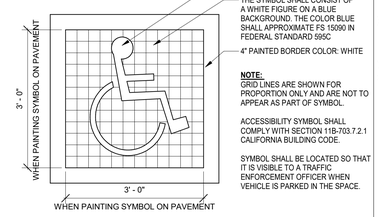
(E) HI-LO FOUNTAIN 28
3/4" = 1'-0"



FILLER PANEL 18
3" = 1'-0"



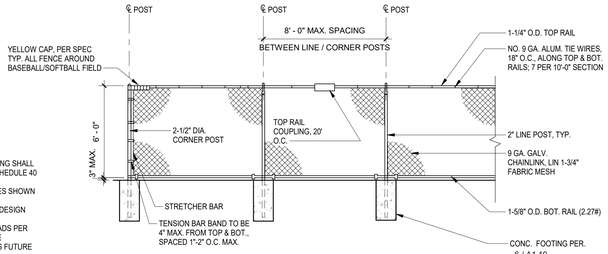
ACCESSIBLE PARKING SIGN 8
1" = 1'-0"



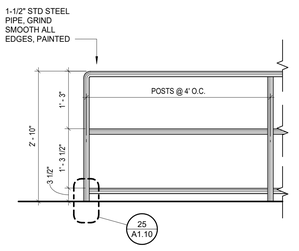
ACCESSIBLE PARKING SYMBOL 2
3/4" = 1'-0"

NOMINAL PIPE SIZE SCH. 40	WEIGHT LBS/FT.
1-1/4"	2.27
1-1/2"	2.72
2"	3.65
2-1/2"	5.79
3"	7.58
3-1/2"	9.12
4"	10.80
5"	14.99
6"	28.58

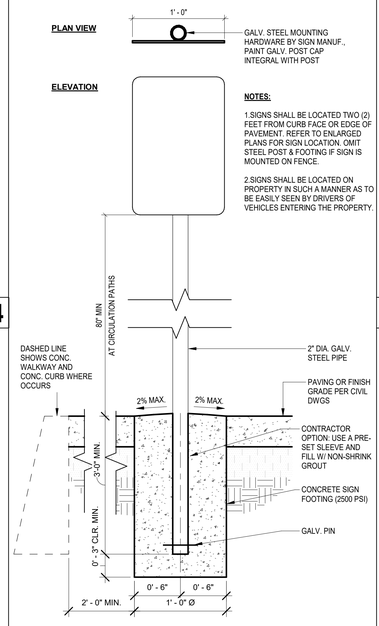
NOTES:
1. U.N.O. ALL FENCE PIPING SHALL BE HOT DIP GALV., SCHEDULE 40 STEEL PIPE
2. DIMENSIONS AND SIZES SHOWN ARE MIN. REQUIRED.
3. CONTRACTOR SHALL DESIGN AND BUILD FENCE TO WITHSTAND WIND LOADS PER REGULATIONS AND BE RESPONSIBLE FOR ITS FUTURE PERFORMANCE.



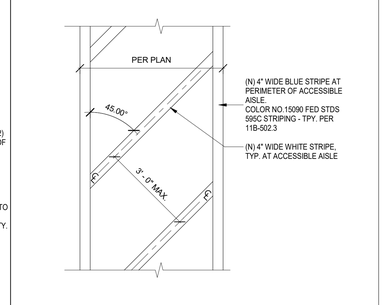
5'-0" TALL CHAINLINK FENCE 3
1/4" = 1'-0"



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



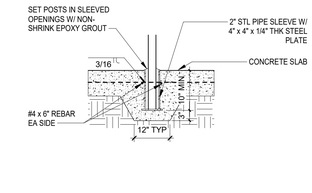
TYPICAL MOUNTED SIGN DETAIL 10
1 1/2" = 1'-0"



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

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
Line Posts	Up to 6'-0"	2	2.375	2.65	12	36
	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
Terminal, Corner, Angle & Pull Posts	Up to 8'-0"	2-1/2	2.875	5.79	12	36
	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
Pedestrian Gate Posts	Up to 8'-0"	2-1/2	2.875	5.79	14	36
Gate Frames	Up to 8'-0"	1-1/2	1.900	2.72	N/A	N/A
Driveway Double-Leaf Swing Gate Posts: Opening						
Up to 17' - 3-1/2"	Up to 8'-0"	3-1/2	4.000	9.11	16	42
17'-4" to 20'- 3 1/2"	Up to 8'-0"	3-1/2	4.000	9.11	16	42

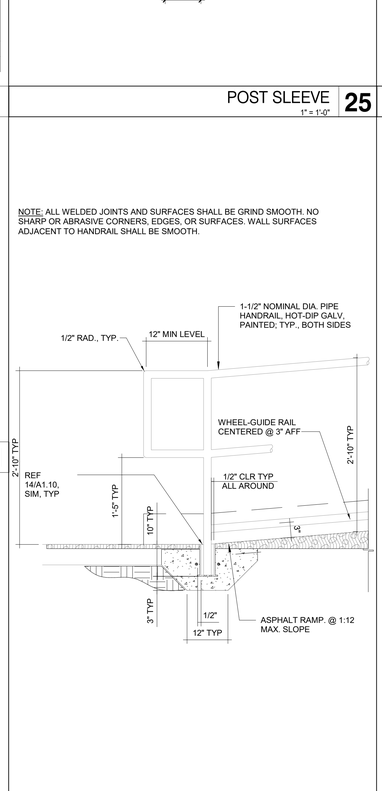
CHAINLINK & FENCE SIZING SCHEDULE 6
3" = 1'-0"



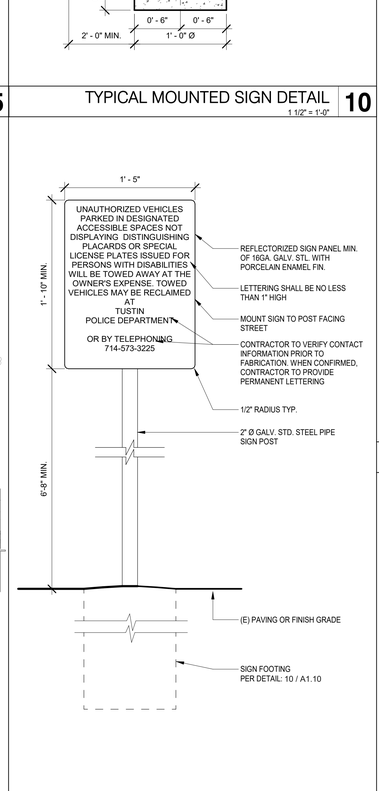
POST SLEEVE 25
1" = 1'-0"

TRUNCATED DOMES 4
3" = 1'-0"

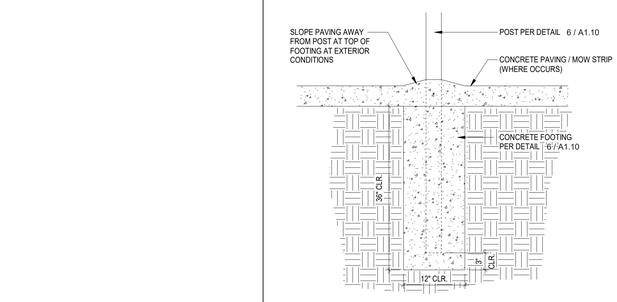
FORK TYPE LATCH 11
1/2" = 1'-0"



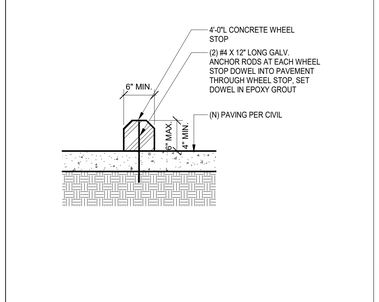
RAILING AT ASPHALT RAMP 1
1" = 1'-0"



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



POST FOOTING 13
1" = 1'-0"



PARKING BUMPER / WHEEL STOP 7
1" = 1'-0"

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Tustin Unified School District

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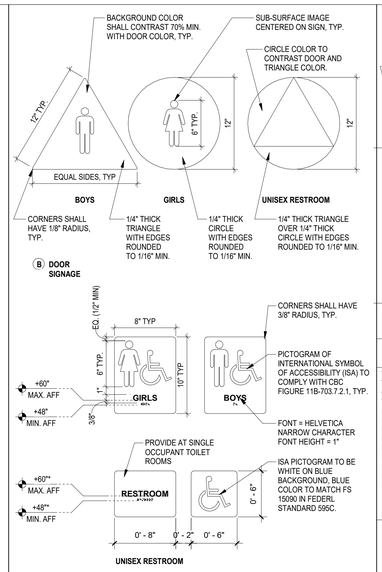
ENLARGED PARKING PLANS AND DETAILS

A1.10

0" 1"



RESTROOM DOOR & WALL SIGN 14

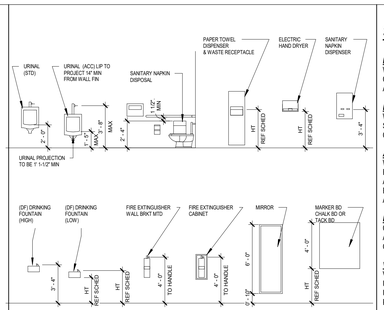
1 1/2" = 1'-0"

NOTES:
1. SIGN MATERIAL SHALL BE 1/4" THICK PLASTIC W/ 1/32" RAISED LETTERS
2. MOUNT W/ VANDAL RESISTANT FASTENERS.
3. BASIS OF DESIGN FOR ASSISTIVE LISTENING SYSTEM: WILLIAMS SOUND PPA 458
   * PER CBC 11B-219 & 11B-706, THE MINIMUM NUMBER OF RECEIVERS PROVIDED FOR EACH AREA SHALL BE EQUAL TO 4% OF THE TOTAL NUMBER OF SEATS, BUT NO LESS THAN 2.
   965SF / 20 OLF = 48 STUDENTS PER CLASSROOM
   48 STUDENTS * 4% = 1.92
   2 RECIEVERS REQUIRED PER CLASSROOM

101400.13-S

ASSISTIVE LISTENING SIGNAGE 2

3" = 1'-0"



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

1. ALL FIXTURES AND ACCESSORIES ARE ACCESSIBLE UNLESS OTHERWISE NOTED OR DIMENSIONED.
2. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
3. SEE ENLARGED TOILET PLANS FOR TOILET ACCESSORY LOCATIONS.
4. 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

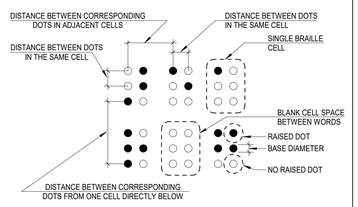
3/16" = 1'-0"

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 MEASUREMENT
(PER FIGURE CBC 11B-703.3.1)



BRAILLE STANDARDS FOR SIGNAGES 17

6" = 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-703.7.2.1) 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 40" 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 135% 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
	72 INCHES AND GREATER	5/8 INCH, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 72 INCHES
GREATER THAN 70 INCHES TO LESS THAN OR EQUAL TO 120 INCHES	LESS THAN 180 INCHES	2 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
	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 CLOSET 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 ELEMETNS 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 RY THE VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE OUTSIDE DIMENSION OF THE PICTOGRAM FIELD SHALL BE A MINIMUM OF 6 INCHES IN HEIGHT.

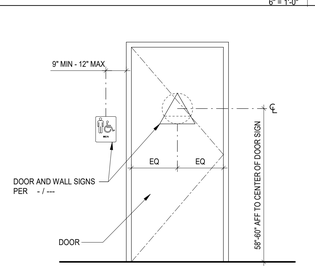
*F. **CHARACTER PLACEMENT:***
CHARACTERS AND BRAILLE SHALL BE IN A HORIZONTAL FORMAT. BRAILLE SHALL BE PLACED A MINIMUM OF 3/8 INCH AND A MAXIMUM OF 1/2 INCH DIRECTLY BELOW THE TACTILE CHARACTERS; FLUSH LEFT OR CENTERED. WHEN TACTILE TEXT IS MULTILINED, ALL BRAILLE SHALL BE PLACED TOGETHER BELOW ALL 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. CORRSPONDING DOTS FROM ONE CELL DIRECTLY BELOW SHALL BE 0.395 TO 0.4000 INCHES. SEE DETAIL

MOUNTING LOCATION AND HEIGHT
WHERE PERMANENT IDENTIFICATION SIGNS ARE PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT.
SEE DETAILS
-
&
-
WHERE PERMANENT IDENTIFICATION SIGNAGE IS PROVIDED FOR ROOMS AND SPACES THEY 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 EXITS THE ROOM OR SPACE.

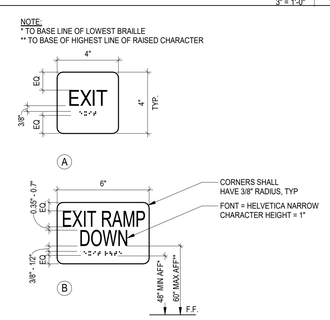
SIGNS AND IDENTIFICATIONS 9

3" = 1'-0"



SIGNAGE MOUNTING DETAIL 10

1/2" = 1'-0"



TACTILE EXIT SIGN 1

3" = 1'-0"

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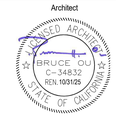
Tustin Unified School District

Consultant

Architect



CLIENT
TUSD

DATE	PROJECT NUMBER
04-11-2024	230379

REVISIONS

No.	Description	Date

SPECIALTY DETAILS

A1.11

E0.00 - ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES

0" 1"

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 WEATHERPROOF, "K" INDICATES KEY POERATED, "MO" INDICATES SPOT MOMENTARY CONTACT, "2" INDICATES DPDT, "3" INDICATES 3-WAY, "4" INDICATES 4-WAY, "M" INDICATES MANUAL MOTOR STARTER, CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

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

PC PHOTOELECTRIC CONTROL

$OC 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

LC1-X CIRCUIT DESIGNATION NEXT TO RECEPTACLE DEVICES INDICATES BRANCH CIRCUIT NUMBER. SEE PANEL SCHEDULES FOR INFORMATION.

REMODEL:

(E) EQUIPMENT WITH "E" ADJACENT IS EXISTING TO REMAIN.

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

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

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

NO TAG INDICATES NEW EQUIPMENT.

(E) PNL-CKT CIRCUIT DESIGNATION WITH PREFIX "(E)" DENOTES EXISTING CIRCUIT AND EQUIPMENT IS TO REMAIN.

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
MINNEAPOLIS,
MN 3M TEST REPORT NO. 1167
DATED AUGUST 21, 1987

FLAMESAFE FSP 1077 FIRESTOP PADS
INTERNATIONAL PROTECTIVE COATINGS
OAKHURST, NJ

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 (CFC), 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 35 AND CFC CHAPTER 80.

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 GOVERNMENTAL 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 ACCETANCE 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 MASONARY 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 24" 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 SHALL SUIT ACCESSIBILITY AND CONSTRUCTION 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 EEOR 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.

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., HCAI OPM FOR2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO START OF AND DURING THE HANGING AND BRACING OF DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP☐ MD☐ PP☐ ☒E OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES & DETAILS.

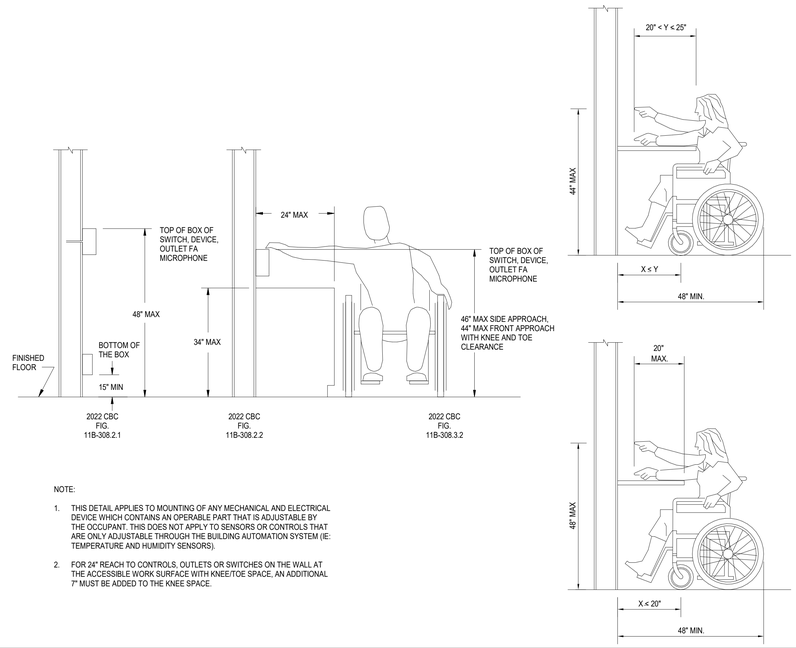
MP☐ MD☐ PP☐ ☐E OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM #) #_____.

UL LISTINGS NOTE

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

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

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.

DRAWING INDEX

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.

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.

Not for permitting or construction

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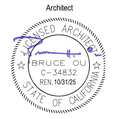
DSA APPL NO.: XXXX DSA FILE NO. XXXX

Tustin Unified School District

NORTH: TRUE

Consultant

Architect



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DATE	PROJECT NUMBER
xxxx	230379

REVISIONS

No.	Description	Date

This document is for plan review only

ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES

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ELECTRICAL SPECIFICATIONS

DIVISION 26

PART 1 GENERAL ELECTRICAL SPECIFICATIONS

1.0 WORK INCLUDED:

A. THIS SPECIFICATION SHALL APPLY TO ALL PHASES OF WORK HEREIN AFTER SPECIFIED, SHOWN ON DRAWINGS, OR AS REQUIRED TO PROVIDE A COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS FOR THIS PROJECT. WORK REQUIRED UNDER THIS SPECIFICATION, IS NOT LIMITED TO JUST THE ELECTRICAL DRAWINGS - REFER TO ARCHITECTURAL, STRUCTURAL, LANDSCAPE, AND MECHANICAL/PLUMBING DRAWINGS, AS WELL AS ALL OTHER DRAWINGS APPLICABLE TO THIS PROJECT, WHICH DESIGNATE THE SCOPE OF WORK TO BE ACCOMPLISHED. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE AND OPERABLE ELECTRICAL SYSTEM THAT INCLUDES ALL DOCUMENTS THAT ARE A PART OF THE CONTRACT.

1. WORK INCLUDED. FURNISH LABOR, MATERIAL, SERVICES AND SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION, CONNECTIONS, TESTING, AND ADJUSTMENT OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SPECIFIED HEREIN, OR SHOWN 0R NOTED ON DRAWINGS, AND ITS DELIVERY TO THE OWNER COMPLETE IN ALL RESPECTS READY FOR USE

2. THE ELECTRICAL WORK INCLUDES INSTALLATION OR CONNECTION OF CERTAIN MATERIALS AND EQUIPMENT FURNISHED BY OTHERS. VERIFY INSTALLATION DETAILS, INSTALLATION AND ROUGH- IN LOCATIONS FROM THE ACTUAL EQUIPMENT OR FROM THE EQUIPMENT SHOP DRAWINGS.

B. ELECTRICAL DRAWINGS. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, AND ARE INTENDED TO CONVEY THE SCOPE OF WORK, INDICATING INTENDED GENERAL ARRANGEMENT OF EQUIPMENT, CONDUIT AND OUTLETS. FOLLOW DRAWINGS IN LAYING OUT WORK AND VERIFY SPACES FOR INSTALLATION OF MATERIALS AND EQUIPMENT BASED ON ACTUAL DIMENSIONS OF EQUIPMENT FURNISHED.

1.1 QUALITY ASSURANCE

A. DESIGN, MANUFACTURE, TESTING AND METHOD OF INSTALLATION OF ALL APPARATUS AND MATERIALS FURNISHED UNDER REQUIREMENTS OF THESE SPECIFICATIONS SHALL CONFORM TO LATEST PUBLICATIONS OR STANDARD RULES OF THE FOLLOWING.

- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS - IEEE
- NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION - NEMA
- UNDERWRITERS' LABORATORIES, INC. - UL
- NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
- FEDERAL SPECIFICATIONS - FED. SPEC.
- AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
- AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
- NATIONAL ELECTRICAL CODE - NEC
- NATIONAL ELECTRICAL SAFETY CODE - NESC
- INSULATED CABLE ENGINEER S ASSOCIATION - ICEA
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION - AISC
- STATE AND MUNICIPAL CODES IN FORCE IN THE SPECIFIC PROJECT AREA
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
- ELECTRONICS INDUSTRIES ASSOCIATION /TELECOMMUNICATIONS INDUSTRY ASSOCIATION (EIA/TIA)
- CALIFORNIA ELECTRICAL CODE
- LOCAL AUTHORITY HAVING JURISDICTION PUBLISHED ELECTRICAL STANDARDS

B. PERFORM WORK IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE, APPLICABLE BUILDING ORDINANCES, AND OTHER APPLICABLE CODES, HEREINAFTER REFERRED TO AS THE "CODE". THE CONTRACTOR SHALL COMPLY WITH THE CODE INCLUDING LOCAL AMENDMENTS AND INTERPRETATIONS WITHOUT ADDED COST TO THE OWNER. WHERE CONTRACT DOCUMENTS EXCEED MINIMUM REQUIREMENTS, THE CONTRACT DOCUMENTS TAKE PRECEDENCE. WHERE CONFLICTS OCCUR, THE MOST STRINGENT SHALL APPLY AND SHALL BE PART OF THE BASE BID.

1. COMPLY WITH ALL REQUIREMENTS FOR PERMITS, LICENSES, FEES AND ALL CODES. THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, SHALL OBTAIN ALL PERMITS, LICENSES, FEES, SPECIAL SERVICE COSTS, INSPECTIONS AND ARRANGEMENTS REQUIRED FOR WORK UNDER THIS CONTRACT, UNLESS OTHERWISE SPECIFIED.

2. COMPLY WITH REQUIREMENTS OF THE APPLICABLE UTILITY COMPANIES SERVING THIS PROJECT. MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR PROPER COORDINATION OF WORK.

1.2 GENERAL REQUIREMENTS

A. GUARANTEE: FURNISH A WRITTEN GUARANTEE FOR A PERIOD OF ONE-YEAR FROM DATE OF ACCEPTANCE.

B. WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, DEVICES, CIRCUIT BREAKERS, ETC., (ALL MATERIALS), ARISES ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITION NOTED ON DRAWINGS AND/OR IN SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ENGINEER.

C. ALL CORE CUTTING, DRILLING, AND PATCHING:

1. FOR THE INSTALLATION OF WORK UNDER THIS SECTION, THE AFOREMENTIONED SHALL BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATIONS AND THE CONCRETE SECTION OF THE SPECIFICATIONS.

2. NO HOLES WILL BE ALLOWED IN ANY STRUCTURAL MEMBERS WITHOUT THE WRITTEN APPROVAL OF THE PROJECT'S STRUCTURAL ENGINEER.

3. FOR PENETRATIONS OF CONCRETE SLABS OR CONCRETE FOOTINGS, THE WORK SHALL BE AS DIRECTED IN THE CONCRETE SECTION OF SPECIFICATIONS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING SURFACES WHERE HE IS REQUIRED TO PENETRATE FOR WORK UNDER THIS CONTRACT.

5. PENETRATIONS SHALL BE SEALED TO THE RATED INTEGRITY OF THE SURFACE REQUIRED TO BE PATCHED AND REPAIRED. THE PATCHED SURFACE SHALL BE PAINTED OR FINISHED TO MATCH THE EXISTING SURFACE.

D. VERIFYING DRAWINGS AND JOB CONDITIONS:

1. THIS CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS IN A MANNER TO BE FULLY COGNIZANT OF ALL WORK REQUIRED UNDER THIS SECTION.

2. THIS CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS. WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS, ADJUSTMENT(S) SHALL BE MADE AND ALLOWANCES INCLUDED FOR ALL NECESSARY EQUIPMENT TO COMPLETE ALL PARTS OF THE DRAWINGS AND SPECIFICATIONS.

1.3 WORK IN COOPERATION WITH OTHER TRADES

A. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND DETERMINE THE WORK TO BE PERFORMED BY THE ELECTRICAL, MECHANICAL AND OTHER TRADES. PROVIDE THE TYPE AND AMOUNT OF ELECTRICAL MATERIALS AND EQUIPMENT NECESSARY TO PLACE THIS WORK IN PROPER OPERATION, COMPLETELY WIRED, TESTED AND READY FOR USE. THIS SHALL INCLUDE ALL CONDUIT, WIRE, DISCONNECTS, RELAYS, AND OTHER DEVICES FOR THE REQUIRED OPERATION SEQUENCE OF ALL ELECTRICAL, MECHANICAL AND OTHER SYSTEMS OR EQUIPMENT.

B. PROVIDE CONDUIT ONLY FOR LOW VOLTAGE WIRING REQUIRED FOR CONTROL OF MECHANICAL AND PLUMBING EQUIPMENT DESCRIBED IN THIS OR OTHER PARTS OF THE CONTRACT DOCUMENTS. INSTALL ALL CONTROL HOUSINGS AND BACK BOXES REQUIRED FOR INSTALLING CONDUIT AND WIRE TO THE CONTROLS.

C. INSTALL SEPARATE CONDUITS BETWEEN EACH HEATING, VENTILATING AND AIR CONDITIONING SENSING DEVICE AND ITS CONTROL PANEL AND/OR CONTROL MOTOR. BEFORE INSTALLING ANY CONDUIT FOR HEATING, VENTILATING AND AIR CONDITIONING CONTROL WIRING, VERIFY THE EXACT REQUIREMENTS FROM THE CONTROL DIAGRAMS PROVIDED WITH THE EQUIPMENT MANUFACTURER'S SHOP DRAWINGS.

1.4 TESTING AND ADJUSTMENT

A. UPON COMPLETION OF ALL ELECTRICAL WORK, THIS CONTRACTOR SHALL TEST ALL CIRCUITS, SWITCHES, LIGHT FIXTURES, LIGHTING CONTROL / DIMMING SYSTEMS INCLUDING DISTRIBUTED SYSTEMS, UPSS, GENERATORS, TVSSS, LIGHTING INVERTERS, TRANSFER SWITCHES, MOTORS, CIRCUIT BREAKERS, MOTOR STARTER(5) AND THEIR AUXILIARY CIRCUITS AND ANY OTHER ELECTRICAL ITEMS TO ENSURE PERFECT OPERATION OF ALL ELECTRICAL EQUIPMENT.

B. EQUIPMENT AND PARTS IN NEED OF CORRECTION, AND DISCOVERED DURING SUCH TESTING, SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH ALL NEW EQUIPMENT AND THAT PART OF THE SYSTEM SHALL THEN BE RETESTED. ALL SUCH REPLACEMENT OR REPAIR SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

C. ALL CIRCUIT(S) SHALL BE TESTED FOR CONTINUITY AND CIRCUIT INTEGRITY. ADJUSTMENTS SHALL BE MADE FOR CIRCUITS NOT COMPLYING WITH TESTING CRITERIA.

D. ALL TEST REPORTS, INCLUDING COPIES OF ANY REQUIRED ENERGY CODE ACCEPTANCE FORMS (E.G. CA TITLE 24 ACCEPTANCE FOR CODE COMPLIANCE FORMS) SHOULD BE SUBMITTEO TO THE ENGINEER AT COMPLETION OF PROJECT.

1.5 IDENTIFICATION

A. NAMEPLATES SHALL BE PROVIDED FOR UNIT SUBSTATIONS, SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, DISTRIBUTION PANELS, PANEL BOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, TRANSFER SWITCHES, CONTACTORS, STARTERS, DISCONNECT SWITCHES, ENCLOSED CIRCUIT BREAKERS/SWITCHES, INVERTERS, UPSS, PDUS, ROCS, LIGHTING CONTROL PANELS, DIMMING PANELS, DOOR RELEASING SYSTEM PANELS, FIRE ALARM/CENTRAL MONITORING TERMINAL CABINETS/POWER SUPPLIES/CONTROL PANELS, AND ALL LOW VOLTAGE SYSTEM TERMINAL A CONTROL CABINETS. NAMEPLATE INSCRIPTIONS SHALL BE IDENTICAL TO THE EQUIPMENT DESIGNATIONS INDICATED IN PLANS AND SPECIFICATIONS. ALL CIRCUIT BREAKERS/FUSES IN SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, DISTRIBUTION PANELS, UPS OUTPUT CIRCUIT BREAKERS, PDU OUTPUT CIRCUIT BREAKERS AND MOTOR CONTROL CENTERS SHALL HAVE INDIVIDUAL NAMEPLATES LOCATED IMMEDIATELY ADJACENT TO THE RESPECTIVE DEVICE. NAMEPLATE INSCRIPTION SHALL IDENTIFY THE DOWNSTREAM EQUIPMENT OR DEVICE SERVED BY THE CIRCUIT BREAKER OR FUSE.

B. IDENTIFICATION NAMEPLATES, U.N.O, SHALL BE LAMINATED 1/8" THICK MICARTA WITH BEVELED EDGES AND ENGRAVED WHITE LETTERS 3/8" HIGH, MINIMUM, ON 1-1/2" HIGH BLACK BACKGROUND FOR SINGLE LINE OF TEXT. WHERE TY/O LINES OF TEXT ARE REQUIRED, PROVIDE MIN. 2" HIGH NAMEPLATE. WHERE THREE LINES OF TEXT ARE REQUIRED, PROVIDE MIN. 2.5" HIGH NAMEPLATE. LABELS SHALL BE BLACK FOR NORMAL POWER SYSTEMS AND RED FOR SYSTEMS CONNECTED TO EMERGENCY POWER.

C. IDENTIFICATION NAMEPLATES FOR SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, DISTRIBUTION PANELS, PANEL BOARDS A MOTOR CONTROL CENTERS SHALL BE ATTACHED WITH SWITCHGEAR MANUFACTURER-PROVIDED SCREWS VIA SWITCHGEAR MANUFACTURER FACTORY PRE-DRILLED HOLES. A FACTORY OPTION TO RIVET IDENTIFICATION NAMEPLATES TO THE EQUIPMENT IS ONLY ACCEPTABLE IF SCREW-FASTENED NAMEPLATES ARE NOT AN AVAILABLE OPTION FROM THE SWITCHGEAR MANUFACTURER. FIELD DRILLING OR OTHER MECHANICAL ATTACHMENT METHODS THAT CHANGE/VOID THE NEMA OR NRTL RATING OF THE ENCLOSURE ARE STRICTLY FORBIDDEN.

1.6 FINAL INSPECTION AND ACCEPTANCE

A. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE.

B. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

1.7 RECORD DRAWINGS.

A. DRAWINGS OF RECORD: THE CONTRACTOR SHALL PROVIDE AND KEEP UP-TO - DATE, A COMPLETE RECORD SET OF DRAWINGS. THESE SHALL BE CORRECTED DAILY AND SHOW EVERY CHANCE FROM THE ORIGINAL DRAWINGS. THIS SET OF PRINTS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTOR TO MAKE CHANGES IN THE LAYOUT WITHOUT DEFINITE INSTRUCTION IN EACH CASE. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE GENERAL CONTRACTOR AND ALL CHANGES AS NOTED ON THE RECORD SET OF PRINTS SHALL BE INCORPORATED THEREON WITH BLACK INK IN A NEAT, LEGIBLE, UNDERSTANDABLE AND PROFESSIONAL MANNER. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR COMPLETE REQUIREMENTS. AT COMPLETION OF PROJECT, THE CONTRACTOR SHALL TRANSFER ALL FIELD AS-BUILT INFORMATION TO AUTOCAD ELECTRONIC DRAWINGS IN DWG FORMAT OR EQUAL.

1.8 SHOP DRAWINGS/SUBMITTALS

A. SHOP DRAWINGS/SUBMITTALS SHALL BE SUBMITTED IN SIX (6) BOUND SETS ACCOMPANIED BY LETTER OF TRANSMITTAL, WHICH SHALL GIVE A LIST OF THE NUMBER AND DATES OF THE DRAWINGS SUBMITTED. DRAWINGS SHALL BE COMPLETE IN EVERY RESPECT AND BOUND IN SETS.

B. THE SHOP DRAWINGS/SUBMITTALS SUBMITTED SHALL BE MARKED WITH THE NAME OF THE PROJECT, NUMBERED CONSECUTIVELY AND BEAR THE APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE CONTRACTOR HAS CHECKED THE DRAWINGS. ANY DRAWINGS SUBMITTED WITHOUT THIS APPROVAL WILL BE RETURNED TO THE CONTRACTOR FOR RESUBMISSION.

C. IF THE SHOP DRAWINGS SHOW VARIATIONS FROM THE REQUIREMENTS OF THE CONTRACT BECAUSE OF STANDARD SHOP PRACTICE OR OTHER REASONS, THE CONTRACTOR SHALL MAKE SPECIFIC MENTION OF SUCH VARIATIONS IN THE CONTRACTOR'S LETTER OF TRANSMITTAL. IF THE SUBSTITUTION IS ACCEPTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER ADJUSTMENT THAT MAY BE CAUSED BY THE SUBSTITUTION. SAMPLES SHALL BE SUBMITTED WHEN REQUESTED.

D. ONLY PRODUCTS LISTED AS "EQUAL" WITHIN THE CONTRACT DOCUMENTS, ALONG WITH FORMALLY APPROVED "SUBSTITUTIONS" WILL BE REVIEWED. PRODUCTS NOT CONFORMING TO THESE ITEMS WILL NOT BE REVIEWED AND WILL BE RETURNED TO THE CONTRACTOR FOR RE-SUBMITTAL.

E. SHOP DRAWINGS SHALL BE SUBMITTED ON THE FOLLOWING BUT NOT LIMITED TO:

- SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.
- TRANSFORMERS
- FIRE ALARM SYSTEM/CENTRAL MONITORING SYSTEM
- WIRING DEVICES.
- PULLBOXES AND UNDERGROUND VAULTS
- TERMINAL CABINETS
- POWER POLES AND FLOOR BOXES
- ARC FLASH, SHORT-CIRCUIT A COORDINATION STUDIES
- ALL OTHER PRODUCTS CALLED OUT ON DRAWINGS THAT CALL FOR SHOP DRAWING SUBMITTAL.

1.9 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

A. PRIOR TO FINAL ACCEPTANCE OF THE JOB, THE ELECTRICAL CONTRACTOR SHALL FURNISH TO THE OWNER AT LEAST FOUR (4) COPIES OF OPERATING AND MAINTENANCE AND SERVICING INSTRUCTIONS, AS WELL AS FOUR (4) COMPLETE WIRING DIAGRAMS FOR THE FOLLOWING ITEMS OR EQUIPMENT:

- FIRE ALARM SYSTEM
- TRANSFORMERS
- SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.

B. ALL WIRING OIAGRAMS SHALL SPECIFICALLY COVER THE SYSTEM SUPPLIED. TYPICAL DRAWINGS WILL NOT BE ACCEPTED. FOUR (4) COPIES SHALL BE PRESENTED TO THE OWNER.

1.10 INTERRUPTION OF SERVICES/SERVICE SHUTDOWN

A. ANY INTERRUPTION OF ELECTRICAL SERVICES, ELECTRICAL CIRCUITS, ELECTRICAL FEEDERS, SIGNAL SYSTEMS, COMMUNICATION SYSTEMS, FIRE ALARM SYSTEMS, ETC. REQUIRED TO PERFORM WORK SHALL MEET THE SPECIFIC PRIOR-APPROVAL REQUIREMENTS OF THE OWNER. SUCH WORK SHALL BE SCHEDULED WITH THE OWNER TO BE PERFORMED AT THE OWNER'S CONVENIENCE.

B. INTERRUPTIONS/OUTAGES OF ANY OF THE OWNER'S SYSTEMS AND SERVICES MENTIONED ABOVE SHALL BE SCHEDULED TO OCCUR DURING OTHER THAN THE OWNER'S NORMAL BUSINESS HOURS. ANY OVERTIME COSTS SHALL BE BORNE BY THE CONTRACTOR.

C. SEE ORAWINGS FOR ANY ADDITIONAL REQUIREMENTS REGARDING OUTAGES, INTERRUPTION AND ANY TEMPORARY SERVICES REQUIRED.

PART 2 PRODUCTS

2.1 MATERIALS

A. MATERIALS AND EQUIPMENT: ALL ELECTRICAL MATERIALS AND EQUIPMENT, INCLUDING CUSTOM -MADE EQUIPMENT, SHALL be NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL OR BE LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LAB (NRTL) THAT IS ALSO RECOGNIZED BY THE LOCAL AUTHORITY-HAVING-JURISDICTION (AHJ).

B. CONDUIT:

1. GALVANIZED RIGID CONDUIT (GRC) SHALL BE FULL WEIGHT THREADED TYPE STEEL. STEEL CONDUIT SHALL BE PROTECTED BY OVERALL ZINC COATING TO INSIDE AND OUTSIDE SURFACES, APPLIED BY THE HOT DIP, METALLIZING, OR SHERARDIZING PROCESS.

2. INTERMEDIATE METAL CONDUIT (IMC), SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH UL 1242 AND MEETING FEDERAL SPECIFICATION WWC -581 (LATEST REVISION).

3. ELECTRICAL METALLIC TUBING (EMT) SHALL BE ZINC-COATED STEEL WITH BAKED ENAMEL OR PLASTIC FINISH ON INSIDE SURFACES EXCEPT AS NOTED BELOW. EMT SHALL BE DIPPED IN A CHROMIC ACID BATH TO CHEMICALLY FORM A CORROSION-RESISTANT PROTECTIVE COATING OF ZINC CHROMATE OVER GALVANIZED SURFACE.

4. FLEXIBLE METAL CONDUIT SHALL BE CONSTRUCTED OF HOT- DIPPED GALVANIZED STEEL STRIPS WOUND SPIRALLY WITH INTERLOCKING EDGES TO PROVIOE GREATEST FLEXIBILITY WITH MAXIMUM STRENGTH. INTERIOR SURFACES SHALL BE SMOOTH AND OFFER MINIMUM DRAG TO PULLING IN CONDUCTORS. USED ONLY AS DIRECTED IN WRITING BY THE ENGINEER WITH THE EXCEPTION OF 400 HZ FEEDERS AND 400 HZ BRANCH CIRCUITS WHICH SHALL BE RUN IN FLEXIBLE ALUMINUM CONDUIT.

5. LIQUID-TIGHT CONDUIT (SEAL-TITE) SHALL BE GALVANIZED STEEL FLEXIBLE CONDUIT AS ABOVE EXCEPT WITH MOISTURE AND OIL- PROOF JACKET, PRE-CUT LENGTHS AND FACTORY-INSTALLED FITTINGS. FOR OUTDOOR INSTALLATIONS AND MOTOR CONNECTIONS ONLY UNLESS OTHERWISE NOTED ON DRAWINGS.

6. FACTORY ASSEMBLED, OR OFF-SITE ASSEMBLED WIRING SYSTEMS (SUCH AS METAL CLAD (MC) CABLE, TYPE AC CABLE, TYPE NM CABLE, TYPE BX CABLE, ETC) SHALL NOT BE USED.

7. MINIMUM SIZE CONDUIT ABOVE GRADE SHALL BE 3/4" MINIMUM AND 1 " MINIMUM FOR BELOW GRADE.

8. NONMETALLIC FLEXIBLE TUBING (ENT) SHALL NOT BE USED.

9. NON-METALLIC CONDUIT:

a. POLYVINYL CHLORIDE (PVC) RIGID CONDUIT, SCHEDULE 40, TYPE II FOR UNDERGROUND INSTALLATION ONLY WITH SOLVENT WELDED JOINTS, CONFORMING TO UNOERWRITERS LABORATORIES, INC. (U.L.) REQUIREMENTS,
LISTED FOR EXPOSED AND DIRECT BURIAL APPLICATION.

b. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.

C. FITTINGS:

1. CONDULET TYPE FITTINGS SHALL BE SMOOTH INSIDE AND OUT, TAPER THREADED WITH INTEGRAL INSULATING BUSHING AND OF THE SHAPES, SIZES AND TYPES REQUIRED TO FACILITATE INSTALLATION OR REMOVAL OF WIRES AND CABLES FROM THE CONDUIT AND TUBING SYSTEM. THESE FITTINGS SHALL BE OF METAL, SMOOTH INSIDE AND OUT, THOROUGHLY GALVANIZED, AND SHERARDIZED CADMIUM PLATED.

2. METALLIC CONDULET COVERS SHALL HAVE THE SAME FINISH AS THE FITTING AND SHALL BE PROVIDED FOR THE OPENING OF EACH FITTING WHERE CONDUCTORS DO NOT PASS THROUGH THE COVER.

3. CONNECTOR, COUPLING, LOCKNUT, BUSHINGS AND CAPS USED WITH RIGID CONDUIT SHALL BE STEEL, THREADED AND THOROUGHLY GALVANIZED. BUSHINGS SHALL BE INSULATED.

4. U.N.O. ALL INTERIOR EMT FITTINGS, CONNECTORS AND COUPLINGS INSTALLED IN CONCEALED LOCATIONS, AREAS NOT CONSIDERED TO BE WET OR DAMP LOCATIONS BY THE AHJ, OR AREAS NOT SUBJECT TO PHYSICAL DAMAGE, SHALL BE STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION, STEEL LOCKING RING TYPE WITH INSULATED THROAT.

5. ALL INTERIOR AND EXTERIOR EMT FITTINGS, CONNECTORS AND COUPLINGS, SHALL BE RAINTITE-LISTED, STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION, STEEL LOCKING RING TYPE WITH INSULATED THROAT IF RAINTITE -LISTED, EMT FITTINGS, CONNECTORS AND COUPLINGS ARE UNAVAILABLE FOR A GIVEN TRADE SIZE OR IF CONDUIT IS INSTALLED IN AN AREA SUBJECT TO DAMAGE - PROVIDE RIGID METALLIC OR INTERMEDIATE METALLIC CONDUITS, FITTINGS, CONNECTORS AND COUPLINGS AS REQUIRED.

6. FLEXIBLE STEEL CONDUIT CONNECTORS SHALL BE A MALLEABLE IRON CLAMP OR SQUEEZE TYPE OR STEEL T\/YIST- IN TYPE WITH INSULATED THROAT. THE FINISH SHALL BE ZINC OR CADMIUM PLATING.

7. CONDUIT UNIONS SHALL BE "ERICKSON" COUPLINGS, OR APPROVED EQUAL. THE USE OF RUNNING THREADS WILL NOT BE PERMITTED.

D. 600 VOLT CONDUCTORS - WIRE AND CABLE:

1. ALL CONDUCTORS SHALL BE COPPER. PROVIDE STRANDED CONDUCTOR FOR #10 AWG AND LARGER OR WHEN MAKING FLEXIBLE CONNECTIONS TO VIBRATING MACHINERY. USE COMPRESSION "FORK" TYPE CONNECTORS OR TRANSITION TO SOLID CONDUCTORS WHEN CONNECTING TO SWITCHES, RECEPTACLES, ETC.

2. TYPE THHN/THWN- 2 THERMOPLASTIC, 600 VOLT, UL APPROVED, DRY AND WET LOCATIONS RATED AT 90 DEGREES CELSIUS, FOR CONDUCTORS OF ALL SIZES FROM }12 AWG UP TO AND INCLUDING 1000 KCMIL. RHH/RHW INSULATION IS ALLOWED ONLY TO PROVIDE AN ELECTRICAL CIRCUIT PROTECTIVE SYSTEM TO COMPLY WITH CEC, ARTICLES 695 AND 700.

3. WIRE AND CABLE SHALL BE NEW, MANUFACTURED NOT MORE THAN SIX (6) MONTHS PRIOR TO INSTALLATION, SHALL HAVE SIZE, TYPE OF INSULATION, VOLTAGE RATING AND MANUFACTURER'S NAME PERMANENTLY MARKED ON OUTER COVERING AT REGULAR INTERVALS.

4. WIRE AND CABLE SHALL BE FACTORY COLOR-CODED BY INTEGRAL PIGMENTATION WITH A SEPARATE COLOR FOR EACH PHASE AND NEUTRAL. EACH SYSTEM SHALL BE COLOR-CODED AND IT SHALL BE MAINTAINED THROUGHOUT.

5. SYSTEMS CONDUCTOR COLOR CODING:

a. POWER 20B/ 120V, 3PH, 4W:

1) PHASE A = BLACK
2) PHASE B = RED
3) PHASE C = BLUE
4) NEUTRAL = WHITE
5) SWITCHLEGS = PURPLE (SWITCHLEGS SHALL ALSO BE IDENTIFIED SEPARATELY BY NUMERICAL TAGS)
6) TRAVELERS = PURPLE WITH BLACK STRIPE.

b. POWER 480/277V, 3PH, 4W:

1) PHASE A = BROWN
2) (2) PHASE B = ORANGE
3) (3) PHASE C = YELLOW
4) NEUTRAL = GRAY
5) SWITCHLEGS = PURPLE (SWITCHLEGS SHALL ALSO BE IDENTIFIED SEPARATELY BY NUMERICAL TAGS)
6) TRAVELERS = PURPLE WITH BLACK STRIPE.

c. GROUND CONDUCTORS: GREEN

d. ISOLATED GROUND CONDUCTORS: GREEN WITH CONTINUOUS YELLOW STRIPE.

e. FIRE ALARM SYSTEM: AS RECOMMENDED BY THE MANUFACTURER.

6. ALL COLOR - COOING FOR #12 THRU #6 AWG CONDUCTOR SHALL BE AS IDENTIFIED ABOVE. CONDUCTORS #4 AWG AND LARGER SHALL BE IDENTIFIED WITH UTILIZING PHASE TAPE AT EACH TERMINATION.

7. NO CONDUCTORS CARRYING 120 VOLT OR MORE SHALL BE SMALLER THAN #12 AWG.

8. ALUMINUM CONDUCTORS SHALL NOT BE USED.

9. WIRE-PULLING COMPOUNDS USED AS LUBRICANTS IN INSTALLING CONDUCTORS IN RACE\DAYS SHALL ONLY BE "POLY\WATER J". NO OIL, GREASE, GRAPHITE, OR SIMILAR SUBSTANCES MAY BE USED. PULLING OF#1/0 OR LARGER CONDUCTORS SHALL BE DONE WITH AN APPROVED CABLE PULL MACHINE. OTHER METHODS; E.G. USING VEHICLES, AND BLOCK AND TACKLE TO INSTALL CONDUCTORS ARE NOT ACCEPTABLE.

E. JUNCTION AND PULLBOXES:

1. FOR INTERIOR DRY LOCATIONS, BOXES SHALL BE GALVANIZED ONE-PIECE DRAWN STEEL, KNOCKOUT TYPE, WITH REMOVABLE, MACHINE SCREW SECURED COVERS.

2. FOR OUTSIDE, DAMP OR SURFACE LOCATIONS, BOXES SHALL BE HEAVY CAST ALUMINUM OR CAST IRON WITH REMOVABLE, GASKETED, NON-FERROUS MACHINE SCREW SECURED COVERS.

3. FOR IN-GRADE APPLICATIONS, JUNCTION AND PULL BOXES SHALL BE PRE-CAST CONCRETE MANUFACTURED BY BROOKS-JENSEN, OR UTILITY VAULT CO

4. ALL BOXES SHALL BE SIZED FOR THE NUMBER AND SIZES OF CONDUCTORS AND CONDUITS ENTERING THE BOX AND EQUIPPED WITH PLASTER RINGS WHERE REQUIRED.

5. ALL BOXES LOCATED IN TRAFFIC AREAS SHALL BE TRAFFIC RATED.

F. TRENCHING AND BACKFILLING: CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCHING AND BACKFILLING.

PART 3 EXECUTION

3.1 PREPARATION AND INSTALLATION

A. INSTALLATION OF CONDUIT AND OUTLET BOXES:

1. ALL CONDUIT INSTALLED IN THE DRY WALLS OR CEILINGS OF A BUILDING SHALL BE STEEL TUBE (EMT), ALUMINUM TUBE (EMT), OR INTERMEDIATE METAL CONDUIT (IMC). FLEXIBLE CONDUIT SHALL NOT BE USED IN LIEU OF EMT, IMC OR RIGID CONDUIT EXCEPT AS NOTED HEREIN.

2. GALVANIZED RIGID CONDUIT (GRC) OR INTERMEDIATE METAL CONDUIT (IMC) SHALL BE USED AS FOLLOWS:

- WHEN NOTED ON THE DRAWINGS
- WHEN CONSIDERED EXPOSED TO DAMAGE BY THE LOCAL AHJ
- WHEN INSTALLED IN WET OR DAMP LOCATIONS AND OF A TRADE SIZE
- WHERE LISTED -RAINTITE FITTINGS, CONNECTORS, COUPLINGS ETC ARE
- UNAVAILABLE
- WHEN REQUIRED BY CEC ARTICLE 517.13
- WHEN INSTALLED IN CONCRETE AND MASONRY. THE USE OF ENT IN CMU WALLS AND PARKING STRUCTURES MAY BE ALLOWED ONLY AS DIRECTED IN WRITING BY THE ENGINEER. REQUEST FOR ENT SUBSTITUTION MUST BE MADE PRIOR TO BID AND IN ACCORDANCE WITH PRE-BID SUBSTITUTION REQUEST REQUIREMENTS OF THESE SPECIFICATIONS.

3. INTERMEDIATE METAL CONDUIT (IMC), IS APPROVED FOR USE IN ALL LOCATIONS AS APPROVED FOR GRC OR EMT ANO IN ACCORDANCE WITH NEC, OR CEC WHERE ADOPTED, ARTICLE 342.

4. FLEXIBLE STEEL CONDUIT SHALL ONLY BE PERMITTED TO BE USED AT LIGHT FIXTURE OUTLETS AND CONNECTIONS TO VIBRATING ELECTRICAL EQUIPMENT. ALL FLEXIBLE STEEL CONDUIT RUNS SHALL BE LESS THAN 6'-0". ALL OUTDOOR INSTALLATION SHALL BE MADE USING LIQUID-TIGHT FLEX WITH APPROVED FITTINGS. INCLUDE A SEPARATE INSULATED GREEN GROUND CONDUCTOR SIZED PER CEC IN EACH CONDUIT. OTHER USES OF FLEXIBLE CONDUIT SHALL BE ALLOWED ONLY AS APPROVED IN WRITING BY THE ENGINEER.

5. FLEXIBLE LIQUIDTIGHT CONDUIT SHALL BE INSTALLED IN LIEU OF THE FLEXIBLE STEEL; WHERE REQUIRED BY CEC, IN DAMP AND WET LOCATION, WHERE EXPOSED TO WEATHER, IN REFRIGERATED AREA (65 DEG. F OR LESS), AND/OR BETWEEN SEISMIC JOINTS. ALL ROTATING ELECTRICAL EQUIPMENT SHALL BE SUPPLIED WITH FLEXIBLE, LIQUID-TIGHT CONDUIT WITH APPROPRIATE SLACK AND SHALL NOT EXCEED THIRTY-SIX (36) INCHES. INCLUDE A SEPARATE INSULATED GREEN GROUND CONDUCTOR SIZED PER CEC IN EACH CONDUIT. OTHER USES OF LIQUIDTIGHT FLEXIBLE CONDUIT SHALL BE ALLOWED AS APPROVED IN WRITING BY THE ENGINEER ON A CASE BY CASE BASIS.

6. RIGID METALLIC CONDUIT INSTALLED UNDERGROUND OR EMBEDDED IN CONCRETE SHALL BE 1" TRADE SIZE MINIMUM AND SHALL BE WRAPPED WITH 20 MIL POLYVINYL CHLORIDE PLASTIC TAPE. PVC CONDUIT INSTALLED CASE BASIS. UNDERGROUND OR EMBEDDED IN CONCRETE SHALL BE 1" MINIMUM TRADE SIZE.

7. WHERE REQUIRED FOR PROVIDING AN ELECTRICAL CIRCUIT PROTECTIVE SYSTEM TO COMPLY WITH CEC, ARTICLES 695 AND 700, UTILIZE UL LISTED 2-HOUR FIRE-RATED RHH/RHW CONDUCTORS IN CONDUIT.

8. CONDUIT SHALL BE RUN SO AS NOT TO INTERFERE WITH OTHER PIPING, FIXTURES OR EQUIPMENT.

9. THE ENDS OF ALL CONDUITS SHALL BE CUT SQUARE, CAREFULLY REAMED OUT TO FULL SIZE AND SHALL BE SHOULDERED IN FITTING.

10. NO RUNNING THREADS WILL BE PERMITTED IN LOCATIONS EXPOSED TO THE WEATHER, IN CONCRETE OR UNDERGROUND. SPECIAL UNION FITTINGS SHALL BE USED IN THESE LOCATIONS.

11. WHERE CONDUIT IS UNDERGROUND, UNDER SLABS OR GRADE, EXPOSED TO THE WEATHER, OR IN WET LOCATIONS, MAKE JOINTS LIQUID TIGHT AND GAS TIGHT.

12. ALL METAL CONDUIT IN MASONRY AND CONCRETE AND WHERE CONCEALED UNDER FLOOR SUBS SHALL HAVE JOINTS PAINTED WITH THREAD COMPOUND PRIOR TO MAKEUP.

13. PVC CONDUIT SHALL NOT BE USED ABOVE GRADE.

14. WHERE CONDUCTORS ENTER A RACEWAY OR A RACEWAY IN A CABINET, PULL BOX, JUNCTION BOX, OR AUXILIARY GUTTER, THE CONDUCTORS SHALL BE PROTECTED BY A PLASTIC BUSHING TYPE FITTING PROVIDING A SMOOTHLY ROUNDED INSULATING SURFACE

15. WHERE CONDUIT EXTENDS THROUGH ROOF TO EQUIPMENT ON ROOF AREA, THIS CONTRACTOR SHALL PROVIDE FLASHING MATERIAL COMPATIBLE WITH THE ROOFING SYSTEM AS REQUIRED BY THE ROOFING SPECIFICATIONS 0R AS REQUIRED BY THE OWNER'S ROOF WARRANTY. THIS FLASHING SHALL BE DELIVERED TO THE ROOFING CONTRACTOR FOR INSTALLATION. THE ACTUAL LOCATION OF ALL SUCH ROOF PENETRATIONS AND OUTLETS SHALL BE VERIFIED WITH ARCHITECT/OWNER. CONTRACTOR SHALL VERIFY TYPE OF FLASHING PRIOR TO BID AND INCLUDE ALL COSTS.

16. ALL CONDUIT SHALL BE SUPPORTED AT INTERVALS NOT LESS THAN 6'-0" AND WITHIN 12" FROM ANY OUTLET AND AT EACH SIDE OF BENDS AND ELBOWS. CONDUIT SUPPORTS SHALL BE GALVANIZED, HEAVY STAMPED, TWO-HOLE CONDUIT CLAMP PROPERLY SECURED. FLEXIBLE CONDUIT SUPPORTS SHALL NOT EXCEED 4'-6" ON CENTER.

17. WHERE CONDUIT RACKS ARE USED THE RACK SHALL CONSIST OF TWO PIECE CONDUIT CLAMPS ATTACHED TO GALVANIZED STEEL SLOTTED CHANNELS, PROPERLY SECURED VIA THREADED RODS ATTACHED DIRECTLY TO THE BUILDING STRUCTURE.

18. NAIL-IN CONDUIT SUPPORTS, ONE-PIECE SET SCREW TYPE CONDUIT CLAMPS OR PERFORATED IRON FOR SUPPORTING CONDUIT SHALL NOT BE USED.

19. SEISMIC CONDUIT SUPPORT:

a. ALL CONDUIT SHALL BE SUPPORTED IN SUCH A MANNER THAT IT IS SECURELY ATTACHED TOTHE STRUCTURE OF THE BUILDING.
ATTACHMENT IS TO BE CAPABLE OF SUPPORTING THE TRIBUTARY WEIGHT OF CONDUIT AND CONTENTS IN ANY DIRECTION. MAXIMUM SPACING OF SUPPORT AND BRACES ARE TO BE AS FOLLOWS:

CONDUIT SIZE	MAXIMUM SPACING
1/2" to 3"	6'-0"
3-1/2" to 4"	8'-0"

20. ALL CONDUIT RUNS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, OR INTERSECTION OF VERTICAL PLANES AND CEILINGS. FIELD MADE BENDS AND OFFSET SHALL BE AVOIDED WHERE POSSIBLE. CRUSHED OR DEFORMED RACEWAY SHALL NOT BE INSTALLED.

21. OPEN KNOCKOUTS IN OUTLET BOXES ONLY WHERE REQUIRED FOR INSERTING CONDUIT.

22. LOCATE WALL OUTLET OF THE SAME TYPE AT SAME LEVEL IN ALL ROOMS, EXCEPT WHERE OTHERWISE NOTED.

23. OUTLET BOXES ON METAL STUDS SHALL BE ATTACHED TO METAL HANGERS, TACK WELDED OR BOLTED TO STUDS; ON WOOD STUDS ATTACHMENT SHALL BE WITH WOOD SCR £MS, NAILS NOT ACCEPTABLE.

24. RECESSED BOXES SHALL NOT BE MOUNTED BACK-TO-BACK IN ANY WALL; MINIMUM OFFSET SHALL BE 24 INCHES.

25. JUNCTION BOXES THAT DO NOT CONTAIN ANY DEVICE(S) SHALL BE LOCATED IN STORAGE ROOMS, ELECTRICAL CLOSETS, OR ABOVE ACCESSIBLE CEILINGS, NOT IN HARD LID CEILINGS OR OTHER FORMS OF INACCESSIBLE CEILINGS. PLACE BOXES WHICH MUST BE EXPOSED TO PUBLIC VIEW IN A LOCATION APPROVED BY THE OWNER'S PROJECT MANAGER. PROVIDE COVERS OR PLATES TO MATCH ADJACENT SURFACES AS APPROVED BY THE OWNER'S PROJECT MANAGER.

26. SURFACE MOUNTED PULL BOXES, TERMINAL CABINETS, JUNCTION BOXES, PANEL BOARDS ETC., SHALL BE ATTACHED TO WALLS USING APPROPRIATE SCREWS, FASTENERS, BACKING PLATES, STUD BLOCKING ETC., AS DETAILED ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS. IF ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS ARE NOT PROVIDED ON THE PROJECT, CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE AND BACKING SUPPORT TO COMPLY WITH LOCAL BUILDING CODE REQUIREMENTS AND ANY ADDITIONAL REQUIREMENTS IMPOSED BY THE LOCAL AUTHORITY-HAVING-JURISDICTION.

27. EXCEPT WHERE BELOW GRADE, SLEEVES SHALL BE INSTALLED WHERE CONDUIT PASSES THROUGH MASONRY OR CONCRETE WALLS AND SHALL BE 24 GAUGE GALVANIZED STEEL NO MORE THAN 1/2" GREATER IN DIAMETER THAN THE OUTSIDE DIAMETER OF THE CONDUIT. WHEN LOCATED IN NON-RATED STRUCTURES, CAULK CONDUIT SLEEVE WITH STONE WOOL. WHEN LOCATED IN FIRE RATED STRUCTURES, PROVIDE U.L. LISTED FIRE STOPPING SYSTEM. SEE FIRE STOPPING SECTION OF THIS SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

28. ALL BOXES SHALL BE COVERED WITH OUTLET BOX PROTECTOR, OR SIMILAR DEVICE/METHOD TO KEEP DIRT/DEBRIS FROM ENTERING BOX, CONDUIT OR PANELS. IF DIRT/DEBRIS DOES NOT IN, IT SHALL BE REMOVED PRIOR TO PULLING WIRES.

29. ALL BOXES INSTALLED OUTDOORS SHALL BE SUITABLE FOR OUTDOOR INSTALLATIONS, GASKETED, SCREW COVER AND PAINTED AS DIRECTED BY THE ARCHITECT WITH WEATHERPROOF PAINT TO MATCH BUILDING.

30. ALL CONDUIT ENTRIES TO OUTDOOR MOUNTED PANELS, CABINETS, BOXES, ETC., SHALL BE MADE USING MYERS "SCRU-TITE" HUBS SERIES ST.

31. PROVIDE NYLON OR A 1/8-INCH O.D. POLYETHYLENE ROPE, RATED AT 250 POUNDS TENSILE STRENGTH, IN ALL CONDUITS MORE THAN 5 FEET IN LENGTH LEFT EMPTY FOR FUTURE USE. NOT LESS THAN 5 FEET OF ROPE SHALL BE LEFT AT EACH END OF THE CONDUIT. TAG ALL LINES WITH A PLASTIC TAG AT EACH END INDICATING THE TERMINATION/STUB LOCATION OF THE OPPOSITE END OF THE CONDUIT.

32. ALL MULTIPLE CONDUIT RUNS WITHIN SUSPENDED CEILINGS SHALL BE SUSPENDED FROM BUILDING STRUCTURE BY MEANS OF UNISTRUT HANGERS/RACK. CONDUIT SHALL NOT BE ALLOWED TO LAY ON CEILING OR BE SUPPORTED FROM CEILING SUSPENSION WIRES OR OTHER SUSPENSION SYSTEM. SUPPORT CONDUIT TO STRUCTURE ABOVE SUSPENDED CEILINGS 8" MINIMUM ABOVE CEILING TO ALLOW REMOVAL OF CEILING TILE. MAINTAIN TWO INCH CLEARANCE ABOVE RECESSED LIGHT FIXTURES.

33. ALL EXPOSED CONDUITS AND SUPPORT HARDWARE SHALL BE PAINTED TO MATCH THE FINISH OF THE WALL OR CEILING TO WHICH IT IS SUPPORTED.

34. WHERE CONDUITS OR WIREWAYS CROSS SEISMIC JOINTS, PROVIDE APPROVED FLEXIBLE CONDUIT CONNECTION OR APPROVED EXPANSION/DEFLECTION FITTING TO ALLOW FOR DISPLACEMENT OF CONDUIT IN ALL THREE AXES. CONNECTION SHALL ALLOW FOR MOVEMENT IN ACCORDANCE WITH DESIGN OF SEISMIC JOINT. NON-FLEXIBLE RACEWAYS CROSSING EXPANSION JOINTS OR OTHER AREAS OF POSSIBLE STRUCTURAL MOVEMENT SHALL MAKE PROVISION FOR 3-WAY MOVEMENT AT SUCH POINTS BY MEANS OF EXPANSION/DEFLECTION FITTINGS. FITTINGS SHALL BE INSTALLED IN THE CENTER OF THEIR AXES OF MOVEMENT AND SHALL NOT BE DEFLECTED TO MAKE PART OF A CONDUIT BEND, OR COMPRESSED OR EXTENDED TO COMPENSATE FOR INCORRECT CONDUIT LENGTH. INSTALL FLEXIBLE CONDUIT CONNECTION (5) OR APPROVED EXPANSION/DEFLECTION FITTING(S) COMPLETE WITH GROUND JUMPERS. WHERE NECESSARY, PROVIDE APPROVED EXPANSION JOINTS TO ALLOW FOR THERMAL EXPANSION AND CONTRACTION OF CONDUIT (5). INSTALL EXPANSION JOINTS COMPLETE WITH GROUND JUMPERS.

35. SEAL ALL CONDUITS WHERE TERMINATION IS SUBJECT TO MOISTURE OR WHERE CONDUIT PENETRATES EXTERIOR WALL, FLOOR OR ROOF, IN REFRIGERATED AREAS, CLASSIFIED (HAZARDOUS AREAS) AND AS INDICATED ON THE DRAWINGS.

36. EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS OR ELSEWHERE IN THESE SPECIFICATIONS, BENDS IN FEEDER AND BRANCH CIRCUIT CONDUIT 2 INCHES OR LARGER SHALL HAVE A RADIUS OR CURVATURE OF THE INNER EDGE, EQUAL TO NOT LESS THAN TEN (10) TIMES THE INTERNAL DIAMETER OF THE CONDUIT. EXCEPT WHERE SWEEPING VERTICALLY INTO A BUILDING WHERE SWEEP RADIUS EQUALS TEN (10) TIMES CONDUIT DIAMETER, UNDERGROUND COMMUNICATIONS AND BUILDING INTERCONNECT CONDUITS 3 INCHES OR LARGER SHALL HAVE A MINIMUM 12'-6" RADIUS OR CURVATURE OF THE INNER EDGE. FOR THE SERVING UTILITIES, RADIUS BENDS SHALL BE MADE PER THEIR RESPECTIVE SPECIFICATIONS.

37. TAG ALL EMPTY CONDUITS AT EACH ACCESSIBLE END WITH A PERMANENT TAG IDENTIFYING THE PURPOSE OF THE CONDUIT, FOOTAGE END-TO-END, AND THE LOCATION OF THE OTHER END. IN WET, CORROSIVE OUTDOOR OR UNDERGROUND LOCATIONS, USE BRASS, BRONZE, OR COPPER 16 GAUGE TAGS SECURED TO CONDUIT ENDS WITH #16 OR LARGER GALVANIZED WIRE. INSCRIBE ON THE TAGS, WITH STEEL PUNCH DIES, CLEAR AND COMPLETE IDENTIFYING INFORMATION.

38. THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL APPLY TO UNDERGROUND CONDUITS:

a. UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC (POLYVINYL CHLORIDE) UNLESS OTHERWISE INDICATED ELSEWHERE IN THESE SPECIFICATIONS OR AS REQUIRED PER CEC, ARTICLE 517. 13.

b. FOR ALL COMMUNICATIONS CONDUITS 2" AND LARGER AND FEEDERS 100 AMPS OR GREATER, PROVIDE WITH A MINIMUM 3" INCH, (2,000 LB) CONCRETE ENVELOPE, 2" INCH MINIMUM SEPARATION BETWEEN CONDUITS, INSTALLED AT DEPTH OF NOT LESS THAN 24" BELOW GRADE. (PROVIDE CONCRETE ENCASEMENT AND/OR GREATER MINIMUM CONDUIT DEPTH AS REQUIRED BY THE UTILITY COMPANIES.) CONDUIT SEPARATION WITHIN A DUCT BANK SHALL BE MAINTAINED USING PLASTIC SPACERS LOCATED AT 5'-0" INTERVALS. WHERE POWER AND COMMUNICATION CONDUITS ARE RUN IN A COMMON TRENCH, A 12 INCH MINIMUM SEPARATION SHALL BE MAINTAINED BETWEEN POWER AND COMMUNICATION CONDUITS OR AS REQUIRED BY UTILITY COMPANIES.

c. IN ALL CASES, WHERE ANY CONDUIT(S) PASS UNDER A BUILDING SLAB OR FOOTING, THE ELECTRICAL CONTRACTOR WILL PROVIDE A BENTONITE CLAY OR CONCRETE BARRIER THAT CONFORMS TO THE HEIGHT AND WIDTH OF THE TRENCH EXCAVATION AND IS A MINIMUM OF 18" THICK. IN ALL CASES, WHERE CONDUIT(S) PASS THRU A SLEEVE IN A FOOTING OR OTHER FOUNDATION ELEMENT, THE ELECTRICAL CONTRACTOR WILL PROVIDE A BENTONITE CLAY OR CONCRETE BARRIER BETWEEN THE SLEEVE AND THE CONDUIT(S) SURROUNDING THE CON0UIT(S) FOR THE ENTIRE DEPTH OF THE SLEEVE. THE BARRIER IS REQUIRED TO PREVENT PASSAGE OF MOISTURE UNDER OR THRU THE SLAB OR FOOTING VIA THE TRENCH OR SLEEVE.

d. WHERE UNDERGROUND CONDUIT PASSES UNDER A BUILDING SLAB, CONCRETE ENCASEMENT MAY NOT BE REQUIRED, EXCEPT AS REQUIRED ABOVE, CONTACT THE ENGINEER FOR WRITTEN DIRECTION PRIOR TO OMITTING ANY ENCASEMENT.

e. UNDERGROUND CONDUITS, WHICH TERMINATE INSIDE BUILDING(S) BELOW GRADE, SUCH AS IN A BASEMENT LEVEL, OR WHICH SLOPE SO THAT WATER MIGHT FLOW INTO INTERIOR BUILDING SPACES, SHALL BE SEALED AT THE POINT OF PENETRATION WITH A MODULAR CONDUIT SEAL (LINK-SEAL OR EQUAL BY ROX SYSTEMS). CONDUIT/CONDUIT SEALING SYSTEM PENETRATIONS OF WATERPROOFING MEMBRANES/SYSTEMS ON EXISTING STRUCTURES SHALL BE COMPLETELY RESTORED AS REQUIRED TO MAINTAIN MEMBRANE/SYSTEM MANUFACTURER AND INSTALLER WARRANTEE FOR THE INSTALLATION. ALL CONDUITS SHALL BE PROVIDED WITH A 4? SLOPE AWAY FROM BUILDINGS. ALL CONDUITS SHALL BE INSTALLED SUCH THAT THE WATER CANNOT ACCUMULATE IN THE CONDUIT AND SUCH THAT WATER DRAINS INTO THE NEAREST MANHOLE, PULL BOX OR VAULT AND NOT INTO THE FACILITY. IN INSTANCES WHERE GRADE CHANGES OR ELEVATION DIFFERENCES PREVENT SLOPING OF CONDUIT AWAY FROM A BUILDING INTO THE NEAREST MANHOLE, PULL BOX OR VAULT OR WHERE ACCUMULATION OF WATER IN A MANHOLE, PULL BOX OR VAULT MAY RESULT IN WATER TRAVELING INTO THE FACILITY, CONDUITS SHALL BE SEALED INTERNALLY AT EACH END OF EACH CONDUIT USING CONDUIT SEALING BUSHING, SIZED AS REQUIRED FOR THE CONDUCTORS CONTAINED WITHIN THE CONDUIT (O- Z GEDNEY #CSBG 100PSIG WITHSTAND OR EQUAL). IN ALL CASES, INSTALL PLUGS OR CAPS IN SPARE (EMPTY) CONDUITS AT BOTH ENDS OF EACH CONDUIT (JACKMOON OR EQUAL) PREVENTING BOTH WATER AND GAS FROM ENTERING THE FACILITY VIA THE CONDUITS.

f. INCLUDE A SEPARATE INSULATED GREEN GROUND CONDUCTOR SIZED PER CEC, IN EACH UNDERGROUND ELECTRICAL FEEDER/BRANCH CIRCUIT.

g. ALL UNDERGROUND CONDUITS WITH CIRCUITS RATED AT 40 AMPS OR GREATER AND ALL UNDERGROUND COMMUNICATIONS CONDUITS SHALL BE PROVIDED WITH A METALLIC MARKER TAPE LOCATED 12 INCHES BELOW THE FINISHED GRADE.

h. WHERE UNDERGROUND CONDUITS SWEEP INTO/THRU SLABS, UTILIZE PVC 90 DEGREE SWEEPS THAT TRANSITION, VIA FEMALE PVC ADAPTER TO GRC COUPLING MOUNTED FLUSH IN SLAB. GRC COUPLINGS SHALL BE 1/2 LAP TAPED WITH 20 MIL TAPE. IF THE DISTANCE OF THE CONDUIT RUN BETH/EEN A SWEEP AND THE NEXT CONNECTING SWEEP, PULLBOX, VAULT OR MANHOLE EXCEEDS 150 FT THEN THE SWEEP SHALL BE CONCRETE ENCASED. EXCEPTIONS:

a. COMMUNICATIONS CONDUITS SHOWN TERMINATING AT A FINISHED FLOOR SHALL HAVE AN ADDITIONAL 4" HIGH GRC NIPPLE EQUIPPED WITH A BUSHING, REMOVABLE CONDUIT PLUG, LABELING TAG AND PULL ROPE. TIE OFF PULL ROPE TO CONDUIT PLUG.

b. UTILITY CONDUIT SWEEPS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY.

i. ALL PVC CONDUIT SHALL BE GLUED FOR A WATER AND GAS TIGHT INSTALLATION. THE CONTRACTOR SHALL USE APPROPRIATE SOLVENT ON ALL JOINTS PRIOR TO GLUING CONDUIT AND FITTINGS TOGETHER.

a. INSTALLATION OF 600-VOLT CONDUCTORS:

1. ALL ELECTRICAL WIRE, INCLUDING SIGNAL CIRCUITS, SHALL BE INSTALLED IN CONDUIT.

2. ALL CIRCUITS AND FEEDER WIRES FOR ALL SYSTEMS SHALL BE CONTINUOUS FROM OVERCURRENT PROTECTIVE DEVICE OR SWITCH TO TERMINAL OR FARTHEST OUTLET. NO JOINTS SHALL BE MADE EXCEPT IN PULL, JUNCTION OR OUTLET BOXES, OR IN PANEL OR SWITCHBOARD GUTTERS.

a. UTILIZE PREINSULATED "WINGED" SPRING TYPE CONNECTORS, PM COMPANY AS REQUIRED FOR SPLICES AND TAPS IN CONDUCTORS {6 AWG AND SMALLER. WHEN A SPRING CONNECTOR IS USED IN AN UNDERGROUND ENVIRONMENT OR WHEN SUBJECT TO MOISTURE, UTILIZE A 3M COMPANY EPOXY RESIN CONNECTOR SEALING PACK TO SEAL THE SPRING CONNECTOR.

b. WIRES #4 AWG AND LARGER AWG SHALL BE JOINED TOGETHER AS FOLLOWS:

1. WHEN LOCATED IN AN UNDERGROUND ENVIRONMENT OR WHEN SUBJECT TO MOISTURE, THE SPLICE SHALL BE MADE WITH COMPRESSION CONNECTOR AND SEALED BY A 3M, OR EQUAL, PST COLO SHRINK CONNECTOR INSULATOR.

2. WHEN LOCATED IN AN INTERIOR ENVIRONMENT, THE SPLICE SHALL BE MADE WITH AN ILSCO OR EQUAL DUAL RATED, INSULATED SPLICER -REDUCER CONNECTOR OR MULTI-TAP CONNECTOR-LISTED FOR USE WITH 75/90 DEGREE CELSIUS RATED CONDUCTORS.

3. CONNECTIONS TO BUSBAR SHALL BE MADE WITH DUAL-RATED COPPER/ALUMINUM ONE-PIECE COMPRESSION LUGS. PARALLELED CONDUCTOR CONNECTIONS SHALL BE BY MECHANICAL LUGS. THOROUGHLY CLEAN ALL CONDUIT AND WIRE-WAYS AND SEE THAT ALL PARTS ARE PERFECTLY DRY BEFORE PULLING ANY WIRES.

4. INSTALL UL APPROVED FIXTURE WIRE FROM ALL LIGHTING FIXTURE LAMP SOCKETS INTO FIXTURE OUTLET OR JUNCTION BOX.

5. FOR 20 AMPERE BRANCH CIRCUIT WIRING, INCREASE #12 CONDUCTORS TO #10 FOR 120 VOLT CIRCUITS LONGER THAN 100 FEET AND FOR 277 VOLT CIRCUITS LONGER THAN 150 FEET, MINIMUM. SEE DRAWING SCHEDULE FOR ADDITIONAL INFORMATION.

6. CONDUCTOR SUPPORT. PROVIDE CONDUCTOR SUPPORTS AS REQUIRED BY CODES AND RECOMMENDED BY CABLE MANUFACTURER. WHERE REQUIRED, PROVIDE CABLE SUPPORTS IN VERTICAL CONDUITS AND PROVIDE LOWER END OF CONDUIT WITH A VENTILATOR.

C. GROUNDING/BONDING:

1. PROVIDE GROUNDING AND BONDING FOR ENTIRE ELECTRIC INSTALLATION AS SHOWN ON PLANS, AS LISTED HEREIN AND AS REQUIRED BY APPLICABLE CODES. INCLUDED, BUT NOT LIMITED TO, ARE ITEMS THAT REQUIRE GROUNDING/BONDING:

a. CONDUIT, RACEWAYS AND CABLE TRAYS.
b. NEUTRAL OR IDENTIFIED CONDUCTORS OF INTERIOR WIRING SYSTEM.
c. PANELBOARDS, DISTRIBUTION BOARDS, SWITCHGEAR AND SWITCHBOARDS.
d. NON -CURRENT CARRYING METAL PARTS OF FIXED EQUIPMENT.
e. TELEPHONE DISTRIBUTION EQUIPMENT.
f. METAL PIPING INSTALLED IN OR ATTACHED TO A BUILDING/STRUCTURE.
g. METALLICALLY ISOLATED STRUCTURAL STEEL.

2. IN MULTI-OCCUPANCY BUILDINGS, CONTRACTOR SHALL BOND METAL WATER PIPING SYSTEMS INSTALLED IN, UNDER OR ATTACHED TO A BUILDING AND/OR STRUCTURE SERVING INDIVIDUAL OCCUPANCIES WHERE THE PIPING SYSTEM(S) ARE METALLICALLY ISOLATED FROM EACH OTHER. PER CEC, ART. 250. 104(A)(2) & (4), THE BONDING CONDUCTOR SHALL BE SIZED PER TABLE 250.122 AND CONNECTED TO THE SWITCHBOARD/PANELBOARD SERVING THAT SUITE/OCCUPANCY.

3. GROUNDING SYSTEM CONNECTION:

a. COMPRESSION CONNECTORS SHALL BE UNPLATED COPPER, MANUFACTURED BY BURNDY, OR APPROVED EQUAL, DESIGNED SPECIFICALLY FOR THE INTENDED CONNECTION.

b. EXOTHERMIC WELD-TYPE CONNECTORS SHALL BE 'CADWELD' MANUFACTURED BY ERICO PRODUCTS, OR APPROVED EQUAL, DESIGNED SPECIFICALLY FOR THE INTENDED CONNECTION.

c. MECHANICAL CONNECTORS SHALL NOT BE USED.

4. PROVIDE SEPARATE GREEN EQUIPMENT GROUND CONDUCTOR IN ALL ELECTRICAL RACEWAYS, TO EFFECTIVELY GROUND ALL FIXTURES, PANELS, CONTROLS, MOTORS, DISCONNECT SWITCHES, EXTERIOR LIGHTING STANDARDS, AND NON-CURRENT CARRYING METALLIC ENCLOSURES. USE BONDING JUMPERS, GROUNDING BUSHINGS, LUGS, BUSSES, ETC., FOR THIS PURPOSE. CONNECT THE EQUIPMENT GROUND TO THE BUILDING SYSTEM GROUND. USE THE SAME SIZE EQUIPMENT GROUND CONDUCTORS AS PHASE CONDUCTORS, UP THROUGH #10 AWG. USE CEC TABLE 250.122 FOR CONDUCTOR SIZE WITH PHASE CONDUCTORS #8 AND LARGER, IF NOT SHOWN ON THE DRAWINGS.

5. CLEAN THE CONTACT SURFACES OF ALL GROUND CONNECTIONS PRIOR TO MAKING CONNECTIONS.

6. DUCTWORK. PROVIDE A FLEXIBLE GROUND STRAP, NO. 6 AWG EQUIVALENT, AT EACH FLEXIBLE DUCTCONNECTION AT EACH AIR HANDLER, EXHAUST FAN, AND SUPPLY FAN, AND INSTALL TO PRECLUDE VIBRATION.

7. MOTORS. CONNECT THE GROUND CONDUCTOR TO THE CONDUIT WITH AN APPROVED GROUNDING BUSHING, AND TO THE METAL FRAME WITH A BOLTED SOLDERLESS LUG. BOLTS, SCREWS AND WASHERS SHALL BE BRONZE OR CADMIUM PLATED STEEL.

8. BUILDING GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS.

D. PREFABRICATED EQUIPMENT: INSTALLATION OF ALL PREFABRICATED ITEMS AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTION PAMPHLETS. WHERE CODE REQUIREMENTS AFFECT INSTALLATION OF MATERIALS AND EQUIPMENT, THE MORE STRINGENT REQUIREMENTS, CODE OR MANUFACTURER'S INSTRUCTIONS AND/OR SPECIFICATIONS, SHALL GOVERN THE WORK.

E. FIRESTOPPING:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONJUNCTION WITH THE SELECTION AND INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT UL-LISTED FIRE STOP ASSEMBLY/SYSTEM(S) AS REQUIRED BY PROJECT CONDITIONS.

2. EACH FIRE STOP ASSEMBLY/SYSTEM SHALL HAVE AN "F" AND/OR "T" RATING AS REQUIRED BY EACH CONDITION REQUIRING FIRE STOPPING. EACH FIRE STOP ASSEMBLY/SYSTEM SHALL HAVE A CURRENT U.L. LISTING, AS INDICATED IN THE LATEST EDITION OF THE U.L. FIRE RESISTANCE DIRECTORY. CONTRACTOR SHALL VERIFY ACCEPTABILITY OF ALL FIRE STOPPING METHODS AND SYSTEM SELECTIONS WITH THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. THE CONTRACTOR SHALL INSTALL EACH FIRESTOP ASSEMBLY/SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

3. EACH FIRE STOP ASSEMBLY/SYSTEM SHALL BE LABELED WITH FIRE STOP MANUFACTURER - FURNISHED LABEL ON EACH SIDE OF THE FIRE STOPPING SYSTEMS DEPICTING UL NUMBER, ETC.

****END OF SECTION

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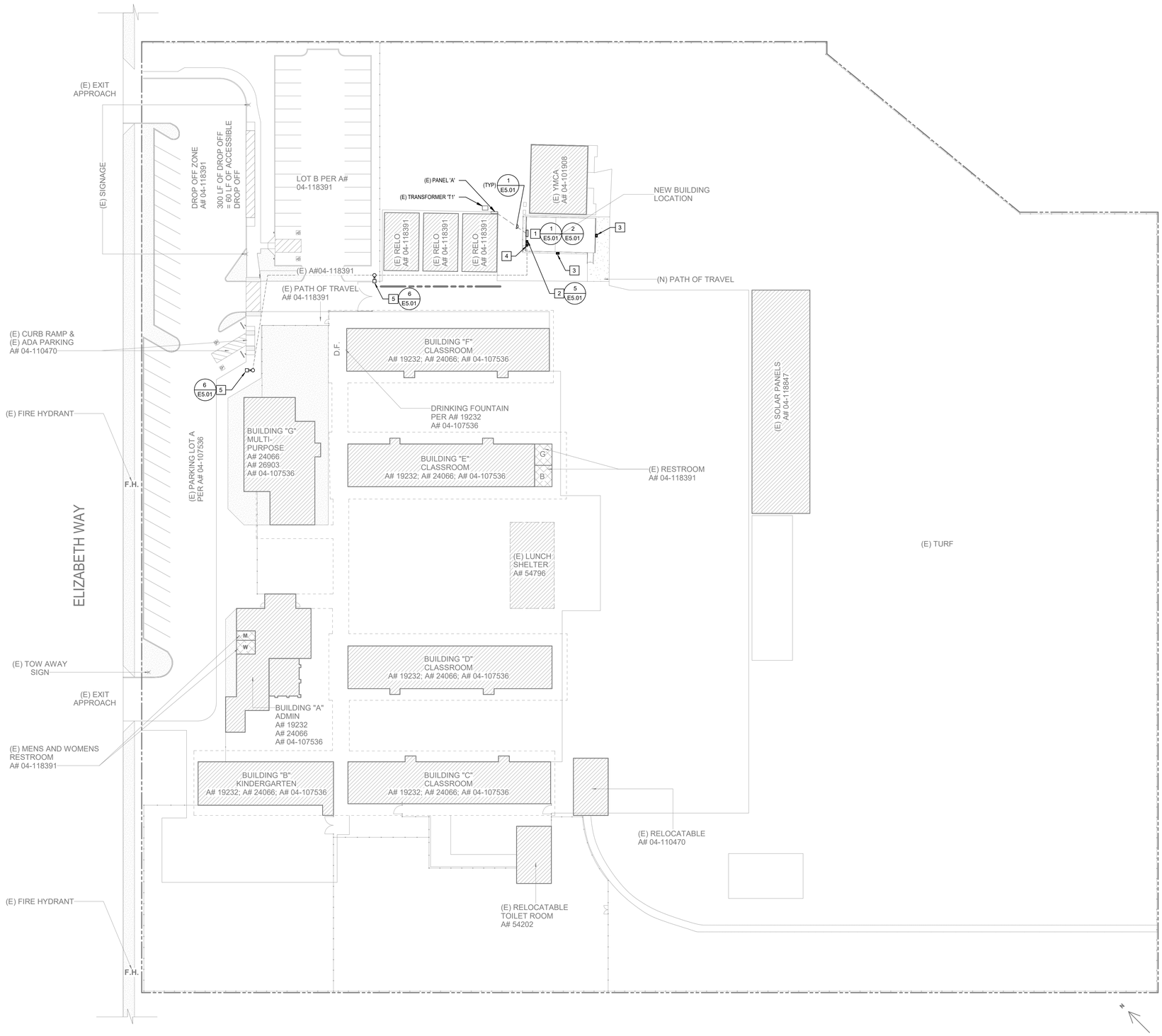
ELECTRICAL SPECIFICATIONS

E0.01

0" 1"



1 ELECTRICAL SITE PLAN
1" = 30'-0"

GENERAL NOTES

1. 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.
2. COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
3. UNLESS NOTED OTHERWISE, ALL UNDERGROUND CONDUIT SHOWN ON THIS PLAN TO BE MINIMUM 1" IN SIZE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.
5. ALL PANELBOARDS ARE PRE-INSTALLED BY PORTABLE MANUFACTURER. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND QUANTITY PRIOR TO ROUGH-IN.
6. PATHWAY IS APPROXIMATE. CONTRACTOR SHALL VERIFY PROPER PATHWAY PRIOR TO INSTALLATION.
7. REFER TO SINGLE LINE DIAGRAM ON 4/E5.01 FOR FEEDER SIZING.

KEY NOTES

1. 100A, 120/208V, 3PH, 4W PANEL TO BE PROVIDED WITH NEW PORTABLE BUILDING. PANEL TO BE FED AS SHOWN ON SINGLE LINE DIAGRAM ON SHEET E5.01. CONTRACTOR TO FIELD VERIFY CIRCUITS ARE OPEN TO USE.
2. PROVIDE NEW LIGHTING INVERTER AT LOCATION SHOWN (MYERS ILLUMINATOR LVM - 250-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.
3. PROVIDE NEW LED WALL PACK LIGHTING AT LOCATION SHOWN (ELUCENT WALL PACK WPDS-40-40-120-G4). CONTRACTOR TO CIRCUIT NEW WALLPACKS INTO NEW MYERS INVERTER. CONTRACTOR TO VERIFY EXACT LOCATION OF LIGHTING.
4. PROVIDE 365-DAYS ASTRONOMICAL TIME CLOCK SWITCH - NEMA 3R WITH PHOTOCELL SENSOR AT ROOF LEVEL FACING NORTH.
5. INSTALL NEW POLE FIXTURE MOUNTED @ 15'-0", LITHONIA - DSX2 LED P2 40K 70CRI TFTM MVOLT SPA PIR DDBXD WITH POLE 'SSS XXFT 4C MOUNTING DDBXD'. ROUTE CIRCUIT THROUGH MYERS INVERTER LOCATED IN BLDG E.

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ELECTRICAL SITE PLAN

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E1.01

FILE PATH: Z:\Projects\...
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0" 1"

(E) Branch Panel: A

NEUTRAL BUS: EXISTING
NEUTRAL RATING: EXISTING
GROUND BUS: EXISTING

VOLTAGE: 120/208V
MAINS: EXISTING

A/C RATING: EXISTING

MOUNTING: EXISTING

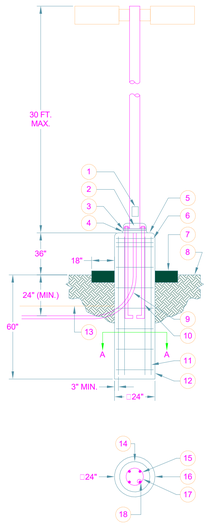
CIR NO	Circuit Description	Breaker amps/poles			A	B	C	Legend			Circuit Description	CIR NO
1	EXISTING LOAD	100 A	2	--	0 / 0			--	1	20 A	EXISTING LOAD	2
3	--	--	--	--		0 / 0		--	2	100 A	EXISTING LOAD	4
5	SPARE	20 A	1	--			0 / 0	--	--	--	--	6
7	SPARE	20 A	1	--	0 / 0			--	2	100 A	NEW RELOCATABLE BUILDING	8
9	SPARE	20 A	1	--		0 / 0		--	--	--	--	10
11	EXISTING LOAD	100 A	2	--			0 / 0	--	1	--	SPACE	12
13	--	--	--	--	0 / 0			--	1	--	SPACE	14
15	SPACE	--	1	--		0 / 0		--	1	--	SPACE	16
17	SPACE	--	1	--			0 / 0	--	1	--	SPACE	18
19	SPACE	--	1	--	0 / 0			--	1	--	SPACE	20
21	SPACE	--	1	--		0 / 0		--	1	--	SPACE	22
23	SPACE	--	1	--			0 / 0	--	1	--	SPACE	24
25	SPACE	--	1	--	0 / 0			--	1	--	SPACE	26
27	SPACE	--	1	--		0 / 0		--	1	--	SPACE	28
29	SPACE	--	1	--			0 / 0	--	1	--	SPACE	30
31	SPACE	--	1	--	0 / 0			--	1	--	SPACE	32
33	SPACE	--	1	--		0 / 0		--	1	--	SPACE	34
35	SPACE	--	1	--			0 / 0	--	1	--	SPACE	36
37	SPACE	--	1	--	0 / 0			--	1	--	SPACE	38
39	SPACE	--	1	--		0 / 0		--	1	--	SPACE	40
41	SPACE	--	1	--			0 / 0	--	1	--	SPACE	42

Legend:
** 6 mA GROUND FAULT CIRCUIT BREAKER
*30 mA GROUND FAULT CIRCUIT BREAKER
LOCK-ON CIRCUIT BREAKER HANDLE
ST - SHUNT TRIP

CONNECTED LOAD BY PHASE:
A: 0 VA
B 0 VA
C: 0 VA

CONNECTED 0 VA KVA
0 A 3 PH. AMPS
DEMAND LOAD
0 A 3 PH. AMPS

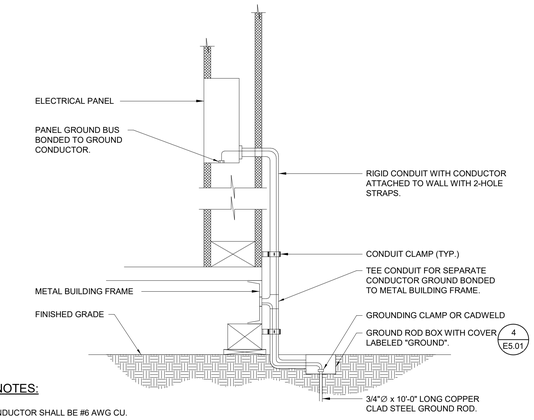
REMARKS:



1. HANDHOLE IN BASE OF POLE COMPLETE WITH GASKETED COVER.
2. BOND GROUND WIRE/CONDUIT TO POLE.
3. POLE BASE WITH WASHERS AND NUTS ON TOP AND BOTTOM AND FULL BASE COVER.
4. GROUT AROUND POLE BASE AFTER LEVELING.
5. RAISED CONCRETE BASE WITH EASED TOP EDGE 1/2" RADIUS CORNERS. SACK AND PATCH SURFACE TO ACHIEVE A SMOOTH UNIFORM FINISH.
6. PLACE THREE #3 TIES IN TOP 5" BASE.
7. MOW STRIP SHALL BE FLUSH WITH SIDEWALK.
8. FINISHED GRADE.
9. THREE 3/4" CONDUITS - ONE FOR LIGHTING, ONE FOR POWER & ONE FOR SIGNAL.
10. 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).
11. FOUR #4 VERTICAL REBAR WITH #4 TIES ON 9" CENTER TO FORM CAGE.
12. CONCRETE BASE. CONCRETE TO BE MIN. 3000 PSI. IN 28 DAYS, POURED IN NATURALLY COMPACTED EARTH HOLE FREE OF LOOSE DIRT OR DEBRIS.
13. PLASTIC WARNING TAPE MARKED "ELECTRICAL" 6" ABOVE CONDUIT.
14. TYP. 18" DIAMETER ROUND STEEL CAGE.
15. TYP. 10" DIAMETER ROUND CAGE WITH 9.5" BOLT CIRCLE.
16. CONCRETE BASE.
17. #4 VERTICAL REBAR, TYPICAL OF FOUR FOR EACH STEEL CAGE.
18. BOLT WITH #3 TIE, TYP.

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

6 LIGHTING POLE MOUNTED DETAIL
NOT TO SCALE

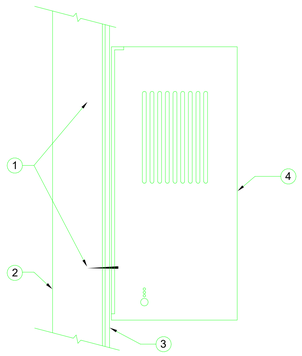


DETAIL NOTES:

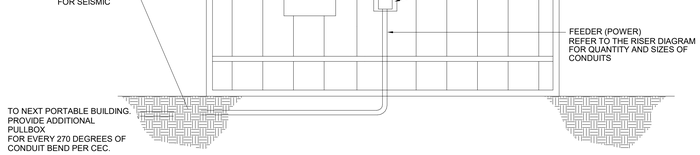
1. SIZE OF CONDUCTOR SHALL BE #6 AWG CU.
2. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL BUILDING FRAME (CEC. 250-81). IN ADDITION TO THE DETAIL SHOWN ABOVE, BOND THE ELECTRICAL GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FT. INTO THE SOIL IF AVAILABLE (CEC. 250-81 & 250.83).
3. ALL MODULES OF METAL FRAME BUILDINGS SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDINGS).
4. 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).
5. GROUND TEST SHALL BE WITNESSED BY PROJECT INSPECTOR, AND RECORDED FOR OWNER MANUAL.

1 PORTABLE BUILDING GROUNDING DETAIL
NOT TO SCALE

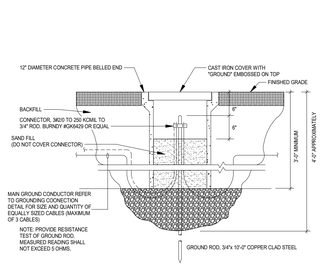
1. (4)1/4" PAN-HEAD TEK SCREWS X MIN. 2 1/2" EMBEDMENT INTO STUDS.
2. METAL WALL STUDS AT 16" O.C.
3. WALL FINISH
4. EMERGENCY LIGHTING INVERTER, IOTA #IIS-375-LED, CEC COMPLIANT, 90 MINUTES RUNTIME 23.0"W x 8.2"D x 17.9"H 114 LBS.



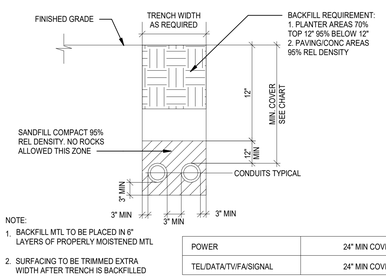
5 LIGHTING INVERTER WALL MOUNTING DETAIL
NOT TO SCALE



2 PORTABLE BUILDING POWER CONNECTION DETAIL
NOT TO SCALE



4 GROUND WELL ASSEMBLY
NOT TO SCALE



NOTE:
1. BACKFILL MTL TO BE PLACED IN 6" LAYERS OF PROPERLY MOISTENED MTL
2. SURFACING TO BE TRIMMED EXTRA WIDTH AFTER TRENCH IS BACKFILLED
3. POWER & LOW VOLTAGE/SIGNAL CONDUITS SHALL BE SEPARATED BY MIN. 12"
4. WHEN TRENCHING NEAR FOOTING, REFER TO 2/S0.1 & 12/S.01 FOR MORE INFORMATION

POWER	24" MIN COVER UNO
TEL/DATA/TV/FA/SIGNAL	24" MIN COVER UNO

3 TRENCH DETAIL
NOT TO SCALE

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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 0N EMERGENCY POWER WHEN AVAILABLE. CONTRACTOR SHALL COORDINATE AND INSTALL ALL 120V POWER REQUIREMENTS AND LOCATIONS AS REQUIRED FOR ALL EQUIPMENT (TYPICAL)
2. CONTRACTOR SHALL COORDINATING WITH PBK TECHNOLOGY DEPARTMENT PRIOR TO THE INSTALLATION OF RACKS AND RACK EQUIPMENT. NO RACKS SHALL BE PERMANENTLY INSTALLED WITHOUT WRITTEN APPROVAL OF THE PROPOSED LOCATIONS.
3. THE PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUITS, BACK BOXES, AND OTHER RACEWAY REQUIRED FOR DEVICES AND PATHWAYS SHOWN ON THE FLOOR PLANS AND DETAIL SHEETS. ANY ADDITIONAL CONDUITS, SLEEVES, AND RACEWAY REQUIREMENTS FOR THE SCS SHALL BE THE RESPONSIBILITY OF THE SCS INSTALLER.
4. THE SELECTED, INSTALLING CONTRACTOR MUST BE A CERTIFIED INTEGRATOR/INSTALLER AUTHORIZED BY THE SPECIFIED SYSTEM MANUFACTURER TO INSTALL THE CABLE PLANT AND CONNECTIVITY PRODUCTS. REFER TO SPECIFICATIONS FOR PRODUCT TYPE AND DESCRIPTION.
5. SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH ENGINEERING BEST PRACTICES AS ESTABLISHED BY ANSI/EIA/TIA, BICSI, AND THE CEC.
6. ALL WIRING SHALL MEET ALL STATE AND LOCAL ELECTRICAL CODES.
7. ALL TELECOMMUNICATIONS SYSTEMS EQUIPMENT AND MOUNTING LOCATIONS SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY STANDARDS.
8. ALL INDUSTRY STANDARD CATEGORY 6A CABLING PRACTICES MUST BE FOLLOWED FOR ALL DATA CABLING.
9. ALL DATA CABLES ARE TO BE INSTALLED WITH A MINIMUM OF 12 INCHES OF SEPARATION FROM AC POWER CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.
10. ALWAYS CROSS OTHER SYSTEM CABLES AT A 90 DEGREE ANGLE.
11. ALL CABLES AND TERMINATION COMPONENTS SHALL BE MACHINE LABELED AT BOTH ENDS. LABEL ALL CABLES PER TS DRAWINGS AND/OR SPECIFICATIONS. FINAL CABLE/OUTLET IDENTIFICATION LABELS SHALL BE COORDINATED WITH THE OWNER AND PBK.
12. CONTRACTOR TO PROVIDE LIGHTNING PROTECTION ON ALL COMMUNICATION CABLE BETWEEN BUILDINGS.
13. ALL EXPOSED CABLING ROUTED IN PLENUM SHALL BE PLENUM-RATED. ALL NON PLENUM-RATED CABLING INSTALLED IN PLENUM SPACES SHALL BE INSTALLED IN CONDUIT.
14. NO TERMINATION OR SPLICES SHALL BE INSTALLED IN OR ABOVE CEILINGS UNLESS NOTED NOTED OTHERWISE.
15. TECHNOLOGY CONTRACTOR SHALL PROVIDE AND INSTALL ALL SLEEVES REQUIRED TO INSTALL COMMUNICATION CABLING THROUGH ALL CMU AND 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.
16. CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.
17. CONTRACTOR SHALL ROUTE ALL FIBER/VOICE/DATA AND CATV CABLING DOWN CORRIDORS AND PERPENDICULAR OR PARALLEL TO BUILDING WALLS ENTER INTO ALL ROOMS ABOVE THE MAIN DOORWAY.
18. ALL COMMUNICATION CABLE INSTALLED SHALL ROUTE TO THE CENTER OF THE ROOM IN WHICH IT SERVES AND THEN TO THE OUTLET LOCATION IT IS INTENDED FOR. EACH CABLE SHALL HAVE A 10' SERVICE LOOP AT THE CENTER OF EACH ROOM AND A 3' SERVICE LOOP ABOVE EACH OUTLET LOCATION.
19. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM A PANDUIT J-MOD CABLE SUPPORT SYSTEMS AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. PANDUIT J-MOD SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. IN LOCATION WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
20. CONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED CABLING AND COMPONENTS TO FURNISH TWO (2) ANALOG TELEPHONE CABLES TO THE FIRE ALARM SYSTEM. CONTRACTOR TO COORDINATE WITH THE SYSTEM INSTALLER FOR EXACT LOCATIONS AND TERMINATION INSTRUCTIONS PRIOR TO INSTALLATION.
21. ALL EXPOSED CABLING OR CABLING ROUTING ACROSS NON ACCESSIBLE CEILINGS SHALL BE INSTALLED IN CONDUIT. CONDUIT SHALL BE PROPERLY SIZED TO MAINTAIN THE 40% FILL RATIO.
22. 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 EXCEPTED. CONTRACTOR TO MAINTAIN A 40% MAXIMUM FILL RATION ON ALL SLEEVES INSTALLED.

AUDIO & VIDEO GENERAL NOTES

1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND 0N 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.
2. THE PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL IN WALL CONDUITS, BELOW GRADE CONDUITS, BELOW SLAB CONDUITS, CONDUITS ACROSS OPEN AREAS BACK BOXES, SLEEVES, AND OTHER RACEWAY REQUIRED FOR DEVICES AND PATHWAYS SHOWN ON THE FLOOR PLANS AND DETAIL SHEETS. ANY ADDITIONAL CONDUITS, SLEEVES, AND RACEWAY REQUIREMENTS FOR EACH SYSTEM SHALL BE THE RESPONSIBILITY OF EACH SYSTEM INSTALLER.
3. THE SECURITY CAMERA SYSTEM INSTALLER SHALL BE RESPONSIBLE FOR CONNECTING ALL APPLICABLE SYSTEM EQUIPMENT TO THE OWNER'S NETWORK.
4. ALL EXPOSED SYSTEM'S WIRING OR WIRING ROUTING ACROSS NON ACCESSIBLE CEILINGS SHALL BE ROUTED IN CONDUIT. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH 40% CABLE FILL RATIO. MINIMUM CONDUIT SIZE SHALL BE 3/4".
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL EXTERIOR WALL PENETRATIONS ARE PROPERLY SEALED TO PREVENT ANY MOISTURE FROM ENTERING BUILDING.
6. NO CONDUITS SHALL BE INSTALLED ON THE EXTERIOR OF THE BUILDING. IF EXTERIOR CONDUITS ARE REQUIRED FOR A COMPLETE INSTALLATION, EACH SYSTEM CONTRACTOR SHALL COORDINATE WITH THE PROJECTS CONSULTANT PRIOR TO ANY ROUGH-IN.
7. EACH SYSTEM CONTRACTOR SHALL PROVIDE AND INSTALL PROTECTIVE BUSHINGS ON ALL CONDUIT STUB OUTS AND SLEEVES TO PREVENT CABLE DAMAGE. BUSHING TO BE INSTALLED PRIOR TO CABLE INSTALLATION. CUTTING BUSHING AND INSTALLING AFTER CABLE IS INSTALLED WILL NOT BE EXCEPTED.
8. ALL CABLE SHALL BE ROUTED DOWN CORRIDORS, PARALLEL AND PERPENDICULAR TO THE BUILDING WALLS AND STRUCTURE. CABLE TO EACH DEVICE SHALL BRANCH OFF OF A MAIN CORRIDOR TRUNK. ROUTING CABLES THROUGH CLASSROOMS, OFFICES, STORAGE ROOMS, RESTROOMS OR ANY TYPE OF ROOM OTHER THAN A CORRIDOR WILL NOT BE ACCEPTED. ENTER ALL ROOMS ABOVE THE ASSOCIATED ROOM DOORWAY.
9. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM A PANDUIT J-MOD CABLE SUPPORT SYSTEMS AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. PANDUIT J-MOD SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
10. SECURITY CAMERA SYSTEM INSTALLER SHALL PROVIDE A CEILING MOUNTED INSTALLATION KIT RECOMMENDED BY THE MANUFACTURER OF THE CAMERA. EACH CEILING MOUNTED CAMERA KIT SHALL HAVE A SUPPORT WIRE ATTACHED TO THE BUILDING'S STRUCTURE TO PREVENT THE CAMERA FROM DROPPING TO THE FLOOR AT ANY TIME. AT NO POINT SHALL THE WEIGHT OF THE CEILING MOUNTED SECURITY CAMERA BE SUPPORTED BY THE CEILING GRID SYSTEM OR CEILING TILES. ALL CEILING MOUNTED CAMERAS SHALL BE FLUSH MOUNTED.
11. ALL EXTERIOR AND WALL MOUNTED CAMERA LOCATIONS MUST BE COORDINATED WITH THE OWNER PRIOR TO ROUGH-IN. ALL CAMERAS TO BE MOUNTED AT 12'-0" AFG. COORDINATION MEETINGS SHALL BE SCHEDULED THROUGH THE ARCHITECTS PROJECT MANAGER.
12. ALL SECURITY CAMERAS SHOWN TO WATCH EXTERIOR DOORS SHALL BE MOUNTED AT 40' FROM DOOR AT ALL LOCATIONS POSSIBLE. NO CAMERA SHALL BE INSTALLED MORE THAN 40' FROM DOOR.
13. CONDUIT, BACK BOX AND CABLING REQUIREMENTS FOR IP SECURITY CAMERAS: EACH IP CAMERA SHALL BE EQUIPPED WITH (1) CAT6 CABLE BY CABLING CONTRACTOR. CONTRACTOR SHALL MOUNT THIS OUTLET AT +12" ABOVE THE CEILING IN A PLENUM RATED JACK AND COORDINATE ALL FINAL LOCATIONS WITH OTHER TRADES ON THE PROJECT TO VERIFY THAT THE LOCATION OF THE OUTLET MAINTAINS 12" OF CLEARANCE FROM THE FRONT OF THE FACEPLATE FOR OWNER ACCESS. ELECTRICAL CONTRACTOR SHALL ROUTE (1) 1" CONDUIT FROM THE BUILDING STRUCTURE TO A SINGLE GANG BACK BOX MOUNTED AT 5' OR LESS ABOVE THE FINISHED CEILING. SECURE CONDUIT AND BACK BOX TO INSURE MINIMAL SWAY MOVEMENT.
14. VIDEO SURVEILLANCE CONTRACTOR SHALL PROVIDE ONE (1) ADDITIONAL OMNICAST LICENSE FOR EACH DOOR EQUIPPED WITH AN INTERIOR CARD READER AND SOUNDER TO ENABLE THE LOCAL CAMERA VIEW TO BE DISPLAYED ON THE LCD MONITOR IN THE RECEPTION AREA.
15. ALL NEW EXTERIOR CAMERAS COVERING DOORS EQUIPPED WITH SOUNDERS SHALL BE AXIS MODEL #F4005E. PROVIDE ALL REQUIRED AXIS HARDWARE FOR FULLY FUNCTIONAL SYSYTEMS AT ALL #F4005E CAMERA LOCATIONS, INTERIOR AND EXTERIOR.
16. PROVIDE LICENSES FOR ALL CAMERAS AS REQUIRED TO PROVIDE A TURNKEY SYSTEM. SALIENT SYSTEMS LICENSES FOR EXISTING ANALOG AND IP CAMERAS ARE TRANSFERABLE TO NEW IP CAMERAS. PROVIDE LICENSES ONLY FOR NEW CAMERAS THAT ARE NOT REPLACING EXISTING CAMERAS.

INTERCOM SYSTEM'S GENERAL NOTES

1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND 0N 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.
2. THE PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL IN WALL CONDUITS, BELOW GRADE CONDUITS, BELOW SLAB CONDUITS, CONDUITS ACROSS OPEN AREAS BACK BOXES, SLEEVES, AND OTHER RACEWAY REQUIRED FOR DEVICES AND PATHWAYS SHOWN ON THE FLOOR PLANS AND DETAIL SHEETS. ANY ADDITIONAL CONDUITS, SLEEVES, AND RACEWAY REQUIREMENTS FOR EACH SYSTEM SHALL BE THE RESPONSIBILITY OF EACH SYSTEM INSTALLER.
3. ALL EXPOSED SYSTEM'S WIRING OR WIRING ROUTING ACROSS NON ACCESSIBLE CEILINGS SHALL BE ROUTED IN CONDUIT. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH 40% CABLE FILL RATIO. MINIMUM CONDUIT SIZE SHALL BE 3/4".
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL EXTERIOR WALL PENETRATIONS ARE PROPERLY SEALED TO PREVENT ANY MOISTURE FROM ENTERING BUILDING.
5. NO CONDUITS SHALL BE INSTALLED ON THE EXTERIOR OF THE BUILDING. IF EXTERIOR CONDUITS ARE REQUIRED FOR A COMPLETE INSTALLATION, EACH SYSTEM CONTRACTOR SHALL COORDINATE WITH THE PROJECTS CONSULTANT PRIOR TO ANY ROUGH-IN.
6. EACH SYSTEM CONTRACTOR SHALL PROVIDE AND INSTALL PROTECTIVE BUSHINGS ON ALL CONDUIT STUB OUTS AND SLEEVES TO PREVENT CABLE DAMAGE. BUSHING TO BE INSTALLED PRIOR O CABLE INSTALLATION. CUTTING BUSHING AND INSTALLING AFTER CABLE IS INSTALLED WILL NOT BE EXCEPTED.
7. ALL CABLE SHALL BE ROUTED DOWN CORRIDORS, PARALLEL AND PERPENDICULAR TO THE BUILDING WALLS AND STRUCTURE. CABLE TO EACH DEVICE SHALL BRANCH OFF OF A MAIN CORRIDOR TRUNK. ROUTING CABLES THROUGH CLASSROOMS, OFFICES, STORAGE ROOMS, RESTROOMS OR ANY TYPE OF ROOM OTHER THAN A CORRIDOR WILL NOT BE ACCEPTED. ENTER ALL ROOMS ABOVE THE ASSOCIATED ROOM DOORWAY.
8. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM AN APPROVED CABLE SUPPORT SYSTEM AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. THE CABLE SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
9. ALL INTERCOM CABLING FOR CLASSROOMS, OFFICES, CONFERENCE ROOMS, WORK ROOMS, AND LOUNGES SHALL BE HOME RUNS TO HEAD END EQUIPMENT TO ALLOW ZONING TO BE ACCOMPLISHED.
10. ALL EXTERIOR AND WALL MOUNTED SPEAKERS SHALL BE MOUNTED AT 10'-0" UNLESS OTHERWISE NOTED.
11. EXTERIOR SPEAKERS SHALL NOT BE GROUPED WITH INTERIOR SPEAKERS.
12. ALL SPEAKERS SHALL BE CONNECTED TO A STANDARD PUNCH DOWN BLOCK LOCATED NEAR HEAD END EQUIPMENT AND THEN CONNECTED TO HEAD END EQUIPMENT.
13. ALL CEILING MOUNTED SPEAKERS SHALL BE INSTALLED UTILIZING A TILE BRIDGE SUPPORT SYSTEM. AT NO POINT SHOULD THE WEIGHT OF A CEILING MOUNTED SPEAKER BE SUPPORTED BY A CEILING TILE ONLY.
14. ALL WALL MOUNTED CALL INITIATING DEVICES SHALL BE INSTALLED AT +42" ABOVE THE FINISHED FLOOR.

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 TECHNOLOGY CONNECTIONS IN FBO BUILDING AND SITE PER THE DESIGN DRAWINGS.
2. PROVIDE NEW CONDUITS, J-HOOKS ABOVE ACCESSIBLE CEILING SPACES TO SUPPORT NEW TECHNOLOGY WIRING AS REQUIRED BETWEEN END DEVICES AND TECHNOLOGY HEADEND EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL WIRING WITH TERMINATION AND TESTING AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
3. PROVIDE NEW EMPTY UNDERGROUND CONDUITS CAP IN-PLACE FOR FUTURE USE BETWEEN THE NEW COMMUNICATION ROOM 109 IN FBO BUILDING TO FUTURE TERMINAL EXPANSION, AND HANGAR. REFER TO SITE PLAN T1.01 FOR NUMBER AND SIZE OF UNDERGROUND CONDUITS.
4. PROVIDE COMPLETE INFRASTRUCTURE INCLUDING WIRING TO ALL SECURITY DEVICES PER PLANS.
5. THE CONTRACTOR SHALL PROVIDE CONDUITS, UNDERGROUND PULL BOXES, AND WIRING AS REQUIRED FOR CONNECTIONS TO ALL SITE DEVICES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TECHNOLOGY EQUIPMENT/DEVICES MOUNTING AS NOTED PER THE DESIGN DRAWINGS.
7. THE CONTRACTOR SHALL PROVIDE NEW UNDERGROUND CONDUITS FOR NEW UTILITY SERVICE PROVIDER CONNECTION, AND COORDINATE WITH UTILITY SERVICE PROVIDER COMPANY FOR FINAL POINT OF CONNECTION PRIOR TO INSTALLATION.
8. PROVIDE ACCESS CONTROL SYSTEM TO INCLUDE ACCESS CONTROL PANEL, POWER SUPPLY AND CARD READERS PER SPECIFICATIONS.
9. PROVIDE VIDEO SURVEILLANCE SYSTEM AND SECURITY CAMERAS WITH REQUIRED LICENSING FOR A COMPLETE WORKING SYSTEM INCLUDING INTEGRATION WITH ACCESS CONTROL SYSTEM.

TECHNOLOGY SYMBOL LIST

SYMBOL:	DESCRIPTION:	NOTE:
WAP	WIRELESS ACCESS POINT DEVICE/ENCLOSURE (CEILING)	. 1.,2.,5.
# ▽	INFORMATION OUTLET (WALL)	1.,2.,5.
S	PUBLIC ADDRESS SPEAKER (CEILING) TYPE 1	.
UPB1	UNDERGROUND PULL BOX TYPE1	7.
UPB2	UNDERGROUND PULL BOX TYPE2	
	CONDUIT (CONCEALED IN OR ABOVE CEILING/HORIZONTAL SURFACE)	.
	UNDERGROUND/FLOOR CONDUIT	.
	CONDUIT UP	.
	CONDUIT DOWN	.
	CONDUIT WITH CONTINUATION	.
	CONDUIT SLEEVE	.
	FIRE RATED PATHWAY SLEEVE SYSTEM	.

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. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR FULL DETAILS.
2. DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.

TECHNOLOGY SYMBOL LIST NOTES:

1. "#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION.
2. SYMBOL SUBSCRIPT INDICATES DEVICE TYPE.
3. INFORMATION OUTLET INSTALLED IN E.C. PROVIDED FLOOR BOX. "#" INDICATES DATA OUTLET FACEPLATE CONFIGURATION. REFER TO THE ELECTRICAL FLOOR PLANS FOR ADDITIONAL INFORMATION.
4. EQUIPMENT/DEVICE HEIGHT AS INDICATED ON PLANS.
5. REFER TO SPECIFICATION - EXTERIOR COMMUNICATION PATHWAYS AND DETAIL 6/T6.02 FOR UNDERGROUND COMMUNICATIONS PULL BOX.
6. REFER TO SPECIFICATION - EXTERIOR COMMUNICATION PATHWAYS FOR UNDERGROUND COMMUNICATIONS HANDHOLE.
7. PROVIDE AV OUTLET WITH (2) HDMI CONNECTORS AND CABLES. REFER TO FLOOR PLAN FOR DETAILS.

DRAWING INDEX

TECHNOLOGY ABBREVIATION KEY

ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
C	CONDUIT
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
J-BOX	JUNCTION BOX
MPOE	MIMIMUM POINT OF ENTRY
MC	MAIN CROSS-CONNECT
S.C.	SECURITY CONTRACTOR
SIM	SIMILAR
T.C.	TECHNOLOGY CONTRACTOR
TR-#	TELECOMMUNICATIONS ROOM
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
+#	MOUNTING HEIGHT ABOVE FINISHED FLOOR

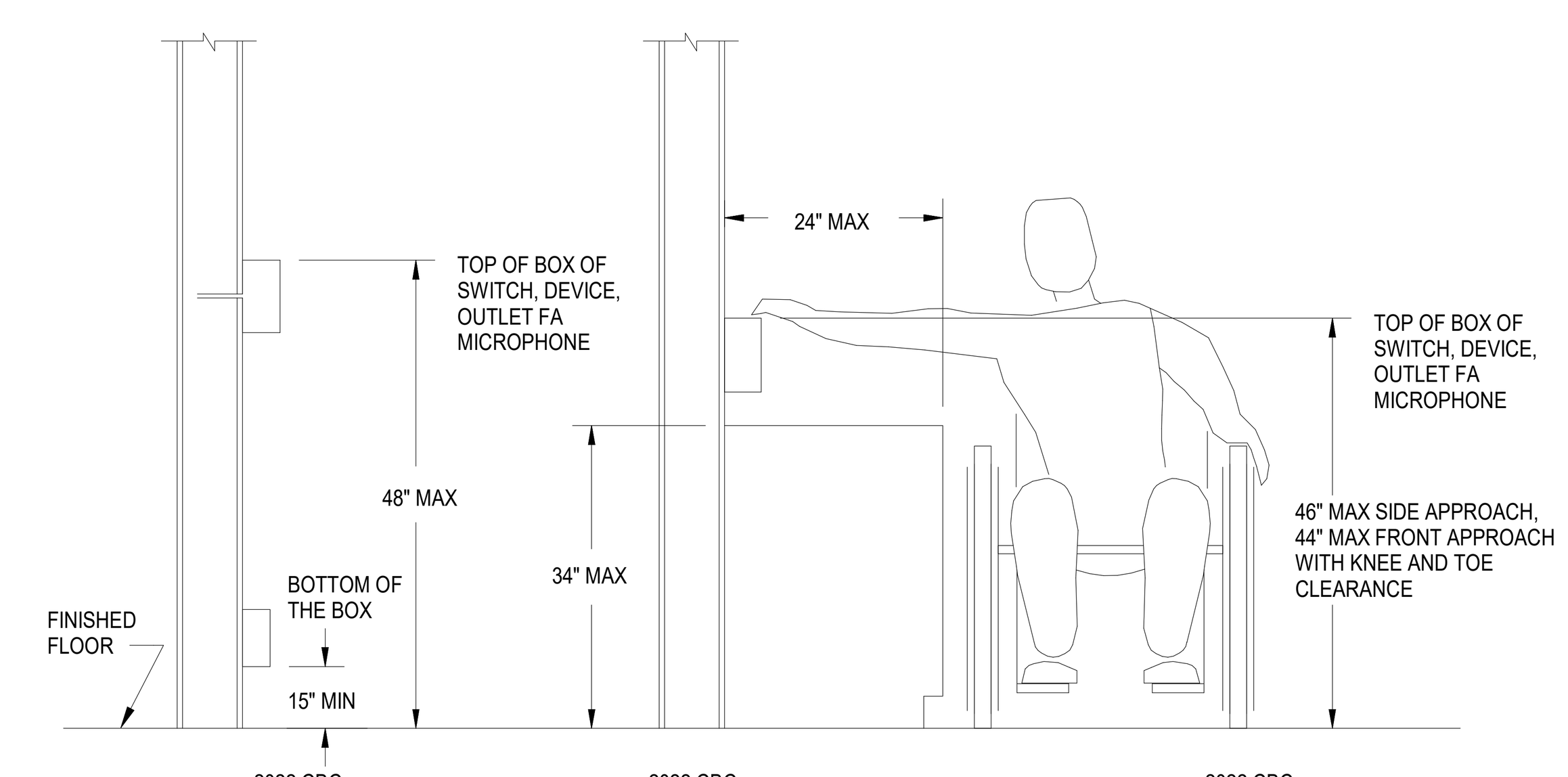
APPLICABLE CODES

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2022
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 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

PARTIAL LIST OF APPLICABLE STANDARDS
NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED): 2016 EDITION
NFPA 720 STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE DETECTION AND WARNING EQUIPMENT; 2016 EDITION
NFPA 80 STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES; 2016 EDITION
UL 464 AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES; 2003 EDITION
UL 521 STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS; 1999 EDITION
UL 1971 STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED; 2002 EDITION (R2010)
ICC 300 STANDARD FOR BLEACHERS, FOLDING AND TELESCOPING SEATING AND GRANDSTANDS; 2017 EDITION

FOR A COMPLETE LIST OF APPLICABLE NFPA STANDARDS REFER TO 2022 CBC (SFM) CHAPTER 35 AND CALIFORNIA FIRE CODE CHAPTER 80.

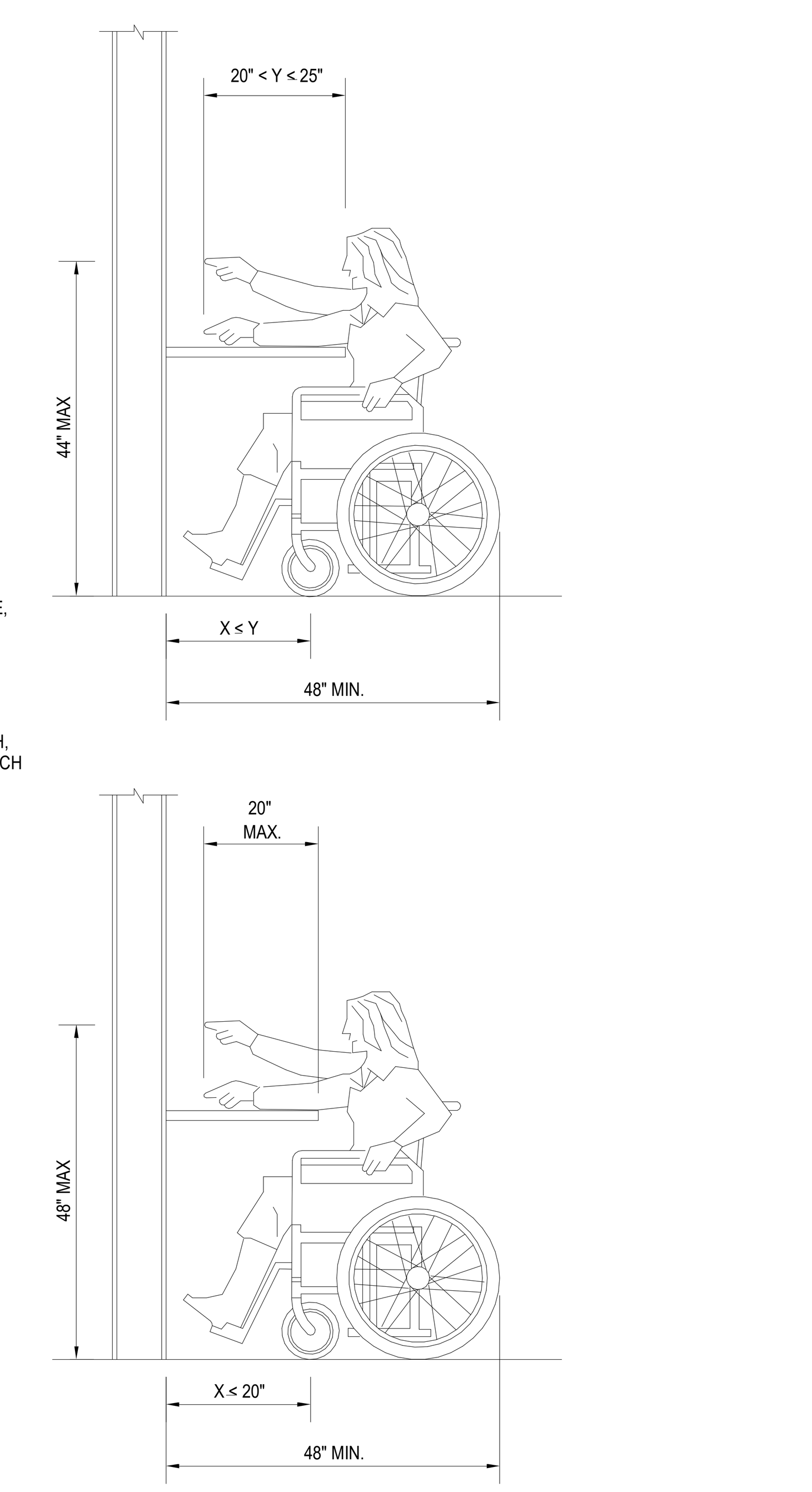
SEE CALIFORNIA BUILDING CODE, CHAPTER 35, FOR STATE OF CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS.



2022 CBC FIG. 11B-308.2.1

2022 CBC FIG. 11B-308.2.2

2022 CBC FIG. 11B-308.3.2



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

Tustin Unified School District

NORTH: TRUE

Consultant

Architect

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TUSD	
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No.	Description	Date

TECHNOLOGY COVER SHEET

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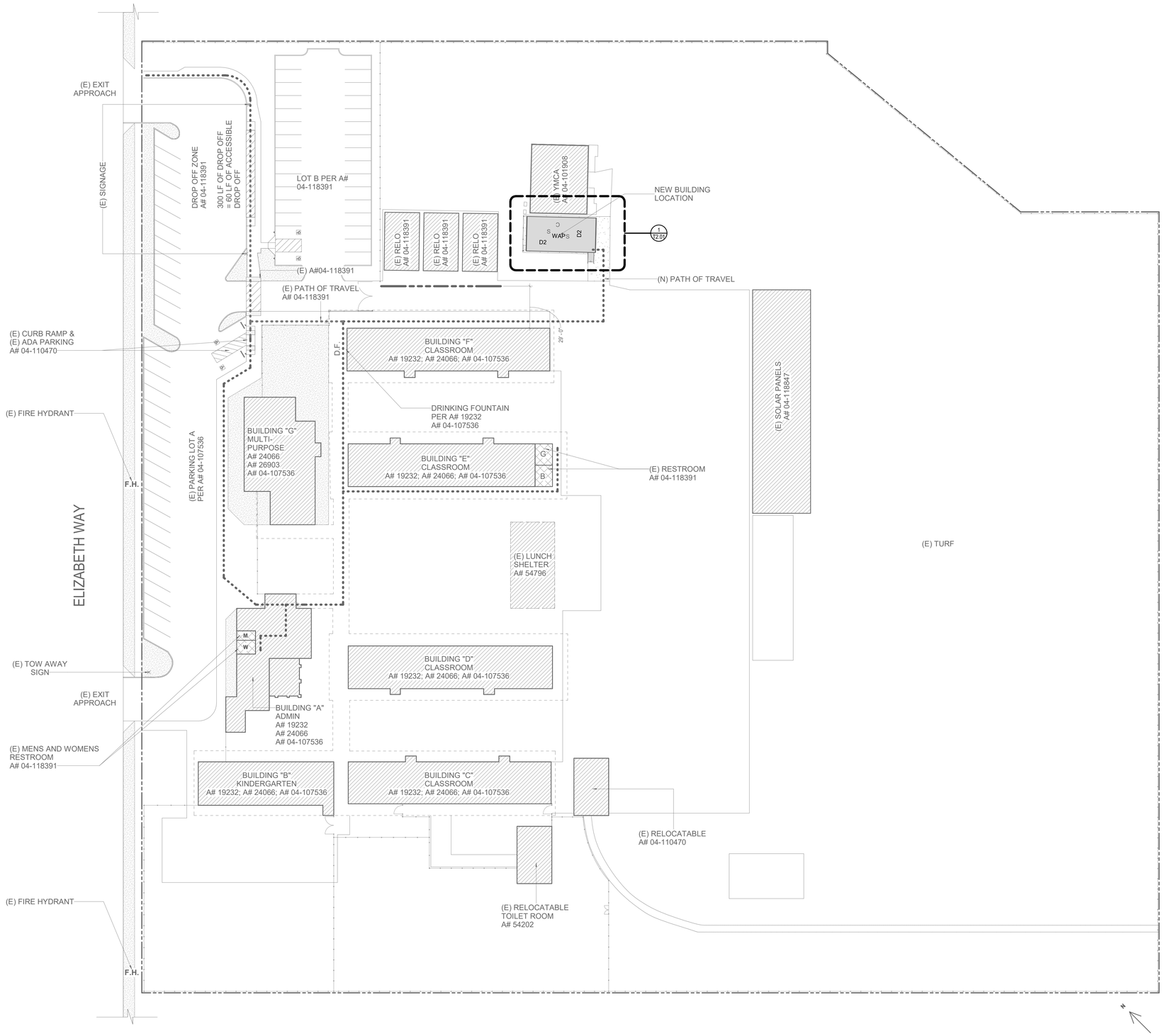

SITE PLAN 1
1" = 30'-0"

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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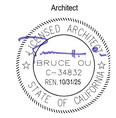

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TECHNOLOGY SITE PLAN

T1.01

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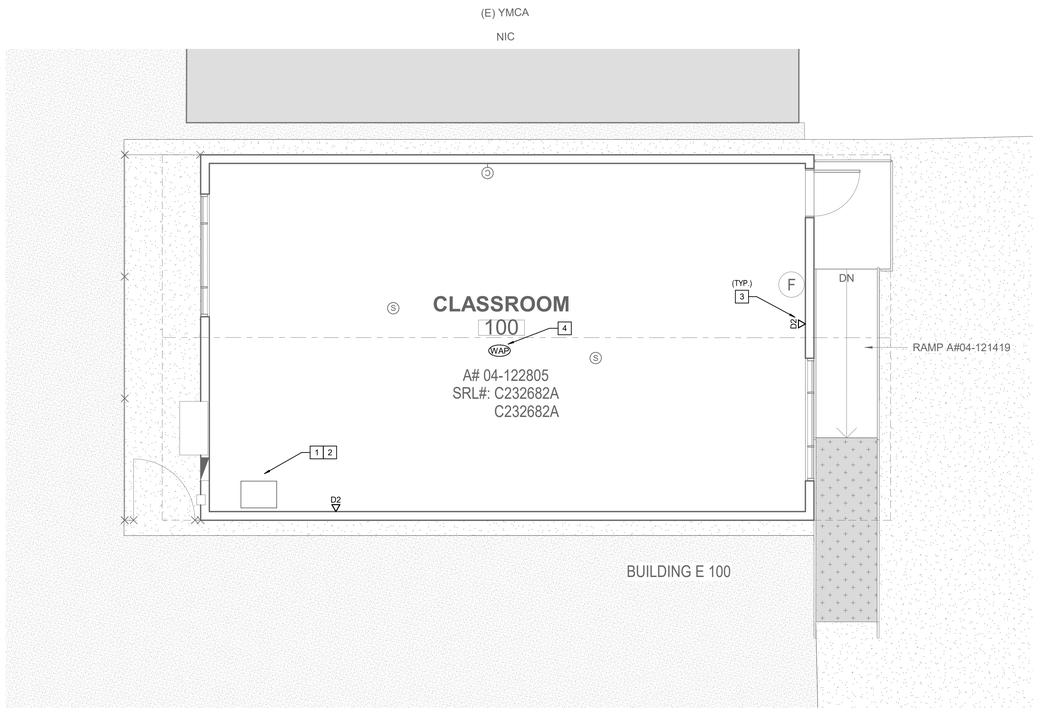

GENERAL NOTES

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 12SM FIBER FROM EXISTING IDF TO NEW PORTABLE IDF CABINET.
3. WALL MOUNTED DATA OUTLET. PROVIDE AND INSTALL OUTLET IN A 5S 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, "CSCO". PROVIDE DATA OUTLET FOR WIRELESS ACCESS POINT, (2) CAT6A CABLES, 2-PORT PLENUM RATED SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING AS INDICATED ON DRAWINGS. USE J-HOOKS TO SUPPORT NEW CABLING ABOVE ACCESSIBLE CEILING SPACE. FOR INACCESSIBLE CEILINGS 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.

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

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REGISTERED ARCHITECT
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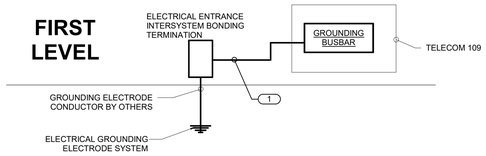
TECHNOLOGY ENLARGED SITE PLAN

T2.01



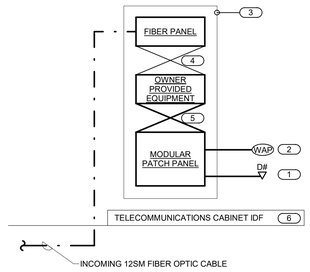
NOTES:
1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS 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 3/0 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.
4. REFER TO [5/T5.00] FOR TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.

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.

BONDING CONDUCTOR SIZING SCHEDULE

CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 26'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
GREATER THAN 66'	3/0

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 CONNECTION(S), 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 RJ45 CATEGORY 6A UTP PATCH CORDS, REFER TO SPECIFIATIONS FOR PATCH CORD REQUIRMENTS.
6. REFER TO COVERPAGE AND FLOOR PLANS FOR TELECOMMUNICATIONS ROOM LOCATIONS.

2 FIBER OPTIC AND COPPER RISER DIAGRAM
N.T.S.

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Tustin Unified School District

NORTH: TRUE

Consultant

Architect

LICENSED ARCHITECT BRUCE OU C-34832 REN: 10/31/25 STATE OF CALIFORNIA

CLIENT
TUSD

DATE	PROJECT NUMBER
xxxx	230379

REVISIONS

No.	Description	Date

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TECHNOLOGY RISER DIAGRAM AND SCHEDULES

T5.01

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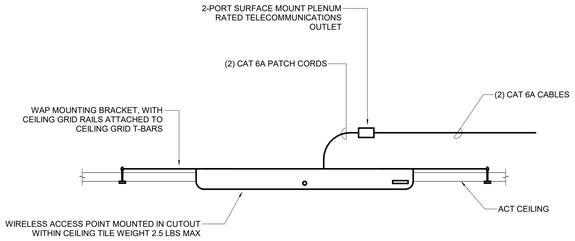
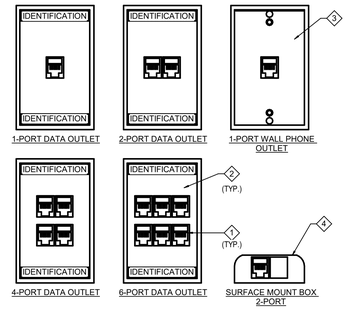


WAP ACT INSTALLATION DETAIL

NOTES:

1. 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 HANGER RESTRICTIONS CANNOT BE ACHIEVED, THE ADDITION OF SUPPLEMENTAL FRAMING OFF STEEL FRAMING WILL BE REQUIRED.

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



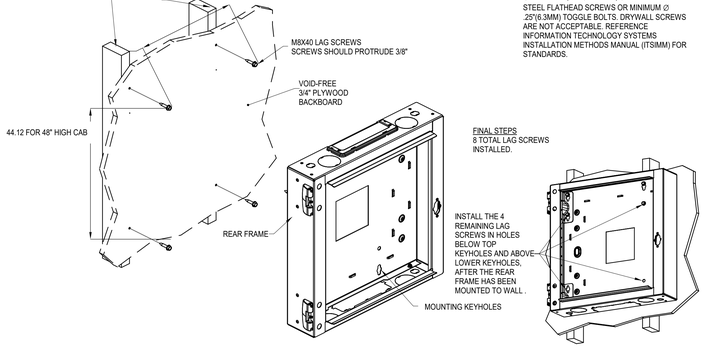
NOTES:

1. REFER TO SPECIFICATION SECTION 27 15 00 - HORIZONTAL CABLING REQUIREMENTS FOR CATEGORY CABLE PERFORMANCE REQUIREMENTS.
2. REFER TO SPECIFICATION SECTION 27 05 53 - IDENTIFICATION FOR DATA OUTLET PORT IDENTIFICATION.
3. DATA OUTLET SHALL BE INSTALL IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING. REFER TO DETAIL 1/T5.01 TECHNOLOGY ROUGH-IN MOUNTING DETAILS FOR CONDUIT SIZE.
4. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS.
5. USE T568B WIRING SCHEME TO TERMINATE THE TWISTED-PAIR CABLE ONTO THE CONNECTOR INTERFACE.
6. WHERE APPLIES PER PLANS, PROVIDE AV OUTLET WITH HDMI CONNECTION PER BELOW.
   - PANDUIT COVER PLATE: CBEIWY OR APPROVED EQUAL
   - PANDUIT JACK:(HDMI 2.0) CMHDMIIW OR APPROVED EQUAL
   - PANDUIT MODULAR INSERT: CHF2IW-X OR APPROVED EQUAL

KEYNOTE NOTES:

1. 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.
2. 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.
3. 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 "KWP6PY", COMMSCOPE OR APPROVED EQUAL.
4. 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.

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

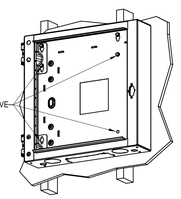


BOLT LOCATIONS
LATERAL: 16.0" ON STUDS
LATERAL: 16.0" ON STUDS
VERTICAL: 24" CAB:21.13"
36" CAB: 33.38"
48" CAB: 45.63"

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 .25"(6.3MM) TOGGLE BOLTS. DRYWALL SCREWS ARE NOT ACCEPTABLE. REFERENCE INFORMATION TECHNOLOGY SYSTEMS INSTALLATION METHODS MANUAL (ITSIMM) FOR STANDARDS.

FINAL STEPS
8 TOTAL LAG SCREWS INSTALLED.

INSTALL THE 4 REMAINING LAG SCREWS IN HOLES BELOW TOP KEYHOLES AND ABOVE LOWER KEYHOLES, AFTER THE REAR FRAME HAS BEEN MOUNTED TO WALL .



NOTES:

1. 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.

STEP 1. 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.

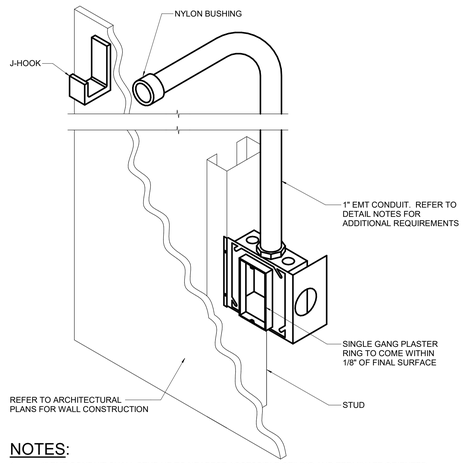
STEP 2. DRILL 5/32" PILOT HOLES FOR THE FOUR M8X40mm LAG SCREWS TO THE DIMENSIONS SHOWN ON THE DRAWING.
THE SCREWS SHOULD GO DIRECTLY INTO THE WALL STUDS.

STEP 3. INSTALL THE LAG SCREWS INTO THE HOLES. THE SCREW HEAD SHOULD PROTRUDE ABOUT 3/8" FROM THE WALL.

STEP 4. MOUNT THE REAR FRAME TO THE WALL BY HOOKING THE UPPER AND LOWER KEYHOLES OVER THE SCREWS. TIGHTEN THE SCREWS SECURELY.

STEP 5. 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"



NOTES:

1. 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.
2. 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.
3. ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT.
4. 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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TECHNOLOGY DETAILS

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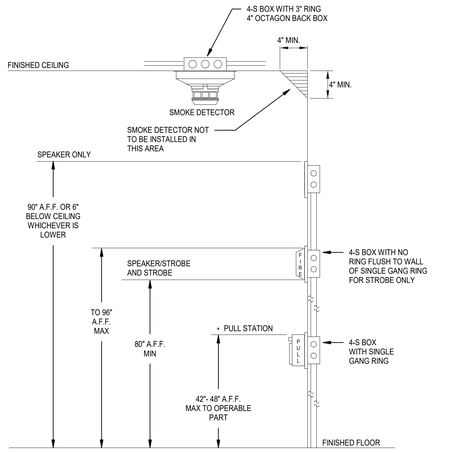
DEVICE SCHEDULE

SYMBOL	DESCRIPTION	MODEL	MANUFACTURER	BACKBOX	MOUNTING HEIGHT	C.S.F.M. NUMBER
FACP	EXISTING FIRE ALARM VOICE EVAC CONTROL PANEL (A# 04-118391)	E3	GAMEWELL-FCI	PROVIDED		----
FAPS	NEW FIRE ALARM POWER SUPPLY	HPF24S6	GAMEWELL-FCI	N/A		7315-1637:0102
S P	ADDRESSABLE AREA SMOKE DETECTOR (PHOTOELECTRIC)	ASD-PL3 B300-6	GAMEWELL-FCI	4S DEEP BOX W/ 3-0 RING	CEILING	7272-1703:0501 7300-1653:0109
A	ADDRESSABLE AREA HEAT DETECTOR	ATD-L3H B300-6	GAMEWELL-FCI	4S DEEP BOX W/ 3-0 RING	ATTIC/ CEILING	7270-1703-0502 7300-1653:0109
WP	FIRE ALARM EXTERIOR WEATHERPROOF SPEAKER	SPRK	SYSTEM SENSOR	4S DEEP BOX W/ 4S EXTENSION		7320-1653:0201
	FIRE ALARM CEILING MOUNTED SPEAKER/STROBE	SPSWRL	SYSTEM SENSOR	4S DEEP BOX W/ 4S EXTENSION		7320-1653:0505
EOL	END OF LINE RESISTOR	N/A	N/A	N/A		N/A

* ALL FIRE ALARM DEVICES AND EQUIPMENTS ARE NEW UNLESS NOTED AS EXISTING.

ELEVATION MOUNTING DETAIL



NOTES:

THE ENTIRE LENS OF STROBE LIGHTS MUST BE BETWEEN 80" AND 96" ABOVE FLOOR FINISH (AFF)

IF CEILING HEIGHTS EXCEED 30 FEET, STROBE LIGHTS MUST BE SUSPENDED AT OR BELOW 30 FEET

MANUAL FIRE ALARM BOXES SHALL BE INSTALLED IN ACCORDANCE WITH 2022 CBC SECTIONS 907.4.2

MANUAL FIRE ALARM BOXES SHALL BE LOCATED NOT MORE THAN 5 FEET FROM THE ENTRANCE TO EACH EXIT. ADDITIONAL MANUAL FIRE ALARM BOXES SHALL BE LOCATED SO THAT THE TRAVEL DISTANCE TO THE NEAREST BOX DOES NOT EXCEED 200 FEET.

THE HEIGHT OF THE MANUAL FIRE ALARM BOXES SHALL BE A MINIMUM OF 42 INCHES AND A MAXIMUM OF 48 INCHES, MEASURED VERTICALLY, FROM THE FLOOR LEVEL TO THE HIGHEST POINT OF THE ACTIVATING HANDLE OR LEVER OF THE BOX. MANUAL FIRE ALARM BOXES SHALL ALSO COMPLY WITH 2022 CBC SECTION 11B-309.4.

PER NFPA 72 CHAPTER A.17.7.4.1 DETECTORS SHOULD NOT BE LOCATED IN ADIRECT AIRFLOW OR CLOSER THAN 36 IN. (910 MM) FROM AN AIR SUPPLY DIFFUSER OR RETURN AIR OPENING. SUPPLY OR RETURN SOURCES LARGER THAN THOSE COMMONLY FOUND IN RESIDENTIAL AND SMALL COMMERCIAL ESTABLISHMENT CAN REQUIRE GREATER CLEARANCE TO SMOKE DETECTORS. SIMILARLY, SMOKE DETECTORS SHOULD BE LOCATED FARTHER AWAY FROM HIGH VELOCITY AIR SUPPLIES.

SEQUENCE OF OPERATIONS

DEVICE / ACTION	AREA SMOKE/ BEAM DETECTOR	HEAT DETECTOR	120VAC POWER FAILURE	SHORT CIRCUIT	GROUND FAULT	BATTERY FAILURE
SOUND ALARM AT "FACP"	**YES**	**YES**	NO	NO	NO	NO
SOUND TROUBLE BUZZER AT "FACP"	NO	NO	**YES**	**YES**	**YES**	**YES**
ANNUNCIATE AT "FACP" AND THE REMOTE ANNUNCIATOR (ALARM OR TROUBLE)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
ACTIVATE AUDIBLE / VISUAL ALARM SIGNAL THROUGHOUT BUILDING	**YES**	**YES**	NO	NO	NO	NO
ACTIVATE SIGNAL FOR OFF-SITE MONITORING	**YES**	**YES**	**YES**	NO	NO	NO
MUTE AUTONOMOUS LOCAL SOUND SYSTEM	**YES**	**YES**	**YES**	NO	NO	NO

LEGENDS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A OR AMP	AMPERES	NIC	NOT IN CONTRACT
AFF	ABOVE FINISHED FLOOR	NO.	NUMBER
AIC	AMPERES INTERRUPTING CAPACITY	PH. OR Ø	PHASE
ARCH.	ARCHITECT; ARCHITECTURAL	PNL	PANEL
AWG	AMERICAN WIRE GAUGE	PWR	POWER
C	CONDUIT	REC/RECEPT	RECEPTACLE
CKT	CIRCUIT	REQ'D	REQUIRED
CL.	CEILING MOUNTED DEVICE	RM	ROOM
C.O.	CONDUIT ONLY WITH PULL WIRE	SF	SQUARE FEET
CU	COPPER	SHT	SHEET
DWG	DRAWING	SP	SINGLE POLE
ER	EXISTING DEVICE TO BE REMOVED	SPECS	SPECIFICATIONS
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EQUIP	EQUIPMENT	TYP	TYPICAL
EXIST / (E)	EXISTING	UG	UNDERGROUND
FIN.	FINISH	U.O.N.	UNLESS OTHERWISE NOTED
FLR	FLOOR	V	VOLTS
FT	FEET	V-A	VOLT-AMPERES
GFI	GROUND FAULT INTERRUPTER	W	WATTS
GND	GROUND	W/	WITH
LTG.	LIGHTING	W/O	WITHOUT
MTG	MOUNTING	WP	WEATHERPROOF
N	NEW	CEC	CALIFORNIA ELECTRICAL CODE
FS	FLOW SWITCH	▭	PULL BOX (WEATHERPROOF)
JB	JUNCTION BOX	##	RISER UP AND DOWN
PIV	POST INDICATOR VALVE	TS	TEMPER SWITCH
DCDV	DOUBLE CHECK DETECTOR VALVE	SFD	COMBINATION SMOKE FIRE DAMPER

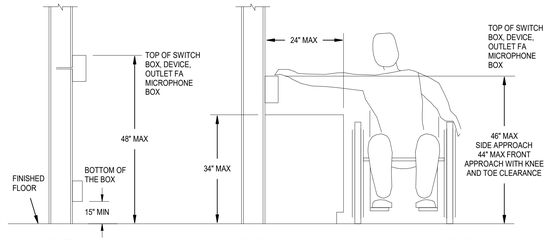
FIRE WATCH NOTE

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 IR 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 EXISTING FIRE ALARM CONTROL PANEL TO CONNECT NEW FIRE ALARM SYSTEM DEVICES SHOWN PER DRAWING AND SPECIFICATION DOCUMENT. UPON COMPLETION, A COMPLETE PRE 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.

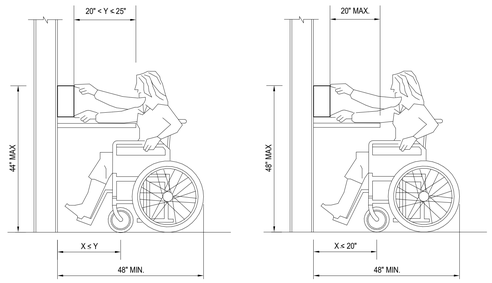
MOUNTING OVER OBSTRUCTION DETAIL



NOTES:

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 x27" HIGH x19" MIN. DEEP CLEAR OPENING. CBC SECTIONS 11B-306 & 11B-308.



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 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

PARTIAL LIST OF APPLICABLE STANDARDS
NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED): 2022 EDITION
NFPA 720 STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE DETECTION AND WARNING EQUIPMENT; 2015 EDITION
NFPA 80 STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES; 2019 EDITION
UL 464 AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES; 2003 EDITION
UL 521 STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS; 1999 EDITION
UL 1971 STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED; 2018 EDITION (R2010)

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.

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.

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS.

THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 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 ELECTRICITY, 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:
A. 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.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED 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 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

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

MECHANICALPIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

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

WIRE SCHEDULE

WIRE DESIGNATION	WIRE IN CONDUIT	WIRE IN CONDUIT UNDERGROUND/WET LOC.	UNDERGROUND/WET WIRE DESIGNATION
INIT. LOOP Z	2 CONDUCTOR #16 FPL TWISTED/ SHIELDED WEST PENN #D991	2 CONDUCTOR #16 FPLP SHIELDED WEST PENN #AQ-294	INIT. LOOP Z
SBUS B	4 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	4 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	SBUS B
VBUS C	2 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	2 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	VBUS C
SPEAKER CKT. S	2 CONDUCTOR #14 THHN/THWN STRANDED	2 CONDUCTOR #14 THHN/THWN STRANDED	SPEAKER CKT. S
VISUAL CKT. V	2 CONDUCTOR #12 THHN/THWN STRANDED	2 CONDUCTOR #12 THHN/THWN STRANDED	VISUAL CKT. V
POWER CKT. P	2 CONDUCTOR #12 THHN/THWN STRANDED	2 CONDUCTOR #12 THHN/THWN STRANDED	POWER CKT. P

NOTE:

ALL WIRE MODEL NUMBERS ARE WEST PENN.
EQUIVALENT BY OTHER MANUFACTURER IS ACCEPTABLE.

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 ALL FIRE RATED WALLS.
B. ELECTRICAL CONTRACTOR'S AND FIRE ALARM SYSTEM INSTALLER'S NAME, ADDRESS, PHONE NUMBER AND C-10 LICENSE NUMBER.
C. LIST OF SYSTEM COMPONENTS, EQUIPMENT AND DEVICES, INCLUDING MANUFACTURERS' MODEL NUMBER(S) AND CALIFORNIA STATE FIRE MARSHALL 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 USED IN 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.

DRAWING INDEX

SHEET	DESCRIPTION
FA0.00	FIRE ALARM SYMBOLS, LEGENDS & GENERAL NOTES
FA0.01	FIRE ALARM SPECIFICATION
FA1.01	FIRE ALARM SITE PLAN
FA1.02	FIRE ALARM ENLARGED SITE PLAN
FA6.01	FIRE ALARM DETAILS

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 90" 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 OCCUPIABLE 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 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15. ALL FIRE ALARM WIRING SHALL BE 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, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS.
19. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
20. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
21. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
22. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 7.8.2.
23. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
24. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
25. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
26. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
27. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.
28. ALL CARBON MONOXIDE SIGNALS SHALL SOUND A FOUR-PULSE TEMPORAL PATTERN PER NFPA 720, 5.8.6.5.1.
29. ALL EQUIPMENT SHALL BE U.L. AND C.S.F.M. LISTED.
30. ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS THAT REQUIRE ACCESS FOR ATTIC HEAT DETECTOR, SERVICING, TROUBLESHOOTING, ETC.
31. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC., THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
34. ALL 120VAC POWER REQUIREMENTS FOR THE FIRE ALARM SYSTEM SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR AND SHALL MEET ALL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
35. ALL FIRE ALARM DEVICE BACKBOXES, FIRE ALARM TERMINAL CABINETS, GUTTERS, JUNCTION BOXES, AND ASSOCIATED CONDUITS SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. REFER TO FIRE ALARM SYMBOL LIST AND/OR MOUNTING DETAILS FOR ADDITIONAL INFORMATION. SYSTEM SUPPLIER PROVIDED BACKBOXES SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
36. SMOKE DETECTOR TESTING SHALL BE ACCOMPLISHED PER THE MANUFACTURER'S INSTRUCTIONS.
37. ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. THE FIRE ALARM CONTROL PANEL TO SUPERVISE THE ANNUNCIATOR PANEL, ALL INITIATING AND INDICATING DEVICE CIRCUITS.
38. ALL WIRING SHALL BE CUT FOR IN AND OUT. WIRING SHALL NOT BE LOOPED THROUGH DEVICES.
39. POINT, COMMON ANNUNCIATION, AND T-TAPPING ARE PROHIBITED.
40. PROVIDE 3/4" CONDUIT FROM FIRE ALARM CONTROL PANEL TO TELEPHONE BACKBOARD FOR OWNER PROVIDED CENTRAL STATION MONITORING.
41. MINIMUM CONDUIT SIZE SHALL BE 3/4" AND CONTRACTOR SHOULD PROVIDE APPLICABLE CONDUIT SIZE AS REQUIRED PER THE SHOP DRAWING AND SPECIFICATION.
43. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
44. FIRE ALARM SYSTEM SHALL BE UL LISTED.
45. CBC 907.6.6.3 (SFM AMENDMENT) REQUIRES FIRE ALARM TO... "TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISORY STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISORY STATION SHALL BE LISTED AS EITHER UUFX (CENTRAL STATION) OR UUJS (REMOTE AND PROPRIETARY) BY THE UNDERWRITERS LABORATORY INC. (UL) OR OTHER APPROVED LISTING AND TESTING LABORATORY OR SHALL COMPLY WITH THE REQUIREMENTS OF STANDARD, FM 3011)."
46. SUBSTITUTION OF SYSTEM COMPONENTS OR MANUFACTURER WILL REQUIRE THE CONTRACTOR TO SEPARATELY OBTAIN APPROVAL WITH THE 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.
47. FINAL ACCEPTANCE TEST TO INCLUDE TESTING THE CONNECTION BETWEEN THE FIRE ALARM PANEL AND THE SUPERVISING STATION.
48. COORDINATE WITH THE ENGINEER FOR USE OF EXISTING CONDUIT ON A CASE BY CASE BASIS.
49. 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.
50. CONTRACTOR SHALL DISCONNECT EXISTING FIRE ALARM SYSTEM FROM THE EXISTING INTERCOM SYSTEM. ENSURE THE INTERCOM SYSTEM IS COMPLETELY FUNCTIONAL AFTER DISCONNECTION.
51. CONTRACTOR SHALL CLEARLY MARK THE ABANDON SECTION OF PUBLIC ADDRESS SYSTEM.
52. PROVIDE A FIRE ALARM DOCUMENTATION CABINET PER NFPA72,7.7.
53. FIRE SAFETY DURING DEMOLITION AND CONSTRUCTION SHALL COMPLY WITH CBC CHAPTER 33 AND CFC CHAPTER 33.
54. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APRROVED DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATION CHANGE DOCUMENT, OR A SEPERATE 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 4-317(C)).
55. 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 -SAFETY PORTIONS OF THE PROJECT. CHANGES SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK SHOWN THEREON CAC 4-338(C)).
56. PROJECT INSPECTOR TO APPROVE SYSTEM VOICE-EVACUATION INTELLIGIBILITY DURING TESTING PHASE.
57. CONTRACTOR SHALL PROVIDE ALL CABLING, RELAYS, MOUNTING HARDWARE AND ANY OTHER DEVICES (FIRE ALARM SYSTEM DEVICES) TO PROVIDE A FULLY FUNCTIONING FIRE ALARM OVERRIDE SYSTEM. WHEN FIRE ALARM CEASES, EACH LOCAL SOUND SYSTEM SHALL AUTOMATICALLY REVERT TO NORMAL OPERATION. FIRE ALARM MODULES AND CABLING BY FIRE ALARM CONTRACTOR.
58. FOR ALL HEAT DETECTORS THAT ARE LOCATED ABOVE CEILING/ATTIC SPACES, CONTRACTOR SHALL PROVIDE STICKER AND LABEL "HD" AT THE REFLECTED CEILING DIRECTLY BELOW THE DEVICE TO INDICATE LOCATION.
60. AUTOMATIC FIRE ALARM SYSTEMS SHALL BE MONITORED AND SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX (CENTRAL STATION) OR UUJS (REMOTE & PROPRIETARY) 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 907.6.6.2.
61. 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.
62. INTELLIGIBILITY SHALL BE TESTED ACCORDING TO NFPA 72 ANNEX D.2 (SPEECH INTELLIGIBILITY).
63. 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.

Not for permitting or construction

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CLIENT
TUSD

DATE	PROJECT NUMBER
xxxx	230379

REVISIONS

No.	Description	Date

This document is for plan review only

FIRE ALARM SYMBOLS, LEGENDS & GENERAL NOTES

FA0.00

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. This 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. All equipment herein specified shall be engineer-approved and California State Fire Marshal (CSFM) listed. The entire installation shall conform to the National Fire Protection Association (NFPA) Standard 72, 2022 90A & CEC Article 760 and authorities having jurisdiction as applicable. The system specified and depicted on the plan is a complete and approved system. The entire fire alarm system has been submitted and approved by the Division of the State Architect as a complete submittal. Any routing of the system wiring that is significantly different than shown on the approved drawings shall have the approval of the engineer and must be obtained prior to construction.
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. 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. Batteries shall be supervised for connection to the system and low voltage threshold. The automatic battery charger shall be capable of charging fully discharged system batteries to 100% in 8 hours.
4. The system wiring and installation shall be as stated in drawings and as required by the manufacturer. All wiring shall be color coded, tagged and verified to assure that it is free from shorts and grounds and shall be rated for the appropriate environmental conditions such as well locations.
5. Testing: The completed system shall be tested in accordance with NFPA Standard 72 7.6.6 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. Devices shall be at least 15dBA above average ambient sound level, but not less than 75dBA at 10' or more than 120dBA.
   c. Visual devices shall not exceed 2 flashes per second and shall not be slower than 1 flash per second. Visual devices shall be synchronized when 3 or more devices are within the same field of view.
   d. Supervision of all circuits to indicate any abnormal wiring condition.
   e. N.O./N.C. integral relays for external device interface or as indicated on drawings.
   f. Central station connection capable of indicating (3) distinct separate signals as being tamper, trouble and alarm with point reporting capabilities.
8. All work shall be completed as shown on the plans and or as specified within this specification and shall include the following (but is not limited to):
   a. Life safety fire alarm detection and signaling system.
   b. Furnishing and installation of equipment and devices.
   c. Conductors, connections and interconnections where specified and all in conduit system.
   d. Conduit, wire and connections for control of heating and ventilation motors, smoke dampers and smoke exhaust.
   e. Testing, cleaning and adjusting of completed work.
   f. Wiring diagrams, as-built drawings and three (3) sets of equipment operations and maintenance instructions for Owner.
   g. Complete maintenance for two years.
   h. Proposal for subsequent maintenance contract.
   i. All work and material for complete and operable systems as indicated or specified.
   j. Permits, inspections and fees.
   k. Identification and instruction to Owner Representative. Training shall consist of a minimum or two (2) 6-hour sessions.
9. Coordination with Section 26 05 33: Raceway and Boxes for Electrical Systems.
10. Furnishing of special back boxes where required for installation of fire alarm devices.
11. All conductors to be installed in conduit pursuant to Specification Section 26 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) submittals 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 these functions.
   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 next to the control unit in accordance with UL Standard 864. The contractor shall warrant all equipment and wiring free from inherent mechanical and electrical defects for two years from the date of final acceptance.
16. The FACP shall integrate with the 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 IRA-1 chapter of approval for temporary school use of DSA approved relocatable buildings, Approval of fire alarm and/or fire sprinkler systems for temporary use buildings shall be in accordance with the Chapter 9, CCR, Title 24, Part 2.

   a. Fire Alarm: Section 3.4.4.4 For buildings sited 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 device(s) (with a minimum rating of 95 dBA at 10 feet).
   Buildings more than 25 feet apart are to be provided with additional audible devices to ensure the fire alarm signal can be heard within adjacent buildings.

   b. 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 telephone or "walkie-talkie" devices or other similar systems. Buildings that are less than 25 feet from existing permanent buildings on the site shall be interconnected with the campus fire alarm system.

B. Substitutions
1. Substitution of system components or manufacturer will require the contractor to separately obtain approval with DSA at Contractor's expense and shall meet all requirements of the system as designed and pre-approved.
2. All proposed substitutions shall be listed with the California State Fire Marshal.

1.3 SUBMITTALS

A. Comply with applicable provisions of Section 26 05 00: Common Work Results for Electrical.
B. General:
1. Two (2) copies of all submittals shall be submitted to the Architect/Engineer for review and approval.
2. All references to manufacturers model numbers and other pertinent information herein is intended to establish minimum standards of performance, function, and quality.
3. 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.

C. 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, U.L. listing, equipment ratings, dimensions and finishes.
3. Highlight actual devices to be used and their amp draw in stand-by and alarm modes.

D. Shop Drawings:
1. Provide schematic layout, floor plan, drawings indicating location of all components and equipment, required size and location of conduit and outlets and type and quantity of system conductors. 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 FATC. Address numbers shall be noted on all appliances.
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 Instruction Manual:
1. Manual shall include the following tailored to this specific project:
   a. Operational description.
   b. Coded cabling plan.
   c. Two wire circuit diagrams.
   d. Wiring destination schedule.
   e. Schematic component diagrams and PC 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 that will 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 end of line 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 (IDC) 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. On Style 6 or 7 (Class A) configurations a single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.
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 refer 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 ratings.
   e. Operating voltage of capacitors shall not exceed 80% of rated voltage.
   f. Operating loads and voltages on transistors 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.
B. 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).

The FACP 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 time of 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, devices, etc. covered by the specifications and/or noted on the contract 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 preventative maintenance. The schedule shall include:
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 at this time.
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.
Placing 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 calibrated sensitivity 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 or 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 provided as specified on the fire alarm equipment legend and as shown on associated electrical drawing.

2.3 COMPONENTS

EXISTING FIRE ALARM CONTROL PANEL (FACP)
A. FACP shall be as indicated model on the drawing or approved equivalent.
2.1System 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 memory 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 upon completion of this project.
2.2Automatic 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. All audible alarm indicating devices shall sound the temporal signal code 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 requirements 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 lcd display.
6. Display type and location of alarm per point on remote lcd annunciator.
7. List on printer the time, date, type, and user defined message for each event printed.
8. Graphically display on the fireworks station, school diagram showing whole school, with graphic scrolling thru system prompts, down to point of alarm activation.
9. Subsequent alarms are to report to the main control panel and fireworks, 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.
2.3Automatic supervisory operation
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.
2.4operation
A. During the normal state, the normal led (green) shall flash. the first line of the lcd shall display the time in (hh: 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 lcd indicates the time, the number of messages waiting, the type of alarm, the point id number of devices, 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 resound.
E. During the trouble condition, the amber 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 the 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-amp notification power expander that provides its own AC power connection, battery charging circuit, and backup battery for use 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, resettable, 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) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.
D. Intelligent Thermal Detectors
1. The intelligent thermal detectors be as indicated model on the drawing or approved equivalent addressable devices rated at 135 degrees Fahrenheit (58 degrees Celsius) and have a rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. A high heat thermal detector rated at 190 degrees Fahrenheit shall also be available. The thermal detectors shall connect via two wires to the fire alarm control panel signaling line circuit.
E. Control Relay Module:
1. The Control Relay is intended for use in intelligent, two-wire systems where the individual address of each module is selected using 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 connections to 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 VRMS) to notification appliances. 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 their status to the panel as NORMAL, OPEN or SHORT CIRCUIT. The module contains a panel-controlled LED. The Series use 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. If one of the devices in the group has a status change, the panel's microprocessor stops 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 selected using the built-in rotary switches.
2. It supports Class A supervised or Class B supervised 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 or approved equals. The Strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service.
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 inputs 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, 30, 75, 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 or 2 1/8"deep and 4" Octagonal, 1 ½" or 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 supervision 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 measuring.
9. When synchronization is required, the appliance shall be compatible with Sync Modules, PS Power Supplies, or other manufacturer's panels with built-in manufacturer Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with patented sync protocol.
I. Combination Speaker Strobes
1. The Speaker Strobes are designed for high efficiency sound output for indoor applications. The product line features intelligible communications with crisp, clear voice messages and tone signaling, ideal for mass notification and voice evacuation.
2. Providing a sleek aesthetic appearance, the wall and ceiling appliances feature dual voltage (25/70 VRMS) capability and field-selectable taps from 1/8 to 2 watts. For faster and easier installation, the low-profile design incorporates a speaker mounting plate, and each model has a built-in level adjustment feature and Snap-On cover with no visible mounting screws.
3. For visible signaling to meet the hearing impaired, the E Speaker Strobe models incorporate the low current draw of the Strobes.
4. Ceiling mount models are available in multi-candela ceiling strobe with field selectable intensities of 15/30/75/95/110/115cd or the high intensity strobe with field selectable 135/150/177/185cd.
5. The strobe portion of all Speaker Strobes may be synchronized when used in conjunction with the Sync Modules, Power Supplies or other manufacturers panels incorporating the manufacturer Patented Sync Protocol.
Synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.
6. 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 IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.
7. The speakers shall be UL Listed under UL 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.
8. 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.
9. The speaker and speaker strobe appliances shall be designed for indoor flush 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.
10. 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.
J. 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. Wall-mount outdoor speakers can be used indoors or outdoors in wet or dry applications, and can provide reliable operation from −40°F to 151°F. These speakers provide a broad frequency response range, low harmonic distortion and maintain a high sound pressure level at all tap settings to provide accurate and intelligible broadcast of evacuation messages.
3. Field-selectable settings, including candela, speaker voltage and power settings, and automatic selection 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. If necessary, to meet standby requirements, external battery and charger systems may be used.

PART 3 EXECUTION

3.1 COORDINATION

A. Refer to the 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 pathing requirements to electrical installer. For self-contained door release, coordinate with door supplier.

3.2 GENERAL

A. Comply with all applicable paragraphs in Section 26 05 00: Common Work Results for Electrical, apply as though repeated herein.
B. Install system(s) in accordance with manufacturer's instructions.
C. Include services of certified technicians to supervise installation, provide adjustments, provide final connections, system testing and system training to Owner Representative

3.3 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 contractor, will be allowed to install any portion of this system Including, but not limited to:
1. Wiring
2. Field device installation
3. System 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 CEC, 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 enclosure shall feature a quick removal chassis to facilitate rapid replacement of the FACP electronics.

3.4 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.

3.5 INSPECTION

A. Systems to meet all the requirements of the CSFM and IOR and AHJ and shall be approved thereby before installation and prior to final acceptance.
B. Closeouts:
1. It is the intent of these 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.
2. As part of the closeout 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 owner with electronic versions of the as-built CD's.
3. Locate next to building FACP and other fire alarm panels.
4. 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.
5. State FML-005 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

3.6 LOCATION

A. Before installation, verify exact location of control equipment and outlets.

3.7 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 cables.
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 of the equipment manufacturer, and as indicated on the engineered shop drawings.
D. All wire shall be U.L. Listed FPL for limited energy (300V) and fire alarm applications and shall be installed in conduit. Limited energy FPLP or MPP wire may be run open in return air ceiling plenums provided such wire is U.L. Listed for such applications and is of the low smoke producing fluorocarbon type and complies with CEC Article 760 if 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 use of IDC 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 T-tapping NFPA Style 4 (Class B) Signaling Line Circuits (SLCs). Systems which do not allow or have restrictions in, for example, the number of T-taps, length of T-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.
J. All service loops shall be installed in the accessible ceiling that is nearest to each device and panel. No service loops shall be installed in open spaces or non-accessible spaces

3.8 TERMINAL BOXES, JUNCTION BOXES AND CABINETS:

A. All boxes and cabinets shall be UL listed for their use and purpose.

3.9 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 CEC.
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 760-29.
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 smoke control system shall be installed in conduit per current adopted codes regardless of voltages or ratings.

3.10 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 IOR, 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

Not for permitting or construction

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BARBARA BENSON ELEMENTARY SCHOOL

PROJECT ADDRESS:
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DSA APPL NO.: XXXX DSA FILE NO.: XXXX

Tustin Unified
School District

NORTH: TRUE

Consultant

Architect

BRUCE OU
C-34832
REN. 10/31/25

CLIENT
TUSD

DATE	PROJECT NUMBER
XXXX	230379

REVISIONS

No.	Description	Date

This document is for plan review only

FIRE ALARM SPECIFICATION

FA0.01

FA0.01 - FIRE ALARM SPECIFICATION

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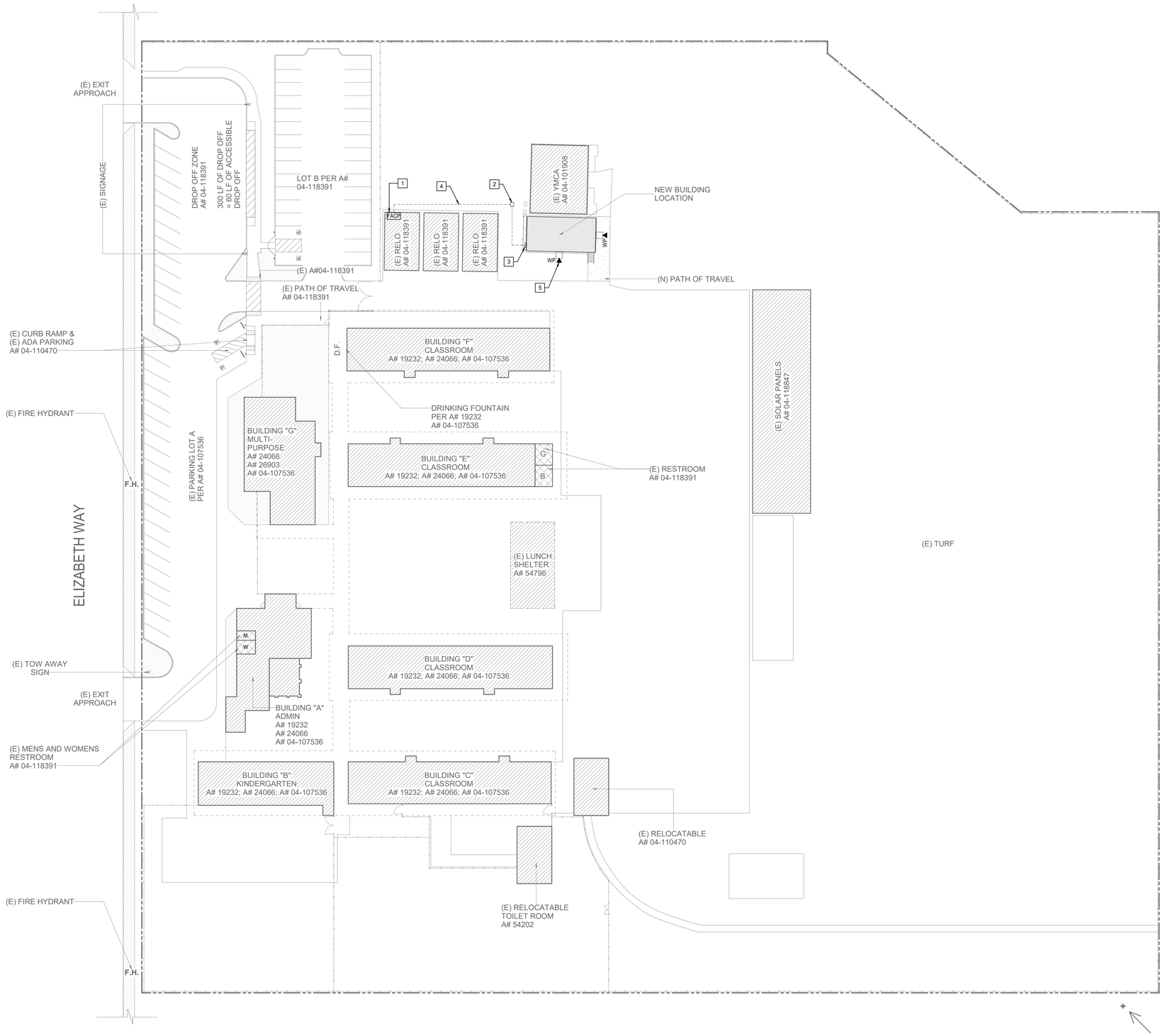

SITE PLAN 1
1" = 30'-0"

KEY NOTES

1. EXISTING FIRE ALARM CONTROL PANEL (A#04-105703). CONTRACTOR TO FIELD VERIFY 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"X6" FOR FIRE-ALARM (TYPICAL).
4. PROVIDE NEW (1) 2" UNDERGROUND CONDUIT (PVC, SCHEDULE 40, 24" BELOW GRADE), FOR FIRE ALARM CABLE AS INDICATED, SAWCUT AND TRENCH EXISTING ASPHALTAND BACK FILL TO MATCH EXISTING SURFACES.
5. PROVIDE FIRE ALARM WEATHERPROOF SPEAKER DEVICE AS SHOWN (TYP).

Not for permitting or construction

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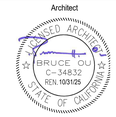
DSA APPL NO.: XXXX DSA FILE NO.: XXXX

Tustin Unified School District

NORTH: TRUE

Consultant

Architect



CLIENT TUSD

DATE	PROJECT NUMBER
XXXX	230379

REVISIONS

No.	Description	Date

FIRE ALARM SITE PLAN

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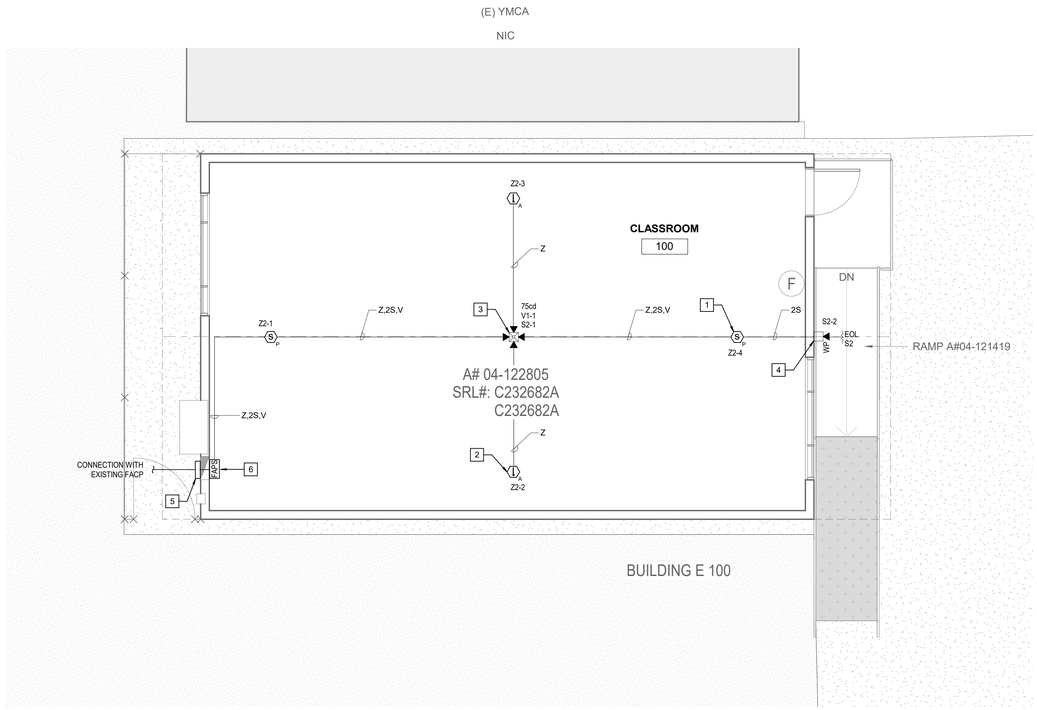

KEY NOTES

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 1/2 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 "HD" 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.

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

Not for permitting or construction

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STATE OF CALIFORNIA

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No.	Description	Date

FIRE ALARM ENLARGED SITE PLAN

This document is for plan review only

FA1.02

0" 1"

FACP BATTERY CALCULATION SHEET

FACP (N) (A# 04-118391)

QUANTITY		UNIT STANDBY CURRENT(A)	TOTAL STANDBY CURRENT(A)	UNIT ALARM CURRENT(A)	TOTAL ALARM 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)

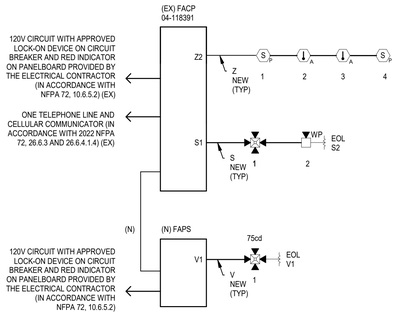
QUANTITY	Description	Unit Standby Current(A)	Total Standby Current(A)	Unit Alarm Current(A)	Total Alarm Current(A)
1	NAC TRIP	0.075	0.075	0.175	0.175
1	75cd ceiling speaker/strobe	0.000	0.000	0.142	0.142
	Sub Total		0.075		0.317
	A - Battery Backup - Standby (Hour)	24			
	B - Battery Backup (minutes)	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 CIRCUIT NUMBER	WIRE GAUGE (18, 16,14 12)	CIRCUIT VOLTAGE (25 OR 70 VRMS)	APPLIANCES QUANTITIES / TAP VALUES				TOTAL CIRCUIT LOAD (WATT)	ESTIMATED CIRCUIT LENGTH (FEET)	MFG. REC. MAXIMUM LOSS IS: -0.5dB		
AMPLIFIER#	CIRCUIT LOCATION				SPEAKER TAPPED AT 0.25 WATTS	SPEAKER TAPPED AT 0.5 WATTS	SPEAKER TAPPED AT 1 WATTS	SPEAKER TAPPED AT 2 WATTS			ACTUAL WIRE/LOSS (dB)	MAXIMUM ALLOWABLE CKT, LENGTH (FEET)	TOTAL CIRCUIT RESISTANCE (OHMS)
FACP	PORTABLE BUILDING	S1	14 AWG	70		1		1	2.50	500	-0.01	21,000	2.58
								TOTAL	2.50				

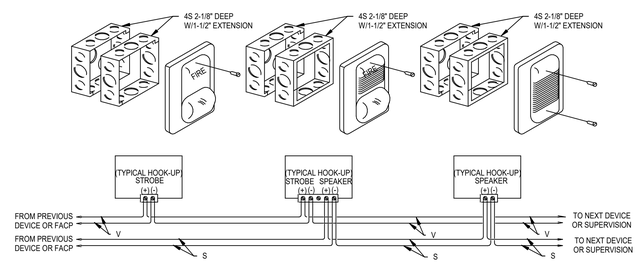
STROBES WORST CASE VOLTAGE DROP

PANEL NAME	CIRCUIT NUMBER	CEILING SPEAKER/STROBE 15cd 0.060	30cd 0.086	75cd 0.142	95cd 0.164	TOTAL CURRENT (AMPS)	TOTAL DISTANCE (FEET)	TOTAL VOLTAGE DROP (%)	TOTAL DEVICES
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				

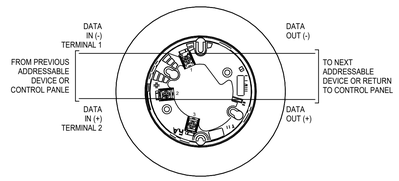


4 FIRE ALARM VOLTAGE DROP AND BATTERY CALCULATIONS
NOT TO SCALE

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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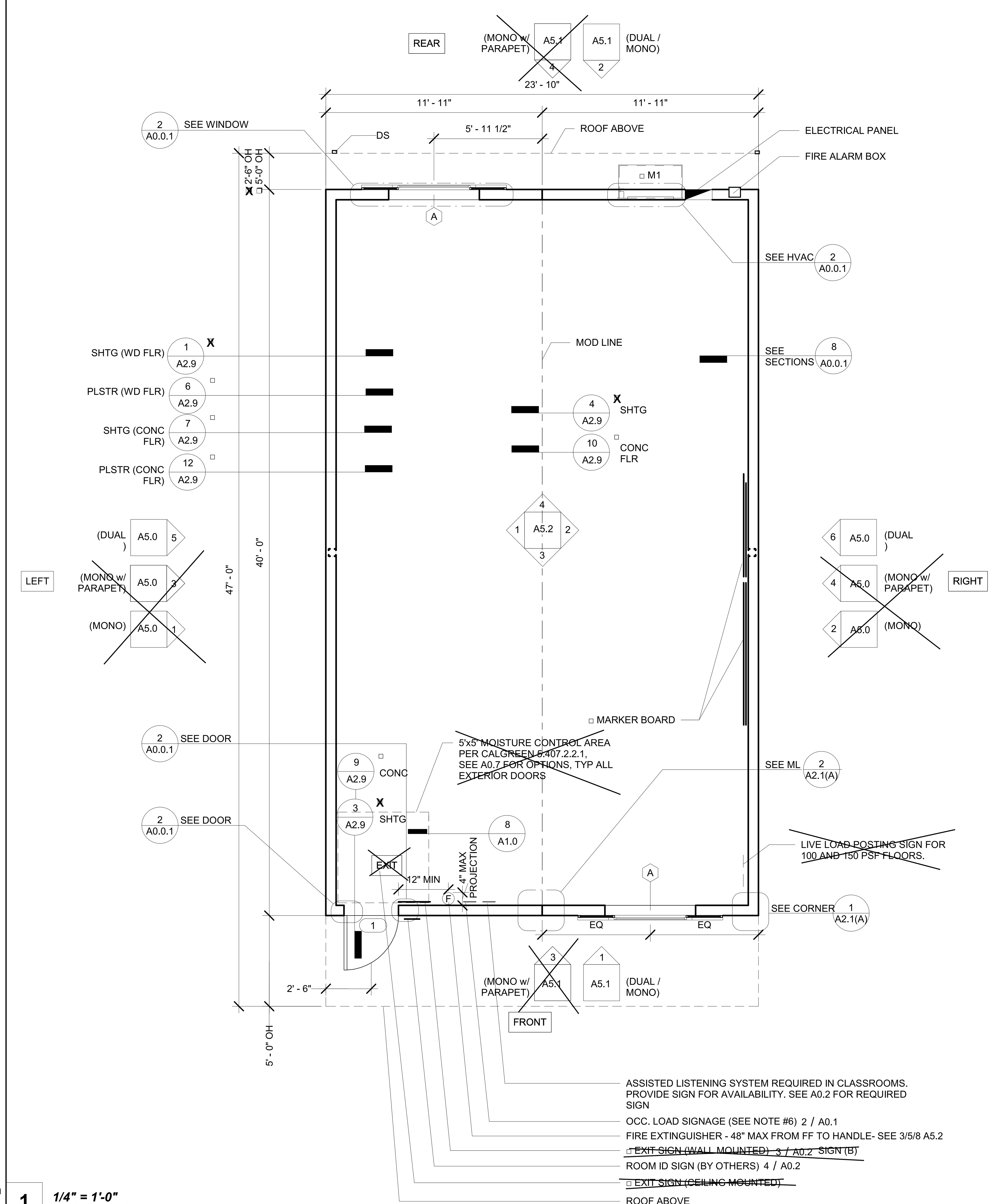
FIRE ALARM DETAILS

FA6.01



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

All rated construction (both vertical and horizontal) must be clearly defined, correctly indentified, 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

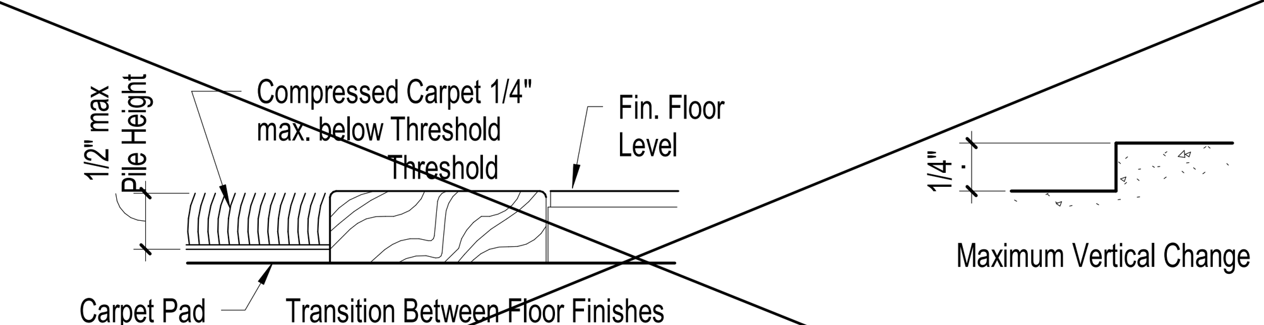
SECTION 915
CARBON MONOXIDE DETECTION

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

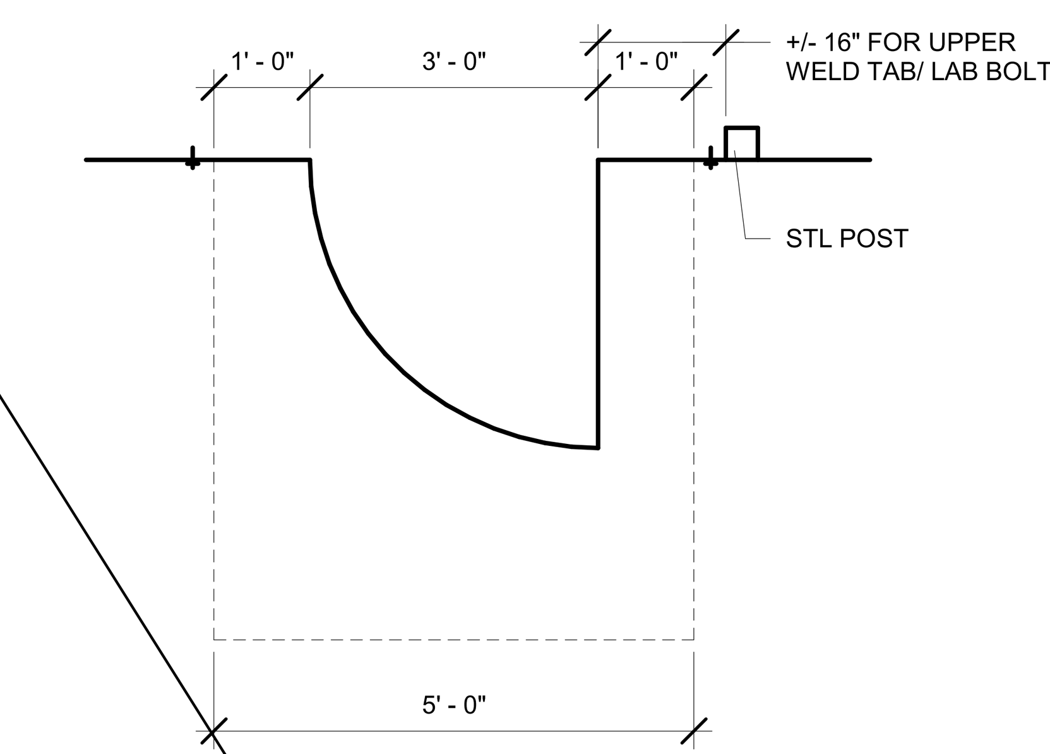
[F] 915.4.1 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and with-out a disconnecting switch other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

915.3 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.

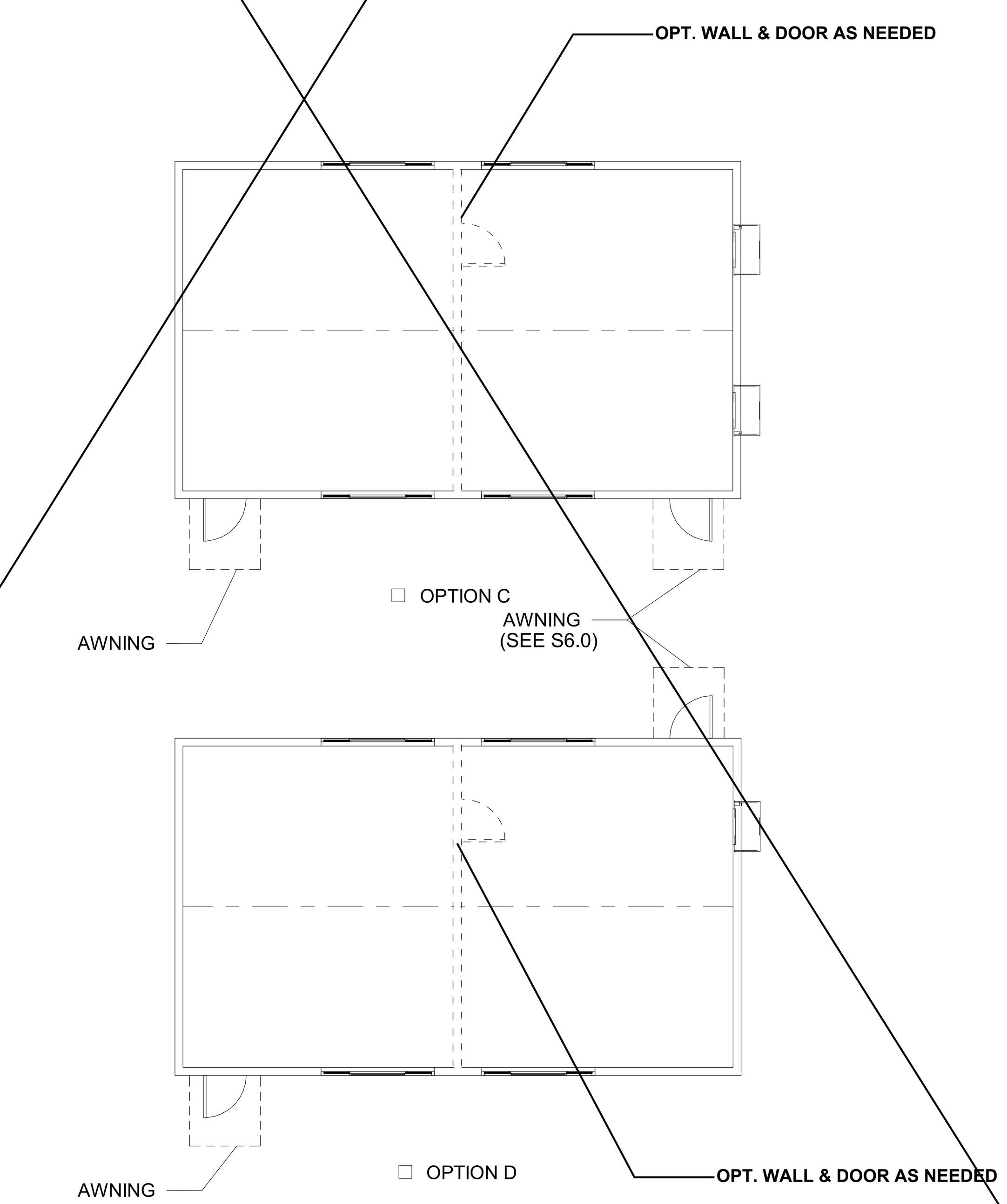


8 1/4" = 1'-0"
VCT TO CARPET DETAIL



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

FOR AWNING SEE 7 / A1.0



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

Wall Schedule

	Stud Size	Sheet	Notes
x	Wood Wall Stud	S4.5	
			FOR BURNING CHARACTERISTIC SEE 3 / A0.1

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

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	

SEE A3.0 FOR ADDITIONAL FIRE ASSEMBLY NOTES AND DETAILS

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

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	

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

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 HVAV	See (M)-Sheets

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REGISTERED PROFESSIONAL ENGINEER MANNY D. FRITSCH S3380 03/31/24 STRUCTURAL STATE OF CALIFORNIA
05/24/23
RST#22088

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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

DRAWN BY
rMc/SC

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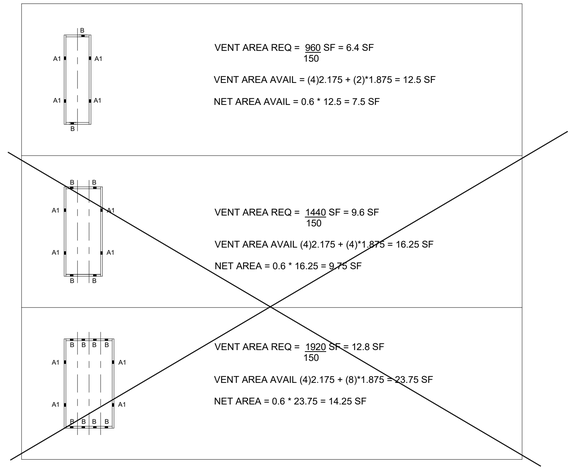
RH/RT

DATE

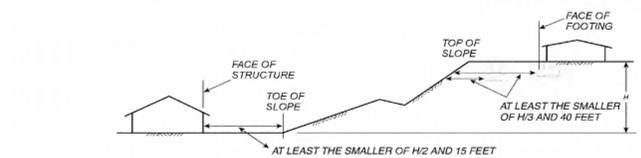
SHEET NO.
A1.0

SHEET OF



NOTE: WOOD FOUNDATION EXPANDABLE TO 48x40

1 ***50+15 VENTING LAYOUT***



For SI: 1 foot = 304.8 mm.

FIGURE 1808.7.1
FOUNDATION CLEARANCES FROM SLOPES

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

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

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

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

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

1. WOOD FOUNDATION CONSTRUCTION IS ALLOWED FOR BUILDINGS WITH 2160 SF AND UNDER.
2. SILL PLATES SHALL BE OF FOUNDATION GRADE REDWOOD OR PRESERVATIVE PRESURE TREATED MATERIAL AND IS ALLOWED TO REST DIRECTLY ON SOIL OR PAVEMENT. MATERIALS ABOVE THE SILL PLATES ARE NOT CONTROLLED BY THIS REQUIREMENT.
3. VENTS THAT OCCUR INSIDE RAMP BOUNDARIES SHALL REQUIRE A VENT OF EQUAL SIZE AT RAMP SKIRTING.
4. 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
5. STACKED FOUNDATION MEMBERS SHALL BE FASTENED TO ONE ANOTHER W/ CORROSION RESISTANT NAILS.
6. 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.
7. REFER TO ARCHITECT'S SITE PLAN FOR DRAINAGE.

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

(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~~

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

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

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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

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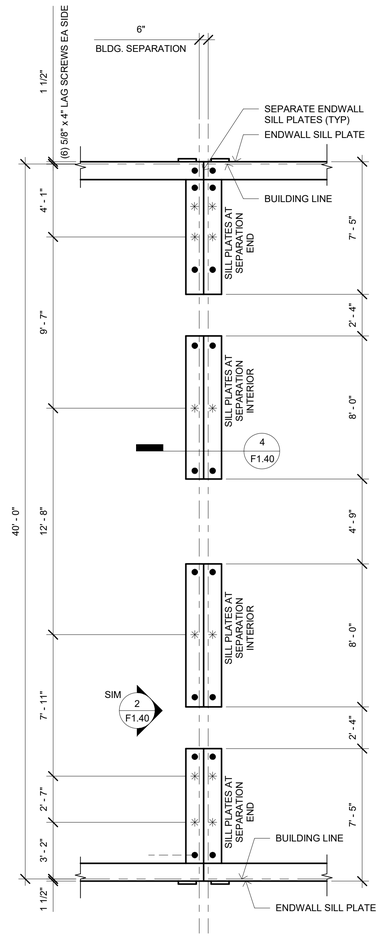
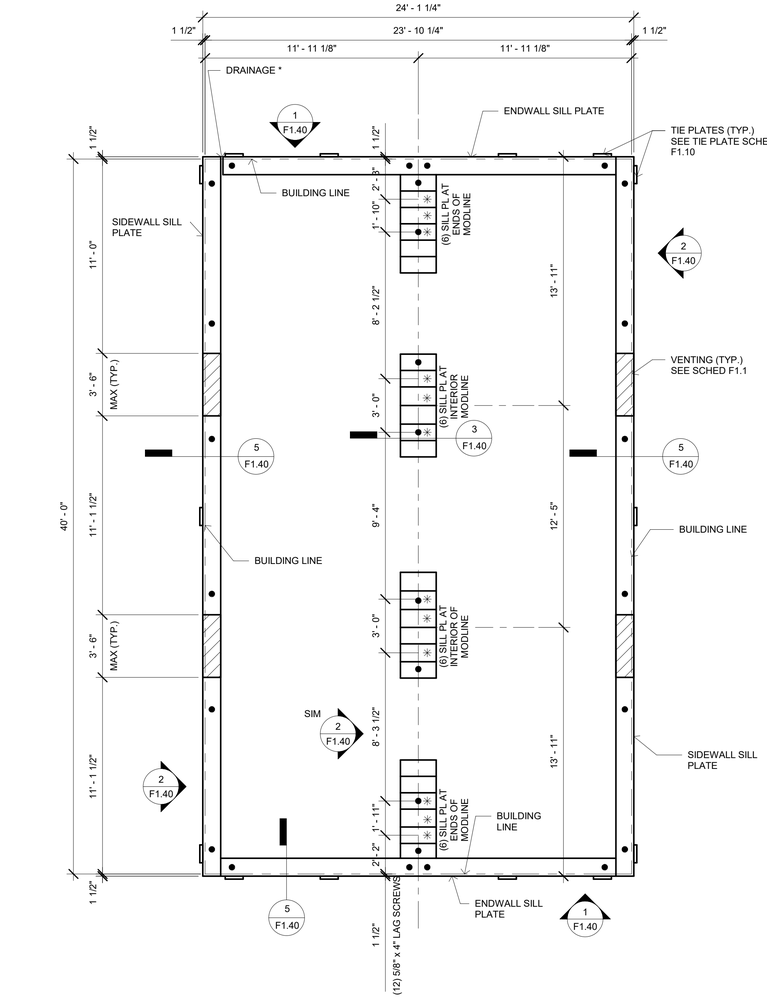


3 *1/4" = 1'-0"*
FOOTING AT SEPARATION



* REFER TO ARCHITECTURAL SITE PLAN FOR DRAINAGE

2 *1/4" = 1'-0"*
24x40 FOUNDATION PLAN

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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

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SHEET NO.

F1.11

SHEET OF

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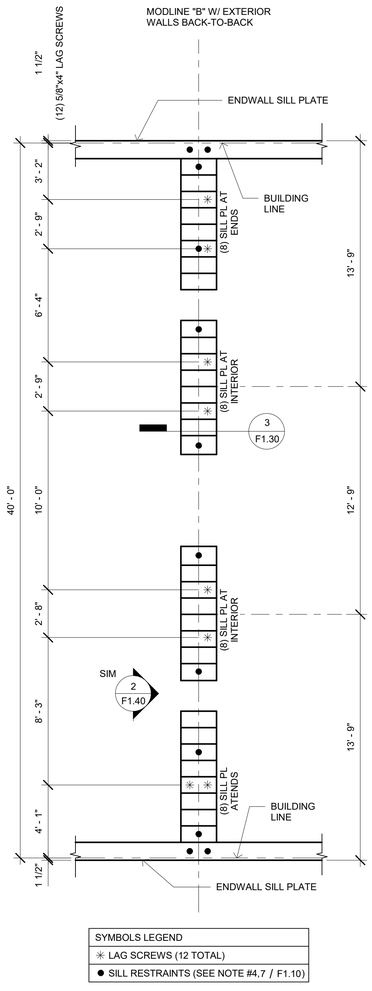
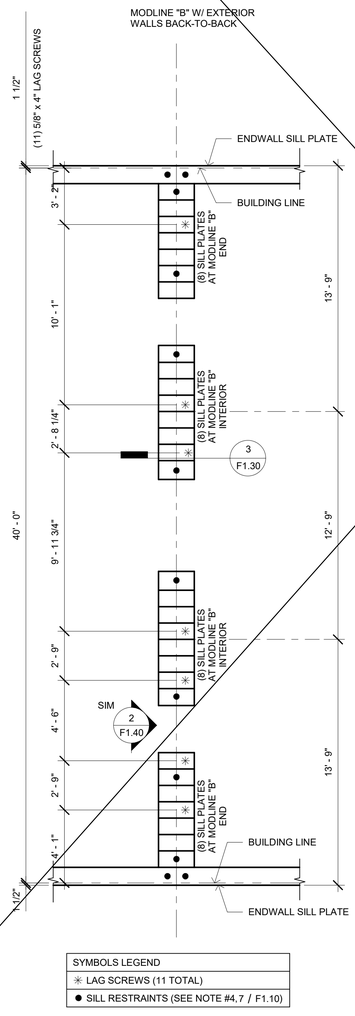


SYMBOLS LEGEND
✳ LAG SCREWS (12 TOTAL)
● SILL RESTRAINTS (SEE NOTE #4,7 / F1.10)

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

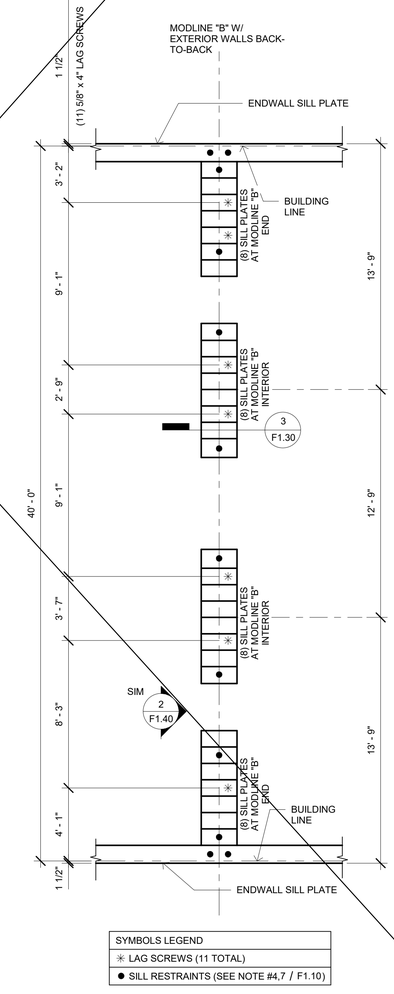
1 *1/4" = 1'-0"*
FOOTING AT MODELINE TYPE "B", 24x40



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 MODLINE 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)

3 *1/4" = 1'-0"*
FOOTING AT MODLINE TYPE "B", 48x40

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APP: 04-121369 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

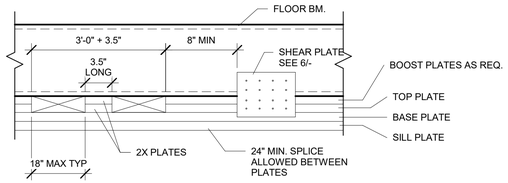
DRAWN BY
rMc/SC

CHECKED BY
JA/RT

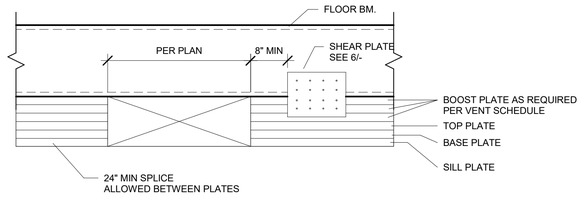
DATE

SHEET NO.
F1.14
SHEET OF

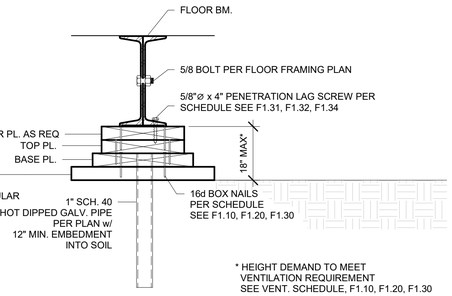
6/16/2021 7:44:53 AM C:\Users\User\Documents\RST#20132 - Class Leasing, PC 24x40 to 120x40 HS_detached_CESAR24D63.rvt



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

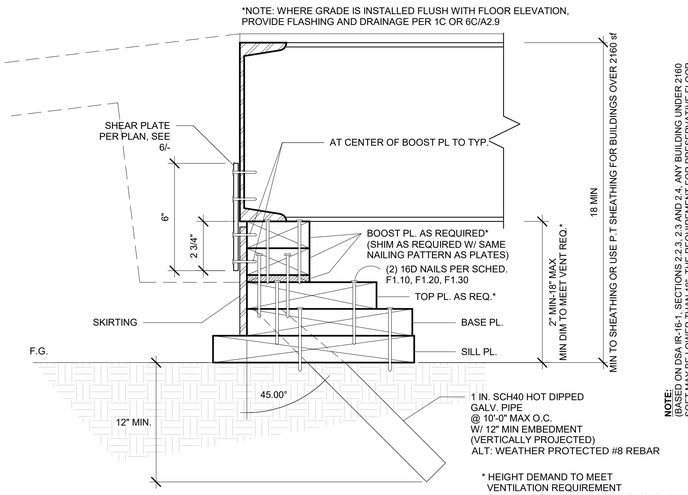


2 *1 1/2" = 1'-0"*
VENT OPENING @ SIDEWALL OR MODLINE @ SEPERATION



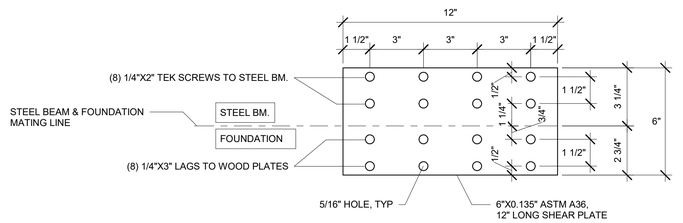
3 *1 1/2" = 1'-0"*
FOUNDATION PAD AT MOD LINE

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

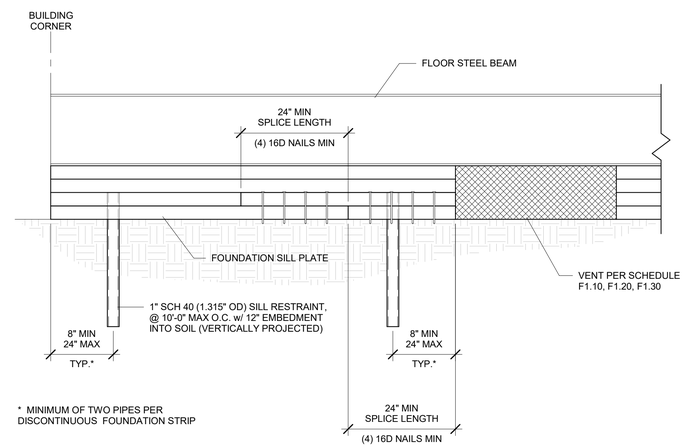


NOTE:
IF USED ON DSA IR-16-1, SECTIONS 2.2.3 AND 2.4, ANY BUILDING UNDER 2160 SQFT MAY BE LOWER THAN 18". THE REQUIREMENT FOR PRESERVATIVE FLOOR FINISH SHEATHING OR WALL FRAMING DOES NOT APPLY. A WAIVER OF DURABILITY WILL BE SUBMITTED FOR APPROVAL BY THE CLIENTS APPOINTED AGENT.)

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 MGT
11590 W BERNARDO COURT, SUITE 100
SAN DIEGO, CA 92127
WWW.RSTAVARES.COM

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ENGINEER
MANNY D. FRANCISCO
No. 63380
03/31/24
STRUCTURAL
STATE OF CALIFORNIA
RST#22088
05/24/23

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

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

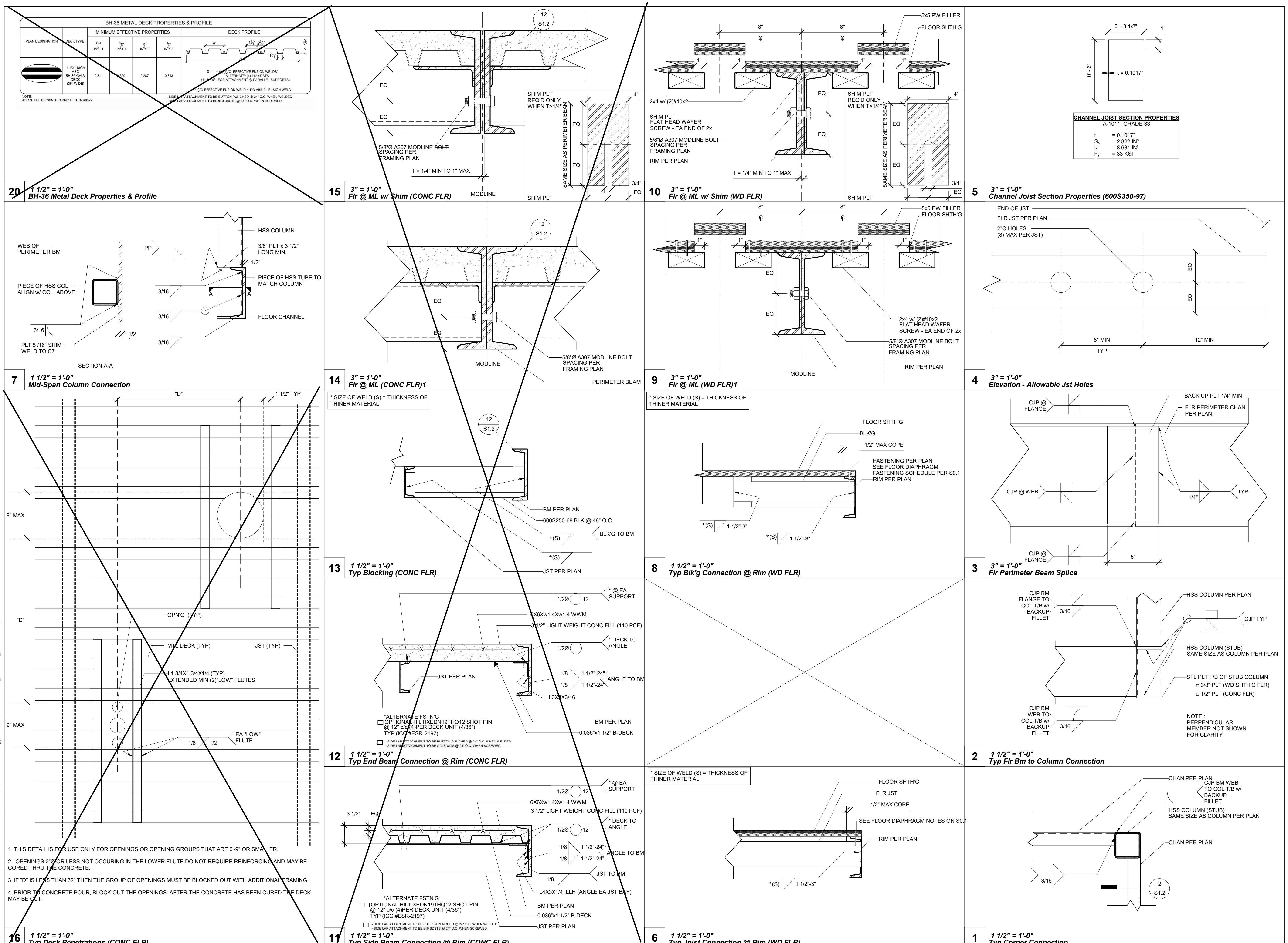
JA/RT

DATE

SHEET NO.

F1.40

SHEET OF


BH-36 METAL DECK PROPERTIES & PROFILE
PLAN DESIGNATION
DECK TYPE
MINIMUM EFFECTIVE PROPERTIES
DECK PROFILE
1-1/2"-18GA ASC BH-36 GALV DECK (36" WIDE)
NOTE: ASC STEEL DECKING: IAPMO UES ER #0329
20
1 1/2" = 1'-0"
BH-36 Metal Deck Properties & Profile
12
S1.2
EQ
SHIM PLT REQ'D ONLY WHEN T>1/4"
SAME SIZE AS PERIMETER BEAM
5/8"Ø A307 MODLINE BOLT SPACING PER FRAMING PLAN
T = 1/4" MIN TO 1" MAX
MODLINE
SHIM PLT
15
3" = 1'-0"
Flr @ ML w/ Shim (CONC FLR)
5x5 PW FILLER
FLOOR SHTH'G
2x4 w/ (2)#10x2
SHIM PLT FLAT HEAD WAFER SCREW - EA END OF 2x
5/8"Ø A307 MODLINE BOLT SPACING PER FRAMING PLAN
RIM PER PLAN
10
3" = 1'-0"
Flr @ ML w/ Shim (WD FLR)
0' - 3 1/2"
0' - 6"
t = 0.1017"
CHANNEL JOIST SECTION PROPERTIES
A-1011, GRADE 33
t = 0.1017"
S_x = 2.822 IN³
I_x = 8.631 IN⁴
F_y = 33 KSI
5
3" = 1'-0"
Channel Joist Section Properties (600S350-97)
WEB OF PERIMETER BM
PP
HSS COLUMN
3/8" PLT x 3 1/2" LONG MIN.
PIECE OF HSS COL. ALIGN w/ COL. ABOVE
PIECE OF HSS TUBE TO MATCH COLUMN
FLOOR CHANNEL
PLT 5/16" SHIM WELD TO C7
SECTION A-A
7
1 1/2" = 1'-0"
Mid-Span Column Connection
5/8"Ø A307 MODLINE BOLT SPACING PER FRAMING PLAN
PERIMETER BEAM
14
3" = 1'-0"
Flr @ ML (CONC FLR)1
2x4 w/ (2)#10x2 FLAT HEAD WAFER SCREW - EA END OF 2x
RIM PER PLAN
9
3" = 1'-0"
Flr @ ML (WD FLR)1
END OF JST
FLR JST PER PLAN
2"Ø HOLES (8) MAX PER JST)
8" MIN
TYP
12" MIN
4
3" = 1'-0"
Elevation - Allowable Jst Holes
"D"
1 1/2" TYP
9" MAX
OPN'G (TYP)
MTL DECK (TYP)
JST (TYP)
L1 3/4X1 3/4X1/4 (TYP) EXTENDED MIN (2)"LOW" FLUTES
EA "LOW" FLUTE
1. THIS DETAIL IS FOR USE ONLY FOR OPENINGS OR OPENING GROUPS THAT ARE 0'-9" OR SMALLER.
2. OPENINGS 2"Ø OR LESS NOT OCCURING IN THE LOWER FLUTE DO NOT REQUIRE REINFORCING AND MAY BE CORED THRU THE CONCRETE.
3. IF "D" IS LESS THAN 32" THEN THE GROUP OF OPENINGS MUST BE BLOCKED OUT WITH ADDITIONAL FRAMING.
4. PRIOR TO CONCRETE POUR, BLOCK OUT THE OPENINGS. AFTER THE CONCRETE HAS BEEN CURED THE DECK MAY BE CUT.
16
1 1/2" = 1'-0"
Typ Deck Penetrations (CONC FLR)
* SIZE OF WELD (S) = THICKNESS OF THINER MATERIAL
BM PER PLAN
600S250-68 BLK @ 48" O.C.
BLK'G TO BM
JST PER PLAN
13
1 1/2" = 1'-0"
Typ Blocking (CONC FLR)
FLOOR SHTH'G
BLK'G
1/2" MAX COPE
FASTENING PER PLAN SEE FLOOR DIAPHRAGM FASTENING SCHEDULE PER S0.1
RIM PER PLAN
*(S) 1 1/2"-3"
8
1 1/2" = 1'-0"
Typ Blk'g Connection @ Rim (WD FLR)
CJP @ FLANGE
BACK UP PLT 1/4" MIN
FLR PERIMETER CHAN PER PLAN
CJP @ WEB
TYP.
5"
3
3" = 1'-0"
Flr Perimeter Beam Splice
* @ EA SUPPORT
6X6XW1.4XW1.4 WWM
3 1/2" LIGHT WEIGHT CONC FILL (110 PCF)
* DECK TO ANGLE
JST PER PLAN
ANGLE TO BM
L3X3X3/16
BM PER PLAN
0.036"x1 1/2" B-DECK
*ALTERNATE FSTN'G
OPTIONAL HILTIXEDN19THQ12 SHOT PIN @ 12" o/c (4)PER DECK UNIT (4/36")
TYP (ICC #ESR-2197)
12
1 1/2" = 1'-0"
Typ End Beam Connection @ Rim (CONC FLR)
CJP BM FLANGE TO COL T/B w/ BACKUP FILLET
HSS COLUMN PER PLAN
CJP TYP
HSS COLUMN (STUB) SAME SIZE AS COLUMN PER PLAN
STL PLT T/B OF STUB COLUMN
3/8" PLT (WD SHTH'G FLR)
1/2" PLT (CONC FLR)
CJP BM WEB TO COL T/B w/ BACKUP FILLET
NOTE : PERPENDICULAR MEMBER NOT SHOWN FOR CLARITY
2
1 1/2" = 1'-0"
Typ Flr Bm to Column Connection
JST TO BM
L4X3X1/4 LLH (ANGLE EA JST BAY)
11
1 1/2" = 1'-0"
Typ Side Beam Connection @ Rim (CONC FLR)
FLOOR SHTH'G
FLR JST
1/2" MAX COPE
SEE FLOOR DIAPHRAGM NOTES ON S0.1
RIM PER PLAN
6
1 1/2" = 1'-0"
Typ Joist Connection @ Rim (WD FLR)
CHAN PER PLAN
CJP BM WEB TO COL T/B w/ BACKUP FILLET
HSS COLUMN (STUB) SAME SIZE AS COLUMN PER PLAN
1
1 1/2" = 1'-0"
Typ Corner Connection

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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 • CONSULTING • PROJECT MGT
11590 W BERNARDO COURT, SUITE 100
SAN DIEGO, CA 92127
WWW.RSTAVARES.COM

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ENGINEER MANNY D. FRISCH S3380 03/31/24 STRUCTURAL STATE OF CALIFORNIA
05/24/23
RST#22088

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

APPROVED
DIV. OF THE STATE ARCHITECT
APP. 04-122805 INC:
REVIEWED FOR
SS ☑ FLS ☐ ACS ☐
DATE: 10/17/23

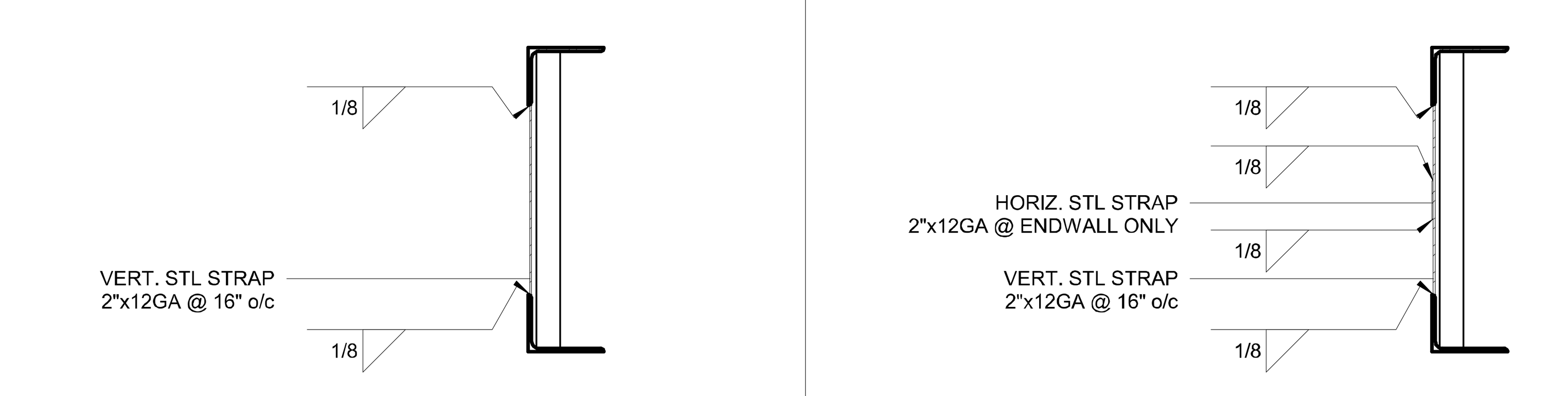
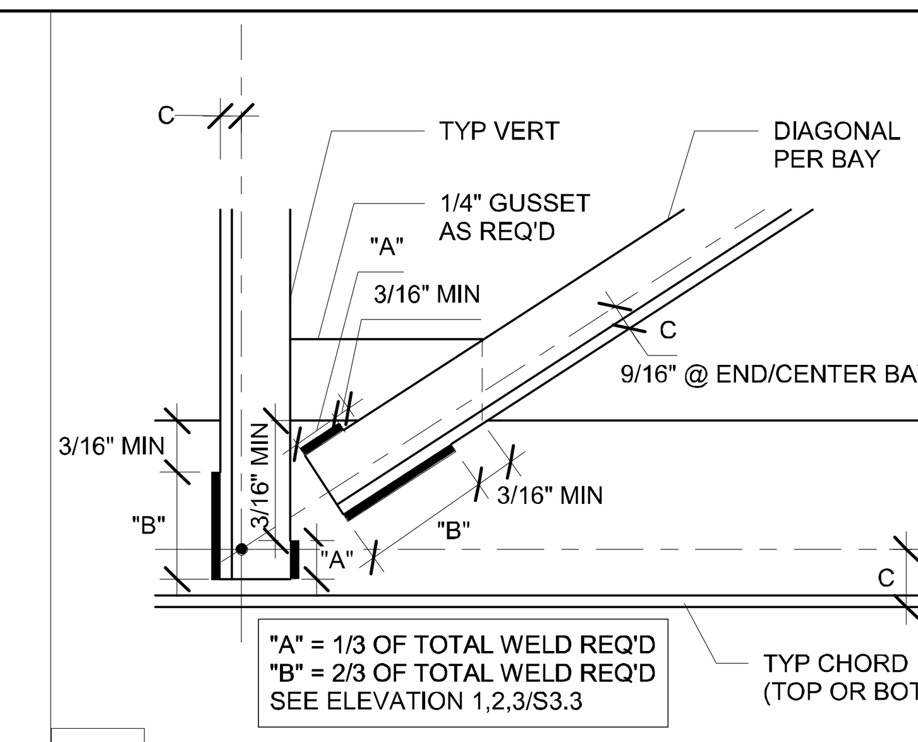


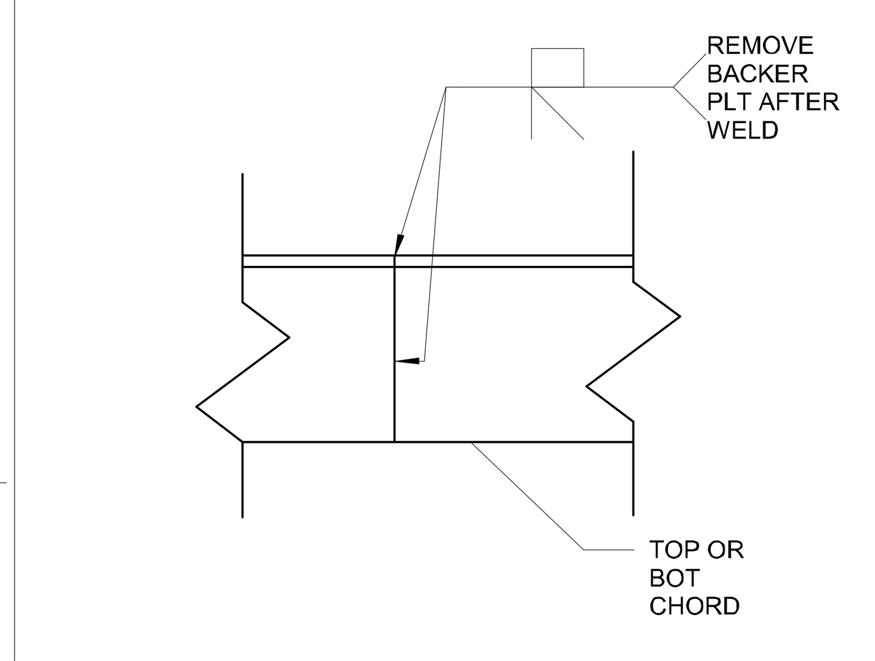
TABLE A-SECTION CENTROID	
SECTION	CENTROID C
L4X3 (LLV)	1 1/4"
L4X3 (LLH)	3/4"
L2X2X3/16	9/16"
L1.5X1.5X3/16	7/16"

NOTE: SEE DETAIL 8 / S3.3

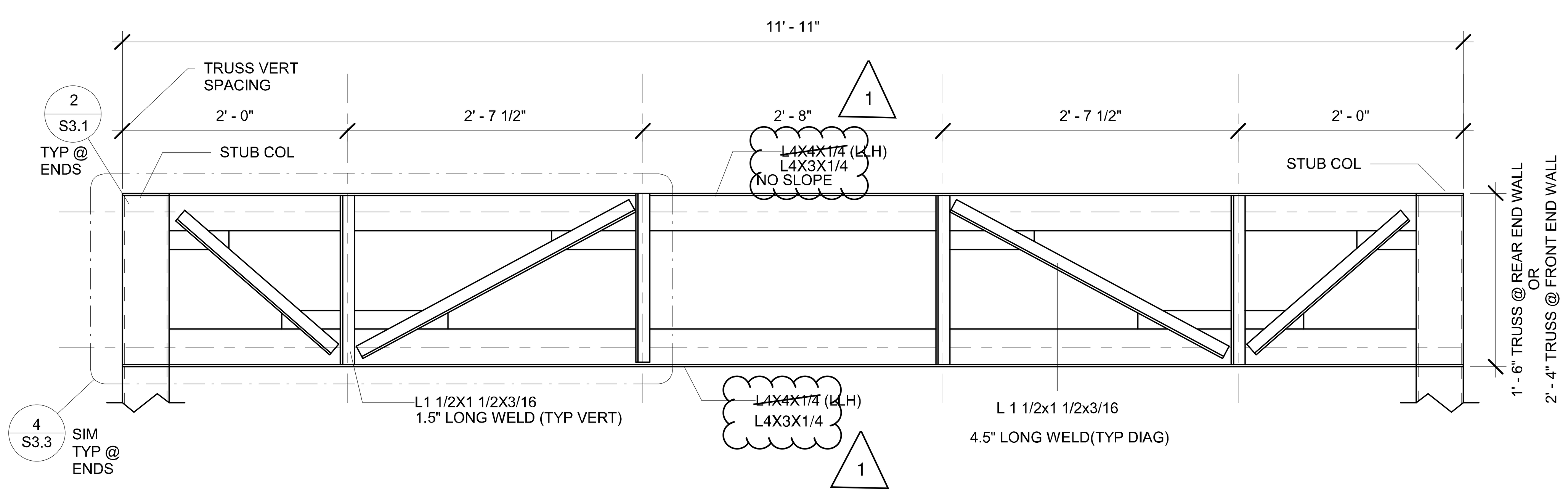
12 1/2" = 1'-0"
TABLE A - SECTION CENTROID



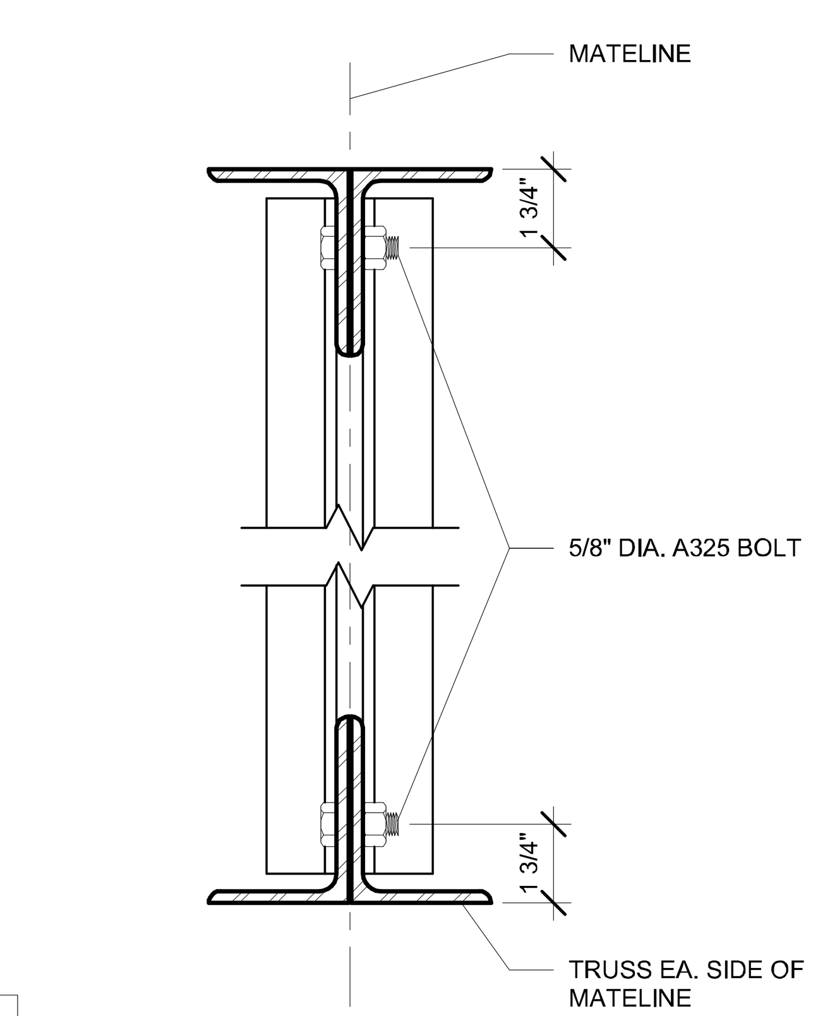
8 3" = 1'-0"
Typ Fillet Weld Lengths



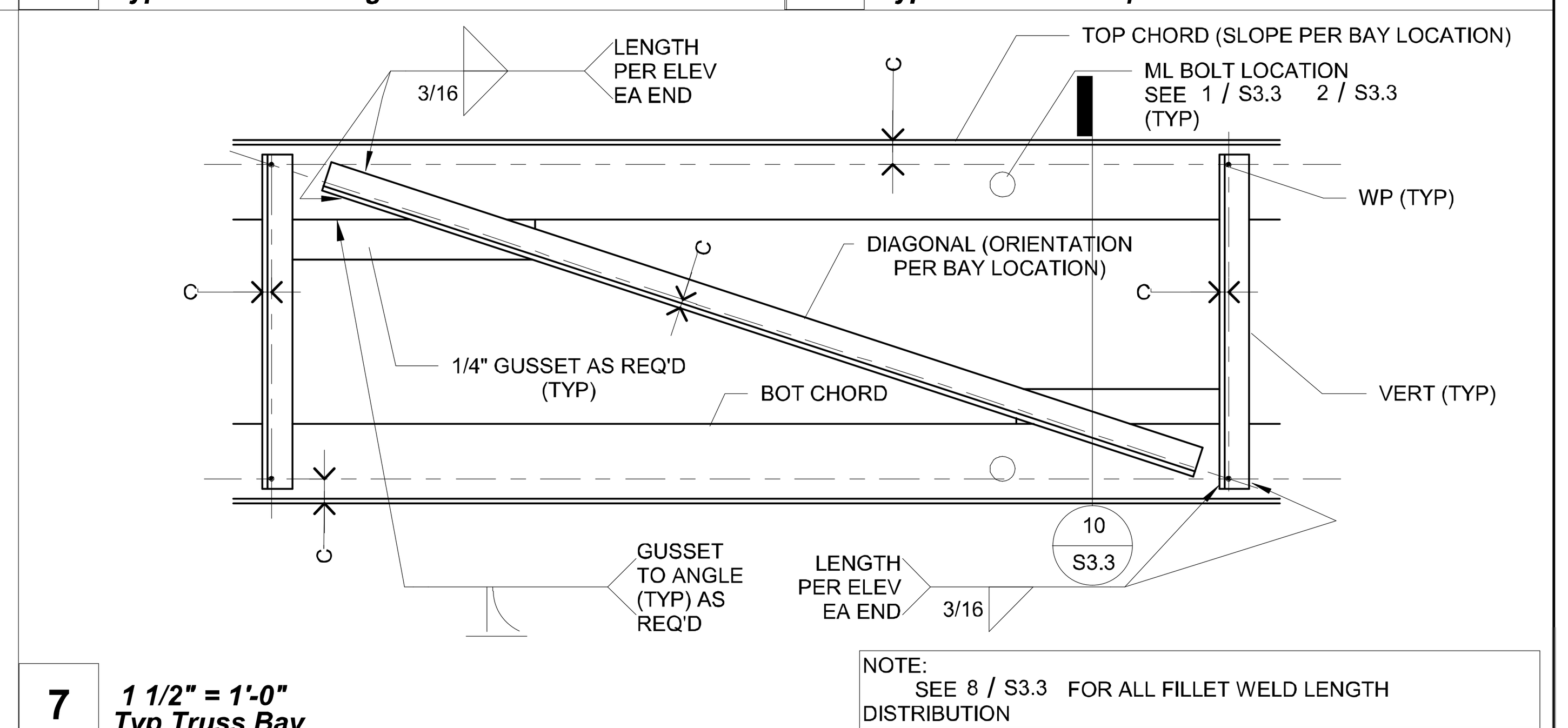
9 3" = 1'-0"
Typ Truss Chord Splice



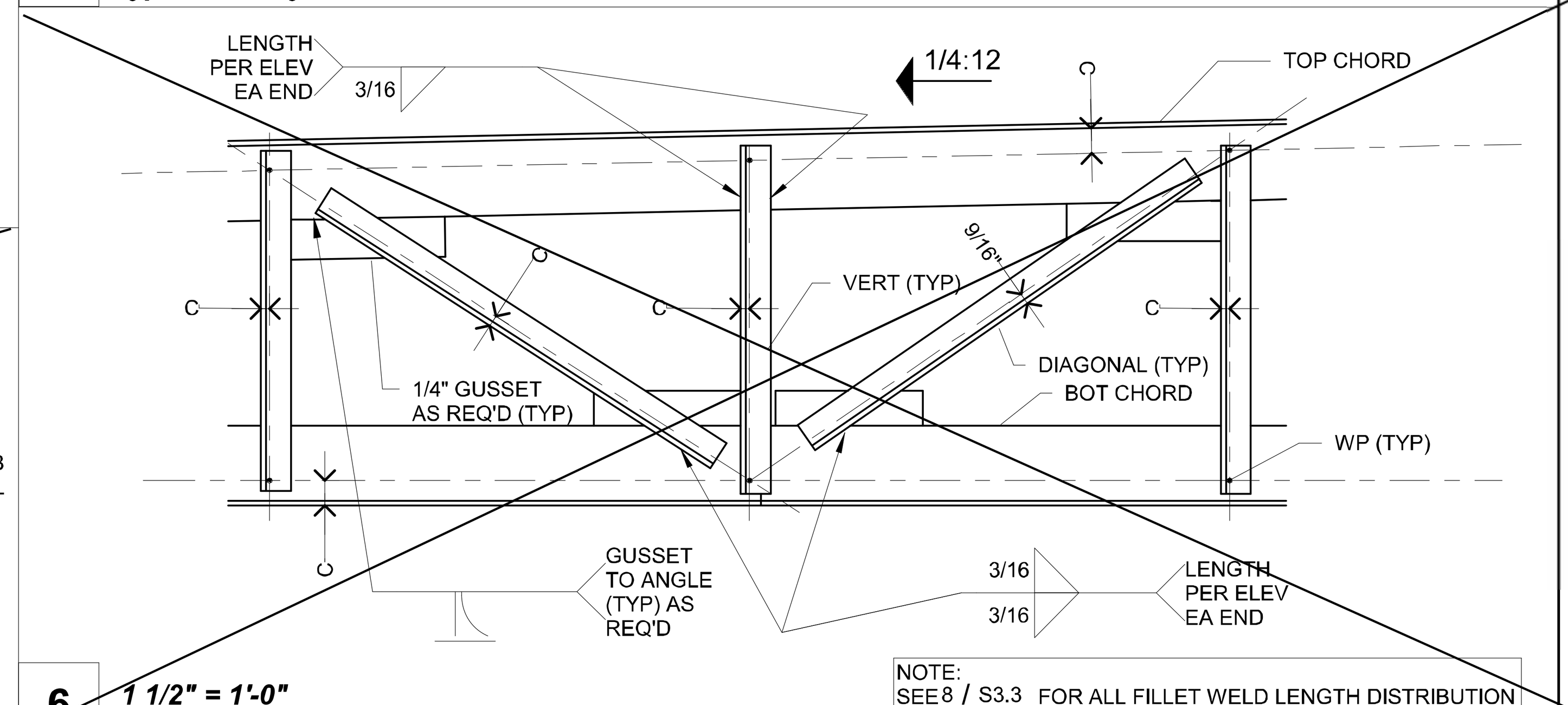
3 1" = 1'-0"
End Wall Truss



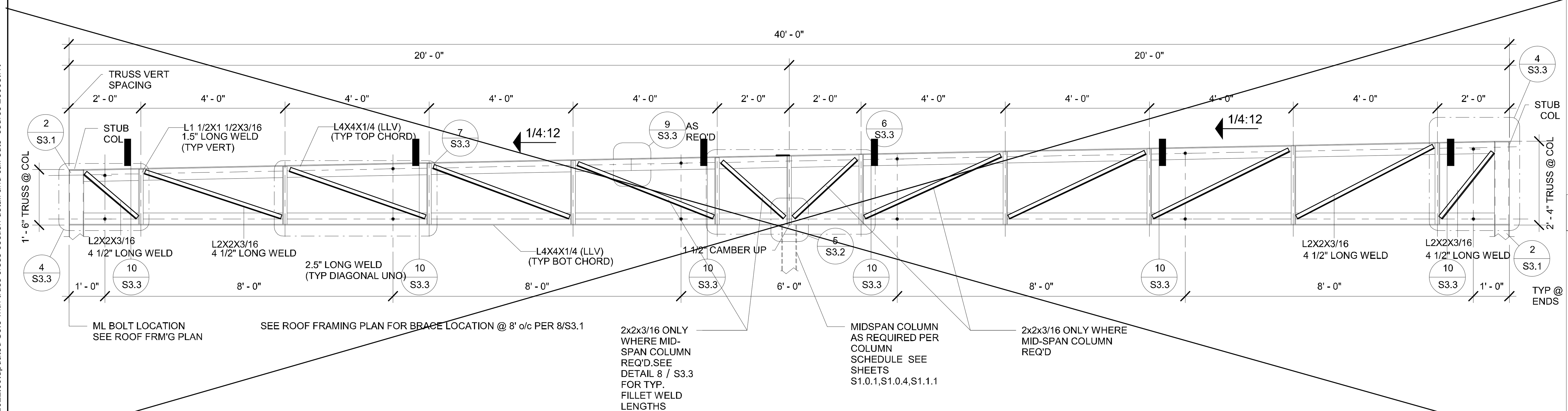
10 3" = 1'-0"
TRUSS CONN. @ MATELINE



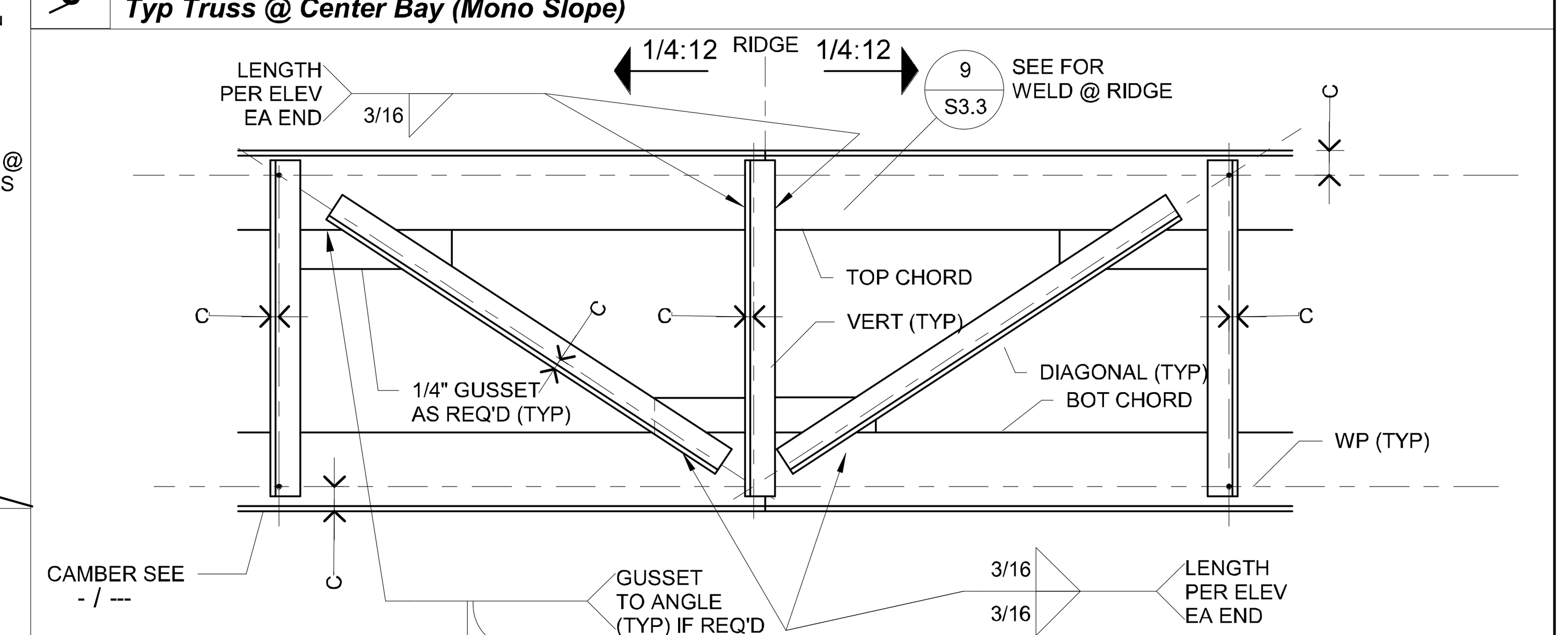
7 1 1/2" = 1'-0"
Typ Truss Bay



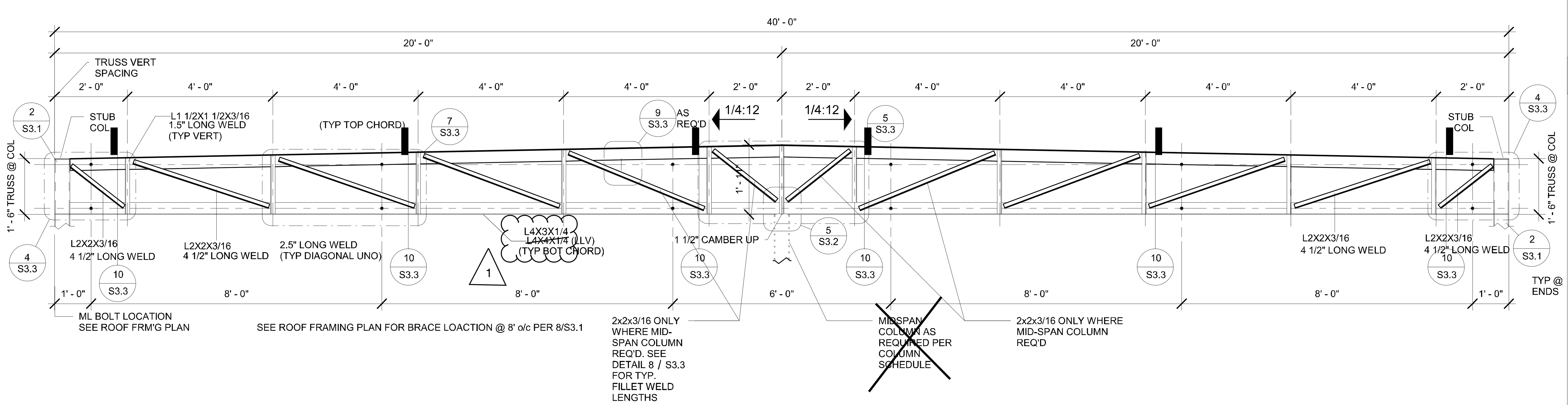
6 1 1/2" = 1'-0"
Typ Truss @ Center Bay (Mono Slope)



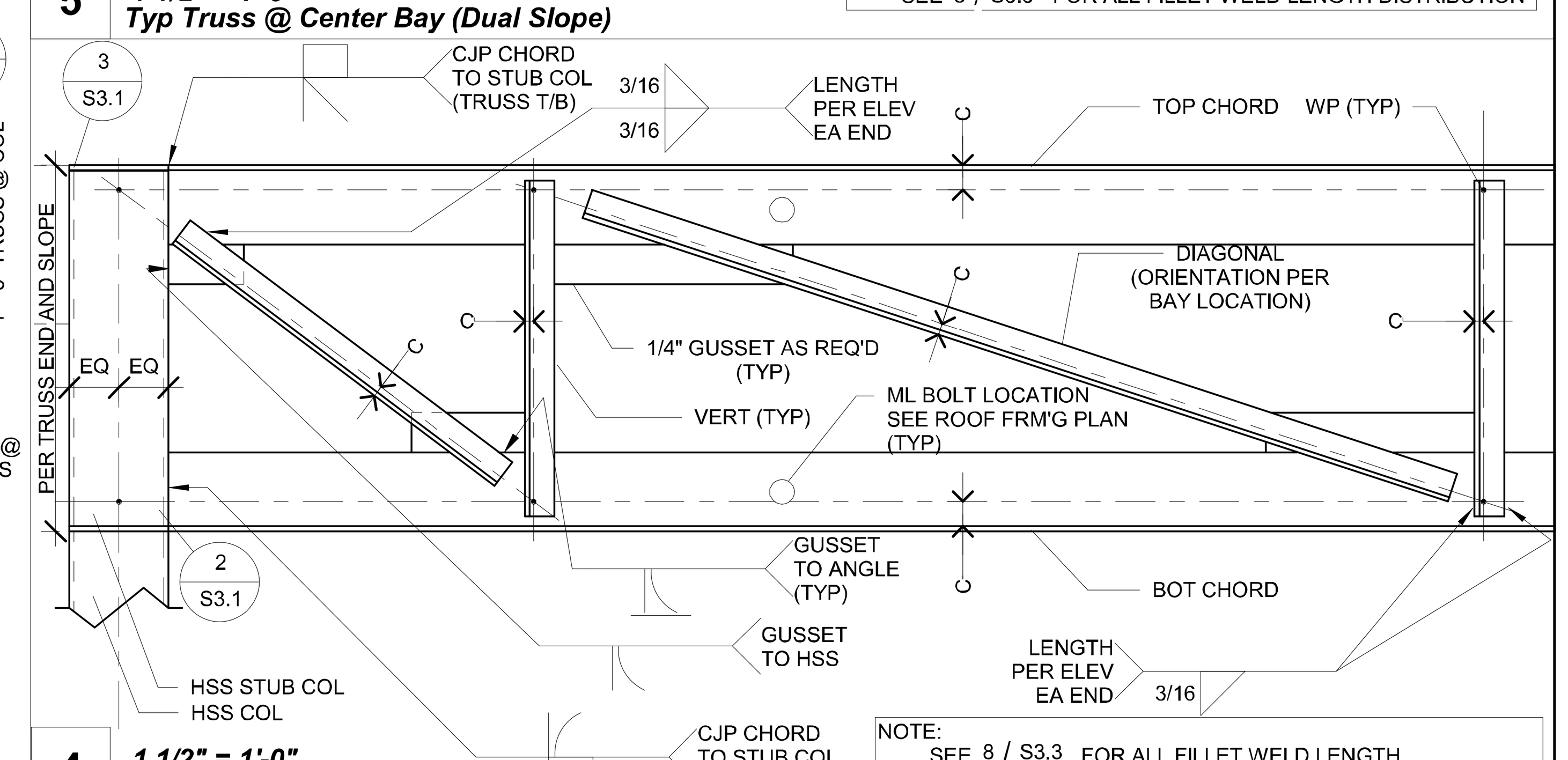
2 1/2" = 1'-0"
Mono Truss



5 1 1/2" = 1'-0"
Typ Truss @ Center Bay (Dual Slope)



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



4 1 1/2" = 1'-0"
Typ End Bay to Stub Conn

M:\2022\22088 - Class Leasing, 24x40 to 120x40 High Seismic 2022 PC\REVIT\22088- 2022.09.updated S3.3 with truss cross-section detail and call outs- source 20093.rvt

9/22/2022 11:10:42 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

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ORIGINAL PC STATE AGENCY APPROVAL

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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
ROOF PERIMETER TRUSS

PROJECT NUMBER
22088

DRAWN BY
rMc/SC

CHECKED BY
RH/RT

DATE

SHEET NO.
S3.3

CCD_001

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2020

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, PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARD CODE (CALGREEEN), 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 35 AND CFC CHAPTER 80.

NOTE: CAL/OSHA ELEVATOR UNIT ENFORCES CCR TITLE 8 AND USES THE 2004 ASME A17.1 BY ADOPTION

*CALIFORNIA ADMINISTRATIVE CODE, PART1, CHAPTER 10, ADMINISTRATIVE REGULATIONS FOR THE CALIFORNIA ENERGY COMMISSION (CEC)

GENERAL NOTES

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATION SHALL BE MADE BY AN ADDENDUM OR CONSTRUCTION CHANGE DOCUMENT(CCD) BY DSA AS REQUIRED BY SECTION 4-338 PART1, TITLE 24, CCR

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT(OWNER) AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. DUTIES OF INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1 TITLE 24, CCR

COMPLETE ACCESS IS A DIVISION OF INTEGRATED STAIR SYSTEMS INC. WITH CORPORATE OFFICES LOCATED IN 1345 RYAN RD, BUCKLEY, WA 98321, (360) 829-4220

DESIGN LOADS

LIVE LOAD:	100 PSF (4.8 kPa)
HANDRAIL IMPACT:	200 LBS (0.9kN)
HANDRAIL DIST. LOAD:	50 PLF (0.7 kN/m)
RISK CATAGORY:	III
SEISMIC:	Ss=2.80g, S1=1.99g, R=1.25, SITE CLASS D
LATERAL RESISTING SYST:	OTHER STRUCTURES SIMILAR TO BUILDINGS
WIND:	110 MPH, 3 SEC GUST EXPOSURE "C", Kzt=1.0
SEIS IMPORTANCE FACTOR:	Ie=1.25, Iw=1.0 Cs=1.493
DESIGN BASE SHEAR, V:	1493 W
SNOW LOAD:	0 PSF (0 kPa)
SOIL ALLOWABLE BEARING:	1,000 PSF (4.8 kPa

MATERIALS

SQUARE STEEL TUBE	ASTM A513 GR. C	Fy= 33 KSI (345 MPa
RAMP OVERHANG POST	ASTM A500 B	Fy= 46 KSI

*ALL STEEL TO BE COATED WITH GALVANIZED RUST INHIBITING COATING

WOOD FOUNDATION SHALL BE OF FOUNDATION GRADE REDWOOD OR PRESERVATIVE PRESSURE TREATED HEM-FIR #2 AND IS ALLOWED TO REST DIRECTLY ON SOIL OR PAVEMENT.

WELDS

WELDING SHALL BE IN ACCORDANCE WITH AWS D.1.1-10 USING E70XX ELECTRODES FOR STEEL
AND AWS D1.2 AND A5.10 FOR ALUMINUM, USING ALMIGWELD ER4043

BOLTS, SCREWS AND NAILS

STEEL TO STEEL CONNECTIONS: ASTM A307 CARBON STEEL BOLTS SHALL BE GRADE 5 ZINC PLATED, HOT DIPPED GALVANIZED TO ASTM A153 OR ELECTROGALVANIZED TO ASTM B63.3. FASTENER SHALL BE LUBRICATED TO ELIMINATE GALLING. ALL STEEL MEMBERS IN CONTACT WITH ALUMINIUM SHALL BE ZINC COATED TO ELIMINATE GALVANIC REACTION.

STEEL TO STEEL & WOOD CONNECTIONS: ANSI/ASME STEEL LAG SCREWS, STEEL STANDARD WOOD SCREWS, WOOD TO WOOD CONNECTION: ASTM STANDARD COMMOM STEEL NAIL.

ITW RED HEAD CONCRETE WEDGE ANCHORS SHALL BE INSTALLED PER RECOMMENDATION SHOWN IN ESR-2427

HANDRAIL NOTES:

1) MANEUVERING CLEARANCE ON EXTERIOR PULL SIDE OF DOOR SHALL BE 42" TYPICAL (610MM) MINIMUM WITH 60" (1524MM) MINIMUM LANDING IN FRONT OF DOOR.

2) HANDRAILS SHALL BE CONTINUOUS ALONG BOTH SIDES. HANDRAILS SHALL BE PARALLEL WITH THE SURFACE AND PROJECT 12" (301MM) ON BEYOND TOP OF RISER AND 12" (301MM) PLUS 1 TREAD AT BOTTOM RISER. AT RAMPS WHERE HANDRAIL ARE NOT CONTINUOUS BETWEEN RUNS THE HANDRAIL SHALL EXTEND HORIZONTALLY ABOVE THE LANDING 12" (301MM) MINIMUM BEYOND THE BEGINNING AND ENDING OF RAMPS

3) TOP OF HANDRAILS SHALL BE MOUNTED BETWEEN 34" (864MM) AND 38" (965MM) ABOVE THE WALKING SURFACE, ONE CONSISTENT HEIGHT, BEIGINNING TO END.

4) CLEARANCE BETWEEN HANDRAIL AND WALL SHALL BE A MINIMUM OF 1-1/2" (38MM).

5) GUARDS ARE TO BE DESIGNED FOR A CONCENTRATED LOAD OF 200 LBF (0.9 kN) APPLIED @ ANY POINT AND ANY DIRECTION ALONG THE RAIL OR A UNIFORM LOAD OF 50 PLF (0.7 kN/m) APPLIED HORIZONTALLY @ HANDRAIL HEIGHT.

7) HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION WITH AN OUTSIDE DIAMETER OF 1-1/4" (31.75MM) MINIMUM AND NOT GREATER THAN 2" (51MM) MAXIMUM. **11B-505.7.2** NON-CIRCULAR CROSS SECTIONS. HANDRAIL GRIPPING SURFACES WITH A NON-CIRCULAR CROSS SECTION SHALL HAVE A PERIMETER DIMENSION OF 4 INCHES (102 MM) MINIMUM AND 6¼ INCHES (159 MM) MAXIMUM, AND A CROSS-SECTION DIMENSION OF 2 ¼ INCHES (57 MM) MAXIMUM.

8) GRIPPING SURFACE SHALL BE CONTINUOUS ALONG THIER LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES.

9) HANDRAILS SHALL NOT ROTATE IN THEIR FITTINGS.

10) ENDS OF HANDRAILS SHALL RETURN SMOOTHLY TO FLOOR, WALL OR POST.

1 ***1 1/2" = 1'-0"***
Notes

RAMP NOTES

1) RAMPS SHALL CONFORM TO CBC 2022 TITLE 24 PART 2, CHAPTER 11B, 11B-405

2) RAMP SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1:12 (8% SLOPE) FOR A MAXIMUM RISE OF 30" (762MM)

3) THE MAXIMUM VERTICAL RISE OF RAMP RUN SHALL BE 30" (762MM) MAXIMUM

4) RAMPS SHALL HAVE LANDING AT BOTTOM AND TOP OF EACH RAMP RUN

5) THE SLOPE ON LANDINGS SHALL NOT BE STEEPER THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2% SLOPE) IN ANY DIRECTION

6) LANDING SHALL HAVE A WIDTH AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING AND A MINIMUM LENGTH OF 60" IN THE DIRECTION OF TRAVEL @ TOP LANDING - 72" MIN @ BOT LANDING

7) CHANGES IN DIRECTION OF TRAVEL SHALL HAVE A LANDING 60" WIDE BY 72" LONG (1524MM x 1829MM) MINIMUM, WITH WITH THE LENGTH BEING IN THE DIRCTION OF DOWNWARD TRAVEL AND CHANGES IN DIRECTION

8) MANEUVERING CLEARANCE ON LANDING ADJACENT TO DOORWAYS SHALL BE NO LESS THAN 42" WITH DOOR IN ANY POSITION AND SHALL NOT BE REDUCED BY MORE THAN 3" WHEN DOOR IS FULLY OPENED

9) WALKING SURFACE SHALL BE ROUGHED OR SHALL BE OF SLIP RESISTANT DIAMOND PLATE ALUMINUM AND ALL LANDINGS TO BE DESIGNED TO NOT RETAIN STANDING WATER - 2.083 MAX SLOPE ANY DIRECTION

ADDITIONAL NOTES

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR

SCOPE OF WORK

CONSTRUCTION OF RAMP AND STAIRS BUILDINGS (RELOCATABLE)

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2022 CBC

Application Number:	School Name:	School District:
DSA File Number:	Increment Number:	Date Created:

2022 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2022 CBC).

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

KEY TO COLUMNS

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

	CS. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect installation of post-installed anchors	**See Notes**	**SI***	**1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8** (See Appendix (end of this form) for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
☐	**b.** Test post-installed anchors.	**Test**	**LOR**	**1910A.5.** (See Appendix (end of this form) for exemptions.)
	S/A1. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify identification of all materials and: • Mill certificates indicate material properties that comply with requirements, • Material sizes, types and grades comply with requirements.	**Periodic**	*	**Table 1705A.2.1 Item 3a–3c.** 2202A.1; AISI S100-20 Section A3.1 & A3.2, AISI S240-20 Section A3 & A5, AISI S220-20 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
☑	**b.** Test unidentified materials	**Test**	**LOR**	**2202A.1.**
☑	**c.** Examine seam welds of HSS shapes	**Periodic**	**SI**	DSA IR 17-3.
☑	**d.** Verify and document steel fabrication per DSA-approved construction documents.	**Periodic**	**SI**	Not applicable to cold-formed steel light-frame construction, except for trusses (**1705A.2.4**).
	S/A3. WELDING:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	**Periodic**	**SI**	**1705A.2.5, Table 1705A.2.1 Items 4 & 5:** AWS D1.1 and AWS D1.8 for structural steel; AWS D1.2 for Aluminum; AWS D1.3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17-3.
☑	**b.** Verify weld filler material manufacturer's certificate of compliance.	**Periodic**	**SI**	DSA IR 17-3.
☑	**c.** Verify WPS, welder qualifications and equipment.	**Periodic**	**SI**	DSA IR 17-3.
	S/A4. SHOP WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	**Continuous**	**SI**	**Table 1705A.2.1 Items 5a.1–4;** AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☑	**b.** Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	**Periodic**	**SI**	**1705A.2.2, Table 1705A.2.1 Items 5a.5 & Sa.6;** AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☑	**c.** Inspect welding of stairs and railing systems.	**Periodic**	**SI**	**1705A.2.1;** AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.

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

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

THE EXAMPLE OF FORM DSA-103s SHOWN ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY. A FORM DSA-103 IS TO BE COMPLETED FOR EACH APPLICATION THAT THIS PC IS BEING INCORPORATED INTO AND ALL EXAMPLE FORM DSA-103s ARE TO BE CROSSED OUT ON THIS DRAWING.

Ramp Option Schedule:

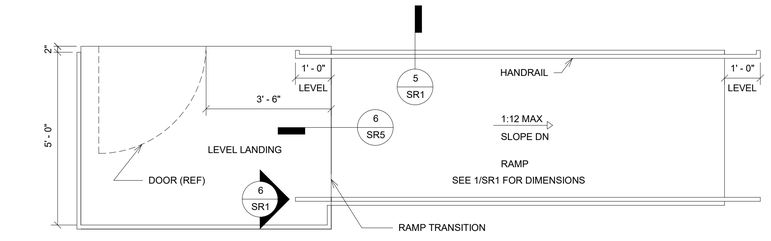
option1 : ramp & landing @ building
(plan view 1/SR1)

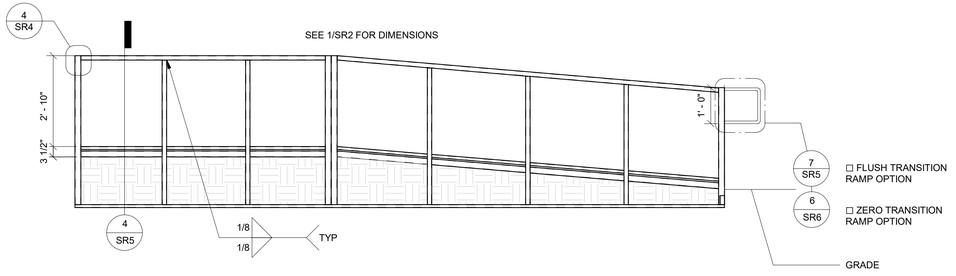
option 2 : ramp and landing with offset ramp
(plan view 2/SR1)

option 3: ramp and platform landing
(plan view 3/SR1)

option 4 : ramp and landing with switch back ramp
(plan view 4/SR1)

2 ***Ramps Options w/ Different Building Sizes***





3 ***1/2" = 1'-0"***
Standard Ramp

PROJECT SPECIFIC STATE AGENCY APPROVAL

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07/24/23

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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
Module Plan and Notes
(COVER SHEET)

PROJECT NUMBER
22079

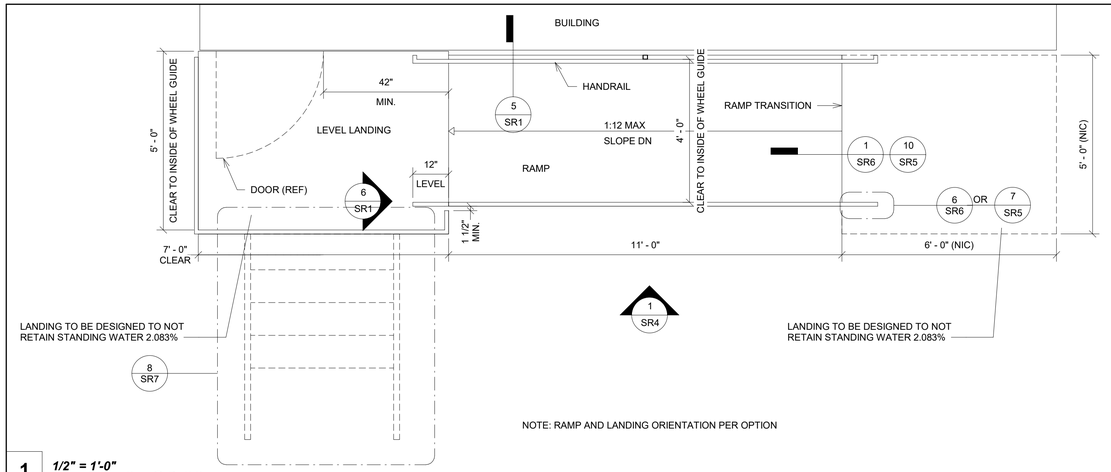
DRAWN BY
SM

CHECKED BY
rMc

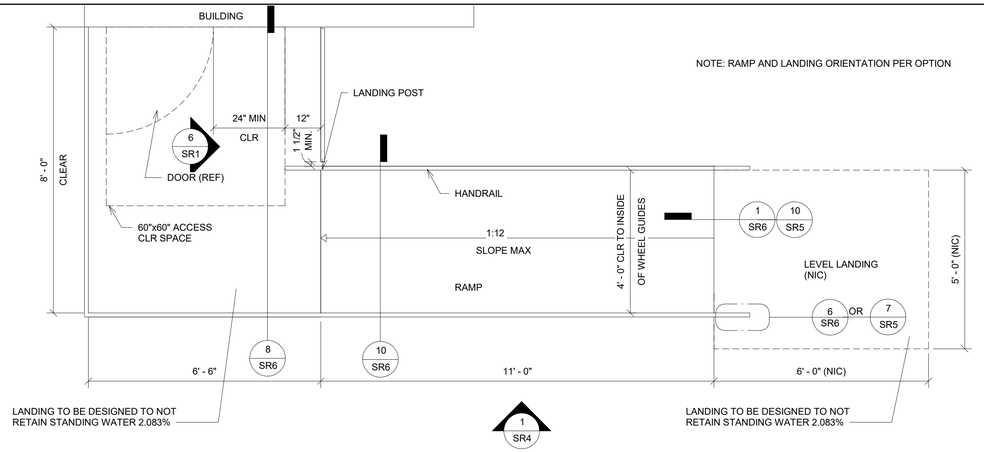
DATE
6/15/2021

SHEET NO.
SR0

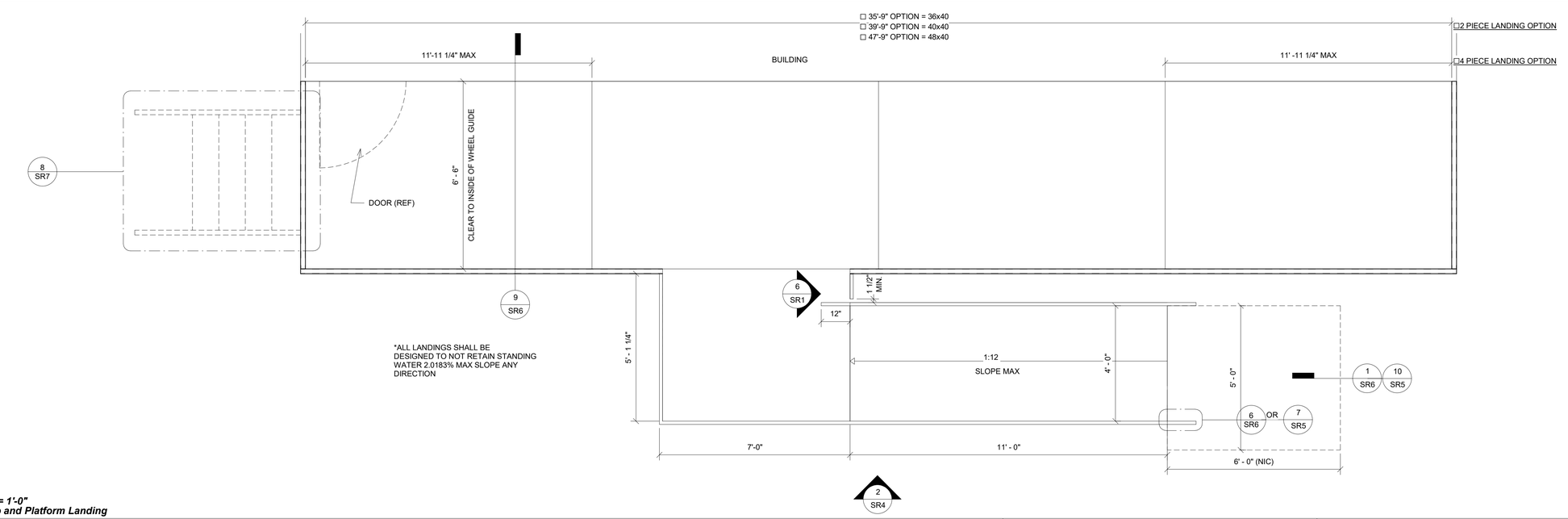
SHEET OF



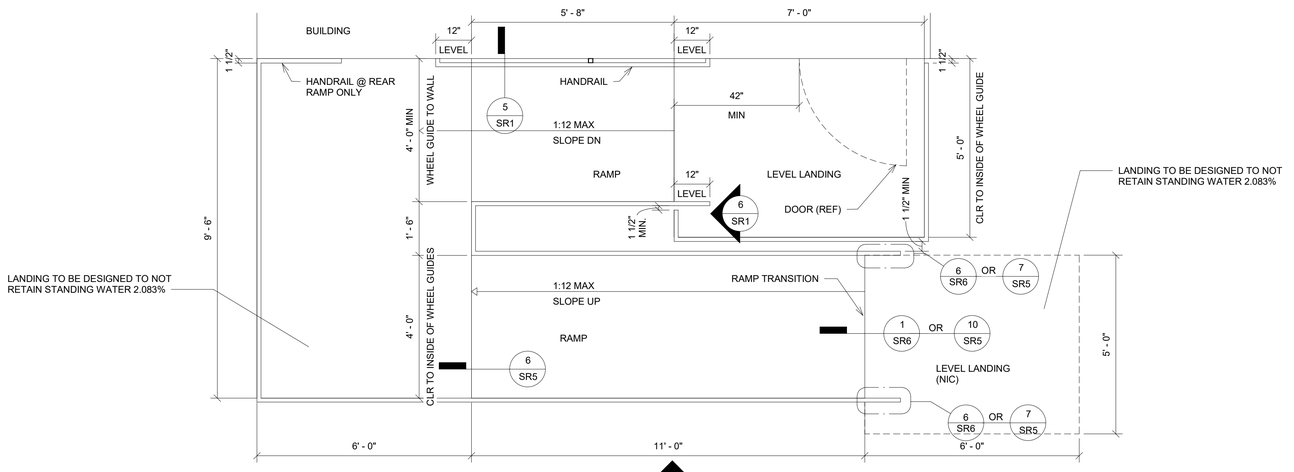
1 *1/2" = 1'-0"*
Ramp & Landing @ Building



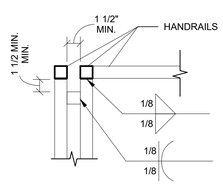
2 *1/2" = 1'-0"*
Ramp & Landing w/ Offset Ramp



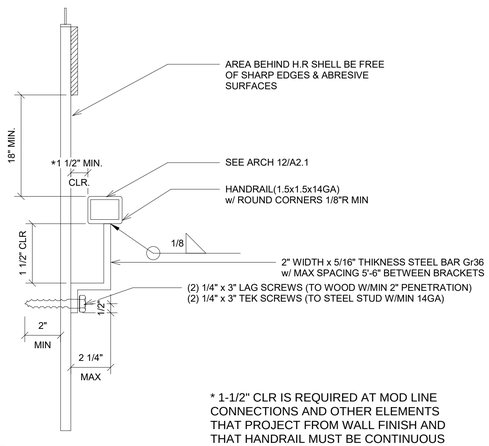
3 *1/2" = 1'-0"*
Ramp and Platform Landing



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



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



* 1-1/2" CLR IS REQUIRED AT MOD LINE CONNECTIONS AND OTHER ELEMENTS THAT PROJECT FROM WALL FINISH AND THAT HANDRAIL MUST BE CONTINUOUS (CANNOT CURVE AROUND PROJECTION)

5 *3" = 1'-0"*
Handrail

PROJECT SPECIFIC STATE AGENCY APPROVAL

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07/24/23

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

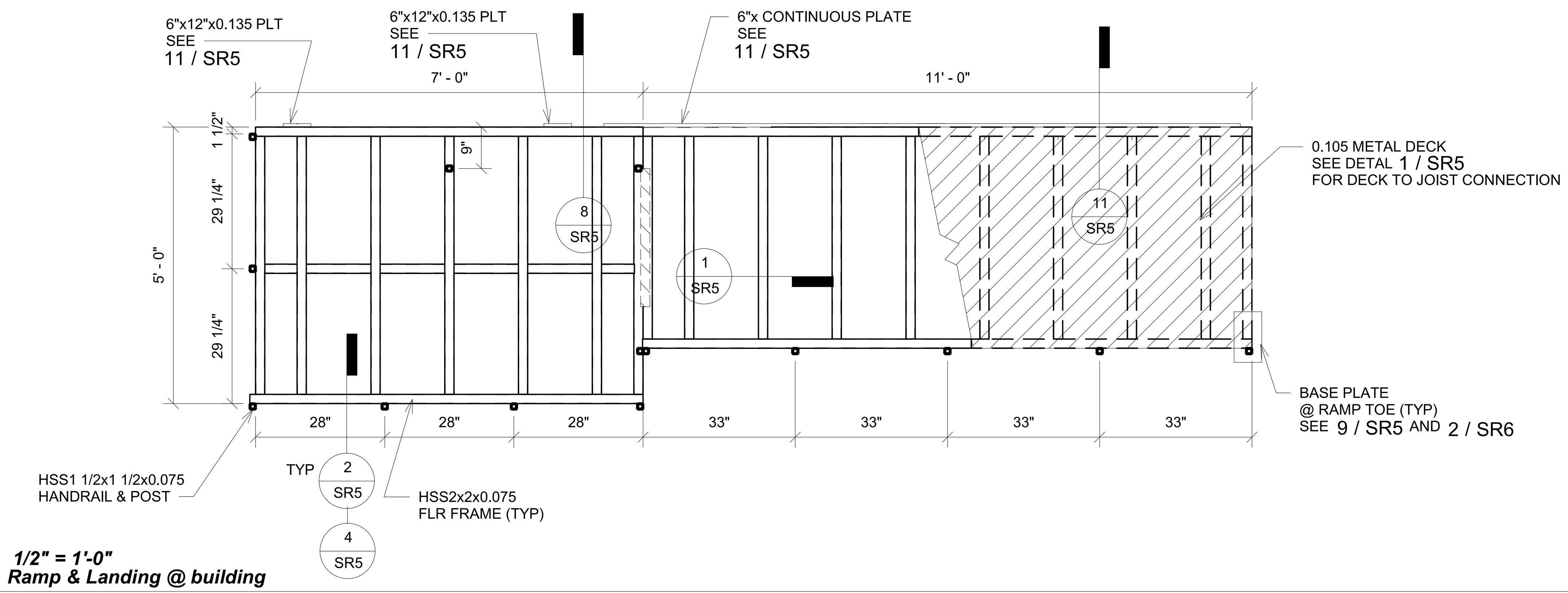
DRAWN BY
SM

CHECKED BY
rMc

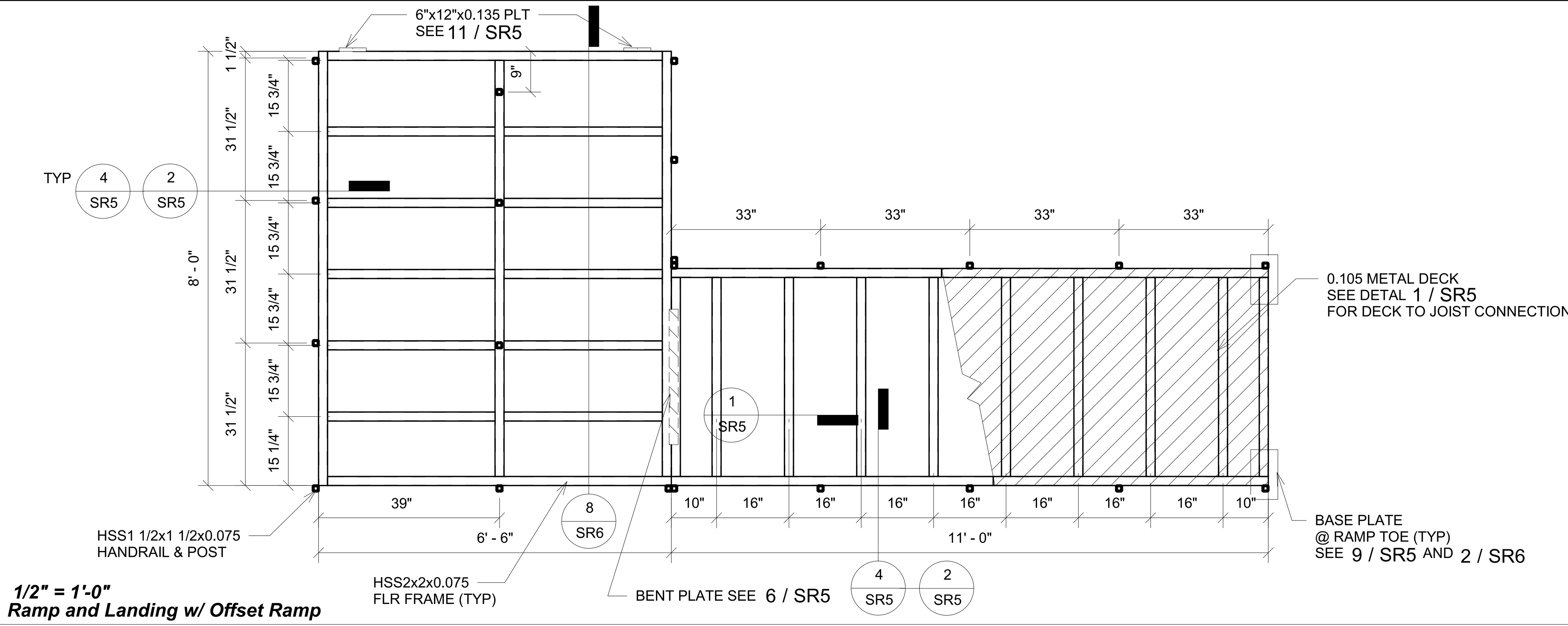
DATE
12/23/2022

SHEET NO.
SR1

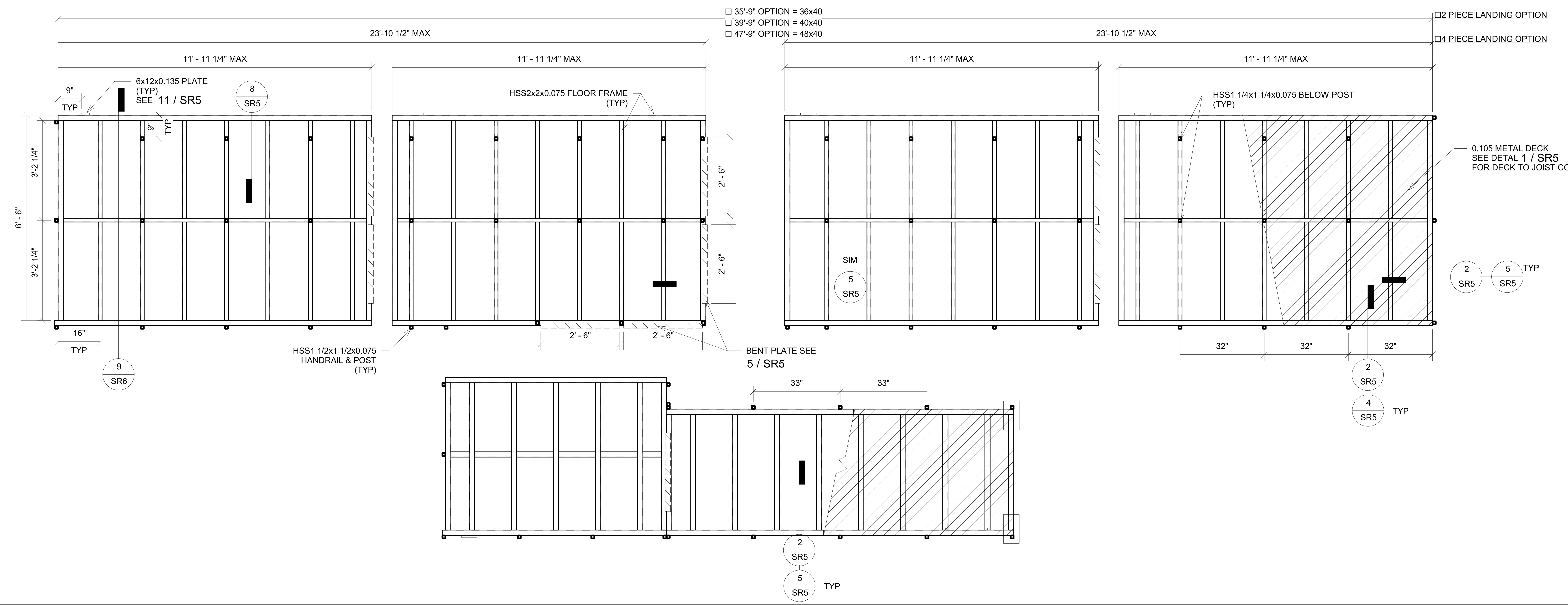
SHEET OF



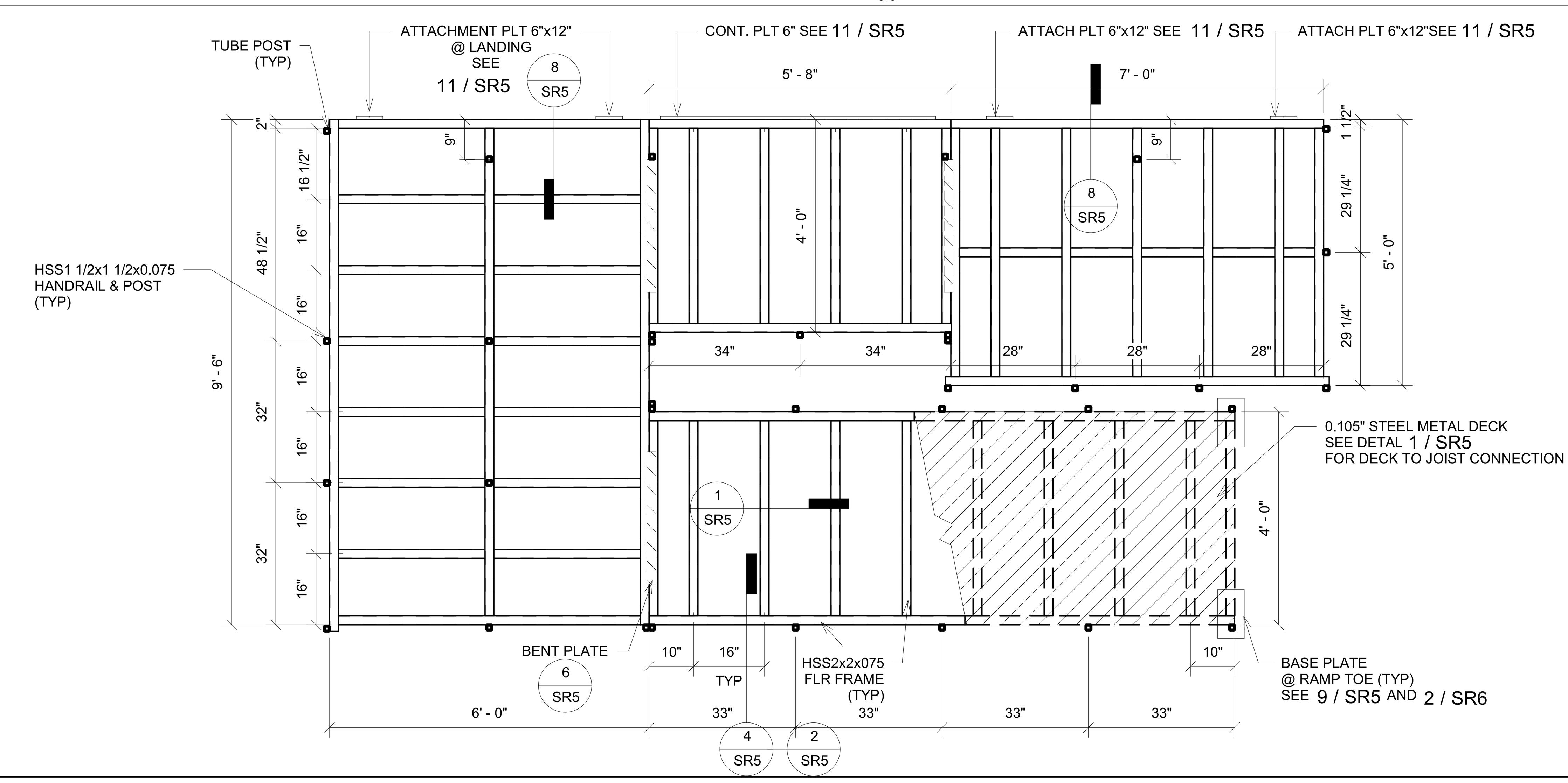
1 ***1/2" = 1'-0"***
Ramp & Landing @ building



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

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

PROJECT SPECIFIC STATE AGENCY APPROVAL

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
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SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

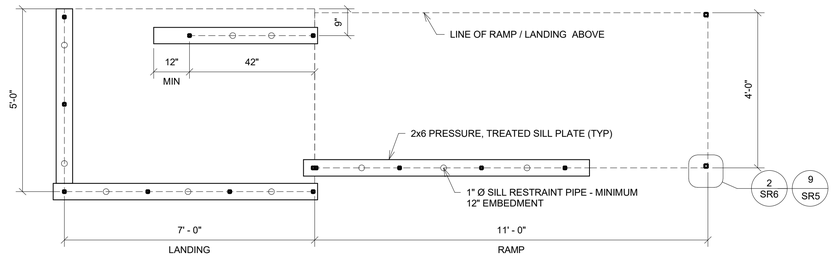
DRAWN BY
SM

CHECKED BY
BR/rMc

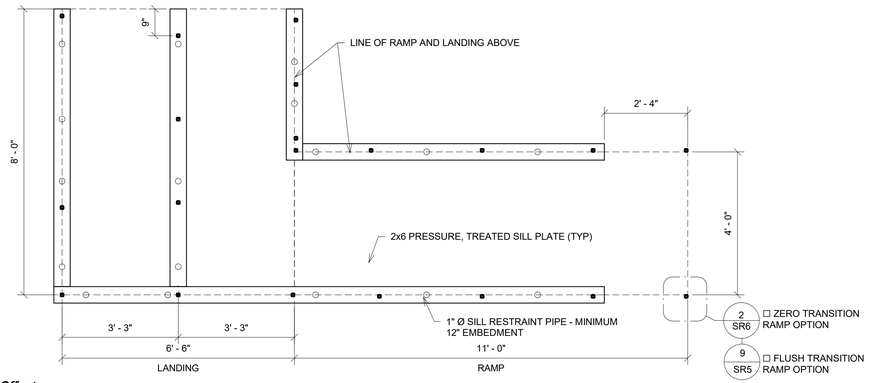
DATE
12/23/2022

SHEET NO.
SR2

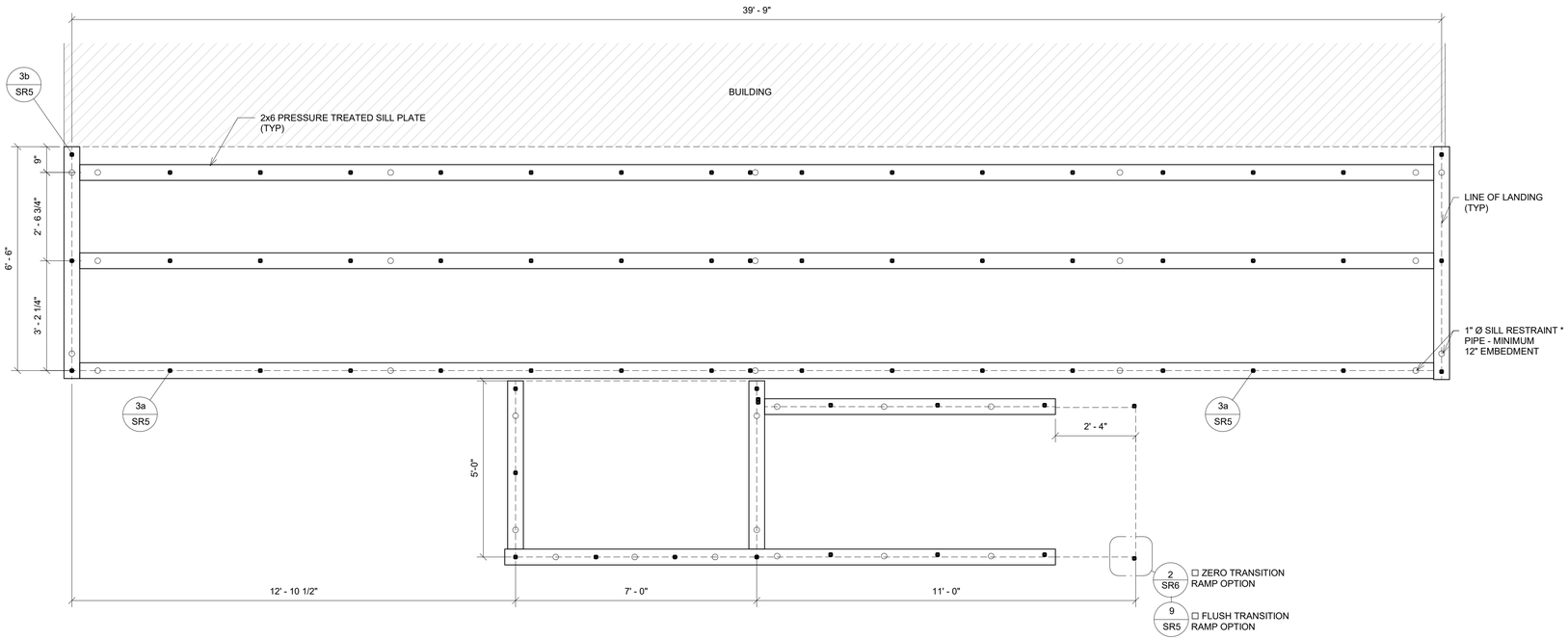
SHEET OF



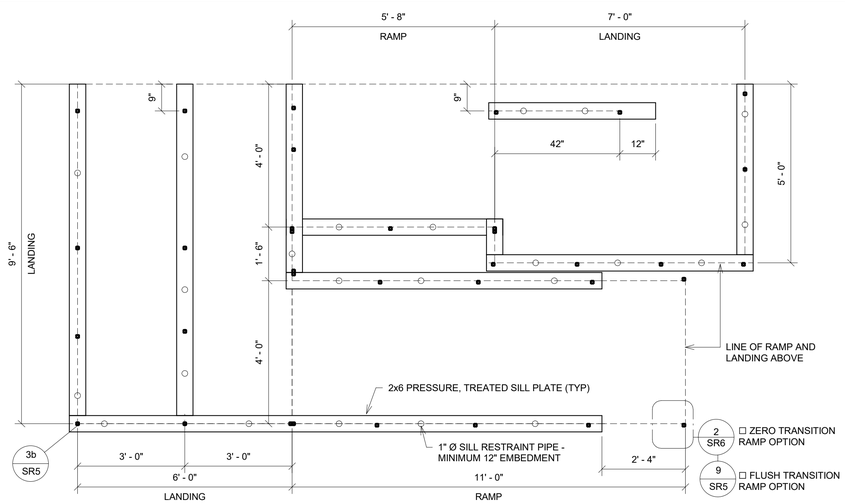
1 *1/2" = 1'-0"*
Sill Plan For Ramp & Landing



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 CORNERIN 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

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07/24/23

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

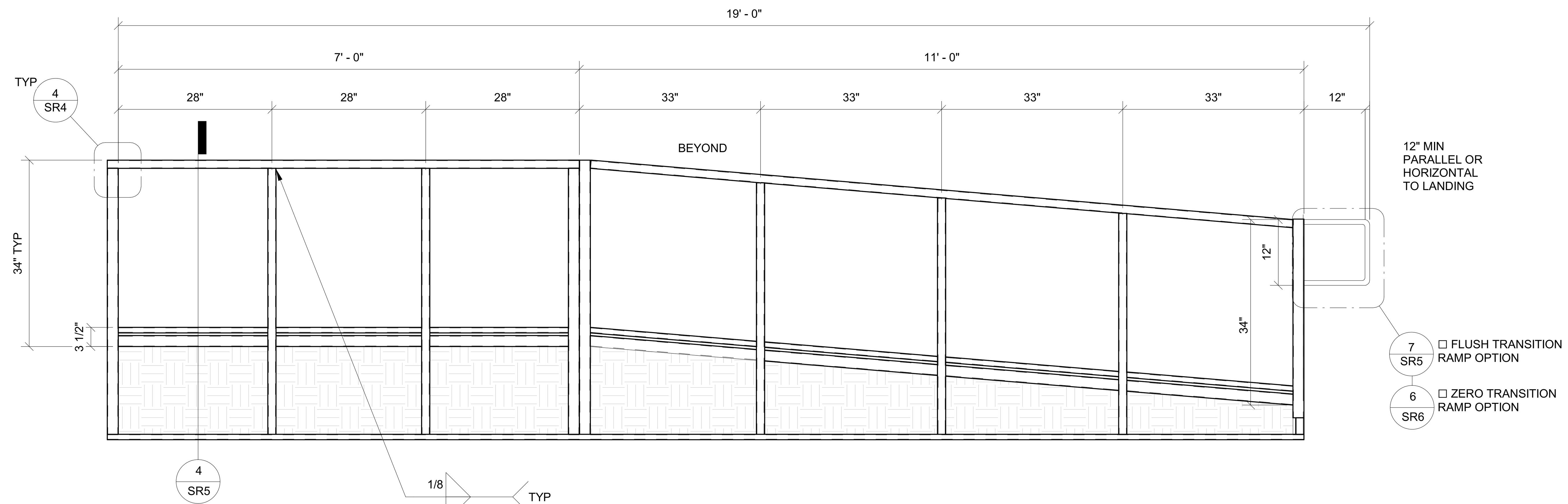
PROJECT NUMBER
22079

DRAWN BY
SM

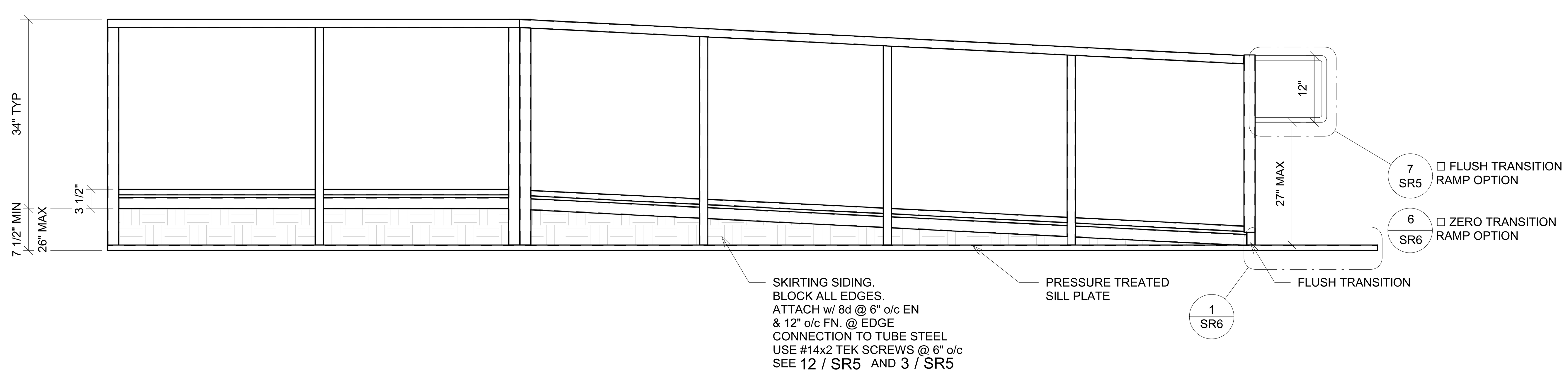
CHECKED BY
rMc

DATE
12/23/2022

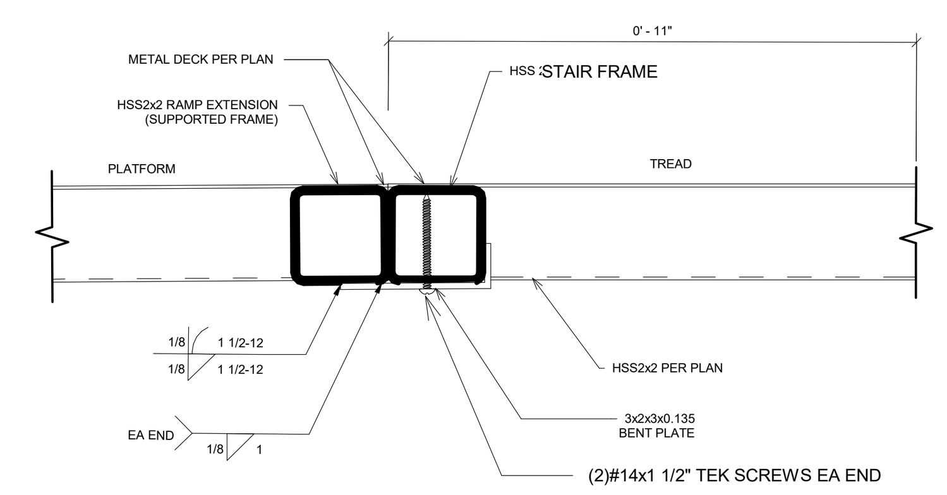
SHEET NO.
SR3
SHEET OF



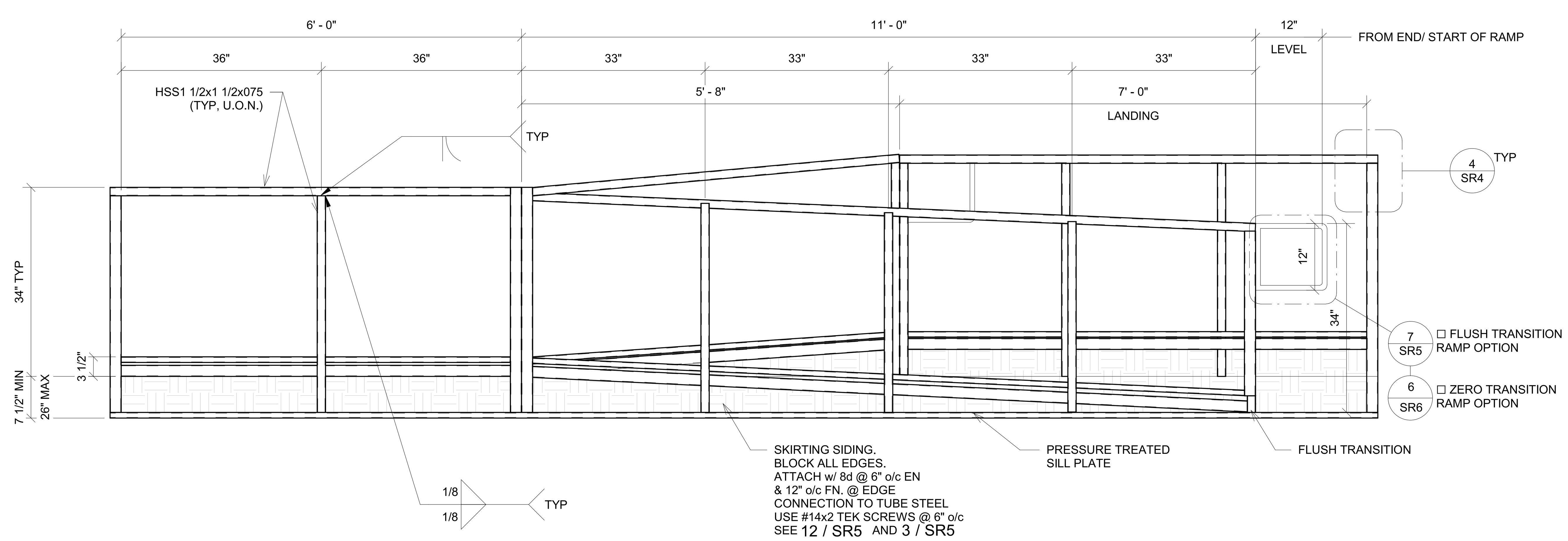
1 3/4" = 1'-0"
Ramp & Landing Elevation



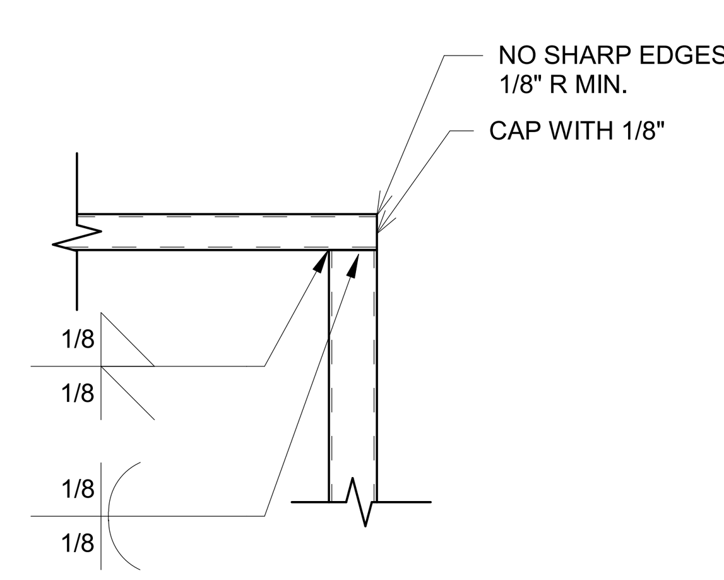
2 3/4" = 1'-0"
Ramp & Landing Elevation Option X Copy 1



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

M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REVIT\RST#20093 - Aries, Ramps and Stairs PC.rvt
6/15/2021 7:29:27 PM

PROJECT SPECIFIC STATE AGENCY APPROVAL

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REGISTERED PROFESSIONAL ENGINEER
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Exp. 03/31/24
STRUCTURAL
STATE OF CALIFORNIA
07/24/23

CLIENT
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ORIGINAL PC STATE AGENCY APPROVAL
APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
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SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

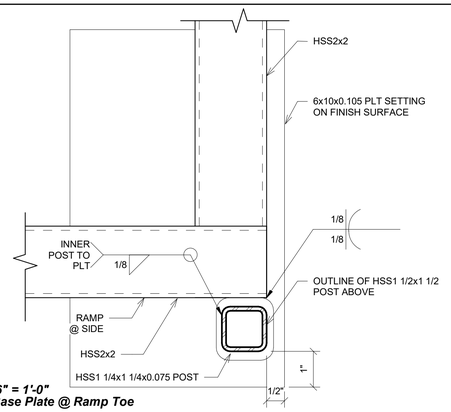
DRAWN BY
SM

CHECKED BY
rMc

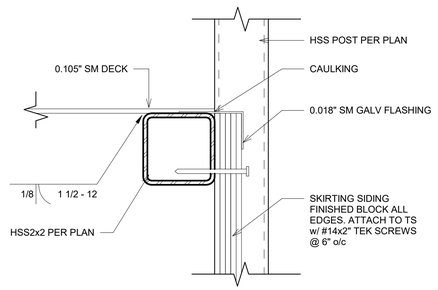
DATE
12/23/2022

SHEET NO.
SR4

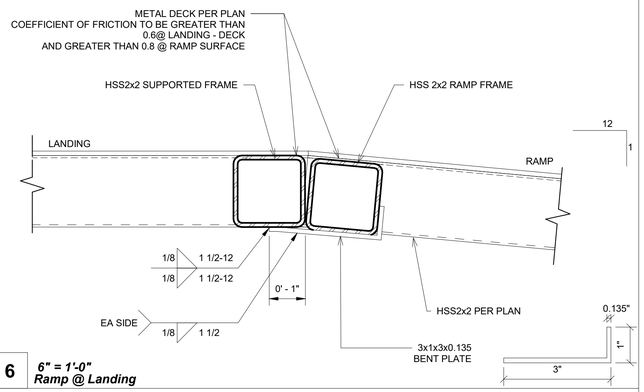
SHEET OF



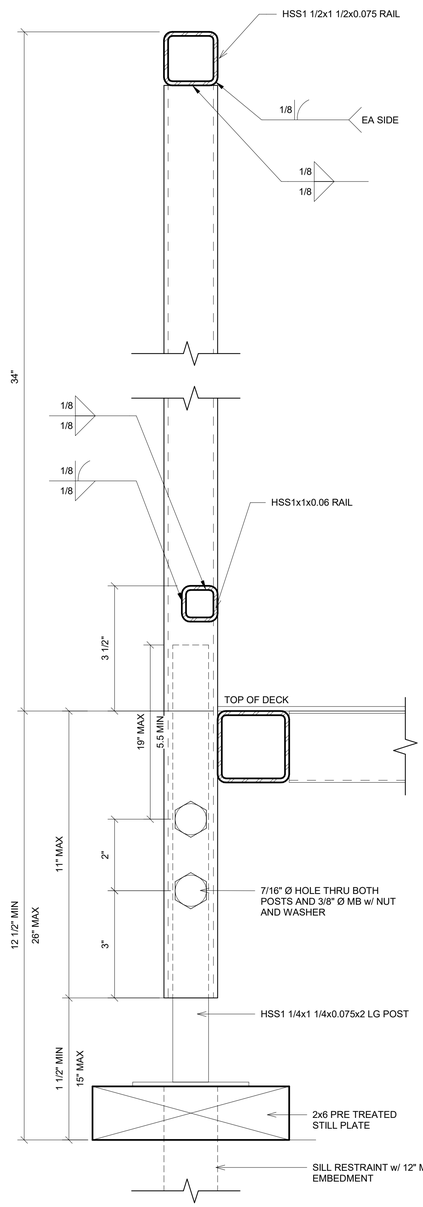
9 *6" = 1'-0"*
Base Plate @ Ramp Toe



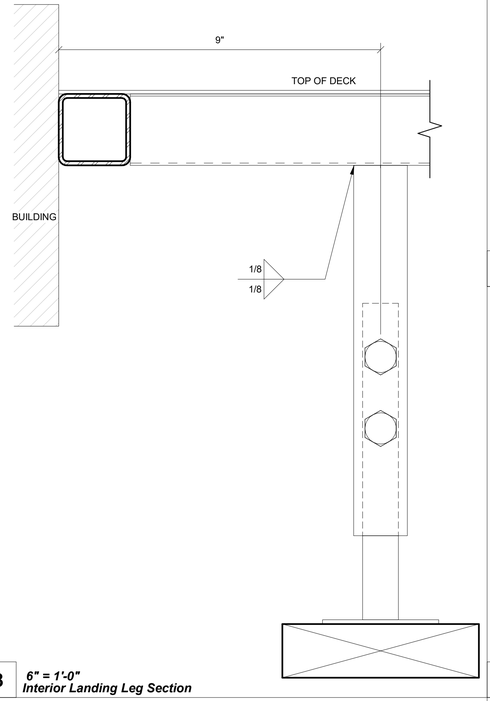
12 *6" = 1'-0"*
Skirt Flashing



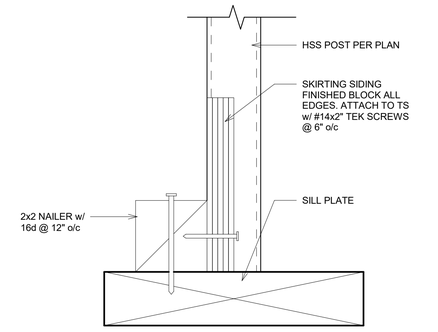
6 *6" = 1'-0"*
Ramp @ Landing



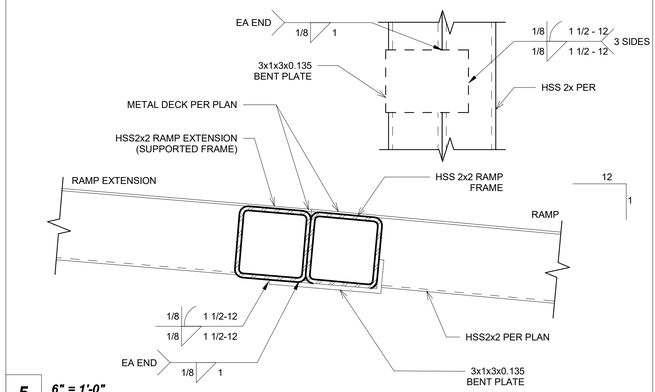
2 *6" = 1'-0"*
Adjustable Leg



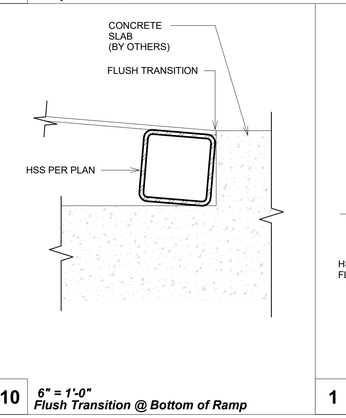
8 *6" = 1'-0"*
Interior Landing Leg Section



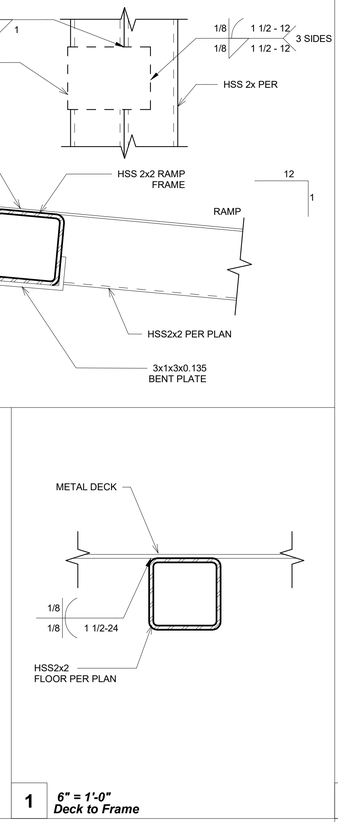
3 *6" = 1'-0"*
Skirt Flashing @ Sill Plate



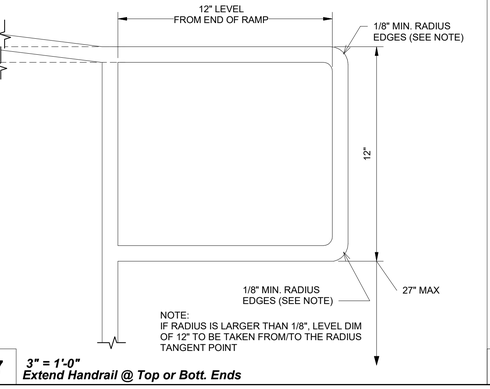
5 *6" = 1'-0"*
Ramp Extension



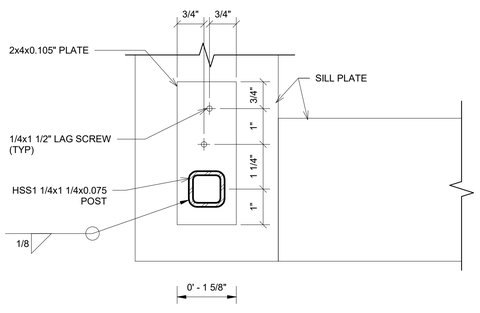
10 *6" = 1'-0"*
Flush Transition @ Bottom of Ramp



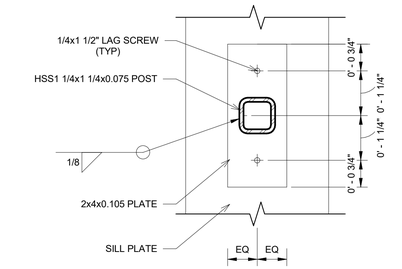
1 *6" = 1'-0"*
Deck to Frame



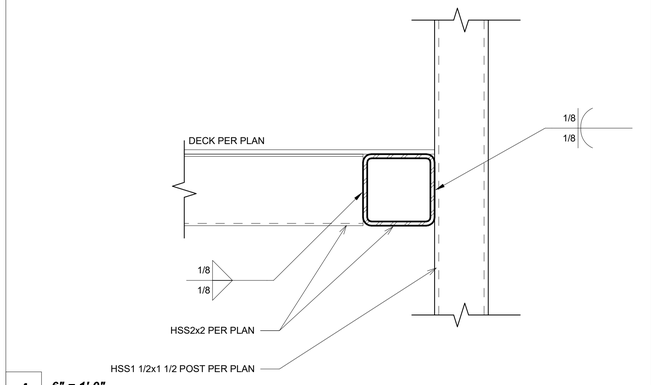
7 *3" = 1'-0"*
Extend Handrail @ Top or Bott. Ends



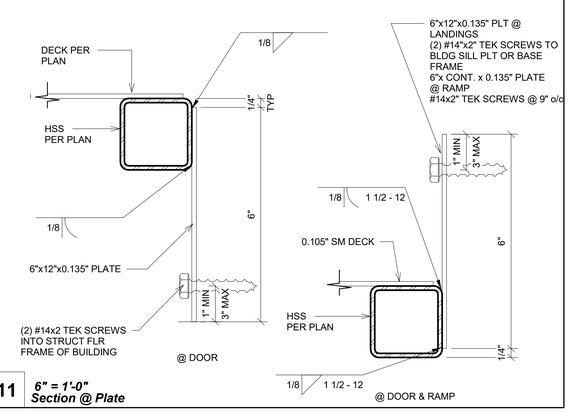
3b *6" = 1'-0"*
Adjustable Leg Base Plate



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



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



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

PROJECT SPECIFIC STATE AGENCY APPROVAL

R&S TAVARES ASSOCIATES
DESIGN ★ CONSULTING ★ PROJECT MGT
11590 W BERNARDO COURT, SUITE 100
SAN DIEGO, CA 92127
WWW.RSTAVARES.COM

PROFESSIONAL STAMP

07/24/23

CLIENT

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

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

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

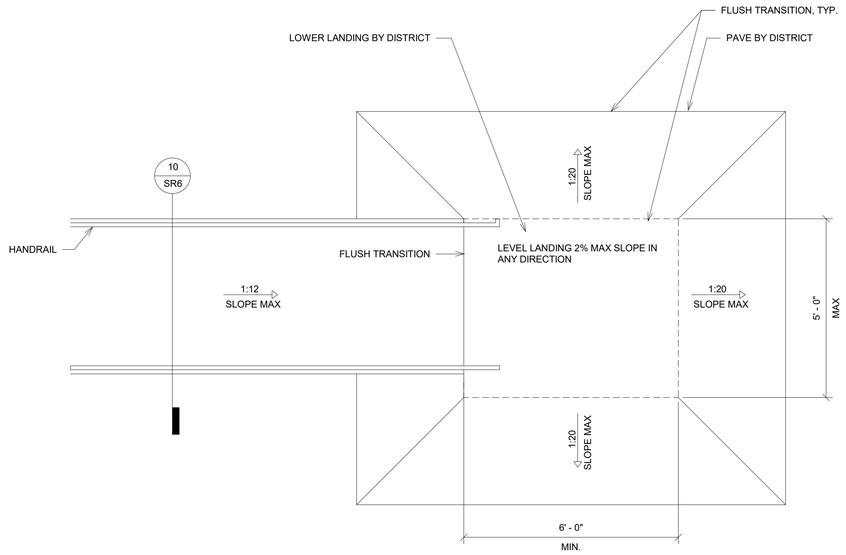
CHECKED BY
rMc

DATE
12/23/2022

SHEET NO.
SR5

SHEET OF

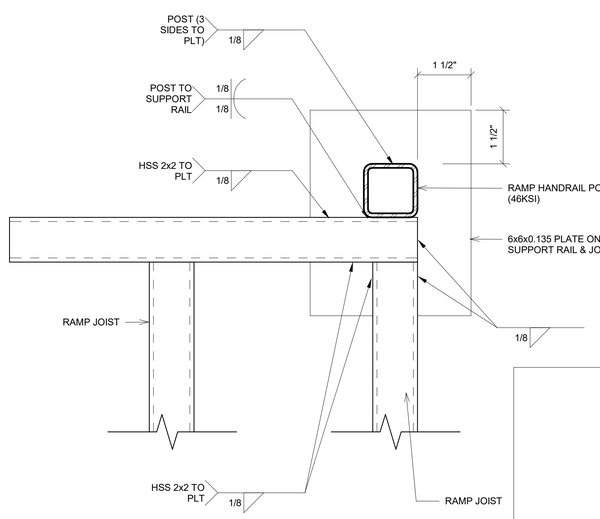
6/15/2021 7:29:28 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REVIT\RS1#20093 - Aries, Ramps and Stairs PC.rvt



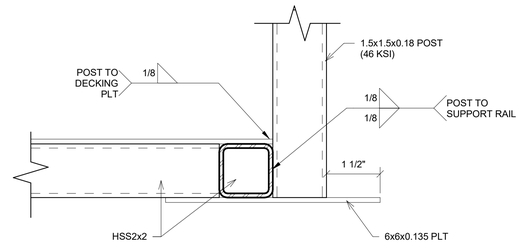
NOTE:
1. 1:20 TRANSITION OFF OF LOWER LANDING REQUIRES NO HANDRAIL.
2. TRANSITIONS EXCEEDING 1:20 BUT NOT EXCEED 1:12 REQUIRE REMOVAL OF 12" HANDRAIL EXTENSION AND ADDITIONAL HANDRAILING BY DISTRICT. (THIS CONDITION REQUIRES A SITE SPECIFIC DETAIL PROVIDED BY ARCHITECT TO DEMOSTRATE ACCESSIBLE RAMP)

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

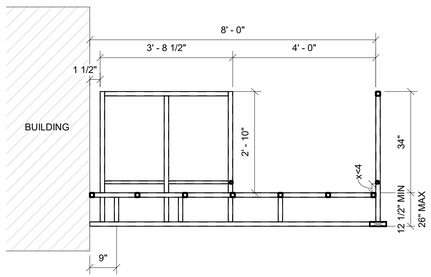
7 ***1/2" = 1'-0"***
Ramp Transition



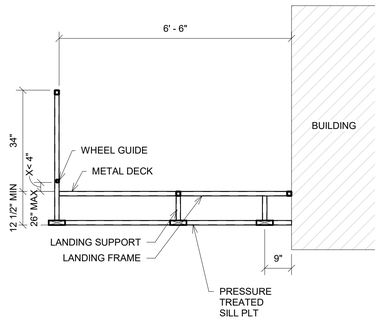
2 ***6" = 1'-0"***
Base Plt @ Ramp Toe For Zero Transition



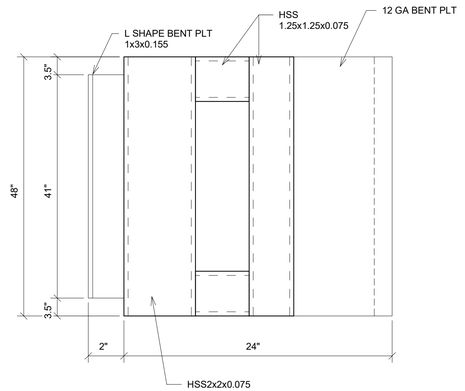
3 ***6" = 1'-0"***
Base Plt @ Ramp Toe Low Zero Side View



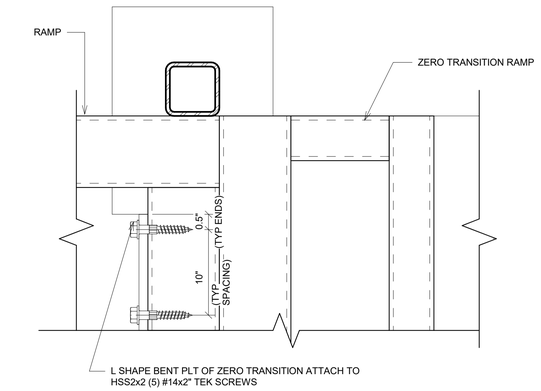
8 ***1/2" = 1'-0"***
Section @ Landing



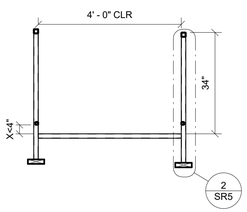
9 ***1/2" = 1'-0"***
Section @ Landing



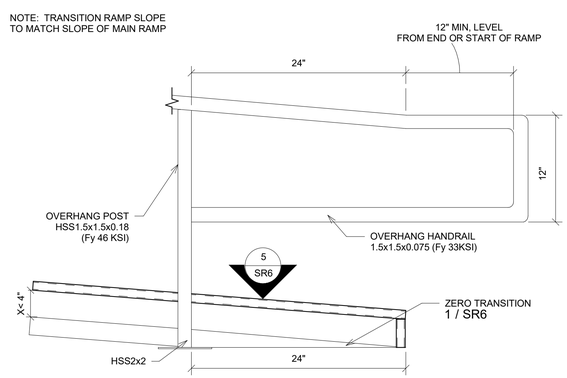
4 ***6" = 1'-0"***
Top View Ramp Zero Transition



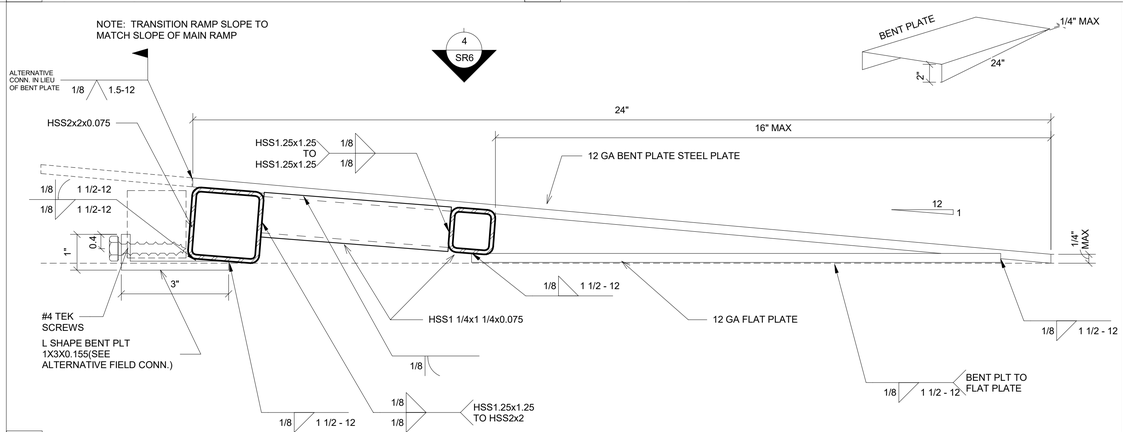
5 ***6" = 1'-0"***
Zero Transition Ramp Connection



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

R&S TAVARES ASSOCIATES
DESIGN ♦ CONSULTING ♦ PROJECT MGT
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SAN DIEGO, CA 92127
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PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ENGINEER
MANNY D. FLORES
S-3385
Exp. 03/31/24
STRUCTURAL
STATE OF CALIFORNIA
07/24/23

CLIENT

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VOICE (951) 943-1908 FAX Fax (951) 943-5768

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

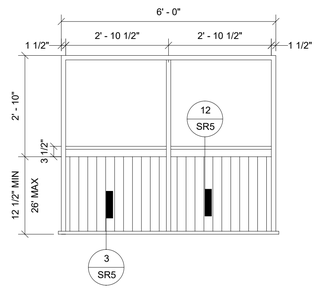
DRAWN BY
SM

CHECKED BY
rMc

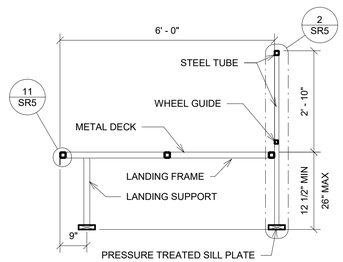
DATE
12/23/2022

SHEET NO.
SR6
SHEET OF

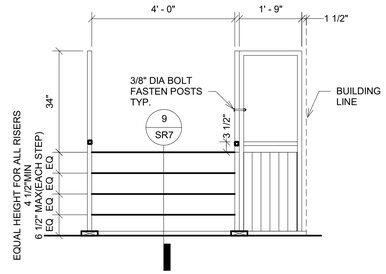
6/15/2021 7:29:30 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REVITRST#20093 - Aries, Ramps and Stairs PC.rvt



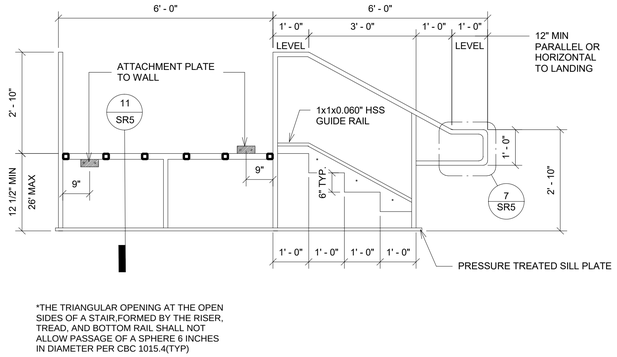
1 *1/2" = 1'-0"*
LANDING ELEVATION VIEW



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

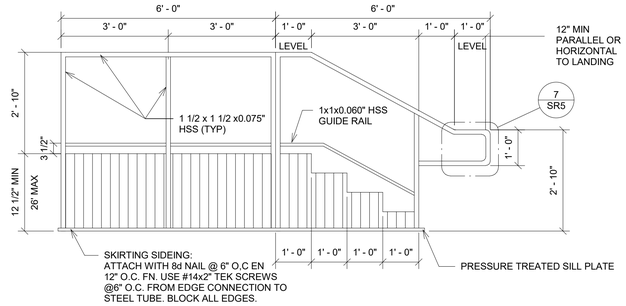


6 *1/2" = 1'-0"*
STEPS ELEVATION

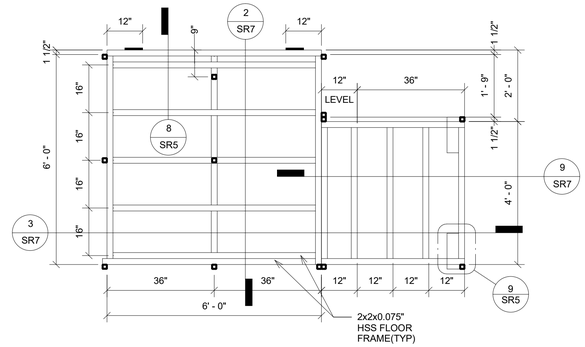


*THE TRIANGULAR OPENING AT THE OPEN SIDES OF A STAIR,FORMED BY THE RISER, TREAD, AND BOTTOM RAIL SHALL NOT ALLOW PASSAGE OF A SPHERE 6 INCHES IN DIAMETER PER CBC 1015.4(TYP)

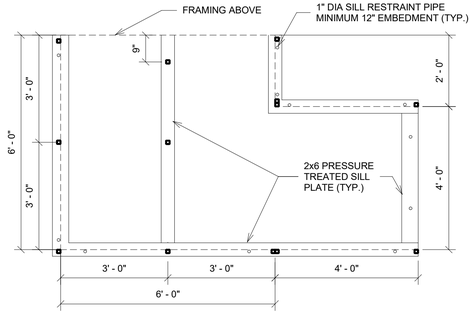
3 *1/2" = 1'-0"*
STEP AND LANDING SECTION



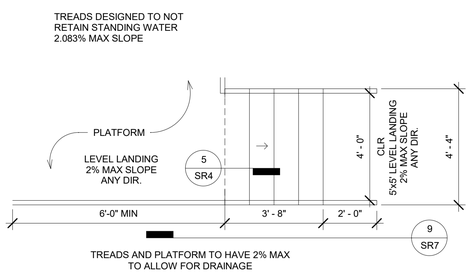
4 *1/2" = 1'-0"*
STEPS AND LANDING SECTION



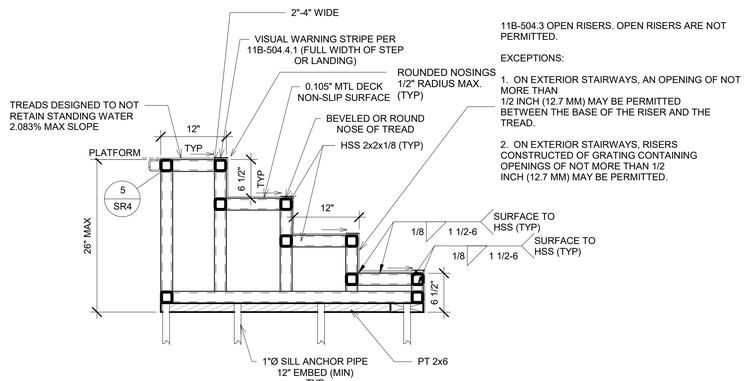
5 *1/2" = 1'-0"*
STEPS/LANDING FRAMING PLAN



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



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



11B-504.3 OPEN RISERS. OPEN RISERS ARE NOT PERMITTED.

EXCEPTIONS:

1. ON EXTERIOR STAIRWAYS, AN OPENING OF NOT MORE THAN 1/2 INCH (12.7 MM) MAY BE PERMITTED BETWEEN THE BASE OF THE RISER AND THE TREAD.

2. ON EXTERIOR STAIRWAYS, RISERS CONSTRUCTED OF GRATING CONTAINING OPENINGS OF NOT MORE THAN 1/2 INCH (12.7 MM) MAY BE PERMITTED.

9 *1" = 1'-0"*
Stair Elev

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

PROJECT SPECIFIC STATE AGENCY APPROVAL

R&S TAVARES ASSOCIATES
DESIGN ♦ CONSULTING ♦ PROJECT MGT
11590 W Bernardo Court, Suite 100
San Diego, CA 92127
www.rstavares.com

PROFESSIONAL STAMP

07/24/23

CLIENT

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

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

SHEET OF

Tustin Unified
School District

TUSD

GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

04/11/2024

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

PBK

GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified
School District

Architect

REGISTERED ARCHITECT
BRUCE OU
C-34832
REN. 10/31/25
STATE OF CALIFORNIA

COVER SHEET

G0.00

0" 1"

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 2603.

  C. ALL EXTERIOR JOINTS AND OPENINGS IN THE BUILDING ENVELOPE THAT ARE POTENTIAL AND OBSERVABLE SOURCES OF AIR LEAKAGE SHALL BE CAULKED, GASKETED, WEATHERSTRIPPED, OR OTHERWISE SEALED.

  D. SITE CONSTRUCTED DOORS, WINDOWS, AND SKYLIGHTS SHALL BE CAULKED 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 (NFRC) 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-8.

  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 COMNDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT IDENTIFIED BY THE CONTRACT DOCUMENTS WHERIN 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 THE ACCESSIBILITY STANDARDS OF THE CALIFORNIA BUILDING CODE, (CBC) 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 COMPLIANT RESOLUTION WILL BE FORMULATED.

26. FEMA NOTES:
FEMA FIRM PANEL #06059C0168J
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 ______
Architect or Engineer designated to be in general responsible charge
BRUCE OU
Print Name
C-34832 OCTOBER 31, 2023
License Number Expiration Date

☐ is/are in general conformance and
☐ have been coordinated

Signature ______ Date ______
Architect or Engineer deligated 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 (A#04-122805). ASSOCIATED BUILDING WORK INCLUDES LOW VOLTAGE. AND FIRE ALARM. ASSOCIATED SITE WORK INCLUDES PAVING, ACCESSIBLE PARKING, MANUFACTURED RAMPS (A# 04-121419), RESTROOM UPGRADES.

NOTE:
FIRE SAFETY DURING DEMOLITION AND/OR CONSTRUCTION SHALL COMPLY WITH 2013 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 9, 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 Marshall 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 Standpipe 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 253 Critical Radiant Flux of Floor Covering Systems	(2019 Edition)
NFPA 2001 Clean Agent Fire Extinguishing Systems (CA amended)	(2018 Edition)
ICC 300 ICC Stds on Bleachers, Folding and Telescoping Seating and Grand stands	(2017 Edition)
UL 300 Fire Testing of Fire Extinguishing Sys for Protection of Restaurant Cooking Areas	2005 (R2010)
UL 464 Audible Signal Appliances	(2003 Edition)
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:
6861 Santa Rita Ave
Garden Grove, CA 92845

SHEET NUMBERING

A2.01A
BUILDING AREA
SEQUENCE (.01 - .99......etc.)
SHEET DISCIPLINE TYPE

DISCIPLINE
- G - GENERAL (Cover, A0 Sheets)
- C - CIVIL
- L - LANDSCAPE
- D - DEMO
- A - ARCHITECTURAL
- S - STRUCTURAL
- I - INTERIORS
- M - MECHANICAL
- E - ELECTRICAL
- P - PLUMBING
- T - TECHNOLOGY

SHEET DISCIPLINE TYPE
- 0 - GENERAL
- 1 - SITE PLANS & DETAILS
- 2 - FLOOR PLANS (Note: Flip Sheets are Schedules)
- 3 - ROOF
- 4 - ADA & ENLARGED PLANS
- 5 - PLAN DETAILS
- 6 - EXTERIOR/INTERIOR ELEVATIONS
- 7 - PARTITION TYPES & WALL SECTIONS
- 8 - CASEWORK ELEVATIONS
- 9 - WINDOWS, DOORS, FRAME ELEVATIONS & DETAILS
- 10 - REFLECTED CEILING PLANS & DETAILS

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 I, 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

ABBRIVATIONS

A.D.	AREA DRAIN
A.D.A.	AMERICANS WITH DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
A.H.J.	ATHORITY HAVING JURISDICTION
A/C	AIR CONDITIONING
ACP.	ACOUSTICAL PANEL
ACT.	ACOUSTICAL TILE
ADJ.	ABADJUSTABLE
ALT.	ALTERNATE
ALUM.	ALUMINUM
ASPH.	ASPHALT
∠	ANGLE
B.U.R.	BUILT-UP ROOF
BD.	BOARD
BLDG.	BUILDING
BLK.	BLOCK
BM.	BEAM
C	CHANNEL
C.J.	CONTROL JOINT
C.M.U.	CONCRETE MASONRY UNIT
C.W.	COLD WATER
CAB, CABT	CABINET
CFMF	COLD FORMED METAL FRAMING
CL	CENTERLINE
CLG.	CEILING
CLR	CLEAR
COL.	COLUMN
COMP.	COMPRESSIBLE
CONC.	CONCRETE
COND.	CONDITION
CORR.	CORRIDOR
CPT.	CARPET (ED)
CT.	CERAMIC TILE
CTG	CLEAR TEMPERED GLAZING
CTSK.	COUNTER SINK
D	DRYER
D.F.	DRINKING FOUNTAIN
D.P.	DAMPPROOFING
D.S.	DOWN SPOUT
DIA.	DIAMETER
DIM.	DIMENSION
DTL.	DETAIL
DWG.	DRAWING
E.J.	EXPANSION JOINT
E.Q.	EQUAL
EA.	EACH
EDF	ELECTRIC DRINKING FOUNTAIN
EL.	ELEVATION (HEIGHT)
ELECT.	ELECTRICAL
ELEV	ELEVATION (DRAWING)
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.H.C.	FIRE HOSE CABINET
FB.	FACE BRICK
FD.	FLOOR DRAIN
FIN.	FINISH (ED)
FIXT.	FIXTURE
FLR.	FLOOR (ING)
FLSHG.	FLASHING
FLUOR	FLUORESCENT
G.B.	GRAB BAR
G.I.	GALVANIZED IRON
GA.	GAUGE
GALV.	GALVANIZED
GCMU	GLAZED CONCRETE MASONRY UNIT
GEN.	GENERAL
GEN.	GENERAL
GL.	GLASS / GLAZING
GL.	GLASS
GR.	GRADE
GTP.	GLAZED TILE PAVER
GYP.	GYPSUM DRYWALL
H.W.	HOT WATER
HM	HOLLOW METAL FRAME
HORIZ.	HORIZONTAL
HT.	HEIGHT
I.D.	INSIDE DIAMETER
I.P.S.	IRON PIPE SIZE
INSUL	INSULATE (ED), (ION)
INT.	INTERIOR
ISA	INTERNATIONL SYMBOL OF ACCESSIBILITY
JT.	JOINT
L.P.	LIGHT POLE
LAM.	LAMINATE (D)
LAV.	LAVATORY
LT.	LIGHT
LT. WT.	LIGHTWEIGHT
M.O.	MASONRY OPENING
MAS.	MASONRY
MATL.	MATERIAL (S)
MAX.	MAXIMUM
MB.	MARKER BOARD
MECH.	MECHANICAL
MEM	MEMBRANE
MEM. WP.	MEMBRANE WATERPROOFING
MEP	MECHANICAL, ELECTRICAL AND PLUMBING
MEZZ.	MEZZANINE
MFR.	MANUFACTURE (R)
MH.	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MOD	MODULAR
MTL	METAL
MTP.	METAL TOILET PARTITION

N.D.	NAPKIN DISPOSAL
N.I.C.	NOT IN CONTRACT
N.R.	NOT RATED
N.T.S.	NOT TO SCALE
N.V.	NAPKIN VENDOR
NO.	NUMBER
O.C.	ON CENTER (S)
O.C.E.W.	ON CENTER EACH WAY
O.D.	OUTSIDE DIAMETER
O.F.C.I.	OWNER FURNISHED, CONTRACTOR INSTALLED
O.H.	OPPOSITE HAND
OPNG.	OPENING
OPP.	OPPOSITE
P. LAM.	PLASTIC LAMINATE
P.C.	PRECAST
P.H.	PAPER HOLDER
P.L.	PROPERTY LINE
P.P.	POWER POLE
P.W.B.	PREFINISHED WALL BOARD
PL.	PLATE
PLUMB.	PLUMBING
PLYWD.	PLYWOOD
POL.	POLISHED
PR.	PAIR
PREFIN.	PRE-FINISHED
PT.	POINT
PTD.	PAINTED
Q.T.	QUARRY TILE
R / RAD	RADIUS
RD	ROOF DRAIN
RE. , REF.	REFER TO / REFERENCE / SEE
RECP.	RECEPTACLE
REINF.	REINFORCE (D), (ING)
REQ'D.	REQUIRED
RES.	RESILIENT
REV.	REVISION (S), REVISED
RF	RECREATIONAL RESILIENT FLOORING
RPG.	RELOCATABLE PAINTED GYPSUM BOARD
RSS.	ROD STOCK AND SEALANT
S.C.	SEALED CONCRETE
S.D.	SOAP DISPENSER
SCHED	SCHEDULE
SCPL	SOLID CORE PLASTIC LAMINATE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SPC	SPECIAL COATING SYSTEM
SPEC	SPECIFICATION (S)
SQ.	SQUARE
SS.	SOUND STRIP
SS. STL.	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUC	STRUCTURAL
SUSP	SUSPENDED
SVDF	SHEET VINYL DANCE FLOORING
SYS	SYSTEM
T.B.	TACK BOARD
T.D.R.	TOWEL DISPENSER AND RECEPTACL
T.O.	TOP OF
T.O.B.	TOP OF (WOOD) BLOCKING
T.O.M.	TOP OF MASONRY
T.O.S.	TOP OF STEEL
T.T.D.	TOILET TISSUE DISPENSER
TCNA	TILE COUNCIL OF NORTH AMERICA
TEL	TELEPHONE
TERR	TERRAZZO
THK	THICK (NESS)
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UR.	URINAL
V	VENT
V.C.T.	VINYL COMPOSITION TILE
V.I.F.	VERIFY IN FIELD
VENT.	VENTILATING, VENTILATED
VER.	VERIFY
VERT.	VERTICAL
VGB	(PREFINISHED) VINYL CLAD GYPSUM BOARD
VWC	VINYL WALL COVERING
W	WASHING MACHINE
W.P.	WATER PROOFING
W.S.	WEATHERSTRIP
W.W.	WATER WELL
W.W.F	WELDED WIRE FABRIC
W/	WITH
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WT	WEIGHT

DRAWING INDEX

TOTAL SHEET COUNT:

Not for permitting or construction

PBK

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

GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

BRUCE OU
C-34832
REN. 10/31/25

CLIENT
TUSD

DATE	PROJECT NUMBER
04/11/2024	230554

REVISIONS

No.	Description	Date

SHEET INDEX / GENERAL NOTES

This document is for plan review only

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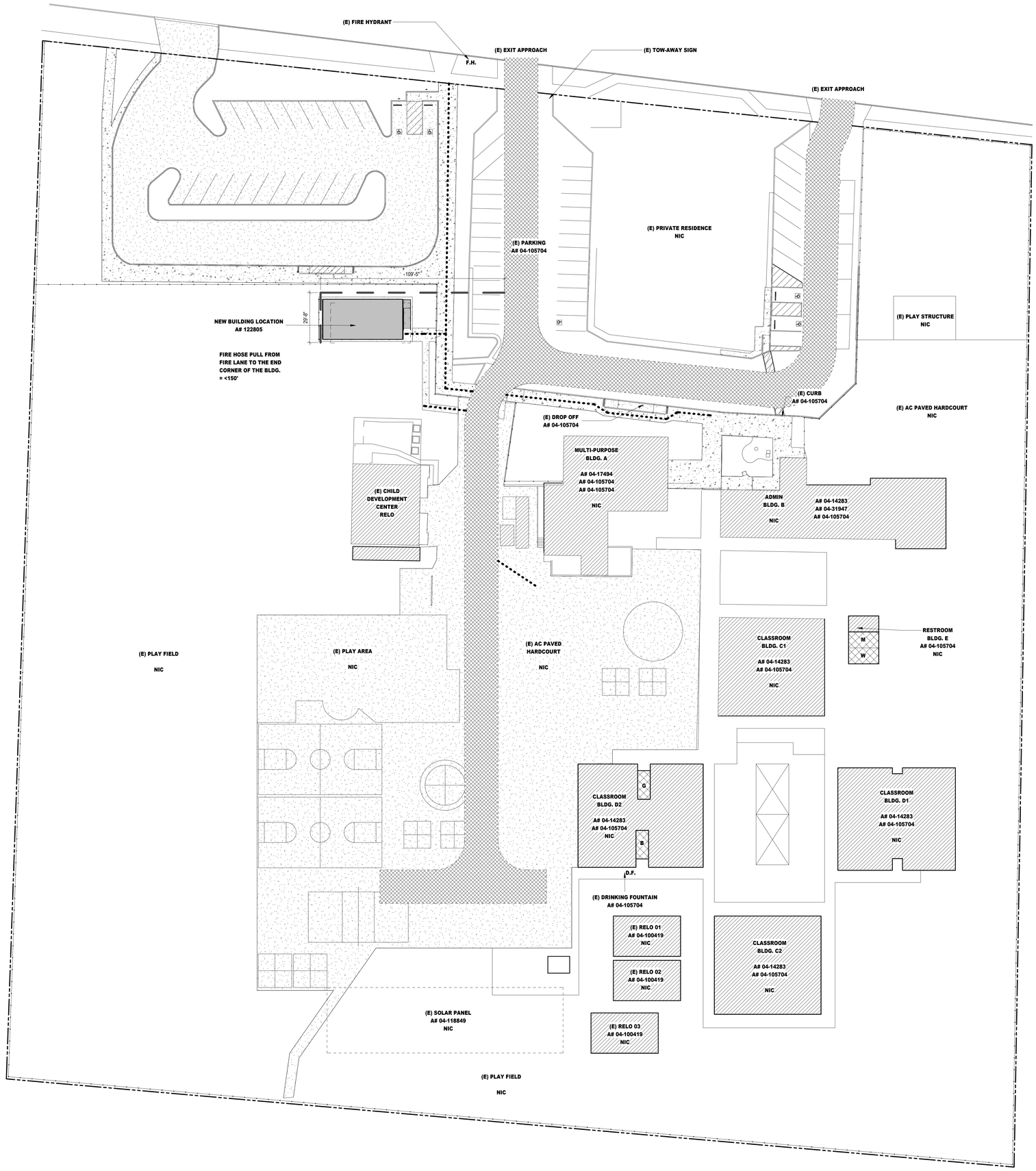

SITE PLAN LEGEND

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

BUILDING FIRE FLOW DATA

BUILDING E101	960 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 consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for 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 7 is to be completed when an alternate means is utilized. Acknowledgement 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:	**GARDEN GROVE UNIFIED SCHOOL DISTRICT**
Project Name/School:	**PATTON ELEMENTARY**
Project Address:	**6861 SANTA RITA AVE GARDEN GROVE, CA 92845**

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 ☒		No ☐
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes ☐		No ☒
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 ☐		No ☒
	Refer to the following website for FHSZ locations: http://egis.fire.ca.gov/FHSZ/	Moderate ☐	High ☐	Very High ☐
	Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)*			WIFA ☐

DGS DSA 810 (revised 12/29/20) DEPARTMENT OF GENERAL SERVICES Page 1 of 4
DIVISION OF THE STATE ARCHITECT STATE OF CALIFORNIA

FIRE FLOW TEST

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

Hydrant Flow Test Report

Project: **Guin Foss Elementary School** Test date: **11/6/23**
Address: **18492 Vanderlip Ave** Test time: **09:15**
City: **Santa Ana** State: **CA** File no.:

Test hydrant location: **Southwest corner of Vanderlip Ave & Brenan Way** Hydr # Elev (ft +/-): **Grade**
Flow hydrant location: **Southeast corner of Vanderlip Ave & Stratton Way** Hydr # Elev (ft +/-): **Grade**

Static Pressure: **54** PSI Report Date: **8/9/23**

Outlet	C-value	Diam	Pitot		Volume	
A	0.9	2.0	**0**	PSI	**0**	GPM
B	0.9	2.5	**20**	PSI	**750**	GPM
C	0.9	3.0	**0**	PSI	**0**	GPM
D	0.83	4.0	**0**	PSI	**0**	GPM

Residual Pressure: **51** PSI at an observed volume of **750** GPM

Projected Pressure: **20** PSI calculates to a volume of **2784** 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, $Q=29.84 \times cd(d^2)(p)^{0.5}$
Per NFPA 24-10, Paragraph C.4.10.1.2, $Q_r = Q_t \times (h_r/h_t)^{0.54}$

Test by: Hildebrandt

Witness Dave Wallick, Tustin Water, (714) 573-3379
Client Tom Rizzuti, Tustin Unified School District, (949) 293-4850

cc: rmedina@tustinca.org
trizzuti@tustin.k12.ca.us

Symbols: S = Test hydrant; R = Flow hydrant

Not for permitting or construction

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

GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

LICENSED ARCHITECT BRUCE OU C-34832 RCH: 10/31/25 STATE OF CALIFORNIA

CLIENT
TUSD

DATE 04/11/2024 PROJECT NUMBER 230554

REVISIONS

No.	Description	Date

This document is for plan review only

FIRE ACCESS SITE PLAN

G0.03

FIRE ACCESS SITE PLAN 1
1" = 25'-0"

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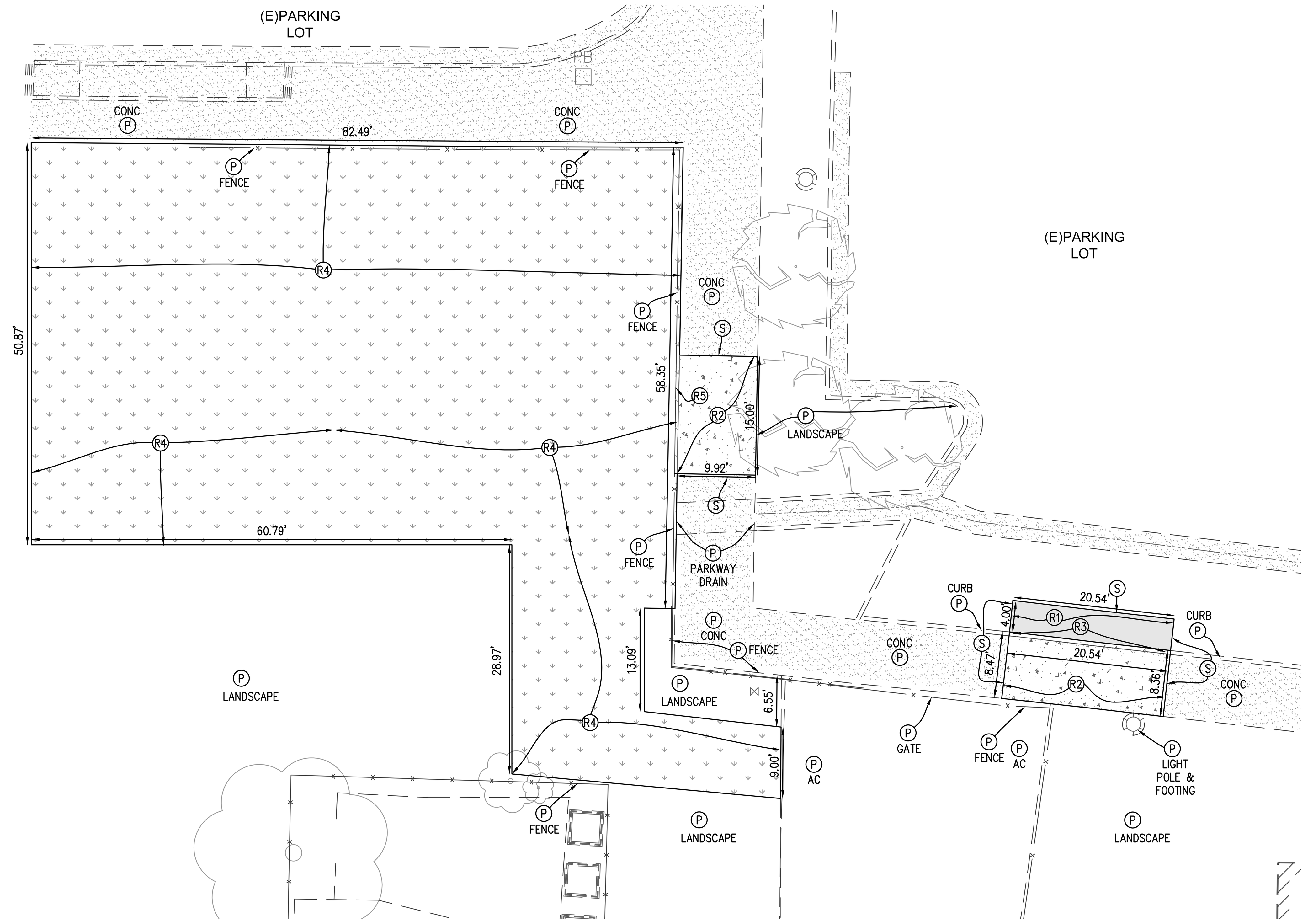

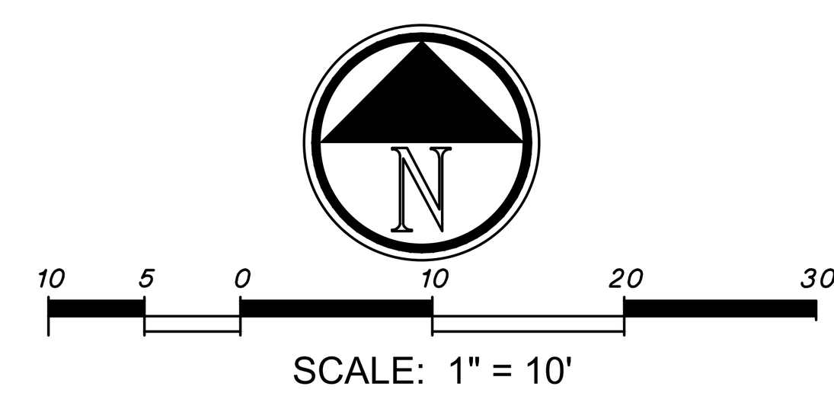

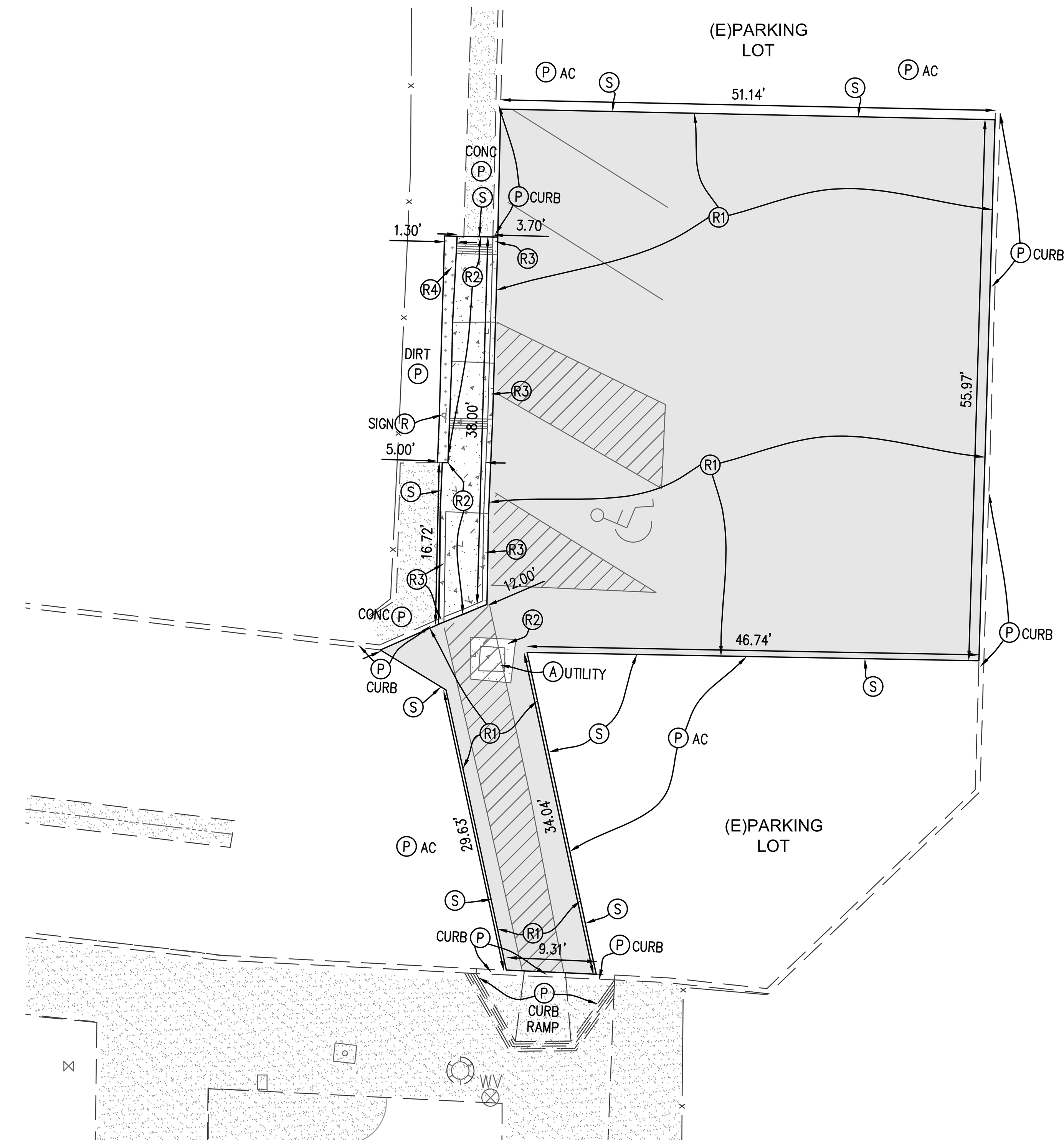

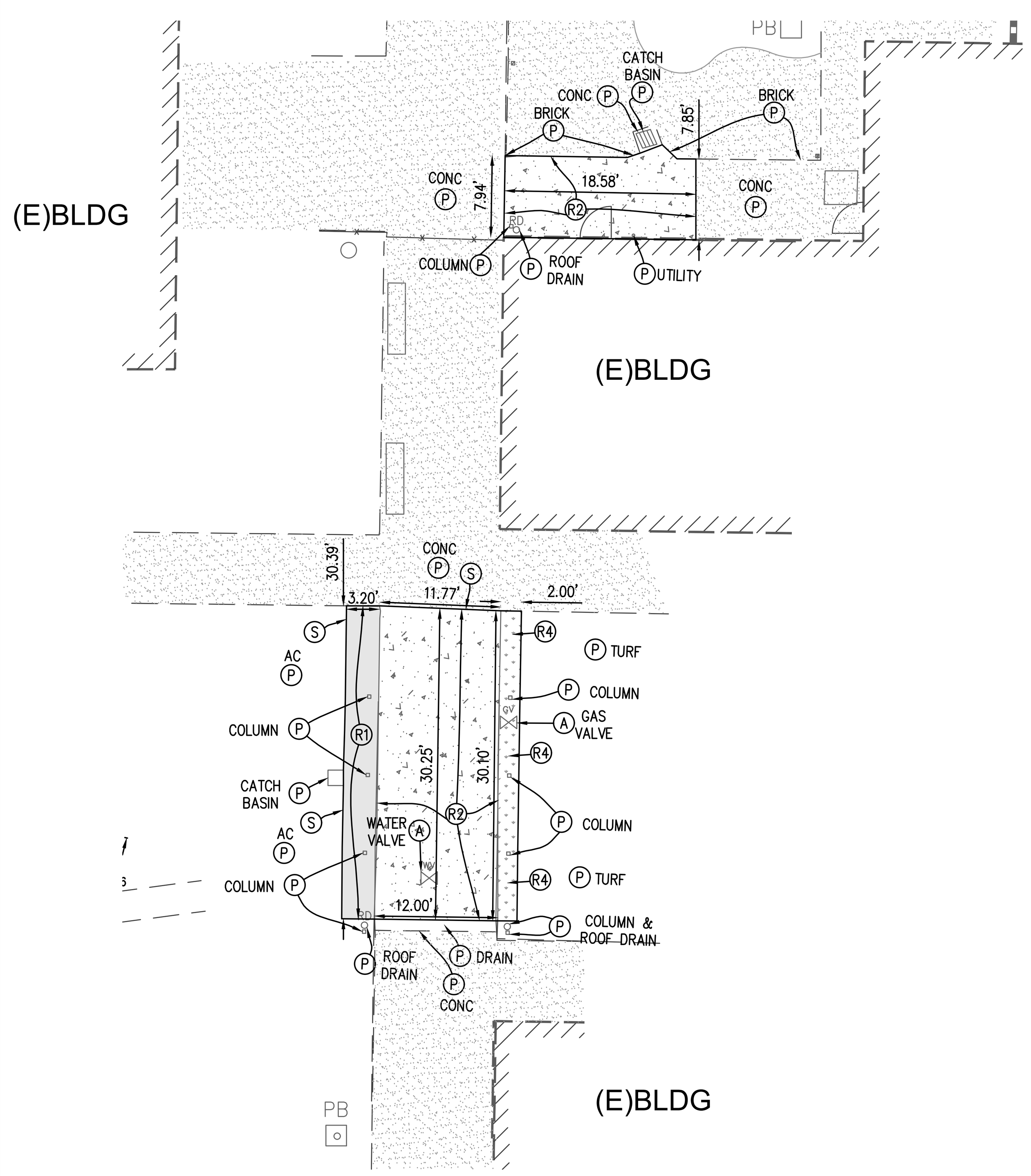

SITE DEMOLITION NOTES

(P)	PROTECT EXISTING IMPROVEMENT IN PLACE.
(S)	SAWCUT EXISTING CONCRETE WITH CLEAN EDGE.
(A)	ADJUST TO GRADE.
(R)	REMOVE & DISPOSE OF EXISTING IMPROVEMENT.
(R1)	REMOVE & DISPOSE OF EXISTING ASPHALT PAVEMENT.
(R2)	REMOVE & DISPOSE OF EXISTING CONCRETE PAVEMENT.
(R3)	REMOVE & DISPOSE OF EXISTING CONCRETE CURB.
(R4)	CLEAR & GRUB EXISTING TURF LANDSCAPE.
(R5)	REMOVE & DISPOSE 4' OF EXISTING CHAIN LINK FENCE, POSTS AND FOOTINGS FOR INSTALLATION OF NEW GATE.

HATCH LEGEND:

- = PROTECT EXISTING BUILDING
- = REMOVE EXISTING CONCRETE PAVING
- = REMOVE EXISTING ASPHALT PAVING
- = PROTECT EXISTING CONCRETE
- = CLEAR AND GRUB EXISTING TURF/ LANDSCAPE

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

GENERAL DEMOLITION NOTES

1. 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 SCHOOLS REPRESENTATIVE PRIOR TO CLEARING AND GRUBBING.
2. 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.
3. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIAL.
4. ALL CONCRETE & CMU BLOCK WALLS & PLANTERS SHOWN ON THIS PLAN TO BE REMOVED SHALL INCLUDE WALL FOOTINGS & FOUNDATIONS IN THEIR REMOVAL.
5. 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.
6. 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.
7. TEMPORARY EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAIN, SANITARY SEWERS AND STREETS.
8. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
9. THE PROVISIONS OF CALIFORNIA FIRE CODE CHAPTER 14 AND CALIFORNIA BUILDING CODE CHAPTER 37 SHALL BE ENFORCED ON THIS PROJECT.
10. 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.
11. 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.
12. 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.
13. THE CONTRACTOR SHALL BACKFILL SOIL IN THE EXCAVATED TREE ROOT PITS AND THE TRENCHES FOR REMOVED EXISTING UNDERGROUND STRUCTURES, UTILITIES, AND IMPROVEMENTS.
14. 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.
15. CONTRACTOR TO SAWCUT ALL EXISTING A.C. AND CONCRETE PAVEMENT AT DEMOLITION LIMIT LINE. CONTRACTOR SHALL REMOVE SIDEWALK, CURB & GUTTER TO THE NEAREST JOINT.
16. CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS OUTSIDE THE DEMOLITION LIMIT LINE THAT ARE DAMAGED DURING CONSTRUCTION TO MATCH EXISTING, INCLUDING PERMANENT TRENCH RESURFACING.
17. CONTRACTOR SHALL FIELD VERIFY THAT THE REMOVAL OF EXISTING UTILITIES WILL NOT IMPACT AREA OPERATIONS.
18. 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.
19. CONTRACTOR IS RESPONSIBLE TO KEEP ALL UTILITES OPERATIONAL THAT SERVES FACILITIES OUTSIDE THE SCOPE OF THE DEMOLITION ZONE. CONTRACTOR IS ALSO RESPONSIBLE TO REROUTE UTILITIES IF NECESSARY TO COMPLETE DEMOLITION.
20. CONTRACTOR SHALL INSTALL A TEMPORARY MINIMUM 8' HIGH CHAIN LINK CONSTRUCTION FENCE, WITH GREEN SCREEN, AROUND PERIMETER OF DEMOLITION AREA.
21. 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.
22. CONTRACTOR SHALL COMPLY WITH CALIFORNIA FIRE CODE CHAPTER 33 - FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION.

PLANS PREPARED BY:
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Traffic • Transportation • Civil
30 Corporate Park, Suite 401
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ARCHITECT PBK Architects, Inc.
PBK.com
ANAHEIM
2400 East Katella Ave, Suite 950
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P 949-548-5000

GUIN FOSS ELEMENTARY SCHOOL

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

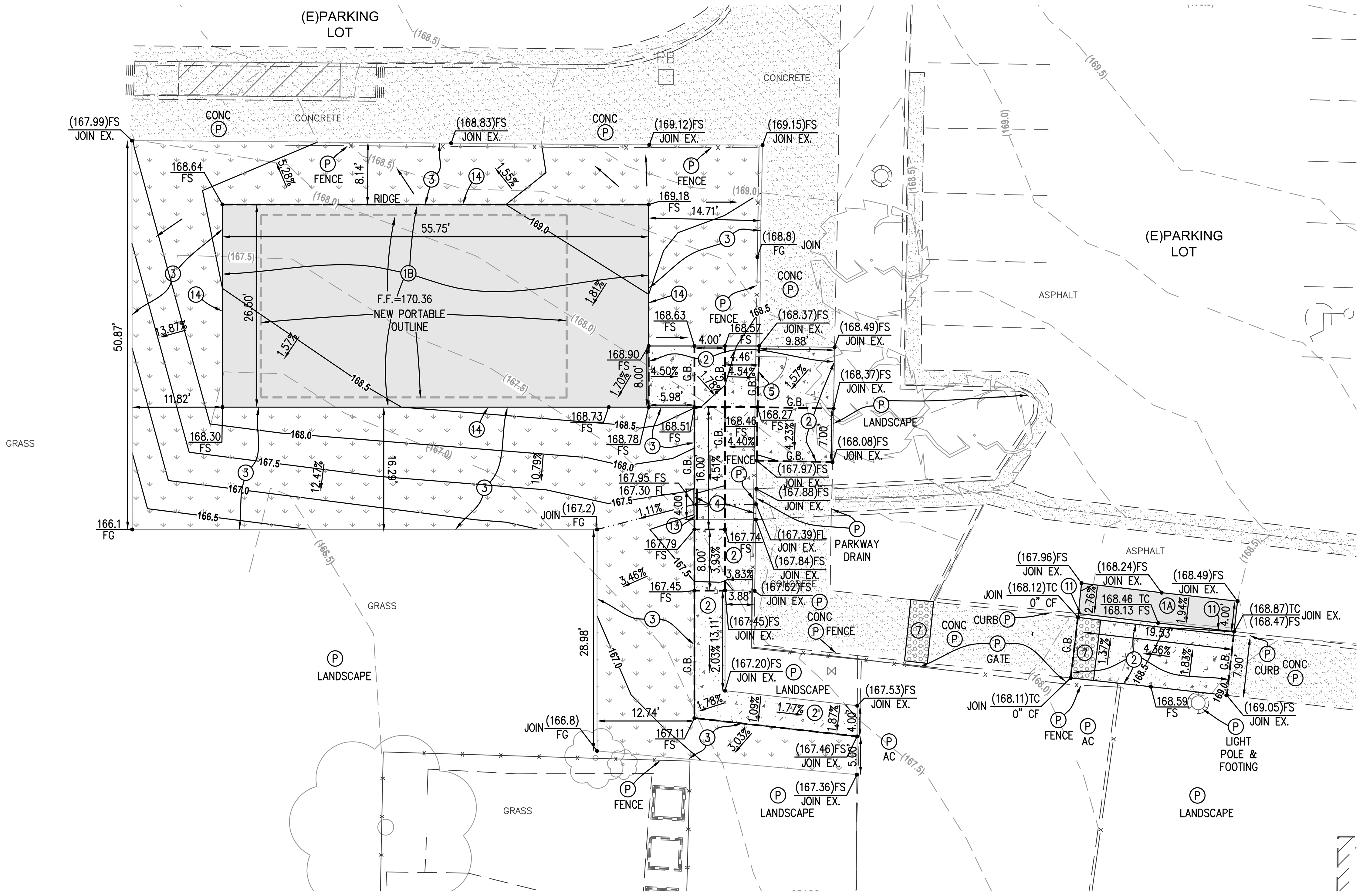
BRUCE OU
C-34832
REN. 10/31/25
STATE OF CALIFORNIA

CLIENT	
DATE	PROJECT NUMBER

REVISIONS

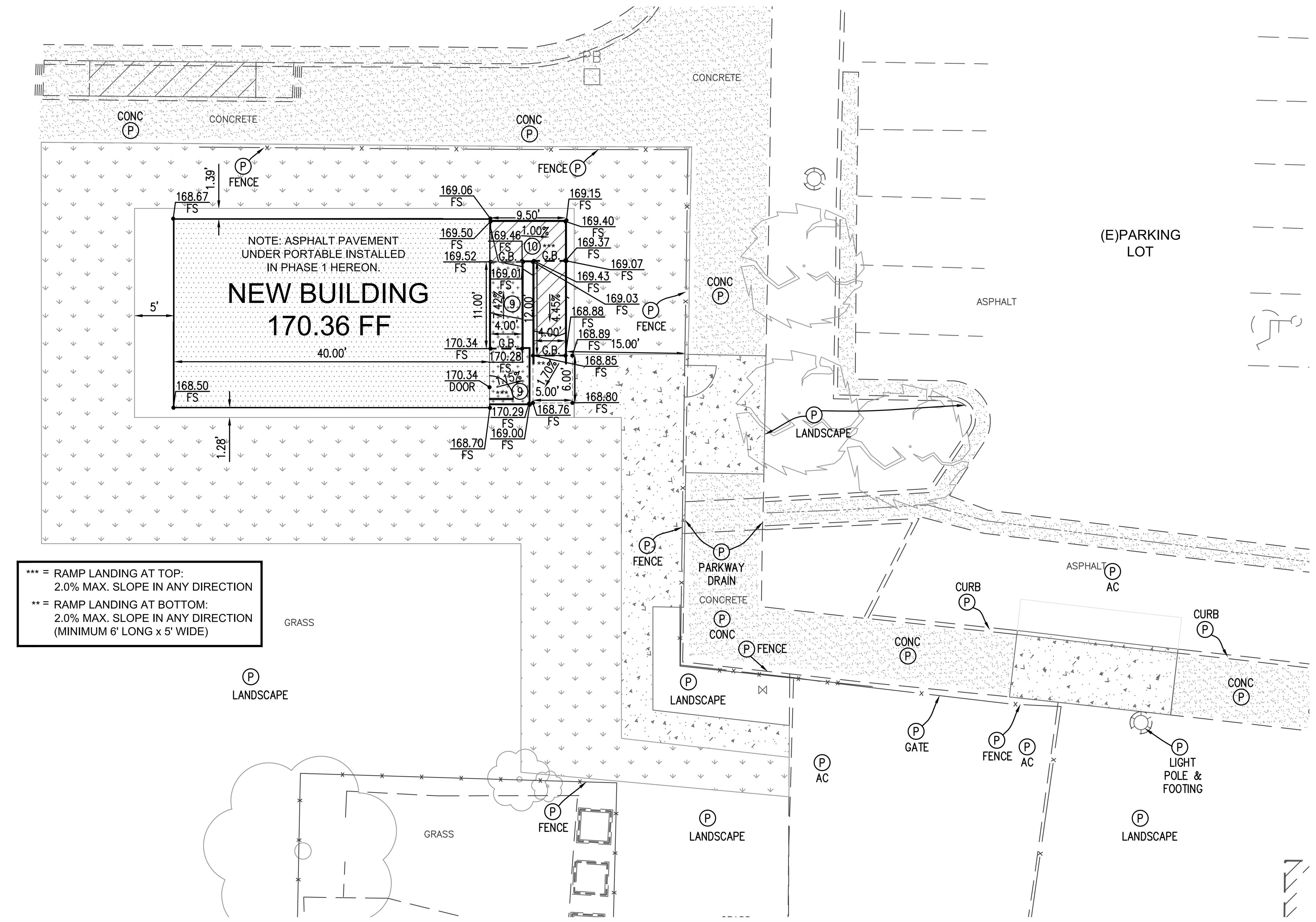
SITE DEMOLITION PLAN

C1.00



PHASE 1 ASPHALT PAVEMENT INSTALLATION

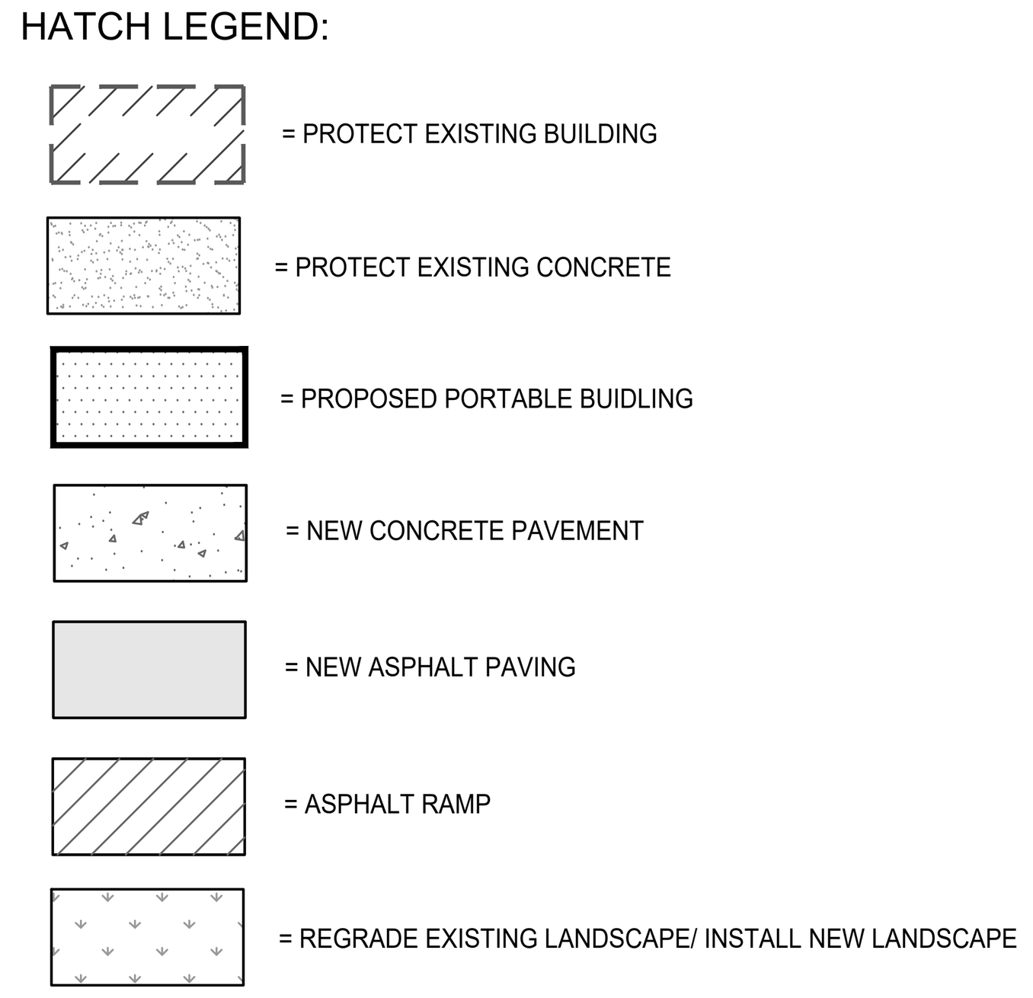
SCALE: 1" = 10'



PHASE 2 PORTABLE BUILDING INSTALLATION

SCALE: 1" = 10'

HATCH LEGEND:



CONSTRUCTION NOTES

- (P) PROTECT EXISTING IMPROVEMENT IN PLACE.
- (A) ADJUST EXISTING UTILITY TO BE FLUSH WITH ULTIMATE FINISH SURFACE.
- (1) CONSTRUCT ASPHALT PAVEMENT SECTION, LIGHT DUTY, PER TABLE 1/C3.00.
- (1A) CONSTRUCT ASPHALT PAVEMENT SECTION, HEAVY DUTY, PER TABLE 1/C3.00.
- (1B) CONSTRUCT ASPHALT PAVEMENT SECTION PER DETAIL 1B/C3.00.
- (2) CONSTRUCT CONCRETE PAVEMENT PER DETAIL 2/C3.00.
- (3) REGRADE EXISTING LANDSCAPE & REINSTALL NEW LANDSCAPE PER GRADES HEREON.
- (4) CONSTRUCT PARKWAY DRAIN WITH INLET TYPE 2, PER GREEN BOOK STANDARD 151-3/C3.01. MATCH THE WIDTH OF THE EXISTING PARKWAY DRAIN.
- (5) CONSTRUCT GATE PER ARCHITECTURAL PLANS.
- (6) CONSTRUCT REDWOOD HEADER PER DETAIL 6/C3.00.
- (7) CONSTRUCT TRUNCATED DOMES PER ARCHITECTURAL PLANS.
- (8) CONSTRUCT 0" HIGH CONCRETE CURB PER DETAIL 8/C3.00.
- (9) CONSTRUCT PORTABLE BUILDING RAMP PER GRADES HEREON OVER EXISTING ASPHALT.
- (10) CONSTRUCT ASPHALT RAMP WITH METAL HANDRAILS PER ARCHITECTURAL DETAIL AND GRADES HEREON.
- (11) CONSTRUCT CONCRETE CURB PER DETAIL 3/C3.00 AND GRADES HEREON.
- (12) CONSTRUCT WHEEL STOP PER ARCHITECTURAL PLANS.
- (13) CONSTRUCT 42" GUARDRAIL PER ARCHITECTURAL PLANS.

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.

GENERAL NOTES FOR GRADING

1. ALL WORK SHALL CONFORM WITH THE "GREENBOOK" STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), 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.
2. 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.
3. 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 FENCES OR OTHER METHODS AS DIRECTED BY THE CONSTRUCTION MANAGER OR FIELD INSPECTOR THROUGHOUT THE CONSTRUCTION OPERATION AND SHALL INCORPORATE IN BASE BID.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. EITHER WATER OR DUST PALLIATIVE, OR BOTH, MUST BE APPLIED FOR THE ALLEVIATION OR PREVENTION OF EXCESSIVE DUST RESULTING FROM THE LOADING OR TRANSPORTATION OF EARTH FROM OR TO THE PROJECT SITE OR PRIVATE AND PUBLIC ROADWAYS.
10. 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.

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 SW'LY CORNER OF A 5' X 8' CATCH BASIN,
MONUMENT IS LOCATED 40' S'LY OF THE CENTERLINE OF 17TH STREET, 150' W'LY OF THE CENTERLINE OF HEWES AVENUE AT THE 18692 17TH STREET ADDRESS.

ELEVATION=192.843 FT NGVD88 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 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 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

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.

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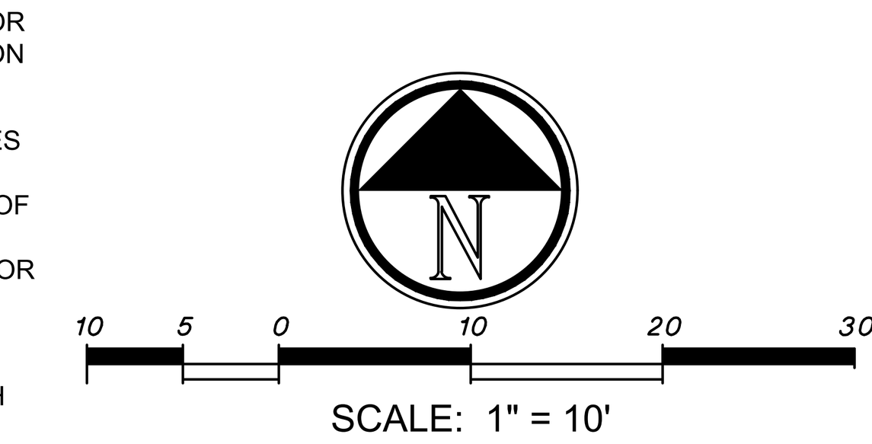
NOTE TO CONTRACTOR: BEFORE DEMOLTION OR TRENCHING OCCURS, THE CONTRACTOR SHALL COMPLETE AN UNDERGROUND UTILITY MAPPING SURVEY OF THE ENTIRE LIMITS OF WORK TO DETERMINE WERE EXISTING UTILITIES ARE AND WHERE POSSIBLE UNDERGROUND CONFLICTS MAY OCCUR. PROVIDE SURVEY TO OWNER.

GENERAL NOTES TO CONTRACTOR

1. 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.
2. SCOPE OF WORK:

   A. PROVIDE ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT & FACILITIES NECESSARY TO FURNISH, FABRICATE, DELIVER, STORE AND INSTALL ALL WORK NOTED ON THE DRAWINGS.

   B. 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.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY AVAILABLE SPACES FOR INSTALLING THE WORK.
4. 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.
5. 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.
6. 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.
7. 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.



SCALE: 1" = 10'

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Phone: 949-252-1688

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Anaheim, CA 92806
P 949-548-5000

GUIN FOSS ELEMENTARY SCHOOL

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

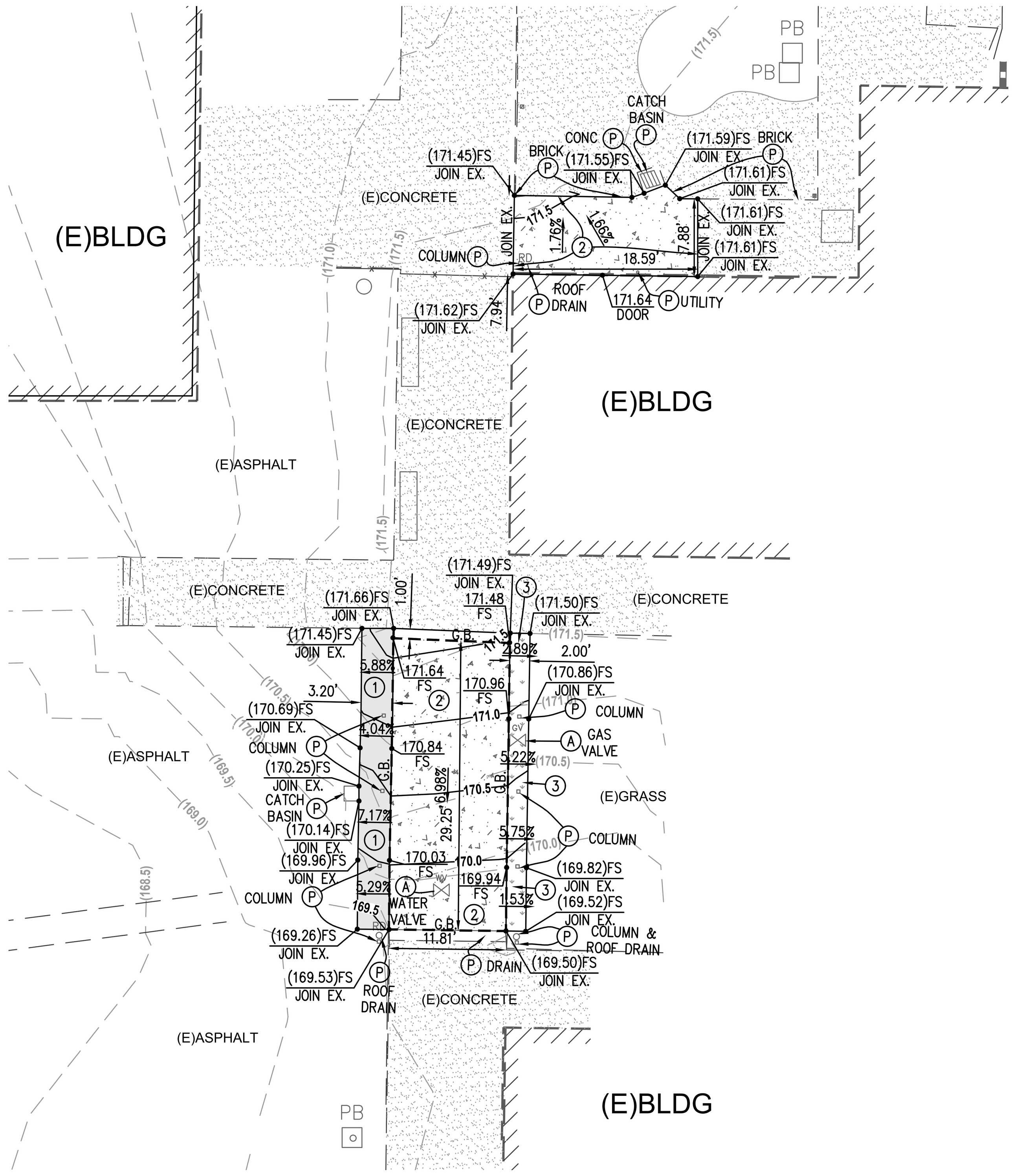
CLIENT

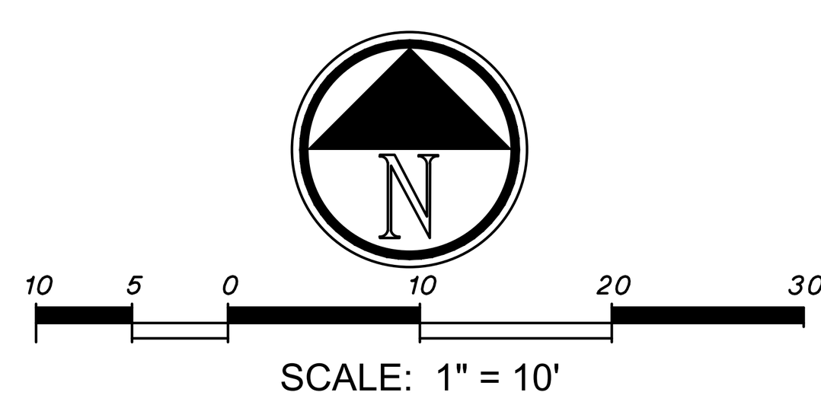
DATE	PROJECT NUMBER

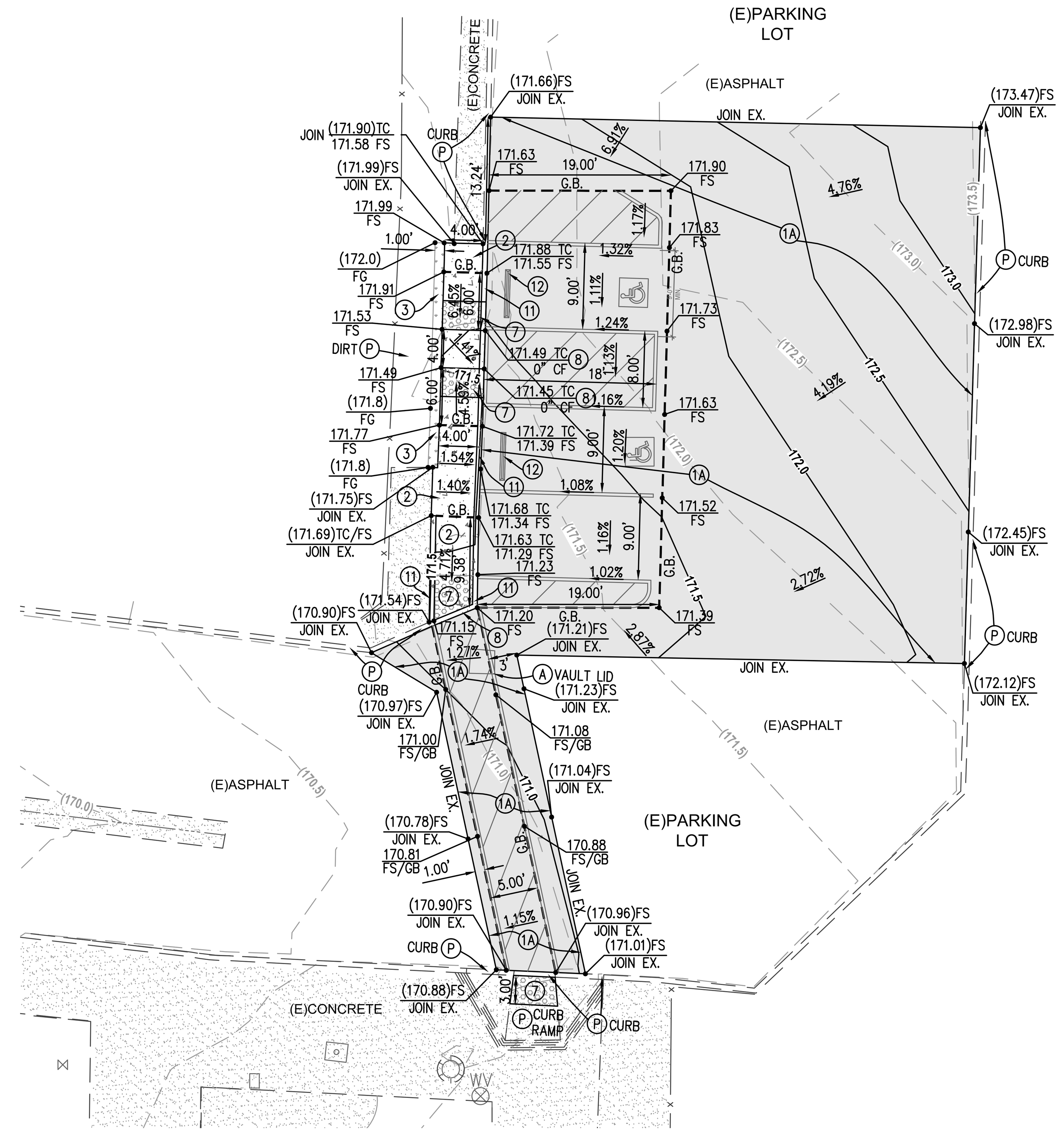
REVISIONS

GRADING PLAN

C2.00







CONSTRUCTION NOTES

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HATCH LEGEND:

- = PROTECT EXISTING BUILDING
- = PROTECT EXISTING CONCRETE
- = NEW CONCRETE PAVEMENT
- = NEW ASPHALT PAVING
- = REGRADE EXISTING LANDSCAPE/ INSTALL NEW LANDSCAPE

HORIZONTAL CONTROL

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ELEVATION=192.843 FT NGVD88 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 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 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

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 STORMWATER CONSTRUCTION GENERAL PERMIT 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 TRENCHING OR DEMOLITION OCCURS, THE CONTRACTOR SHALL COMPLETE AN UNDERGROUND UTILITY MAPPING SURVEY OF THE PROJECT AREA TO DETERMINE WERE EXISTING UTILITIES ARE AND WHERE POSSIBLE UNDERGROUND CONFLICTS MAY OCCUR.

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.

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ARCHITECT PBK Architects, Inc.
PBK.com
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GUIN FOSS ELEMENTARY SCHOOL

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

CLIENT

DATE | PROJECT NUMBER

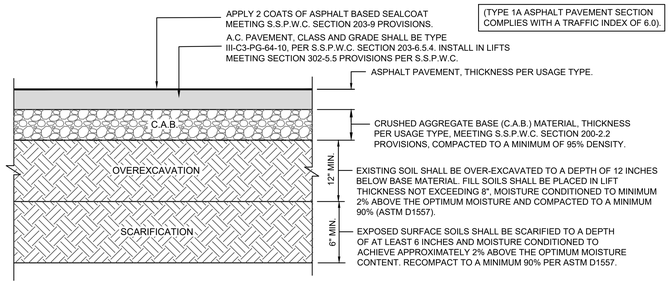
REVISIONS

GRADING PLAN

C2.01

0" 1"

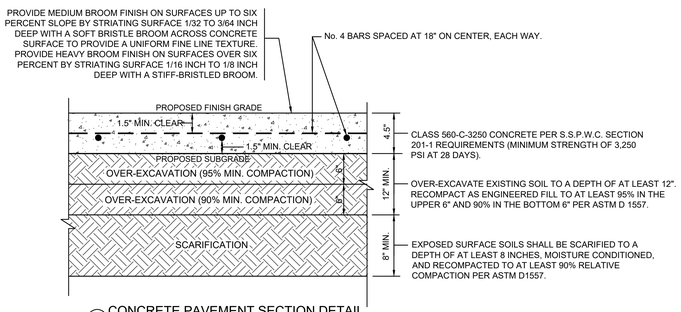
USAGE TYPE	ASPHALT PAVEMENT TABLE 1
(1) LIGHT DUTY	2.0" THICK ASPHALT PAVEMENT OVER 3.0" THICK BASE PER DETAIL BELOW.
(1A) HEAVY DUTY	4.0" THICK ASPHALT PAVEMENT OVER 6.5" THICK BASE PER DETAIL BELOW.



(TYPE 1A ASPHALT PAVEMENT SECTION COMPLIES WITH A TRAFFIC INDEX OF 6.0).

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.

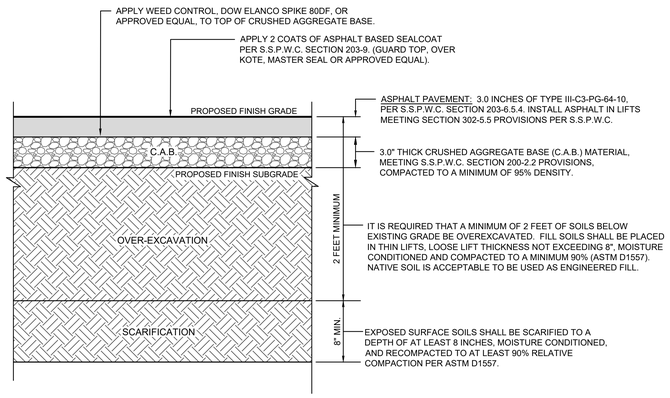


(2) CONCRETE PAVEMENT SECTION DETAIL
NOT TO SCALE

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 PONDS 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.

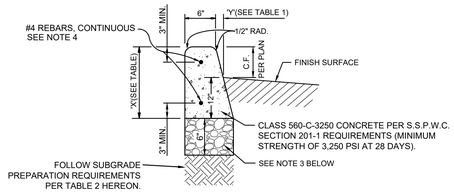


(1B) ASPHALT PAVEMENT SECTION DETAIL
NOT TO SCALE

FLOOD TEST NOTE:

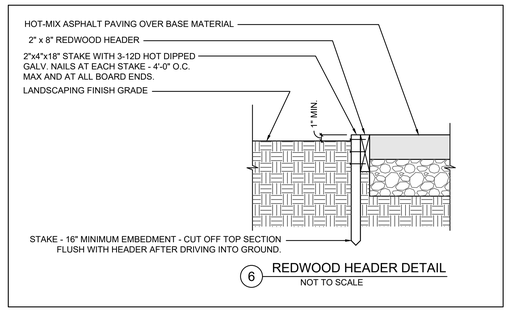
BEFORE ACCEPTANCE, ALL NEW ASPHALT SHALL BE WATER TESTED TO ENSURE PROPER DRAINAGE AS DIRECTED BY THE INSPECTOR. THE CONTRACTOR SHALL PROVIDE WATER FOR THIS PURPOSE. THE FLOODING SHALL BE DONE BY WATER TANK TRUCK. DEPRESSIONS WHERE THE WATER PONDS TO A DEPTH OF MORE THAN 0.01 FOOT SHALL BE FILLED WITH 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.

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"

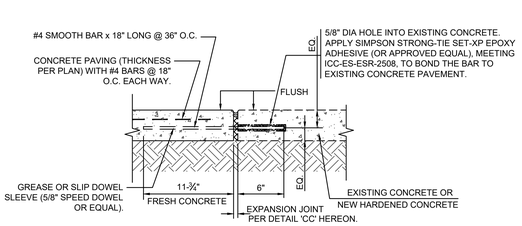


(3) CONCRETE CURB DETAIL
NOT TO SCALE

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. 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.
4. PLACE NO. 4 REBARS 3" MINIMUM FROM TOP AND BOTTOM OF CURB.



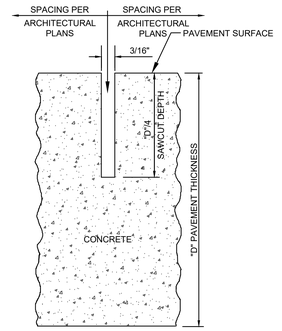
(6) REDWOOD HEADER DETAIL
NOT TO SCALE



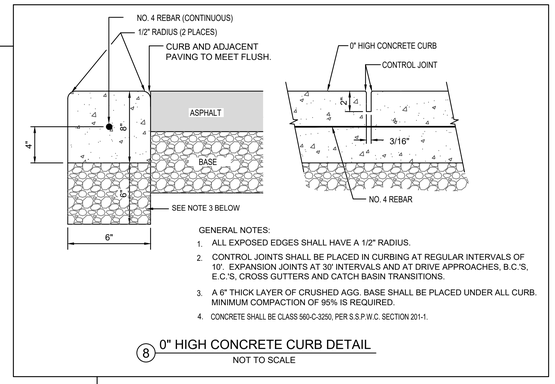
NOTE:1. VERTICAL CHANGE IN ELEVATION ALONG ACCESSIBLE PATH OF TRAVEL CANNOT EXCEED 1/4" PER CBC 11B-303.2

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

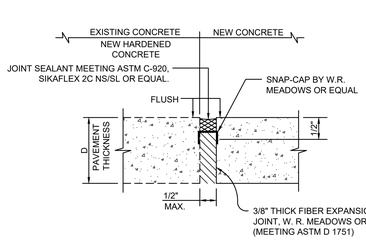


(BB) CONTROL JOINT (C.J.)
NOT TO SCALE

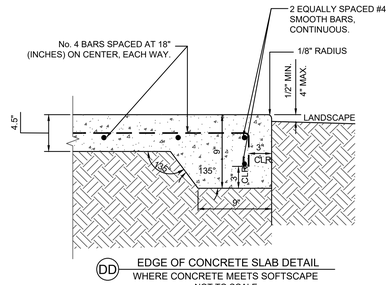


GENERAL NOTES:
1. ALL EXPOSED EDGES SHALL HAVE A 1/2" RADIUS.
2. CONTROL JOINTS SHALL BE PLACED IN CURBING AT REGULAR INTERVALS OF 10'. EXPANSION JOINTS AT 30' INTERVALS AND AT DRIVE APPROACHES, B.C.'S, E.C.'S, CROSS GUTTERS AND CATCH BASIN TRANSITIONS.
3. A 6" THICK LAYER OF CRUSHED AGG. BASE SHALL BE PLACED UNDER ALL CURB. MINIMUM COMPACTION OF 95% IS REQUIRED.
4. CONCRETE SHALL BE CLASS 560-C-3250, PER S.S.P.W.C. SECTION 201-1.

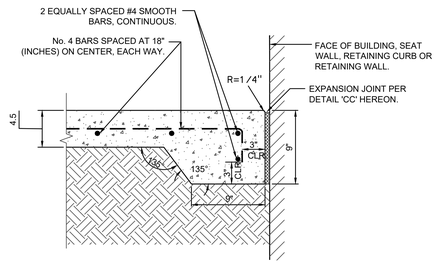
(8) 0" HIGH CONCRETE CURB DETAIL
NOT TO SCALE



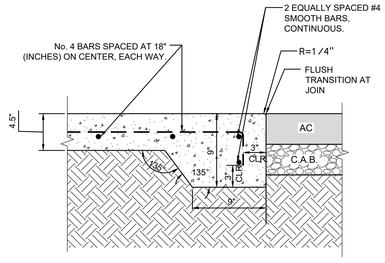
(CC) EXPANSION JOINT (E.J.)
NOT TO SCALE



(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

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

Tustin Unified School District

Consultant

REGISTERED PROFESSIONAL ENGINEER ALAN WING-CHI LEE No. C34832 CIVIL 03-30-25 STATE OF CALIFORNIA

Architect

LICENSED ARCHITECT BRUCE OU C-34832 RENEWAL 10/31/25 STATE OF CALIFORNIA

CLIENT

DATE	PROJECT NUMBER

REVISIONS

DETAIL SHEET

C3.00

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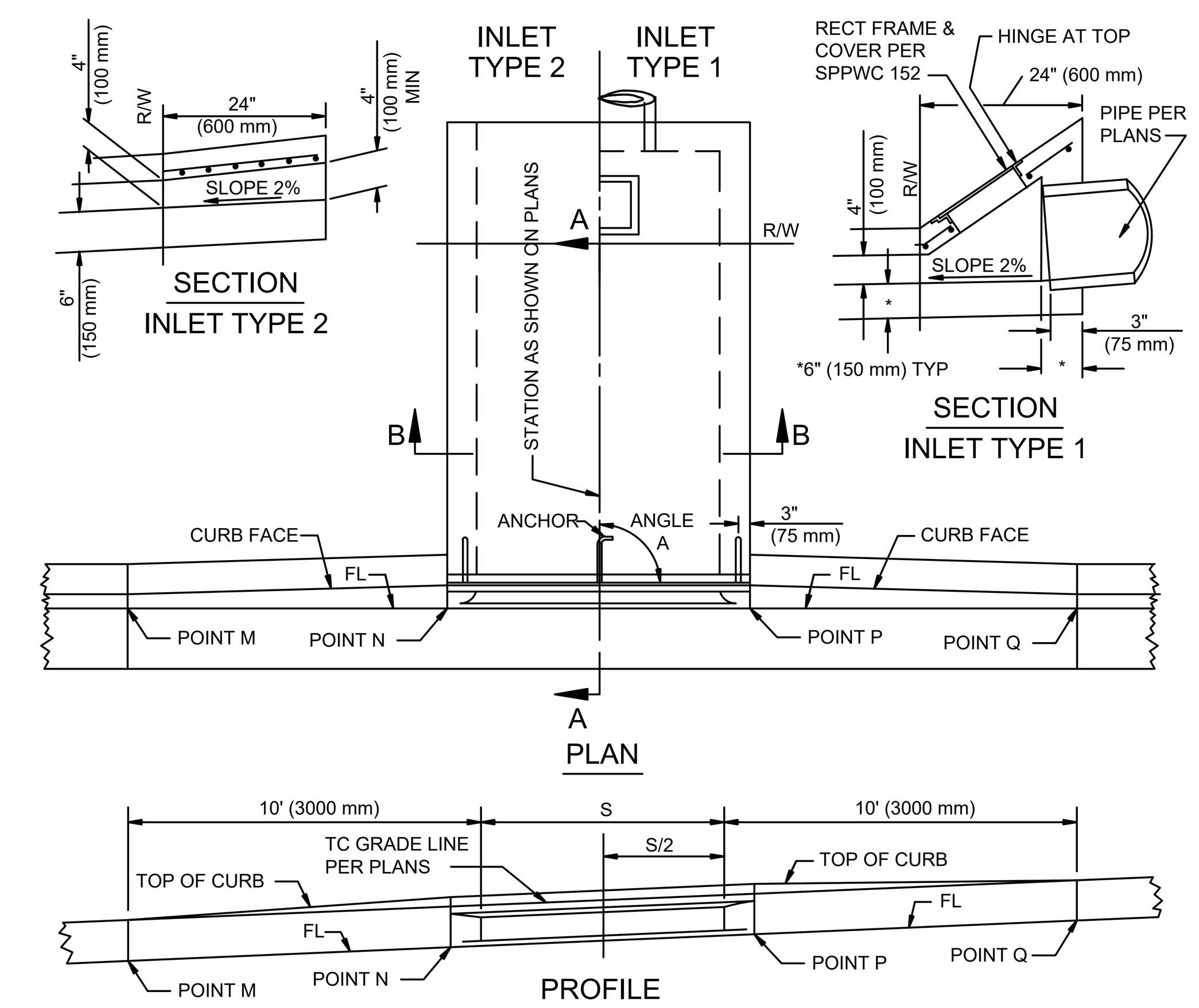
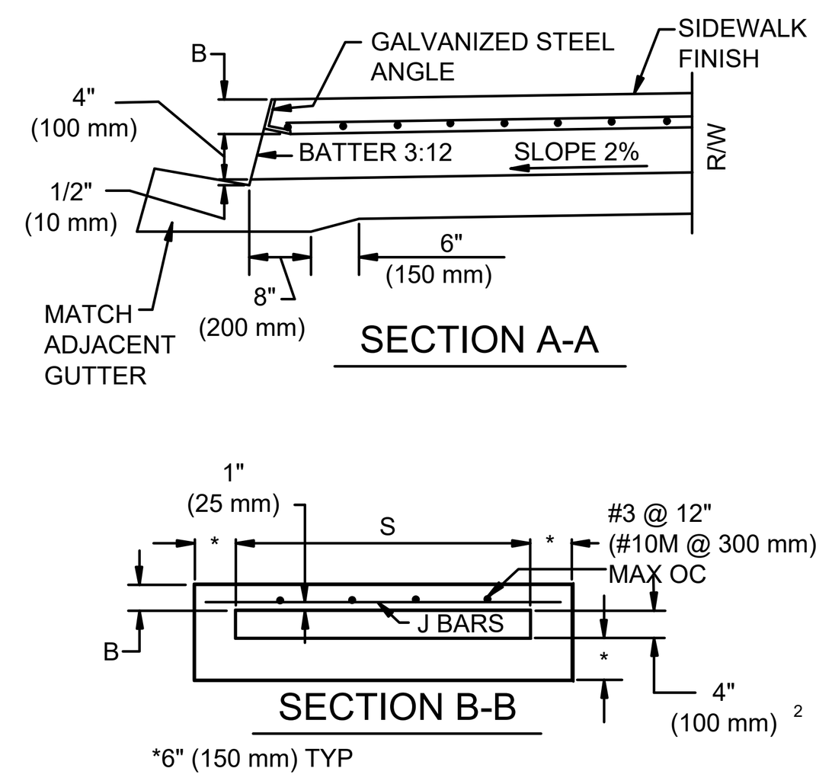


S	J BAR SPACING	ANCHORS	NOTE
12" (300 mm)	7" (180 mm)	2	9
18" (450 mm)	7" (180 mm)	2	9
24" (600 mm)	7" (180 mm)	2	9
30" (750 mm)	7" (180 mm)	2	9
36" (900 mm)	7" (180 mm)	3	9
42" (1050 mm)	6" (150 mm)	3	9
48" (1200 mm)	5" (125 mm)	3	9
54" (1350 mm)	6-1/2" (165 mm)	3	10
60" (1500 mm)	5" (125 mm)	3	10
66" (1650 mm)	4" (100 mm)	3	10
72" (1800 mm)	3-1/2" (90 mm)	3	10



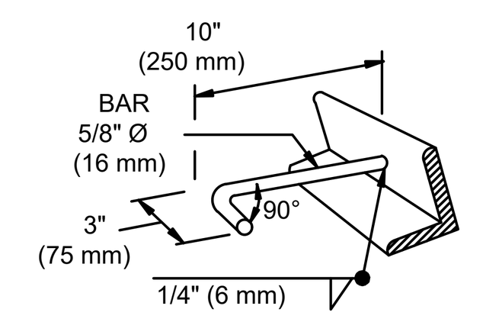
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1993 REV. 1996, 2009, 2021

PARKWAY DRAIN

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN 151-3 SHEET 1 OF



DETAIL OF ANCHOR

NOTES

1. FLOOR OF BOX SHALL BE TROWLED SMOOTH.
2. IF THE TOE OF SLOPE IS ALLOWED WITHIN THE R/W, INLET TYPE 1 BEGINS AT THE TOE RATHER THAN AT THE R/W LINE.
3. FOR OPEN DITCH (TYPE 2), THE 24" (600 mm) EXTENSION BEYOND THE R/W LINE IS NOT REQUIRED WHEN BACK OF WALK IS 24" (600 mm) OR MORE FROM THE R/W LINE; HOWEVER, THE PARKWAY DRAIN SHALL EXTEND TO THE R/W LINE IN ANY EVENT.
4. TOP OF INLET STRUCTURE (TYPE 1 & 2) SHALL BE FLUSH WITH ADJACENT SURFACE WHERE PRACTICAL.
5. A HEADED STEEL STUD 5/8" x 6-3/8" WITH A 1" HEAD (16 x 160 mm, 25 mm HEAD) ATTACHED BY A FULL PENETRATION BUTT WELD MAY BE USED AS AN ALTERNATE ANCHOR.
6. NORMAL CURB FACE AT POINT M AND Q. CURB FACE IS B + 5" (125 mm) AT POINT N AND P.
7. THE 3" (75 mm) LEG OF THE 5/8" (16 mm) DIA ANCHORS SHALL BE PARALLEL TO THE TOP OF SIDEWALK.
8. J BARS ARE #3 (#10M).
9. FOR S = 48" (1200 mm) AND LESS, B = 3" (75 mm). USE 2-1/2" x 2" x 3/8" (64 x 51 x 9.5 mm) GALVANIZED STEEL ANGLE.
10. FOR S = 54" (1350 mm) OR MORE, B = 4" (100 mm). USE 3-1/2" x 3" x 1/2" (89 x 76 x 12.7 mm) GALVANIZED STEEL ANGLE.
11. ANGLE A EQUALS 90° UNLESS OTHERWISE SPECIFIED.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PARKWAY DRAIN

STANDARD PLAN 151-3 SHEET 2 OF 2

PLANS PREPARED BY:

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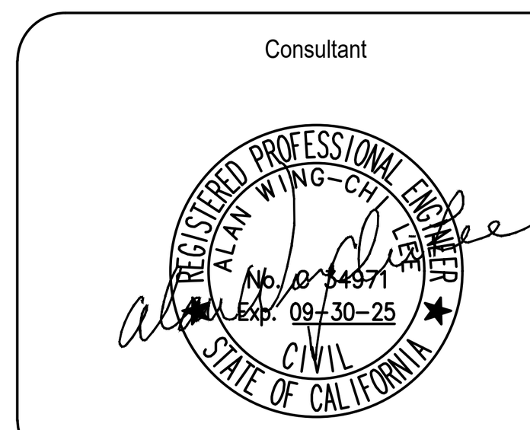
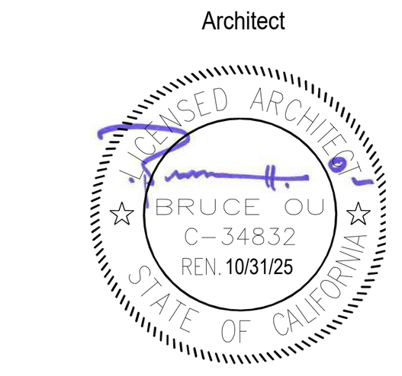


Architect



CLIENT

DATE	PROJECT NUMBER

REVISIONS

DETAIL SHEET

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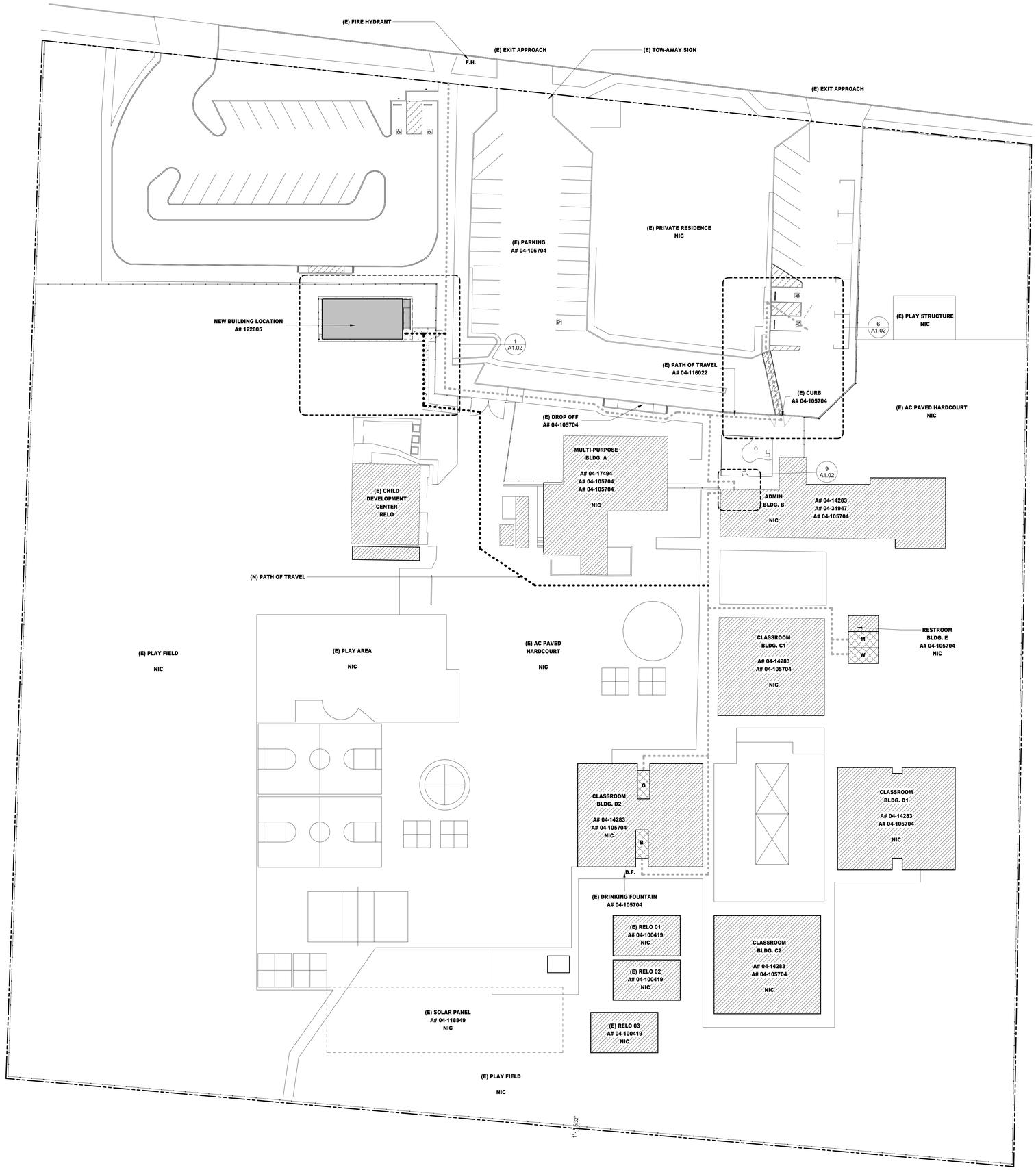
Plot Date: 3/25/2024 5:21:45 PM Last Save By: valeria.landeros Login: Ron Canedy S:\Jobs\2777 - PBK\2777ppp - Tustin USD Portables\2777ppp3 - Guin Foss ES\Civil\Guin Foss ES C3.01 Detail Sheet.dwg

A1.01 - OVERALL SITE PLAN

0" 1"



SITE PLAN
1" = 25'-0"

1

SITE GENERAL NOTES

1. SEE CIVIL FOR TOPOGRAPHIC DATA, GRADING, DRAINING, AND UTILITY INFORMATION.
2. SEE CIVIL FOR DIMENSIONS, DETAILS AND INFORMATION OF ALL FLATWORK.
3. ALL NEW WALK SURAFCES IN P.O.T. SHALL HAVE FLUSH TRANSITION TO ALL ADJACENT NEW OR EXISTING CONCRETE/AC PAVING, U.N.O.
4. 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.
5. 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 INDENTIFIED 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 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 THRESHHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP 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 ½" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING ¼" 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.

1. CLEAR OPENING WIDTH FOR A DOOR SHALL BE 32 INCHES MINIMUM. CBC SECTION 11B-404.2.3
2. 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-404.2.7
3. THE LEVERS 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 CLOTHEING OR PERSONS PER CALIFORNIA REFERENCED STANDARDS CODE. T-24 PART 12, SECTION 12-10-202, ITEM (F).
4. 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.
5. 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.
6. 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 OPTEN POSITION OF 90 DEGREES TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM. SPRING HINGES AHLL 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.
7. THRESHOLDS SHALL COMPLY WITH CBC SECTION 11B-404.2.5.
8. FLOOR STOPS SHALL NOT BE LOCATED IN THE PATH OF TRAVEL AND 4" MAXIMUM FROM THE WALLS.
9. HARWARE (INCLUDING PANIC HARWARE) 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 HARWARE 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).
10. 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 ABRAISIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED. 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	960 SQ FT
BASIC ALLOWABLE AREA 9,500 SF	960 SF < 9,500 SF = OKAY
ALLOWABLE HEIGHT / NO OF STORIES:	55'-0" / TWO
ACTUAL HEIGHT / NO OF STORIES:	12'-0" / ONE
SPRINKLER SYSTEM:	NONE

KEYNOTES

#	Description

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. A1.2 & A1.4
- (N) PATH OF TRAVEL
- (E) PATH OF TRAVEL A# 04-116022

D.F.	DRINKING FOUNTAIN PER. 14,15,20/A10.1
M	MEN RESTROOM (AGES 13 & ABOVE) PER . 3/A1.02
W	WOMEN RESTROOM (AGES 13 & ABOVE) PER 3/A1.02
B	BOYS RESTROOM (AGES 5 THROUGH 8) PER 2/A1.02
G	GIRLS RESTROOM (AGES 5 THROUGH 8) PER 2/A1.02

(E) PARKING CALCULATION

(E) GUIN FOSS ELEMENTARY SCHOOL PARKING LOT A CALCULATIONS

TOTAL STALLS	39
REGULAR STALLS	37
ACCESSIBLE STALLS	2 (INCLUDING 1 VAN)

(E) GUIN FOSS ELEMENTARY SCHOOL PARKING LOT B CALCULATIONS

TOTAL STALLS	22
REGULAR STALLS	20
ACCESSIBLE STALLS	2 (INCLUDING 1 VAN)

Not for permitting or construction

PBK

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

GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

REGISTERED ARCHITECT BRUCE OU C-34832 REN: 10/31/25 STATE OF CALIFORNIA

CLIENT
TUSD

DATE	PROJECT NUMBER
04/11/2024	230554

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OVERALL SITE PLAN

A1.01

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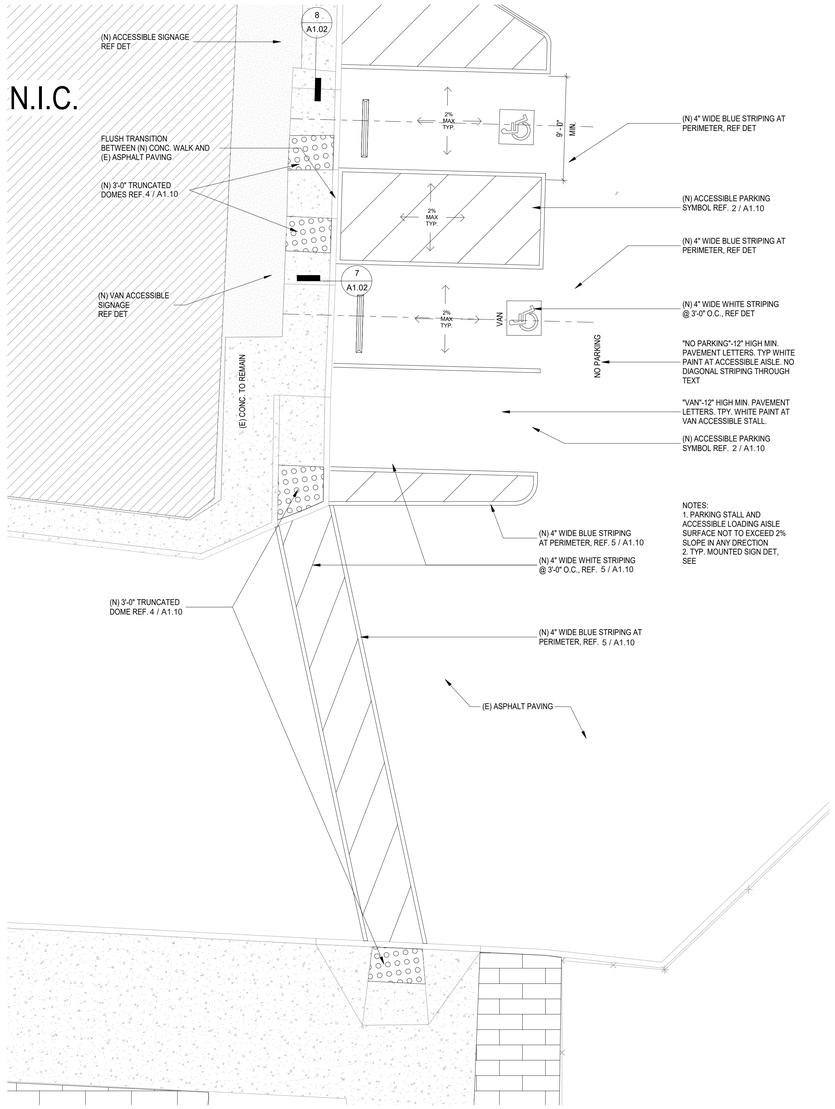
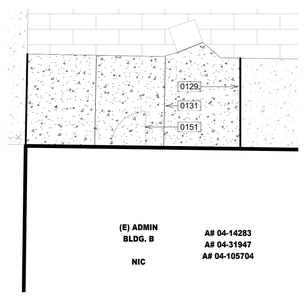


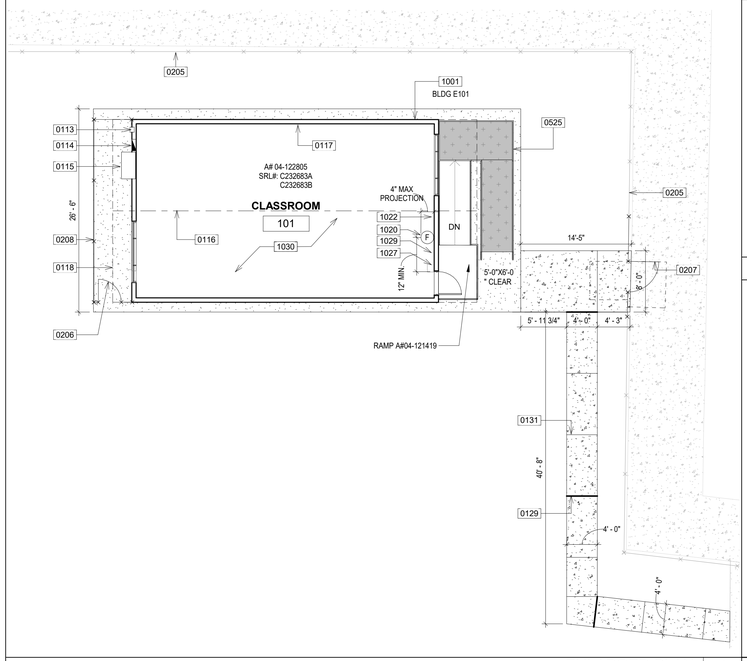
NORTH

(N) ENLARGED ADA PARKING 6
3/16" = 1'-0"



NORTH

ENLARGED PLAN 02 9
3/16" = 1'-0"



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

GENERAL NOTES

ALL FINISH MATERIALS MUST MEET THE FLAME SPREAD RATNGS PER THE BUILDING CODE.

1. REFER TO INTERIOR ELEVATIONS FOR SPECIFIC MATERIAL LOCATIONS.
2. PAINT ALL EXPOSED DUCTWORK, CONDUIT, ELECTRICAL EQUIPMENT, ETC TO MATCH ADJACENT SURFACES.
3. PAINT ALL NON-FACTORY FINISHED EXPOSED METAL.
4. REFER TO TYPICAL FLOORING TRANSITION DETAILS FOR ALL FLOORING MATERIALS.
5. FLOORING TRANSITIONS AT DOORS SHOULD BE LOCATED UNDER THE DOOR IN THE CLOSED POSITION, UNLESS NOTED OTHERWISE.
6. CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING FINISHED FLOORING SURFACES FROM DAMAGE DURING ALL CONSTRUCTION PHASES.
7. PROVIDE BULLNOSE TRIM AT TRANSITIONS FROM CERAMIC WALL TILE TO OTHER MATERIAL, UNLESS NOTED OTHERWISE.
8. REFER TO REFLECTED CEILING PLANS FOR CEILING HEIGHTS.
9. ALL ELECTRICAL DEVICE COVERS ARE TO BE WHITE UNLESS NOTED OTHERWISE.
10. CARPET PATTERNS TO RUN PARALLEL TO CORRIDOR, UNLESS NOTED OTHERWISE.
11. ALL HOLLOW METAL DOOR FRAMES TO BE PAINTED TO MATCH ADJACENT WALL COLOR.
12. IF PC DOOR HARWARE 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 ND75PB RHO (RHODES) CLASSROOM SERCURITY LEVEL LOCK, 626 FINISH. THE PC DOOR HARWARE IS TO BE REMOVED AND TO BE PROTECTED AND RETURNED TO THE OWNER.
13. CONTRACTOR TO VERIFY ALL WINDOWS ARE SCREWED SHUT AND NON-OPERABLE.
14. CONTROL JOINT (CJ) SPACING SHALL NOT EXCEED 8'-0" ON CENTER AND EXPANSION JOINTS (EJ) ARE PLACED AT EVERY 3RD CONTROL JOINT PER C4.00

KEYNOTES

#	Description
0113	FIRE ALARM BOX
0114	ELECTRICAL PANEL
0115	MECHANICAL UNIT PER
0116	MOD LINE
0117	MARKER BOARD
0118	ROOF ABOVE
0129	EXPANSION JOINT (E.J.) PER CC/C3.00
0131	CONTROL JOINT (C.J.) PER BB/C3.00
0151	PROTECT IN PLACE (E) MIRROR
0205	(E) CHAINLINK FENCE & GATES, PROTECT IN PLACE
0206	(N) 5'-0" HIGH 3'-0" WIDE GATE, PER DETAIL 16 / A1.10
0207	(N) 5'-0" HIGH 4'-0" WIDE GATE PER DETAIL 20 / A1.10, VON DURPIN PANIC AX/PA BAR 98/99 SERIES, & KNOX PADLOCK
0208	(N) 5'-0" CHAIN LINK FENCE PER DETAIL 17 / A1.10
0525	INSTALL NEW HANDRAIL PER DETAIL 24 / A1.10
1001	BOBRICK B-262 PAPER TOWEL WITH 4" MAX PROTRUSION, FOR ACCESSIBLE MOUNTING HEIGHT REF 17 / A1.11
1020	SURFACE MOUNTED FIRE EXTINGUISHER PER DTL 3/5/8 A5.2
1022	OCCUPANCY SIGN PER DTL. 2/A0.1
1027	EXIT SIGNAGE TO READ "EXIT RAMP DOWN" PER DTL. 20 / A1.11
1029	ASSISTIVE LISTENING SIGN PER DTL 23 / A1.11
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 TRANSMITERS 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
- (C.J.) CONTROL JOINT
- (E.J.) EXPANSION JOINT
- (E) BUILDING, N.I.C.
- (E) PLAYGROUND
- (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
- (E) LANDSCAPE AREA, N.I.C.

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12712 Elizabeth Way,
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DSA APPL NO.: XXXX DSA FILE NO.: XXXX

Tustin Unified School District

Consultant

Architect

LICENSED ARCHITECT
M. BRUCE DU
C-34832
REN: 10/31/25
STATE OF CALIFORNIA

CLIENT
TUSD

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ENLARGED SITE PLAN

A1.02

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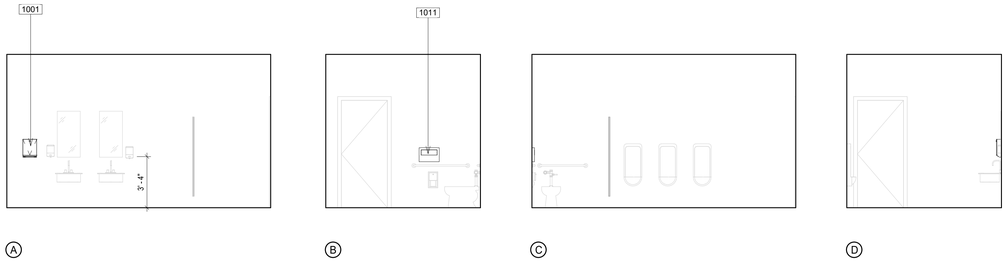
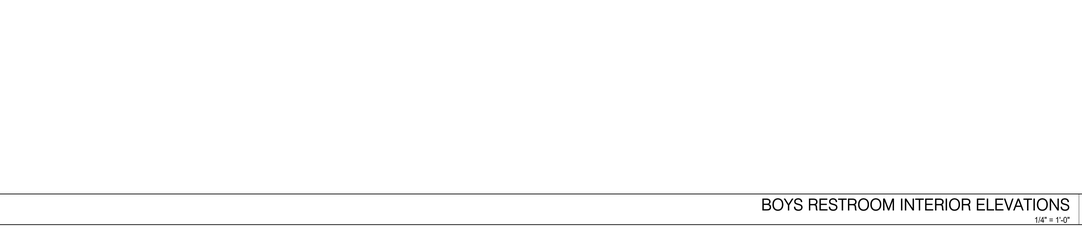


A B C D

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



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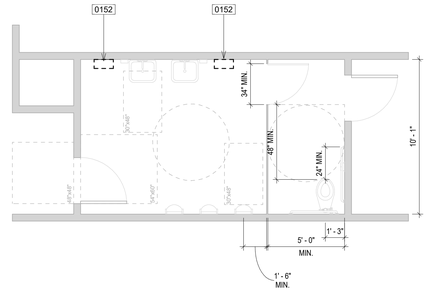
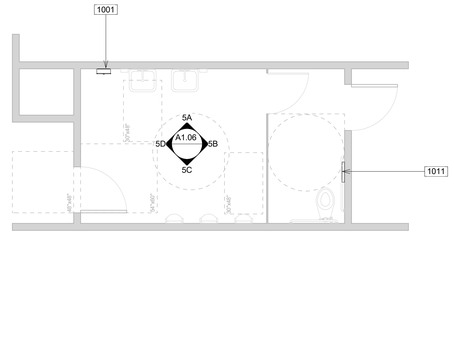
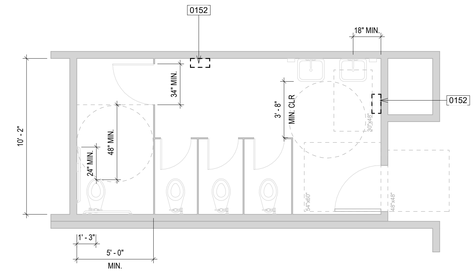
1/4" = 1'-0"



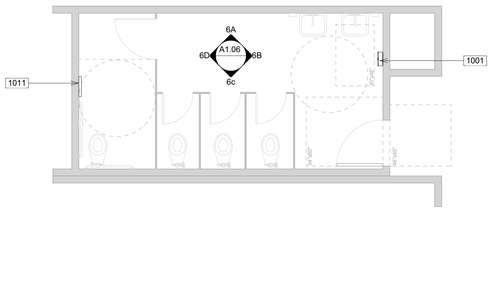
(E) ENLARGED BOYS RESTROOM 1
1/4" = 1'-0"



(N) ENLARGED BOYS RESTROOM 3
1/4" = 1'-0"



(E) ENLARGED GIRLS RESTROOM 2
1/4" = 1'-0"



(N) ENLARGED GIRLS RESTROOM 4
1/4" = 1'-0"

REFERENCE NOTES

KEYNOTE	DESCRIPTION
0152	REMOVE, SALVAGE, AND PROTECT (E) RESTROOM ACCESSORIES AND RETURN TO DISTRICT
1001	BOBRICK B-262 PAPER TOWEL WITH 4" MAX PROTRUSION, FOR ACCESSIBLE MOUNTING HEIGHT REF 1 / A1.11 & 2 / A1.11|2 / A1.11
1011	BOBRICK B-221 SURFACE MOUNTED TOILET SEAT COVER DISPENSER, REF 3 / A1.11 & 4 / A1.11

DEMO GENERAL NOTES

1. WHERE TILE AND MORTAR BED IS DEMOLISHED, PATCH AND REPAIR FLOOR AS REQUIRED FOR NEW FINISH.
2. FIELD VERIFY ALL DIMENSIONS FOR EXISTING BUILDINGS.
3. PROTECT IN PLACE ALL ITEMS, UNO.
4. 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.
5. 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.
6. 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

1. PATCH AND REPAIR CONCRETE FLOOR SLAB BELOW DEMOLISHED WALLS, DOOR FRAMES, AND OTHER REMOVED ITEMS. PREP FOR NEW FINISHES.
2. PATCH AND REPAIR (E) ADJOINING WALLS NOT TO BE DEMOLISHED AND PREP FOR NEW FINISHES AS REQUIRED, UNO.
3. WALLS ARE FULL HEIGHT TO THE UNDERSIDE OF THE STRUCTURE ABOVE UNO.
4. 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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GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

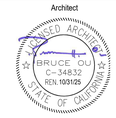
PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect



CLIENT
TUSD

DATE 04/11/2024
PROJECT NUMBER 230554

REVISIONS

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ENLARGED PLANS & ELEVATIONS

A1.06

A1.07 - ENLARGED PLANS & ELEVATIONS

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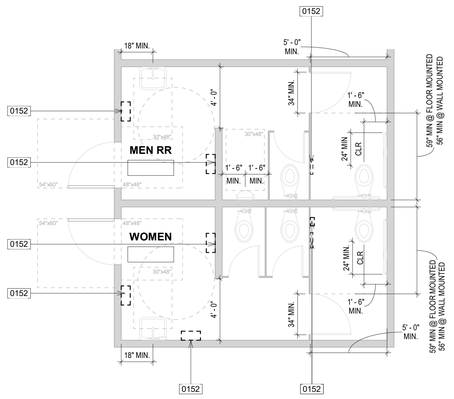
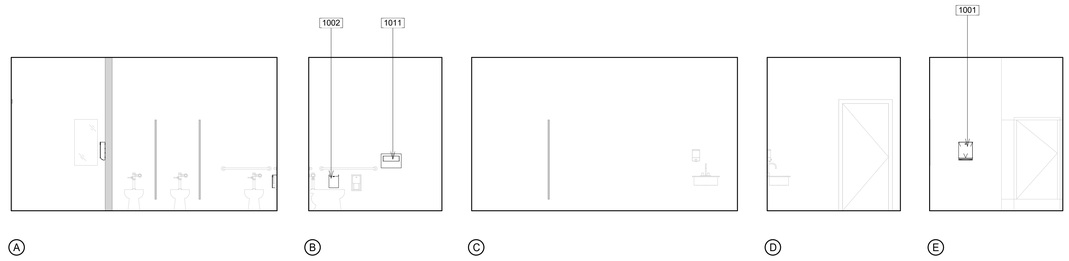
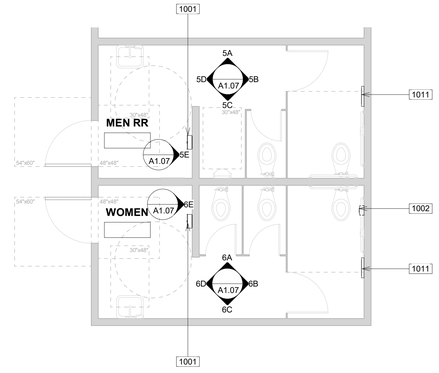
MEN RESTROOM INTERIOR ELEVATIONS 1/4" = 1'-0" **5**



(E) ENLARGED MENS AND WOMENS RESTROOM 1/4" = 1'-0" **1**



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



(N) ENLARGED MENS AND WOMENS RESTROOM 1/4" = 1'-0" **2**

REFERENCE NOTES

KEYNOTE	DESCRIPTION
0152	REMOVE, SALVAGE, AND PROTECT (E) RESTROOM ACCESSORIES AND RETURN TO DISTRICT
1001	BOBRICK B-262 PAPER TOWEL WITH 4" MAX PROTRUSION, FOR ACCESSIBLE MOUNTING HEIGHT REF 1 / A1.11 & 2 / A1.11
1002	BOBRICK B-5270 SANITARY NAPKIN DISPOSAL 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

DEMO GENERAL NOTES

1. WHERE TILE AND MORTAR BED IS DEMOLISHED, PATCH AND REPAIR FLOOR AS REQUIRED FOR NEW FINISH.
2. FIELD VERIFY ALL DIMENSIONS FOR EXISTING BUILDINGS.
3. PROTECT IN PLACE ALL ITEMS, UNO.
4. 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.
5. 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.
6. 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

1. PATCH AND REPAIR CONCRETE FLOOR SLAB BELOW DEMOLISHED WALLS, DOOR FRAMES, AND OTHER REMOVED ITEMS. PREP FOR NEW FINISHES.
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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

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REVISIONS

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ENLARGED PLANS & ELEVATIONS

A1.07

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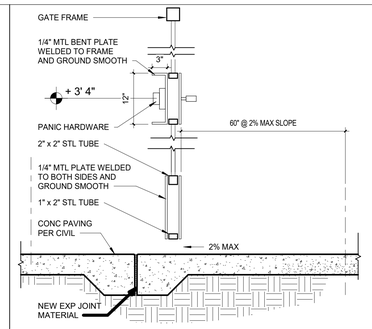
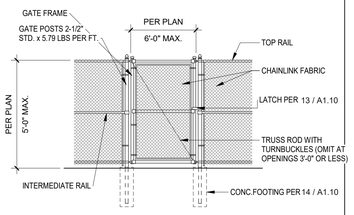


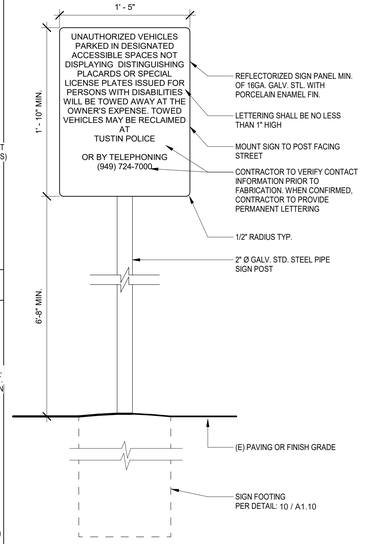
ACCESSIBLE CL GATE SECTION 21

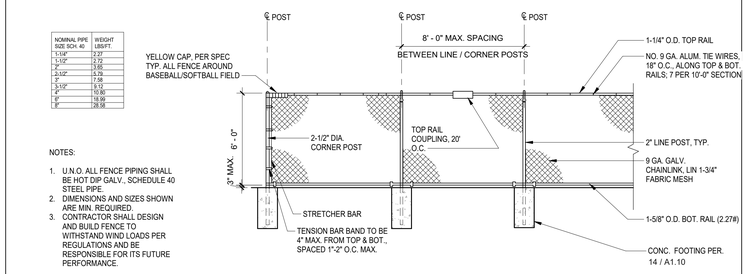
1" = 1'-0"



CHAIN LINK SINGLE GATE 16

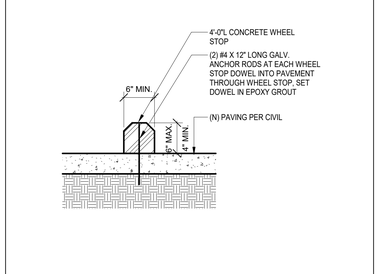
NOT TO SCALE





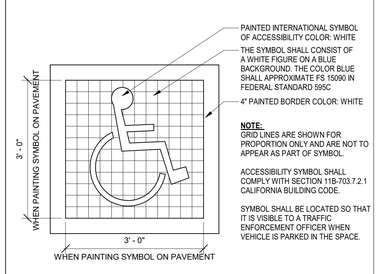
5'-0" TALL CHAINLINK FENCE 17

1/4" = 1'-0"



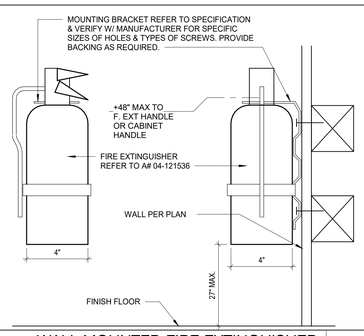
PARKING BUMPER / WHEEL STOP 7

1" = 1'-0"



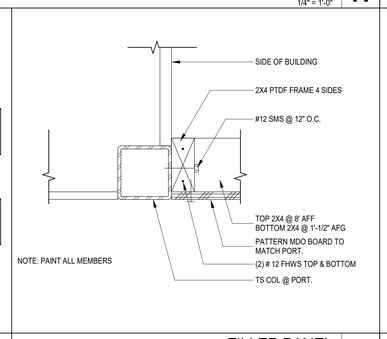
ACCESSIBLE PARKING SYMBOL 2

3/4" = 1'-0"



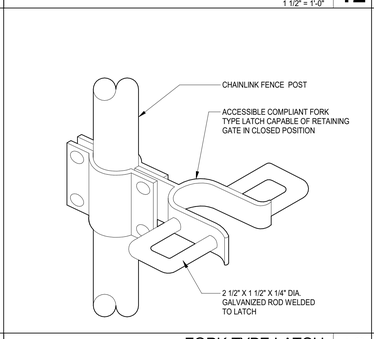
WALL MOUNTED FIRE EXTINGUISHER 23

3" = 1'-0"



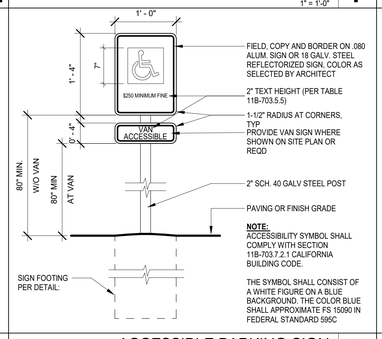
FILLER PANEL 18

3" = 1'-0"



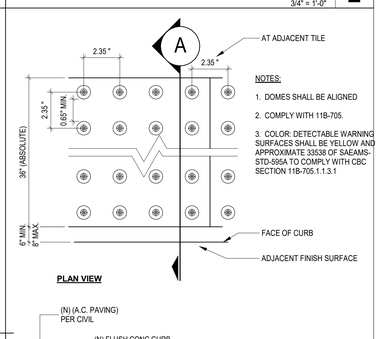
FORK TYPE LATCH 13

1/2" = 1'-0"



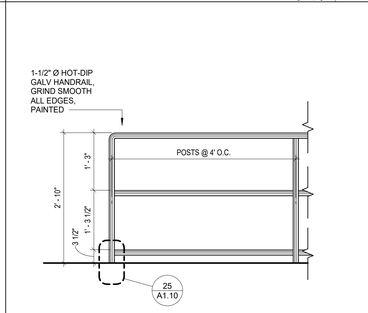
ACCESSIBLE PARKING SIGN 8

1" = 1'-0"



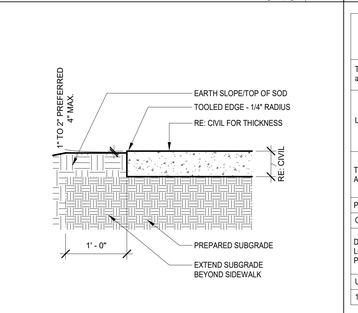
ACCESS AISLE STRIPING 5

1/2" = 1'-0"



RAILING DETAIL 24

3/4" = 1'-0"



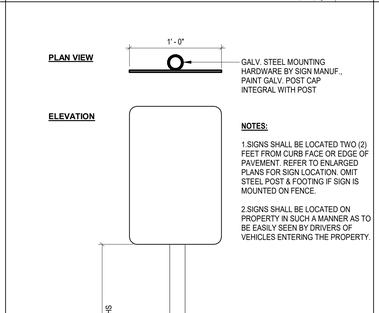
CONCRETE WALK EDGE 19

1" = 1'-0"

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
Line Posts	Up to 6'-0"	2	2.375	2.65	12	36
	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
Terminal, Corner, Angle & Pull Posts	Up to 8'-0"	2-1/2	2.875	5.79	12	36
	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
Pedestrian Gate Posts	Up to 8'-0"	2-1/2	2.875	5.79	14	36
Gate Frames	Up to 8'-0"	1-1/2	1.900	2.72	N/A	N/A
Driveway Double-Leaf Swing Gate Posts: Opening						
Up to 17' - 3-1/2"	Up to 8'-0"	3-1/2	4.000	9.11	16	42
17'-4" to 20'- 3 1/2"	Up to 8'-0"	3-1/2	4.000	9.11	16	42

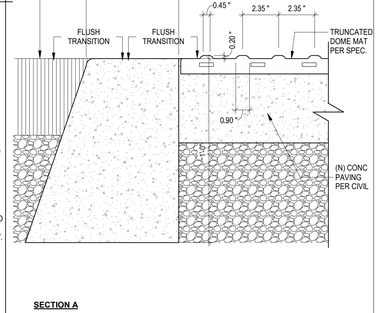
CHAINLINK & FENCE SIZING SCHEDULE 14

3" = 1'-0"



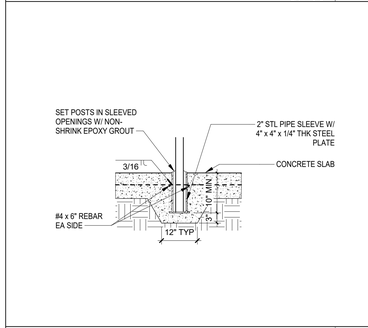
TYPICAL MOUNTED SIGN DETAIL 10

1 1/2" = 1'-0"



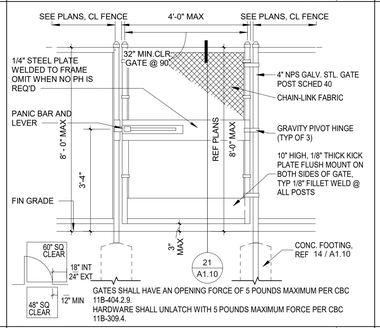
TRUNCATED DOMES 4

3" = 1'-0"



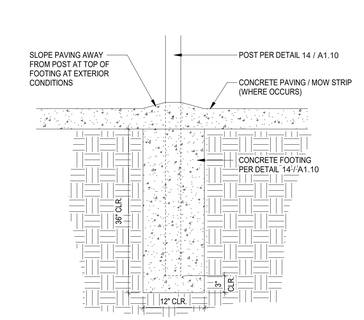
POST SLEEVE 25

1" = 1'-0"



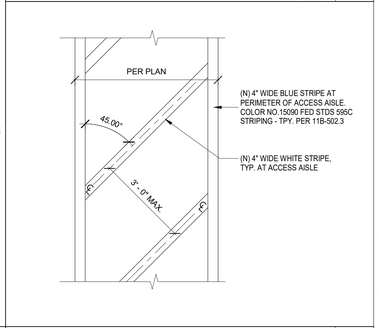
ACCESSIBLE CL GATE 20

1/2" = 1'-0"



POST FOOTING 15

1" = 1'-0"



ACCESS AISLE STRIPING 5

1/2" = 1'-0"

PBK

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

GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

Tustin Unified School District

Consultant

Architect

PLANNED ARCHITECT
BRUCE OU
C-34832
REN: 10/31/25
STATE OF CALIFORNIA

CLIENT
TUSD

DATE	PROJECT NUMBER
04/11/2024	230554

REVISIONS

No.	Description	Date

ENLARGED PARKING PLANS AND DETAILS

A1.10

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3/26/2024 12:25:05 AM

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

1. ALL FIXTURES AND ACCESSORIES ARE ACCESSIBLE UNLESS OTHERWISE NOTED OR DIMENSIONED.
2. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
3. SEE ENLARGED TOILET PLANS FOR TOILET ACCESSORY LOCATIONS.
4. 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

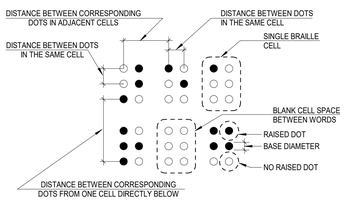
3/16" = 1'-0"

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)

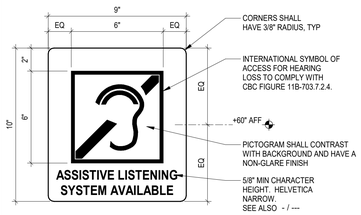
1. MEASURED CENTER TO CENTER

BRAILLE MEASUREMENT
(PER FIGURE CBC 11B-703.3.1)



BRAILLE STANDARDS FOR SIGNAGE1 22

6" = 1'-0"

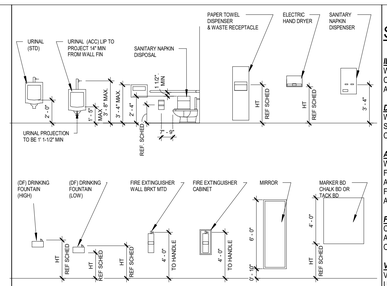


NOTES:
1. SIGN MATERIAL SHALL BE 1/4" THICK PLASTIC W/ 1/32" RAISED LETTERS
2. MOUNT W/ VANDAL RESISTANT FASTENERS.
3. BASIS OF DESIGN FOR ASSISTIVE LISTENING SYSTEM: WILLIAMS SOUND PPA 458
   - PER CBC 11B-219 & 11B-706, THE MINIMUM NUMBER OF RECEIVERS PROVIDED FOR EACH AREA SHALL BE EQUAL TO 4% OF THE TOTAL NUMBER OF SEATS, BUT NO LESS THAN 2.
     960SF / 20 OLF = 48 STUDENTS PER CLASSROOM
     48 STUDENTS * 4% = 1.92
     2 RECIEVERS REQUIRED PER CLASSROOM

101400.13-S

ASSISTIVE LISTENING SIGNAGE 23

3" = 1'-0"



FIXTURE	SUGGESTED DIMENSION A	E	K
TOILET CENTER LINE FROM WALL	1' - 5" ~ 1' - 6"	1' - 0" ~ 1' - 3"	1' - 0" ~ 1' - 3"
TOILET SEAT HEIGHT (TOP OF SEAT)	1' - 1" ~ 1' - 2"	1' - 1" ~ 1' - 3"	1' - 0" ~ 1' - 1"
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"
NAPKIN DISPOSAL IN BACK OF TOILET	6" MAX	N / A	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' - 6" MAX
LAVATORY APRON CLEARANCE	2' - 5" MIN	N / A	N/A
LAVATORY/SINK KNEE CLEARANCE	2' - 3" MIN	2' - 0" MIN	2' - 0" MIN
DF BUBBLER HEIGHT: HIGH	38" - 43"	38" - 43"	2' - 6" MAX
LOW	3' - 0" MAX	2' - 6" MAX	
DF BUBBLER FROM FRONT EDGE	5" MAX	3-1/2" MAX	3-1/2" MAX
DF CONTROL FROM FRONT EDGE	6" MAX	6" MAX	6" MAX
DF KNEE CLEARANCE	2' - 3" MIN	PARALLEL APPROACH	PARALLEL APPROACH
RAMP/STAIR HANDRAIL HEIGHT	2' - 10" ~ 3' - 2"	2' - 10" ~ 3' - 2"	2' - 4" MAX
MARKER BOARD HEIGHT	3' - 0"	2' - 0"	2' - 0"

LEGEND

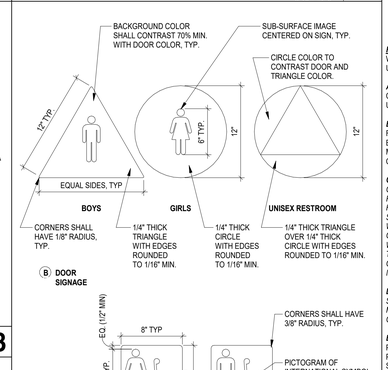
ADULT DIMENSIONS (STAFF, AGE 12 AND OVER)
ELEMENTARY DIMENSIONS (AGE 5 - 8)
K = KINDERGARTEN AND PRE-SCHOOL DIMENSIONS (3 - 4)

NOTE

1. ALL FIXTURES AND ACCESSORIES ARE ACCESSIBLE UNLESS OTHERWISE NOTED OR DIMENSIONED.
2. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
3. SEE ENLARGED TOILET PLANS FOR TOILET ACCESSORY LOCATIONS.
4. 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 17

3/16" = 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-703.7.2.1) 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 40" 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 135% 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
	72 INCHES AND GREATER	5/8 INCH, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 72 INCHES
GREATER THAN 70 INCHES TO LESS THAN OR EQUAL TO 120 INCHES	LESS THAN 180 INCHES	2 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
	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 CLOSET 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 ELEMETNS 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

A1.11 - SPECIALTY DETAILS

0" 1"

Not for permitting or construction

PBK

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

GUIN FOSS ELEMENTARY SCHOOL RELOCATABLE ADDITION

PROJECT ADDRESS:
12712 Elizabeth Way,
Tustin, CA 92780

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

LICENSED ARCHITECT
BRUCE OU
C-34832
REN. 10/31/25
STATE OF CALIFORNIA

Tustin Unified School District

E0.00 - ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES

0" 1"

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 WEATHERPROOF, "K" INDICATES KEY POERATED, "MO" INDICATES SPOT MOMENTARY CONTACT, "2" INDICATES DPDT, "3" INDICATES 3-WAY, "4" INDICATES 4-WAY, "M" INDICATES MANUAL MOTOR STARTER, CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

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

PC PHOTOELECTRIC CONTROL

$OC 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

LC1-X CIRCUIT DESIGNATION NEXT TO RECEPTACLE DEVICES INDICATES BRANCH CIRCUIT NUMBER. SEE PANEL SCHEDULES FOR INFORMATION.

REMODEL:

(E) EQUIPMENT WITH "E" ADJACENT IS EXISTING TO REMAIN.

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

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

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

NO TAG INDICATES NEW EQUIPMENT.

(E) PNL-CKT 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 GOVERNMENTAL 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 NOTIFIED 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 ACCETANCE 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 MASONARY 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 24" 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 SHALL SUIT ACCESSIBILITY AND CONSTRUCTION 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 EEOR 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

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
MINNEAPOLIS,
MN 3M TEST REPORT NO. 1167
DATED AUGUST 21, 1987

FLAMESAFE FSP 1077 FIRESTOP PADS
INTERNATIONAL PROTECTIVE COATINGS
OAKHURST, NJ

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 (CFC), 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 35 AND CFC 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., HCAI OPM FOR2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO START OF AND DURING THE HANGING AND BRACING OF DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP☐ MD☐ PP☒ E☒ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES & DETAILS.

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

UL LISTINGS NOTE

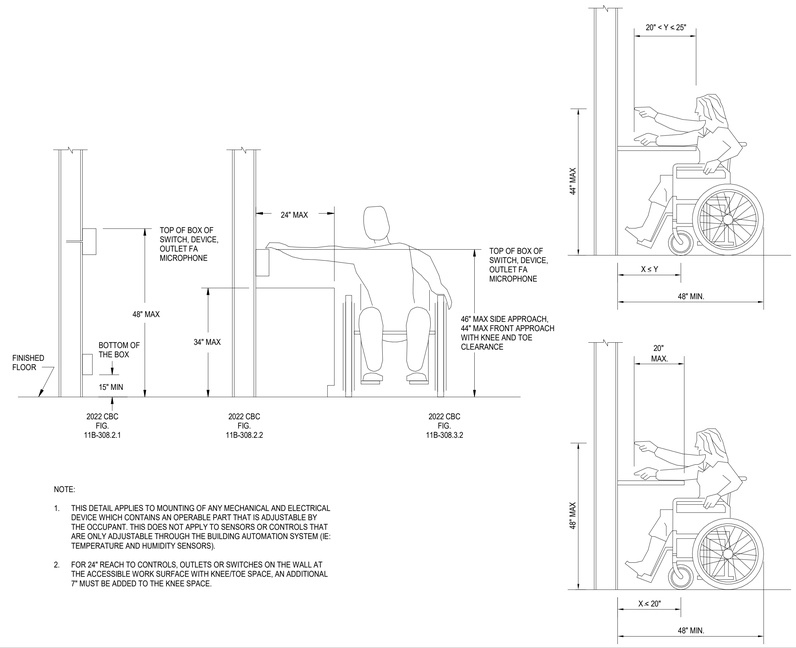
ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATIES (UL) AND BEAR THEIR LABEL OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY.

ALL EQUIPMENT/DEVICES INSTALLED RECESSED IN FIRE RATED CEILINGS 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.

Not for permitting or construction

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NORTH: TRUE

Consultant

Architect
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BRUCE OU
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REN: 10/31/25
STATE OF CALIFORNIA

CLIENT
TUSD
DATE xxxx
PROJECT NUMBER 220513

REVISIONS

No.	Description	Date

This document is for plan review only

ELECTRICAL SYMBOLS, LEGENDS & GENERAL NOTES

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ELECTRICAL SPECIFICATIONS

DIVISION 26

PART 1 GENERAL ELECTRICAL SPECIFICATIONS

1.0 WORK INCLUDED:

A. THIS SPECIFICATION SHALL APPLY TO ALL PHASES OF WORK HEREIN AFTER SPECIFIED, SHOWN ON DRAWINGS, OR AS REQUIRED TO PROVIDE A COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS FOR THIS PROJECT. WORK REQUIRED UNDER THIS SPECIFICATION, IS NOT LIMITED TO JUST THE ELECTRICAL DRAWINGS - REFER TO ARCHITECTURAL, STRUCTURAL, LANDSCAPE, AND MECHANICAL/PLUMBING DRAWINGS, AS WELL AS ALL OTHER DRAWINGS APPLICABLE TO THIS PROJECT, WHICH DESIGNATE THE SCOPE OF WORK TO BE ACCOMPLISHED. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE AND OPERABLE ELECTRICAL SYSTEM THAT INCLUDES ALL DOCUMENTS THAT ARE A PART OF THE CONTRACT.

1. WORK INCLUDED. FURNISH LABOR, MATERIAL, SERVICES AND SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION, CONNECTIONS, TESTING, AND ADJUSTMENT OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SPECIFIED HEREIN, OR SHOWN 0R NOTED ON DRAWINGS, AND ITS DELIVERY TO THE OWNER COMPLETE IN ALL RESPECTS READY FOR USE

2. THE ELECTRICAL WORK INCLUDES INSTALLATION OR CONNECTION OF CERTAIN MATERIALS AND EQUIPMENT FURNISHED BY OTHERS. VERIFY INSTALLATION DETAILS, INSTALLATION AND ROUGH- IN LOCATIONS FROM THE ACTUAL EQUIPMENT OR FROM THE EQUIPMENT SHOP DRAWINGS.

B. ELECTRICAL DRAWINGS. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, AND ARE INTENDED TO CONVEY THE SCOPE OF WORK, INDICATING INTENDED GENERAL ARRANGEMENT OF EQUIPMENT, CONDUIT AND OUTLETS. FOLLOW DRAWINGS IN LAYING OUT WORK AND VERIFY SPACES FOR INSTALLATION OF MATERIALS AND EQUIPMENT BASED ON ACTUAL DIMENSIONS OF EQUIPMENT FURNISHED.

1.1 QUALITY ASSURANCE

A. DESIGN, MANUFACTURE, TESTING AND METHOD OF INSTALLATION OF ALL APPARATUS AND MATERIALS FURNISHED UNDER REQUIREMENTS OF THESE SPECIFICATIONS SHALL CONFORM TO LATEST PUBLICATIONS OR STANDARD RULES OF THE FOLLOWING.

- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS - IEEE
- NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION - NEMA
- UNDERWRITERS' LABORATORIES, INC. - UL
- NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
- FEDERAL SPECIFICATIONS - FED. SPEC.
- AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
- AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
- NATIONAL ELECTRICAL CODE - NEC
- NATIONAL ELECTRICAL SAFETY CODE - NESC
- INSULATED CABLE ENGINEER S ASSOCIATION - ICEA
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION - AISC
- STATE AND MUNICIPAL CODES IN FORCE IN THE SPECIFIC PROJECT AREA
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
- ELECTRONICS INDUSTRIES ASSOCIATION /TELECOMMUNICATIONS INDUSTRY ASSOCIATION (EIA/TIA)
- CALIFORNIA ELECTRICAL CODE
- LOCAL AUTHORITY HAVING JURISDICTION PUBLISHED ELECTRICAL STANDARDS

B. PERFORM WORK IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE, APPLICABLE BUILDING ORDINANCES, AND OTHER APPLICABLE CODES, HEREINAFTER REFERRED TO AS THE "CODE". THE CONTRACTOR SHALL COMPLY WITH THE CODE INCLUDING LOCAL AMENDMENTS AND INTERPRETATIONS WITHOUT ADDED COST TO THE OWNER. WHERE CONTRACT DOCUMENTS EXCEED MINIMUM REQUIREMENTS, THE CONTRACT DOCUMENTS TAKE PRECEDENCE. WHERE CONFLICTS OCCUR, THE MOST STRINGENT SHALL APPLY AND SHALL BE PART OF THE BASE BID.

1. COMPLY WITH ALL REQUIREMENTS FOR PERMITS, LICENSES, FEES AND ALL CODES. THE CONTRACTOR, AT CONTRACTOR'S EXPENSE, SHALL OBTAIN ALL PERMITS, LICENSES, FEES, SPECIAL SERVICE COSTS, INSPECTIONS AND ARRANGEMENTS REQUIRED FOR WORK UNDER THIS CONTRACT, UNLESS OTHERWISE SPECIFIED.

2. COMPLY WITH REQUIREMENTS OF THE APPLICABLE UTILITY COMPANIES SERVING THIS PROJECT. MAKE ALL ARRANGEMENTS WITH UTILITY COMPANIES FOR PROPER COORDINATION OF WORK.

1.2 GENERAL REQUIREMENTS

A. GUARANTEE: FURNISH A WRITTEN GUARANTEE FOR A PERIOD OF ONE-YEAR FROM DATE OF ACCEPTANCE.

B. WHEREVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, DEVICES, CIRCUIT BREAKERS, ETC., (ALL MATERIALS), ARISES ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITION NOTED ON DRAWINGS AND/OR IN SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE OWNER AND ENGINEER.

C. ALL CORE CUTTING, DRILLING, AND PATCHING:

1. FOR THE INSTALLATION OF WORK UNDER THIS SECTION, THE AFOREMENTIONED SHALL BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATIONS AND THE CONCRETE SECTION OF THE SPECIFICATIONS.
2. NO HOLES WILL BE ALLOWED IN ANY STRUCTURAL MEMBERS WITHOUT THE WRITTEN APPROVAL OF THE PROJECT'S STRUCTURAL ENGINEER.
3. FOR PENETRATIONS OF CONCRETE SLABS OR CONCRETE FOOTINGS, THE WORK SHALL BE AS DIRECTED IN THE CONCRETE SECTION OF SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING SURFACES WHERE HE IS REQUIRED TO PENETRATE FOR WORK UNDER THIS CONTRACT.
5. PENETRATIONS SHALL BE SEALED TO THE RATED INTEGRITY OF THE SURFACE REQUIRED TO BE PATCHED AND REPAIRED. THE PATCHED SURFACE SHALL BE PAINTED OR FINISHED TO MATCH THE EXISTING SURFACE.

D. VERIFYING DRAWINGS AND JOB CONDITIONS:

1. THIS CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS IN A MANNER TO BE FULLY COGNIZANT OF ALL WORK REQUIRED UNDER THIS SECTION.
2. THIS CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS. WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS, ADJUSTMENT(S) SHALL BE MADE AND ALLOWANCES INCLUDED FOR ALL NECESSARY EQUIPMENT TO COMPLETE ALL PARTS OF THE DRAWINGS AND SPECIFICATIONS.

1.3 WORK IN COOPERATION WITH OTHER TRADES

A. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND DETERMINE THE WORK TO BE PERFORMED BY THE ELECTRICAL, MECHANICAL AND OTHER TRADES. PROVIDE THE TYPE AND AMOUNT OF ELECTRICAL MATERIALS AND EQUIPMENT NECESSARY TO PLACE THIS WORK IN PROPER OPERATION, COMPLETELY WIRED, TESTED AND READY FOR USE. THIS SHALL INCLUDE ALL CONDUIT, WIRE, DISCONNECTS, RELAYS, AND OTHER DEVICES FOR THE REQUIRED OPERATION SEQUENCE OF ALL ELECTRICAL, MECHANICAL AND OTHER SYSTEMS OR EQUIPMENT.

B. PROVIDE CONDUIT ONLY FOR LOW VOLTAGE WIRING REQUIRED FOR CONTROL OF MECHANICAL AND PLUMBING EQUIPMENT DESCRIBED IN THIS OR OTHER PARTS OF THE CONTRACT DOCUMENTS. INSTALL ALL CONTROL HOUSINGS AND BACK BOXES REQUIRED FOR INSTALLING CONDUIT AND WIRE TO THE CONTROLS.

C. INSTALL SEPARATE CONDUITS BETWEEN EACH HEATING, VENTILATING AND AIR CONDITIONING SENSING DEVICE AND ITS CONTROL PANEL AND/OR CONTROL MOTOR. BEFORE INSTALLING ANY CONDUIT FOR HEATING, VENTILATING AND AIR CONDITIONING CONTROL WIRING, VERIFY THE EXACT REQUIREMENTS FROM THE CONTROL DIAGRAMS PROVIDED WITH THE EQUIPMENT MANUFACTURER'S SHOP DRAWINGS.

1.4 TESTING AND ADJUSTMENT

A. UPON COMPLETION OF ALL ELECTRICAL WORK, THIS CONTRACTOR SHALL TEST ALL CIRCUITS, SWITCHES, LIGHT FIXTURES, LIGHTING CONTROL / DIMMING SYSTEMS INCLUDING DISTRIBUTED SYSTEMS, UPSS, GENERATORS, TVSSS, LIGHTING INVERTERS, TRANSFER SWITCHES, MOTORS, CIRCUIT BREAKERS, MOTOR STARTER(5) AND THEIR AUXILIARY CIRCUITS AND ANY OTHER ELECTRICAL ITEMS TO ENSURE PERFECT OPERATION OF ALL ELECTRICAL EQUIPMENT.

B. EQUIPMENT AND PARTS IN NEED OF CORRECTION, AND DISCOVERED DURING SUCH TESTING, SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH ALL NEW EQUIPMENT AND THAT PART OF THE SYSTEM SHALL THEN BE RETESTED. ALL SUCH REPLACEMENT OR REPAIR SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

C. ALL CIRCUIT(S) SHALL BE TESTED FOR CONTINUITY AND CIRCUIT INTEGRITY. ADJUSTMENTS SHALL BE MADE FOR CIRCUITS NOT COMPLYING WITH TESTING CRITERIA.

D. ALL TEST REPORTS, INCLUDING COPIES OF ANY REQUIRED ENERGY CODE ACCEPTANCE FORMS (E.G. CA TITLE 24 ACCEPTANCE FOR CODE COMPLIANCE FORMS) SHOULD BE SUBMITTEO TO THE ENGINEER AT COMPLETION OF PROJECT.

1.5 IDENTIFICATION

A. NAMEPLATES SHALL BE PROVIDED FOR UNIT SUBSTATIONS, SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, DISTRIBUTION PANELS, PANEL BOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, TRANSFER SWITCHES, CONTACTORS, STARTERS, DISCONNECT SWITCHES, ENCLOSED CIRCUIT BREAKERS/SWITCHES, INVERTERS, UPSS, PDUS, ROCS, LIGHTING CONTROL PANELS, DIMMING PANELS, DOOR RELEASING SYSTEM PANELS, FIRE ALARM/CENTRAL MONITORING TERMINAL CABINETS/POWER SUPPLIES/CONTROL PANELS, AND ALL LOW VOLTAGE SYSTEM TERMINAL A CONTROL CABINETS. NAMEPLATE INSCRIPTIONS SHALL BE IDENTICAL TO THE EQUIPMENT DESIGNATIONS INDICATED IN PLANS AND SPECIFICATIONS. ALL CIRCUIT BREAKERS/FUSES IN SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, DISTRIBUTION PANELS, UPS OUTPUT CIRCUIT BREAKERS, PDU OUTPUT CIRCUIT BREAKERS AND MOTOR CONTROL CENTERS SHALL HAVE INDIVIDUAL NAMEPLATES LOCATED IMMEDIATELY ADJACENT TO THE RESPECTIVE DEVICE. NAMEPLATE INSCRIPTION SHALL IDENTIFY THE DOWNSTREAM EQUIPMENT OR DEVICE SERVED BY THE CIRCUIT BREAKER OR FUSE.

B. IDENTIFICATION NAMEPLATES, U.N.O, SHALL BE LAMINATED 1/8" THICK MICARTA WITH BEVELED EDGES AND ENGRAVED WHITE LETTERS 3/8" HIGH, MINIMUM, ON 1-1/2" HIGH BLACK BACKGROUND FOR SINGLE LINE OF TEXT. WHERE TY/O LINES OF TEXT ARE REQUIRED, PROVIDE MIN. 2" HIGH NAMEPLATE. WHERE THREE LINES OF TEXT ARE REQUIRED, PROVIDE MIN. 2.5" HIGH NAMEPLATE. LABELS SHALL BE BLACK FOR NORMAL POWER SYSTEMS AND RED FOR SYSTEMS CONNECTED TO EMERGENCY POWER.

C. IDENTIFICATION NAMEPLATES FOR SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, DISTRIBUTION PANELS, PANEL BOARDS A MOTOR CONTROL CENTERS SHALL BE ATTACHED WITH SWITCHGEAR MANUFACTURER-PROVIDED SCREWS VIA SWITCHGEAR MANUFACTURER FACTORY PRE-DRILLED HOLES. A FACTORY OPTION TO RIVET IDENTIFICATION NAMEPLATES TO THE EQUIPMENT IS ONLY ACCEPTABLE IF SCREW-FASTENED NAMEPLATES ARE NOT AN AVAILABLE OPTION FROM THE SWITCHGEAR MANUFACTURER. FIELD DRILLING OR OTHER MECHANICAL ATTACHMENT METHODS THAT CHANGE/VOID THE NEMA OR NRTL RATING OF THE ENCLOSURE ARE STRICTLY FORBIDDEN.

1.6 FINAL INSPECTION AND ACCEPTANCE

A. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS HAVE BEEN FULLY COMPLETED, REPRESENTATIVES OF THE OWNER WILL INSPECT THE WORK. CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF EACH REPRESENTATIVE.

B. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE OWNER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

1.7 RECORD DRAWINGS.

A. DRAWINGS OF RECORD: THE CONTRACTOR SHALL PROVIDE AND KEEP UP-TO - DATE, A COMPLETE RECORD SET OF DRAWINGS. THESE SHALL BE CORRECTED DAILY AND SHOW EVERY CHANCE FROM THE ORIGINAL DRAWINGS. THIS SET OF PRINTS SHALL BE KEPT ON THE JOB SITE AND SHALL BE USED ONLY AS A RECORD SET. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTOR TO MAKE CHANGES IN THE LAYOUT WITHOUT DEFINITE INSTRUCTION IN EACH CASE. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE GENERAL CONTRACTOR AND ALL CHANGES AS NOTED ON THE RECORD SET OF PRINTS SHALL BE INCORPORATED THEREON WITH BLACK INK IN A NEAT, LEGIBLE, UNDERSTANDABLE AND PROFESSIONAL MANNER. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR COMPLETE REQUIREMENTS. AT COMPLETION OF PROJECT, THE CONTRACTOR SHALL TRANSFER ALL FIELD AS-BUILT INFORMATION TO AUTOCAD ELECTRONIC DRAWINGS IN DWG FORMAT OR EQUAL.

1.8 SHOP DRAWINGS/SUBMITTALS

A. SHOP DRAWINGS/SUBMITTALS SHALL BE SUBMITTED IN SIX (6) BOUND SETS ACCOMPANIED BY LETTER OF TRANSMITTAL, WHICH SHALL GIVE A LIST OF THE NUMBER AND DATES OF THE DRAWINGS SUBMITTED. DRAWINGS SHALL BE COMPLETE IN EVERY RESPECT AND BOUND IN SETS.

B. THE SHOP DRAWINGS/SUBMITTALS SUBMITTED SHALL BE MARKED WITH THE NAME OF THE PROJECT, NUMBERED CONSECUTIVELY AND BEAR THE APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE CONTRACTOR HAS CHECKED THE DRAWINGS. ANY DRAWINGS SUBMITTED WITHOUT THIS APPROVAL WILL BE RETURNED TO THE CONTRACTOR FOR RESUBMISSION.

C. IF THE SHOP DRAWINGS SHOW VARIATIONS FROM THE REQUIREMENTS OF THE CONTRACT BECAUSE OF STANDARD SHOP PRACTICE OR OTHER REASONS, THE CONTRACTOR SHALL MAKE SPECIFIC MENTION OF SUCH VARIATIONS IN THE CONTRACTOR'S LETTER OF TRANSMITTAL. IF THE SUBSTITUTION IS ACCEPTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER ADJUSTMENT THAT MAY BE CAUSED BY THE SUBSTITUTION. SAMPLES SHALL BE SUBMITTED WHEN REQUESTED.

D. ONLY PRODUCTS LISTED AS "EQUAL" WITHIN THE CONTRACT DOCUMENTS, ALONG WITH FORMALLY APPROVED "SUBSTITUTIONS" WILL BE REVIEWED. PRODUCTS NOT CONFORMING TO THESE ITEMS WILL NOT BE REVIEWED AND WILL BE RETURNED TO THE CONTRACTOR FOR RE-SUBMITTAL.

E. SHOP DRAWINGS SHALL BE SUBMITTED ON THE FOLLOWING BUT NOT LIMITED TO:

- SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.
- TRANSFORMERS
- FIRE ALARM SYSTEM/CENTRAL MONITORING SYSTEM
- WIRING DEVICES.
- PULLBOXES AND UNDERGROUND VAULTS
- TERMINAL CABINETS
- POWER POLES AND FLOOR BOXES
- ARC FLASH, SHORT-CIRCUIT A COORDINATION STUDIES
- ALL OTHER PRODUCTS CALLED OUT ON DRAWINGS THAT CALL FOR SHOP DRAWING SUBMITTAL.

1.9 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

A. PRIOR TO FINAL ACCEPTANCE OF THE JOB, THE ELECTRICAL CONTRACTOR SHALL FURNISH TO THE OWNER AT LEAST FOUR (4) COPIES OF OPERATING AND MAINTENANCE AND SERVICING INSTRUCTIONS, AS WELL AS FOUR (4) COMPLETE WIRING DIAGRAMS FOR THE FOLLOWING ITEMS OR EQUIPMENT:

- FIRE ALARM SYSTEM
- TRANSFORMERS
- SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, AND BUS DUCTS; COMPLETE WITH OVERCURRENT DEVICE INFORMATION.

B. ALL WIRING OIAGRAMS SHALL SPECIFICALLY COVER THE SYSTEM SUPPLIED. TYPICAL DRAWINGS WILL NOT BE ACCEPTED. FOUR (4) COPIES SHALL BE PRESENTED TO THE OWNER.

1.10 INTERRUPTION OF SERVICES/SERVICE SHUTDOWN

A. ANY INTERRUPTION OF ELECTRICAL SERVICES, ELECTRICAL CIRCUITS, ELECTRICAL FEEDERS, SIGNAL SYSTEMS, COMMUNICATION SYSTEMS, FIRE ALARM SYSTEMS, ETC. REQUIRED TO PERFORM WORK SHALL MEET THE SPECIFIC PRIOR-APPROVAL REQUIREMENTS OF THE OWNER. SUCH WORK SHALL BE SCHEDULED WITH THE OWNER TO BE PERFORMED AT THE OWNER'S CONVENIENCE.

B. INTERRUPTIONS/OUTAGES OF ANY OF THE OWNER'S SYSTEMS AND SERVICES MENTIONED ABOVE SHALL BE SCHEDULED TO OCCUR DURING OTHER THAN THE OWNER'S NORMAL BUSINESS HOURS. ANY OVERTIME COSTS SHALL BE BORNE BY THE CONTRACTOR.

C. SEE ORAWINGS FOR ANY ADDITIONAL REQUIREMENTS REGARDING OUTAGES, INTERRUPTION AND ANY TEMPORARY SERVICES REQUIRED.

PART 2 PRODUCTS

2.1 MATERIALS

A. MATERIALS AND EQUIPMENT: ALL ELECTRICAL MATERIALS AND EQUIPMENT, INCLUDING CUSTOM -MADE EQUIPMENT, SHALL be NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL OR BE LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LAB (NRTL) THAT IS ALSO RECOGNIZED BY THE LOCAL AUTHORITY-HAVING-JURISDICTION (AHJ).

B. CONDUIT:

1. GALVANIZED RIGID CONDUIT (GRC) SHALL BE FULL WEIGHT THREADED TYPE STEEL. STEEL CONDUIT SHALL BE PROTECTED BY OVERALL ZINC COATING TO INSIDE AND OUTSIDE SURFACES, APPLIED BY THE HOT DIP, METALLIZING, OR SHERARDIZING PROCESS.
2. INTERMEDIATE METAL CONDUIT (IMC), SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH UL 1242 AND MEETING FEDERAL SPECIFICATION WWC -581 (LATEST REVISION).
3. ELECTRICAL METALLIC TUBING (EMT) SHALL BE ZINC-COATED STEEL WITH BAKED ENAMEL OR PLASTIC FINISH ON INSIDE SURFACES EXCEPT AS NOTED BELOW. EMT SHALL BE DIPPED IN A CHROMIC ACID BATH TO CHEMICALLY FORM A CORROSION-RESISTANT PROTECTIVE COATING OF ZINC CHROMATE OVER GALVANIZED SURFACE.
4. FLEXIBLE METAL CONDUIT SHALL BE CONSTRUCTED OF HOT- DIPPED GALVANIZED STEEL STRIPS WOUND SPIRALLY WITH INTERLOCKING EDGES TO PROVIOE GREATEST FLEXIBILITY WITH MAXIMUM STRENGTH. INTERIOR SURFACES SHALL BE SMOOTH AND OFFER MINIMUM DRAG TO PULLING IN CONDUCTORS. USED ONLY AS DIRECTED IN WRITING BY THE ENGINEER WITH THE EXCEPTION OF 400 HZ FEEDERS AND 400 HZ BRANCH CIRCUITS WHICH SHALL BE RUN IN FLEXIBLE ALUMINUM CONDUIT.
5. LIQUID-TIGHT CONDUIT (SEAL-TITE) SHALL BE GALVANIZED STEEL FLEXIBLE CONDUIT AS ABOVE EXCEPT WITH MOISTURE AND OIL- PROOF JACKET, PRE-CUT LENGTHS AND FACTORY-INSTALLED FITTINGS. FOR OUTDOOR INSTALLATIONS AND MOTOR CONNECTIONS ONLY UNLESS OTHERWISE NOTED ON DRAWINGS.
6. FACTORY ASSEMBLED, OR OFF-SITE ASSEMBLED WIRING SYSTEMS (SUCH AS METAL CLAD (MC) CABLE, TYPE AC CABLE, TYPE NM CABLE, TYPE BX CABLE, ETC) SHALL NOT BE USED.
7. MINIMUM SIZE CONDUIT ABOVE GRADE SHALL BE 3/4" MINIMUM AND 1 " MINIMUM FOR BELOW GRADE.
8. NONMETALLIC FLEXIBLE TUBING (ENT) SHALL NOT BE USED.
9. NON-METALLIC CONDUIT:
   a. POLYVINYL CHLORIDE (PVC) RIGID CONDUIT, SCHEDULE 40, TYPE II FOR UNDERGROUND INSTALLATION ONLY WITH SOLVENT WELDED JOINTS, CONFORMING TO UNOERWRITERS LABORATORIES, INC. (U.L.) REQUIREMENTS,
   LISTED FOR EXPOSED AND DIRECT BURIAL APPLICATION.
   b. CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.

C. FITTINGS:

1. CONDULET TYPE FITTINGS SHALL BE SMOOTH INSIDE AND OUT, TAPER THREADED WITH INTEGRAL INSULATING BUSHING AND OF THE SHAPES, SIZES AND TYPES REQUIRED TO FACILITATE INSTALLATION OR REMOVAL OF WIRES AND CABLES FROM THE CONDUIT AND TUBING SYSTEM. THESE FITTINGS SHALL BE OF METAL, SMOOTH INSIDE AND OUT, THOROUGHLY GALVANIZED, AND SHERARDIZED CADMIUM PLATED.
2. METALLIC CONDULET COVERS SHALL HAVE THE SAME FINISH AS THE FITTING AND SHALL BE PROVIDED FOR THE OPENING OF EACH FITTING WHERE CONDUCTORS DO NOT PASS THROUGH THE COVER.
3. CONNECTOR, COUPLING, LOCKNUT, BUSHINGS AND CAPS USED WITH RIGID CONDUIT SHALL BE STEEL, THREADED AND THOROUGHLY GALVANIZED. BUSHINGS SHALL BE INSULATED.
4. U.N.O. ALL INTERIOR EMT FITTINGS, CONNECTORS AND COUPLINGS INSTALLED IN CONCEALED LOCATIONS, AREAS NOT CONSIDERED TO BE WET OR DAMP LOCATIONS BY THE AHJ, OR AREAS NOT SUBJECT TO PHYSICAL DAMAGE, SHALL BE STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION, STEEL LOCKING RING TYPE WITH INSULATED THROAT.
5. ALL INTERIOR AND EXTERIOR EMT FITTINGS, CONNECTORS AND COUPLINGS, SHALL BE RAINTITE-LISTED, STEEL, ZINC OR CADMIUM PLATED, THREADLESS, COMPRESSION, STEEL LOCKING RING TYPE WITH INSULATED THROAT IF RAINTITE -LISTED, EMT FITTINGS, CONNECTORS AND COUPLINGS ARE UNAVAILABLE FOR A GIVEN TRADE SIZE OR IF CONDUIT IS INSTALLED IN AN AREA SUBJECT TO DAMAGE - PROVIDE RIGID METALLIC OR INTERMEDIATE METALLIC CONDUITS, FITTINGS, CONNECTORS AND COUPLINGS AS REQUIRED.
6. FLEXIBLE STEEL CONDUIT CONNECTORS SHALL BE A MALLEABLE IRON CLAMP OR SQUEEZE TYPE OR STEEL TVYIST- IN TYPE WITH INSULATED THROAT. THE FINISH SHALL BE ZINC OR CADMIUM PLATING.
7. CONDUIT UNIONS SHALL BE "ERICKSON" COUPLINGS, OR APPROVED EQUAL. THE USE OF RUNNING THREADS WILL NOT BE PERMITTED.

D. 600 VOLT CONDUCTORS - WIRE AND CABLE:

1. ALL CONDUCTORS SHALL BE COPPER. PROVIDE STRANDED CONDUCTOR FOR #10 AWG AND LARGER OR WHEN MAKING FLEXIBLE CONNECTIONS TO VIBRATING MACHINERY. USE COMPRESSION "FORK" TYPE CONNECTORS OR TRANSITION TO SOLID CONDUCTORS WHEN CONNECTING TO SWITCHES, RECEPTACLES, ETC.
2. TYPE THHN/THWN- 2 THERMOPLASTIC, 600 VOLT, UL APPROVED, DRY AND WET LOCATIONS RATED AT 90 DEGREES CELSIUS, FOR CONDUCTORS OF ALL SIZES FROM }12 AWG UP TO AND INCLUDING 1000 KCMIL. RHH/RHW INSULATION IS ALLOWED ONLY TO PROVIDE AN ELECTRICAL CIRCUIT PROTECTIVE SYSTEM TO COMPLY WITH CEC, ARTICLES 695 AND 700.
3. WIRE AND CABLE SHALL BE NEW, MANUFACTURED NOT MORE THAN SIX (6) MONTHS PRIOR TO INSTALLATION, SHALL HAVE SIZE, TYPE OF INSULATION, VOLTAGE RATING AND MANUFACTURER'S NAME PERMANENTLY MARKED ON OUTER COVERING AT REGULAR INTERVALS.
4. WIRE AND CABLE SHALL BE FACTORY COLOR-CODED BY INTEGRAL PIGMENTATION WITH A SEPARATE COLOR FOR EACH PHASE AND NEUTRAL. EACH SYSTEM SHALL BE COLOR-CODED AND IT SHALL BE MAINTAINED THROUGHOUT.
5. SYSTEMS CONDUCTOR COLOR CODING:
   a. POWER 20B/ 120V, 3PH, 4W:
      1) PHASE A = BLACK
      2) PHASE B = RED
      3) PHASE C = BLUE
      4) NEUTRAL = WHITE
      5) SWITCHLEGS = PURPLE (SWITCHLEGS SHALL ALSO BE IDENTIFIED SEPARATELY BY NUMERICAL TAGS)
      6) TRAVELERS = PURPLE WITH BLACK STRIPE.
   b. POWER 480/277V, 3PH, 4W:
      1) PHASE A = BROWN
      2) (2) PHASE B = ORANGE
      3) (3) PHASE C = YELLOW
      4) NEUTRAL = GRAY
      5) SWITCHLEGS = PURPLE (SWITCHLEGS SHALL ALSO BE IDENTIFIED SEPARATELY BY NUMERICAL TAGS)
      6) TRAVELERS = PURPLE WITH BLACK STRIPE.
   c. GROUND CONDUCTORS: GREEN
   d. ISOLATED GROUND CONDUCTORS: GREEN WITH CONTINUOUS YELLOW STRIPE.
   e. FIRE ALARM SYSTEM: AS RECOMMENDED BY THE MANUFACTURER.
6. ALL COLOR - COOING FOR #12 THRU #6 AWG CONDUCTOR SHALL BE AS IDENTIFIED ABOVE. CONDUCTORS #4 AWG AND LARGER SHALL BE IDENTIFIED WITH UTILIZING PHASE TAPE AT EACH TERMINATION.
7. NO CONDUCTORS CARRYING 120 VOLT OR MORE SHALL BE SMALLER THAN #12 AWG.
8. ALUMINUM CONDUCTORS SHALL NOT BE USED.
9. WIRE-PULLING COMPOUNDS USED AS LUBRICANTS IN INSTALLING CONDUCTORS IN RACE\DAYS SHALL ONLY BE "POLY\WATER J". NO OIL, GREASE, GRAPHITE, OR SIMILAR SUBSTANCES MAY BE USED. PULLING OF#1/0 OR LARGER CONDUCTORS SHALL BE DONE WITH AN APPROVED CABLE PULL MACHINE. OTHER METHODS; E.G. USING VEHICLES, AND BLOCK AND TACKLE TO INSTALL CONDUCTORS ARE NOT ACCEPTABLE.

E. JUNCTION AND PULLBOXES:

1. FOR INTERIOR DRY LOCATIONS, BOXES SHALL BE GALVANIZED ONE-PIECE DRAWN STEEL, KNOCKOUT TYPE, WITH REMOVABLE, MACHINE SCREW SECURED COVERS.
2. FOR OUTSIDE, DAMP OR SURFACE LOCATIONS, BOXES SHALL BE HEAVY CAST ALUMINUM OR CAST IRON WITH REMOVABLE, GASKETED, NON-FERROUS MACHINE SCREW SECURED COVERS.
3. FOR IN-GRADE APPLICATIONS, JUNCTION AND PULL BOXES SHALL BE PRE-CAST CONCRETE MANUFACTURED BY BROOKS-JENSEN, OR UTILITY VAULT CO
4. ALL BOXES SHALL BE SIZED FOR THE NUMBER AND SIZES OF CONDUCTORS AND CONDUITS ENTERING THE BOX AND EQUIPPED WITH PLASTER RINGS WHERE REQUIRED.
5. ALL BOXES LOCATED IN TRAFFIC AREAS SHALL BE TRAFFIC RATED.

F. TRENCHING AND BACKFILLING: CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCHING AND BACKFILLING.

PART 3 EXECUTION

3.1 PREPARATION AND INSTALLATION

A. INSTALLATION OF CONDUIT AND OUTLET BOXES:

1. ALL CONDUIT INSTALLED IN THE DRY WALLS OR CEILINGS OF A BUILDING SHALL BE STEEL TUBE (EMT), ALUMINUM TUBE (EMT), OR INTERMEDIATE METAL CONDUIT (IMC). FLEXIBLE CONDUIT SHALL NOT BE USED IN LIEU OF EMT, IMC OR RIGID CONDUIT EXCEPT AS NOTED HEREIN.
2. GALVANIZED RIGID CONDUIT (GRC) OR INTERMEDIATE METAL CONDUIT (IMC) SHALL BE USED AS FOLLOWS:
   - WHEN NOTED ON THE DRAWINGS
   - WHEN CONSIDERED EXPOSED TO DAMAGE BY THE LOCAL AHJ
   - WHEN INSTALLED IN WET OR DAMP LOCATIONS AND OF A TRADE SIZE
   - WHERE LISTED -RAINTITE FITTINGS, CONNECTORS, COUPLINGS ETC ARE
   - UNAVAILABLE
   - WHEN REQUIRED BY CEC ARTICLE 517.13
   - WHEN INSTALLED IN CONCRETE AND MASONRY. THE USE OF ENT IN CMU WALLS AND PARKING STRUCTURES MAY BE ALLOWED ONLY AS DIRECTED IN WRITING BY THE ENGINEER. REQUEST FOR ENT SUBSTITUTION MUST BE MADE PRIOR TO BID AND IN ACCORDANCE WITH PRE-BID SUBSTITUTION REQUEST REQUIREMENTS OF THESE SPECIFICATIONS.
3. INTERMEDIATE METAL CONDUIT (IMC), IS APPROVED FOR USE IN ALL LOCATIONS AS APPROVED FOR GRC OR EMT ANO IN ACCORDANCE WITH NEC, OR CEC WHERE ADOPTED, ARTICLE 342.
4. FLEXIBLE STEEL CONDUIT SHALL ONLY BE PERMITTED TO BE USED AT LIGHT FIXTURE OUTLETS AND CONNECTIONS TO VIBRATING ELECTRICAL EQUIPMENT. ALL FLEXIBLE STEEL CONDUIT RUNS SHALL BE LESS THAN 6'-0". ALL OUTDOOR INSTALLATION SHALL BE MADE USING LIQUID-TIGHT FLEX WITH APPROVED FITTINGS. INCLUDE A SEPARATE INSULATED GREEN GROUND CONDUCTOR SIZED PER CEC IN EACH CONDUIT. OTHER USES OF FLEXIBLE CONDUIT SHALL BE ALLOWED ONLY AS APPROVED IN WRITING BY THE ENGINEER.
5. FLEXIBLE LIQUIDTIGHT CONDUIT SHALL BE INSTALLED IN LIEU OF THE FLEXIBLE STEEL; WHERE REQUIRED BY CEC, IN DAMP AND WET LOCATION, WHERE EXPOSED TO WEATHER, IN REFRIGERATED AREA (65 DEG. F OR LESS), AND/OR BETWEEN SEISMIC JOINTS. ALL ROTATING ELECTRICAL EQUIPMENT SHALL BE SUPPLIED WITH FLEXIBLE, LIQUID-TIGHT CONDUIT WITH APPROPRIATE SLACK AND SHALL NOT EXCEED THIRTY-SIX (36) INCHES. INCLUDE A SEPARATE INSULATED GREEN GROUND CONDUCTOR SIZED PER CEC IN EACH CONDUIT. OTHER USES OF LIQUIDTIGHT FLEXIBLE CONDUIT SHALL BE ALLOWED AS APPROVED IN WRITING BY THE ENGINEER ON A CASE BY CASE BASIS.
6. RIGID METALLIC CONDUIT INSTALLED UNDERGROUND OR EMBEDDED IN CONCRETE SHALL BE 1" TRADE SIZE MINIMUM AND SHALL BE WRAPPED WITH 20 MIL POLYVINYL CHLORIDE PLASTIC TAPE. PVC CONDUIT INSTALLED CASE BASIS.
   UNDERGROUND OR EMBEDDED IN CONCRETE SHALL BE 1" MINIMUM TRADE SIZE.
7. WHERE REQUIRED FOR PROVIDING AN ELECTRICAL CIRCUIT PROTECTIVE SYSTEM TO COMPLY WITH CEC, ARTICLES 695 AND 700, UTILIZE UL LISTED 2-HOUR FIRE-RATED RHH/RHW CONDUCTORS IN CONDUIT.
8. CONDUIT SHALL BE RUN SO AS NOT TO INTERFERE WITH OTHER PIPING, FIXTURES OR EQUIPMENT.
9. THE ENDS OF ALL CONDUITS SHALL BE CUT SQUARE, CAREFULLY REAMED OUT TO FULL SIZE AND SHALL BE SHOULDERED IN FITTING.
10. NO RUNNING THREADS WILL BE PERMITTED IN LOCATIONS EXPOSED TO THE WEATHER, IN CONCRETE OR UNDERGROUND. SPECIAL UNION FITTINGS SHALL BE USED IN THESE LOCATIONS.
11. WHERE CONDUIT IS UNDERGROUND, UNDER SLABS OR GRADE, EXPOSED TO THE WEATHER, OR IN WET LOCATIONS, MAKE JOINTS LIQUID TIGHT AND GAS TIGHT.
12. ALL METAL CONDUIT IN MASONRY AND CONCRETE AND WHERE CONCEALED UNDER FLOOR SUBS SHALL HAVE JOINTS PAINTED WITH THREAD COMPOUND PRIOR TO MAKEUP.
13. PVC CONDUIT SHALL NOT BE USED ABOVE GRADE.
14. WHERE CONDUCTORS ENTER A RACEWAY OR A RACEWAY IN A CABINET, PULL BOX, JUNCTION BOX, OR AUXILIARY GUTTER, THE CONDUCTORS SHALL BE PROTECTED BY A PLASTIC BUSHING TYPE FITTING PROVIDING A SMOOTHLY ROUNDED INSULATING SURFACE
15. WHERE CONDUIT EXTENDS THROUGH ROOF TO EQUIPMENT ON ROOF AREA, THIS CONTRACTOR SHALL PROVIDE FLASHING MATERIAL COMPATIBLE WITH THE ROOFING SYSTEM AS REQUIRED BY THE ROOFING SPECIFICATIONS 0R AS REQUIRED BY THE OWNER'S ROOF WARRANTY. THIS FLASHING SHALL BE DELIVERED TO THE ROOFING CONTRACTOR FOR INSTALLATION. THE ACTUAL LOCATION OF ALL SUCH ROOF PENETRATIONS AND OUTLETS SHALL BE VERIFIED WITH ARCHITECT/OWNER. CONTRACTOR SHALL VERIFY TYPE OF FLASHING PRIOR TO BID AND INCLUDE ALL COSTS.
16. ALL CONDUIT SHALL BE SUPPORTED AT INTERVALS NOT LESS THAN 6'-0" AND WITHIN 12" FROM ANY OUTLET AND AT EACH SIDE OF BENDS AND ELBOWS. CONDUIT SUPPORTS SHALL BE GALVANIZED, HEAVY STAMPED, TWO-HOLE CONDUIT CLAMP PROPERLY SECURED. FLEXIBLE CONDUIT SUPPORTS SHALL NOT EXCEED 4'-6" ON CENTER.
17. WHERE CONDUIT RACKS ARE USED THE RACK SHALL CONSIST OF TWO PIECE CONDUIT CLAMPS ATTACHED TO GALVANIZED STEEL SLOTTED CHANNELS, PROPERLY SECURED VIA THREADED RODS ATTACHED DIRECTLY TO THE BUILDING STRUCTURE.
18. NAIL-IN CONDUIT SUPPORTS, ONE-PIECE SET SCREW TYPE CONDUIT CLAMPS OR PERFORATED IRON FOR SUPPORTING CONDUIT SHALL NOT BE USED.
19. SEISMIC CONDUIT SUPPORT:
   a. ALL CONDUIT SHALL BE SUPPORTED IN SUCH A MANNER THAT IT IS SECURELY ATTACHED TOTHE STRUCTURE OF THE BUILDING.
   ATTACHMENT IS TO BE CAPABLE OF SUPPORTING THE TRIBUTARY
   WEIGHT OF CONDUIT AND CONTENTS IN ANY DIRECTION. MAXIMUM SPACING OF SUPPORT AND BRACES ARE TO BE AS FOLLOWS:

CONDUIT SIZE	MAXIMUM SPACING
1/2" to 3"	6'-0"
3-1/2" to 4"	8'-0"

20. ALL CONDUIT RUNS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, OR INTERSECTION OF VERTICAL PLANES AND CEILINGS. FIELD MADE BENDS AND OFFSET SHALL BE AVOIDED WHERE POSSIBLE. CRUSHED OR DEFORMED RACEWAY SHALL NOT BE INSTALLED.
21. OPEN KNOCKOUTS IN OUTLET BOXES ONLY WHERE REQUIRED FOR INSERTING CONDUIT.
22. LOCATE WALL OUTLET OF THE SAME TYPE AT SAME LEVEL IN ALL ROOMS, EXCEPT WHERE OTHERWISE NOTED.
23. OUTLET BOXES ON METAL STUDS SHALL BE ATTACHED TO METAL HANGERS, TACK WELDED OR BOLTED TO STUDS; ON WOOD STUDS ATTACHMENT SHALL BE WITH WOOD SCR £MS, NAILS NOT ACCEPTABLE.
24. RECESSED BOXES SHALL NOT BE MOUNTED BACK-TO-BACK IN ANY WALL; MINIMUM OFFSET SHALL BE 24 INCHES.
25. JUNCTION BOXES THAT DO NOT CONTAIN ANY DEVICE(S) SHALL BE LOCATED IN STORAGE ROOMS, ELECTRICAL CLOSETS, OR ABOVE ACCESSIBLE CEILINGS, NOT IN HARD LID CEILINGS OR OTHER FORMS OF INACCESSIBLE CEILINGS. PLACE BOXES WHICH MUST BE EXPOSED TO PUBLIC VIEW IN A LOCATION APPROVED BY THE OWNER'S PROJECT MANAGER. PROVIDE COVERS OR PLATES TO MATCH ADJACENT SURFACES AS APPROVED BY THE OWNER'S PROJECT MANAGER.
26. SURFACE MOUNTED PULL BOXES, TERMINAL CABINETS, JUNCTION BOXES, PANEL BOARDS ETC., SHALL BE ATTACHED TO WALLS USING APPROPRIATE SCREWS, FASTENERS, BACKING PLATES, STUD BLOCKING ETC., AS DETAILED ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS. IF ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS ARE NOT PROVIDED ON THE PROJECT, CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING HARDWARE AND BACKING SUPPORT TO COMPLY WITH LOCAL BUILDING CODE REQUIREMENTS AND ANY ADDITIONAL REQUIREMENTS IMPOSED BY THE LOCAL AUTHORITY-HAVING-JURISDICTION.
27. EXCEPT WHERE BELOW GRADE, SLEEVES SHALL BE INSTALLED WHERE CONDUIT PASSES THROUGH MASONRY OR CONCRETE WALLS AND SHALL BE 24 GAUGE GALVANIZED STEEL NO MORE THAN 1/2" GREATER IN DIAMETER THAN THE OUTSIDE DIAMETER OF THE CONDUIT. WHEN LOCATED IN NON-RATED STRUCTURES, CAULK CONDUIT SLEEVE WITH STONE WOOL. WHEN LOCATED IN FIRE RATED STRUCTURES, PROVIDE U.L. LISTED FIRE STOPPING SYSTEM. SEE FIRE STOPPING SECTION OF THIS SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
28. ALL BOXES SHALL BE COVERED WITH OUTLET BOX PROTECTOR, OR SIMILAR DEVICE/METHOD TO KEEP DIRT/DEBRIS FROM ENTERING BOX, CONDUIT OR PANELS. IF DIRT/DEBRIS DOES NOT IN, IT SHALL BE REMOVED PRIOR TO PULLING WIRES.
29. ALL BOXES INSTALLED OUTDOORS SHALL BE SUITABLE FOR OUTDOOR INSTALLATIONS, GASKETED, SCREW COVER AND PAINTED AS DIRECTED BY THE ARCHITECT WITH WEATHERPROOF PAINT TO MATCH BUILDING.
30. ALL CONDUIT ENTRIES TO OUTDOOR MOUNTED PANELS, CABINETS, BOXES, ETC., SHALL BE MADE USING MYERS "SCRU-TITE" HUBS SERIES ST.
31. PROVIDE NYLON OR A 1/8-INCH O.D. POLYETHYLENE ROPE, RATED AT 250 POUNDS TENSILE STRENGTH, IN ALL CONDUITS MORE THAN 5 FEET IN LENGTH LEFT EMPTY FOR FUTURE USE. NOT LESS THAN 5 FEET OF ROPE SHALL BE LEFT AT EACH END OF THE CONDUIT. TAG ALL LINES WITH A PLASTIC TAG AT EACH END INDICATING THE TERMINATION/STUB LOCATION OF THE OPPOSITE END OF THE CONDUIT.
32. ALL MULTIPLE CONDUIT RUNS WITHIN SUSPENDED CEILINGS SHALL BE SUSPENDED FROM BUILDING STRUCTURE BY MEANS OF UNISTRUT HANGERS/RACK. CONDUIT SHALL NOT BE ALLOWED TO LAY ON CEILING OR BE SUPPORTED FROM CEILING SUSPENSION WIRES OR OTHER SUSPENSION SYSTEM. SUPPORT CONDUIT TO STRUCTURE ABOVE SUSPENDED CEILINGS 8" MINIMUM ABOVE CEILING TO ALLOW REMOVAL OF CEILING TILE. MAINTAIN TWO INCH CLEARANCE ABOVE RECESSED LIGHT FIXTURES.
33. ALL EXPOSED CONDUITS AND SUPPORT HARDWARE SHALL BE PAINTED TO MATCH THE FINISH OF THE WALL OR CEILING TO WHICH IT IS SUPPORTED.
34. WHERE CONDUITS OR WIREWAYS CROSS SEISMIC JOINTS, PROVIDE APPROVED FLEXIBLE CONDUIT CONNECTION OR APPROVED EXPANSION/DEFLECTION FITTING TO ALLOW FOR DISPLACEMENT OF CONDUIT IN ALL THREE AXES. CONNECTION SHALL ALLOW FOR MOVEMENT IN ACCORDANCE WITH DESIGN OF SEISMIC JOINT. NON-FLEXIBLE RACEWAYS CROSSING EXPANSION JOINTS OR OTHER AREAS OF POSSIBLE STRUCTURAL MOVEMENT SHALL MAKE PROVISION FOR 3-WAY MOVEMENT AT SUCH POINTS BY MEANS OF EXPANSION/DEFLECTION FITTINGS. FITTINGS SHALL BE INSTALLED IN THE CENTER OF THEIR AXES OF MOVEMENT AND SHALL NOT BE DEFLECTED TO MAKE PART OF A CONDUIT BEND, OR COMPRESSED OR EXTENDED TO COMPENSATE FOR INCORRECT CONDUIT LENGTH. INSTALL FLEXIBLE CONDUIT CONNECTION (5) OR APPROVED EXPANSION/DEFLECTION FITTING(S) COMPLETE WITH GROUND JUMPERS. WHERE NECESSARY, PROVIDE APPROVED EXPANSION JOINTS TO ALLOW FOR THERMAL EXPANSION AND CONTRACTION OF CONDUIT (5). INSTALL EXPANSION JOINTS COMPLETE WITH GROUND JUMPERS.
35. SEAL ALL CONDUITS WHERE TERMINATION IS SUBJECT TO MOISTURE OR WHERE CONDUIT PENETRATES EXTERIOR WALL, FLOOR OR ROOF, IN REFRIGERATED AREAS, CLASSIFIED (HAZARDOUS AREAS) AND AS INDICATED ON THE DRAWINGS.
36. EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS OR ELSEWHERE IN THESE SPECIFICATIONS, BENDS IN FEEDER AND BRANCH CIRCUIT CONDUIT 2 INCHES OR LARGER SHALL HAVE A RADIUS OR CURVATURE OF THE INNER EDGE, EQUAL TO NOT LESS THAN TEN (10) TIMES THE INTERNAL DIAMETER OF THE CONDUIT. EXCEPT WHERE SWEEPING VERTICALLY INTO A BUILDING WHERE SWEEP RADIUS EQUALS TEN (10) TIMES CONDUIT DIAMETER, UNDERGROUND COMMUNICATIONS AND BUILDING INTERCONNECT CONDUITS 3 INCHES OR LARGER SHALL HAVE A MINIMUM 12'-6" RADIUS OR CURVATURE OF THE INNER EDGE. FOR THE SERVING UTILITIES, RADIUS BENDS SHALL BE MADE PER THEIR RESPECTIVE SPECIFICATIONS.
37. TAG ALL EMPTY CONDUITS AT EACH ACCESSIBLE END WITH A PERMANENT TAG IDENTIFYING THE PURPOSE OF THE CONDUIT, FOOTAGE END-TO-END, AND THE LOCATION OF THE OTHER END. IN WET, CORROSIVE OUTDOOR OR UNDERGROUND LOCATIONS, USE BRASS, BRONZE, OR COPPER 16 GAUGE TAGS SECURED TO CONDUIT ENDS WITH #16 OR LARGER GALVANIZED WIRE. INSCRIBE ON THE TAGS, WITH STEEL PUNCH DIES, CLEAR AND COMPLETE IDENTIFYING INFORMATION.
38. THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL APPLY TO UNDERGROUND CONDUITS:
   a. UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC (POLYVINYL CHLORIDE) UNLESS OTHERWISE INDICATED ELSEWHERE IN THESE SPECIFICATIONS OR AS REQUIRED PER CEC, ARTICLE 517. 13.
   b. FOR ALL COMMUNICATIONS CONDUITS 2" AND LARGER AND FEEDERS 100 AMPS OR GREATER, PROVIDE WITH A MINIMUM 3" INCH, (2,000 LB) CONCRETE ENVELOPE, 2" INCH MINIMUM SEPARATION BETWEEN CONDUITS, INSTALLED AT DEPTH OF NOT LESS THAN 24" BELOW GRADE. (PROVIDE CONCRETE ENCASEMENT AND/OR GREATER MINIMUM CONDUIT DEPTH AS REQUIRED BY THE UTILITY COMPANIES.) CONDUIT SEPARATION WITHIN A DUCT BANK SHALL BE MAINTAINED USING PLASTIC SPACERS LOCATED AT 5'-0" INTERVALS. WHERE POWER AND COMMUNICATION CONDUITS ARE RUN IN A COMMON TRENCH, A 12 INCH MINIMUM SEPARATION SHALL BE MAINTAINED BETWEEN POWER AND COMMUNICATION CONDUITS OR AS REQUIRED BY UTILITY COMPANIES.
   c. IN ALL CASES, WHERE ANY CONDUIT(S) PASS UNDER A BUILDING SLAB OR FOOTING, THE ELECTRICAL CONTRACTOR WILL PROVIDE A BENTONITE CLAY OR CONCRETE BARRIER THAT CONFORMS TO THE HEIGHT AND WIDTH OF THE TRENCH EXCAVATION AND IS A MINIMUM OF 18" THICK. IN ALL CASES, WHERE CONDUIT(S) PASS THRU A SLEEVE IN A FOOTING OR OTHER FOUNDATION ELEMENT, THE ELECTRICAL CONTRACTOR WILL PROVIDE A BENTONITE CLAY OR CONCRETE BARRIER BETWEEN THE SLEEVE AND THE CONDUIT(S) SURROUNDING THE CON0UIT(S) FOR THE ENTIRE DEPTH OF THE SLEEVE. THE BARRIER IS REQUIRED TO PREVENT PASSAGE OF MOISTURE UNDER OR THRU THE SLAB OR FOOTING VIA THE TRENCH OR SLEEVE.
   d. WHERE UNDERGROUND CONDUIT PASSES UNDER A BUILDING SLAB, CONCRETE ENCASEMENT MAY NOT BE REQUIRED, EXCEPT AS REQUIRED ABOVE, CONTACT THE ENGINEER FOR WRITTEN DIRECTION PRIOR TO OMITTING ANY ENCASEMENT.
   e. UNDERGROUND CONDUITS, WHICH TERMINATE INSIDE BUILDING(S) BELOW GRADE, SUCH AS IN A BASEMENT LEVEL, OR WHICH SLOPE SO THAT WATER MIGHT FLOW INTO INTERIOR BUILDING SPACES, SHALL BE SEALED AT THE POINT OF PENETRATION WITH A MODULAR CONDUIT SEAL (LINK-SEAL OR EQUAL BY ROX SYSTEMS). CONDUIT/CONDUIT SEALING SYSTEM PENETRATIONS OF WATERPROOFING MEMBRANES/SYSTEMS ON EXISTING STRUCTURES SHALL BE COMPLETELY RESTORED AS REQUIRED TO MAINTAIN MEMBRANE/SYSTEM MANUFACTURER AND INSTALLER WARRANTEE FOR THE INSTALLATION. ALL CONDUITS SHALL BE PROVIDED WITH A 4? SLOPE AWAY FROM BUILDINGS. ALL CONDUITS SHALL BE INSTALLED SUCH THAT THE WATER CANNOT ACCUMULATE IN THE CONDUIT AND SUCH THAT WATER DRAINS INTO THE NEAREST MANHOLE, PULL BOX OR VAULT AND NOT INTO THE FACILITY. IN INSTANCES WHERE GRADE CHANGES OR ELEVATION DIFFERENCES PREVENT SLOPING OF CONDUIT AWAY FROM A BUILDING INTO THE NEAREST MANHOLE, PULL BOX OR VAULT OR WHERE ACCUMULATION OF WATER IN A MANHOLE, PULL BOX OR VAULT MAY RESULT IN WATER TRAVELING INTO THE FACILITY, CONDUITS SHALL BE SEALED INTERNALLY AT EACH END OF EACH CONDUIT USING CONDUIT SEALING BUSHING, SIZED AS REQUIRED FOR THE CONDUCTORS CONTAINED WITHIN THE CONDUIT (O- Z GEDNEY #CSBG 100PSIG WITHSTAND OR EQUAL). IN ALL CASES, INSTALL PLUGS OR CAPS IN SPARE (EMPTY) CONDUITS AT BOTH ENDS OF EACH CONDUIT (JACKMOON OR EQUAL) PREVENTING BOTH WATER AND GAS FROM ENTERING THE FACILITY VIA THE CONDUITS.
   f. INCLUDE A SEPARATE INSULATED GREEN GROUND CONDUCTOR SIZED PER CEC, IN EACH UNDERGROUND ELECTRICAL FEEDER/BRANCH CIRCUIT.
   g. ALL UNDERGROUND CONDUITS WITH CIRCUITS RATED AT 40 AMPS OR GREATER AND ALL UNDERGROUND COMMUNICATIONS CONDUITS SHALL BE PROVIDED WITH A METALLIC MARKER TAPE LOCATED 12 INCHES BELOW THE FINISHED GRADE.
   h. WHERE UNDERGROUND CONDUITS SWEEP INTO/THRU SLABS, UTILIZE PVC 90 DEGREE SWEEPS THAT TRANSITION, VIA FEMALE PVC ADAPTER TO GRC COUPLING MOUNTED FLUSH IN SLAB. GRC COUPLINGS SHALL BE 1/2 LAP TAPED WITH 20 MIL TAPE. IF THE DISTANCE OF THE CONDUIT RUN BETH/EEN A SWEEP AND THE NEXT CONNECTING SWEEP, PULLBOX, VAULT OR MANHOLE EXCEEDS 150 FT THEN THE SWEEP SHALL BE CONCRETE ENCASED. EXCEPTIONS:
      a. COMMUNICATIONS CONDUITS SHOWN TERMINATING AT A FINISHED FLOOR SHALL HAVE AN ADDITIONAL 4" HIGH GRC NIPPLE EQUIPPED WITH A BUSHING, REMOVABLE CONDUIT PLUG, LABELING TAG AND PULL ROPE. TIE OFF PULL ROPE TO CONDUIT PLUG.
      b. UTILITY CONDUIT SWEEPS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY.
   i. ALL PVC CONDUIT SHALL BE GLUED FOR A WATER AND GAS TIGHT INSTALLATION. THE CONTRACTOR SHALL USE APPROPRIATE SOLVENT ON ALL JOINTS PRIOR TO GLUING CONDUIT AND FITTINGS TOGETHER.
      a. INSTALLATION OF 600-VOLT CONDUCTORS:

1. ALL ELECTRICAL WIRE, INCLUDING SIGNAL CIRCUITS, SHALL BE INSTALLED IN CONDUIT.
2. ALL CIRCUITS AND FEEDER WIRES FOR ALL SYSTEMS SHALL BE CONTINUOUS FROM OVERCURRENT PROTECTIVE DEVICE OR SWITCH TO TERMINAL OR FARTHEST OUTLET. NO JOINTS SHALL BE MADE EXCEPT IN PULL, JUNCTION OR OUTLET BOXES, OR IN PANEL OR SWITCHBOARD GUTTERS.
   a. UTILIZE PREINSULATED "WINGED" SPRING TYPE CONNECTORS, PM COMPANY AS REQUIRED FOR SPLICES AND TAPS IN CONDUCTORS {6 AWG AND SMALLER. WHEN A SPRING CONNECTOR IS USED IN AN UNDERGROUND ENVIRONMENT OR WHEN SUBJECT TO MOISTURE, UTILIZE A 3M COMPANY EPOXY RESIN CONNECTOR SEALING PACK TO SEAL THE SPRING CONNECTOR.
   b. WIRES #4 AWG AND LARGER AWG SHALL BE JOINED TOGETHER AS FOLLOWS:
1. WHEN LOCATED IN AN UNDERGROUND ENVIRONMENT OR WHEN SUBJECT TO MOISTURE, THE SPLICE SHALL BE MADE WITH COMPRESSION CONNECTOR AND SEALED BY A 3M, OR EQUAL, PST COLO SHRINK CONNECTOR INSULATOR.
2. WHEN LOCATED IN AN INTERIOR ENVIRONMENT, THE SPLICE SHALL BE MADE WITH AN ILSCO OR EQUAL DUAL RATED, INSULATED SPLICER -REDUCER CONNECTOR OR MULTI-TAP CONNECTOR-LISTED FOR USE WITH 75/90 DEGREE CELSIUS RATED CONDUCTORS.
3. CONNECTIONS TO BUSBAR SHALL BE MADE WITH DUAL-RATED COPPER/ALUMINUM ONE-PIECE COMPRESSION LUGS. PARALLELED CONDUCTOR CONNECTIONS SHALL BE BY MECHANICAL LUGS. THOROUGHLY CLEAN ALL CONDUIT AND WIRE-WAYS AND SEE THAT ALL PARTS ARE PERFECTLY DRY BEFORE PULLING ANY WIRES.
4. INSTALL UL APPROVED FIXTURE WIRE FROM ALL LIGHTING FIXTURE LAMP SOCKETS INTO FIXTURE OUTLET OR JUNCTION BOX.
5. FOR 20 AMPERE BRANCH CIRCUIT WIRING, INCREASE #12 CONDUCTORS TO #10 FOR 120 VOLT CIRCUITS LONGER THAN 100 FEET AND FOR 277 VOLT CIRCUITS LONGER THAN 150 FEET, MINIMUM. SEE DRAWING SCHEDULE FOR ADDITIONAL INFORMATION.
6. CONDUCTOR SUPPORT. PROVIDE CONDUCTOR SUPPORTS AS REQUIRED BY CODES AND RECOMMENDED BY CABLE MANUFACTURER. WHERE REQUIRED, PROVIDE CABLE SUPPORTS IN VERTICAL CONDUITS AND PROVIDE LOWER END OF CONDUIT WITH A VENTILATOR.

C. GROUNDING/BONDING:

1. PROVIDE GROUNDING AND BONDING FOR ENTIRE ELECTRIC INSTALLATION AS SHOWN ON PLANS, AS LISTED HEREIN AND AS REQUIRED BY APPLICABLE CODES. INCLUDED, BUT NOT LIMITED TO, ARE ITEMS THAT REQUIRE GROUNDING/BONDING:
   a. CONDUIT, RACEWAYS AND CABLE TRAYS.
   b. NEUTRAL OR IDENTIFIED CONDUCTORS OF INTERIOR WIRING SYSTEM.
   c. PANELBOARDS, DISTRIBUTION BOARDS, SWITCHGEAR AND SWITCHBOARDS.
   d. NON -CURRENT CARRYING METAL PARTS OF FIXED EQUIPMENT.
   e. TELEPHONE DISTRIBUTION EQUIPMENT.
   f. METAL PIPING INSTALLED IN OR ATTACHED TO A BUILDING/STRUCTURE.
   g. METALLICALLY ISOLATED STRUCTURAL STEEL.
2. IN MULTI-OCCUPANCY BUILDINGS, CONTRACTOR SHALL BOND METAL WATER PIPING SYSTEMS INSTALLED IN, UNDER OR ATTACHED TO A BUILDING AND/OR STRUCTURE SERVING INDIVIDUAL OCCUPANCIES WHERE THE PIPING SYSTEM(S) ARE METALLICALLY ISOLATED FROM EACH OTHER. PER CEC, ART. 250. 104(A)(2) & (4), THE BONDING CONDUCTOR SHALL BE SIZED PER TABLE 250.122 AND CONNECTED TO THE SWITCHBOARD/PANELBOARD SERVING THAT SUITE/OCCUPANCY.
3. GROUNDING SYSTEM CONNECTION:
   a. COMPRESSION CONNECTORS SHALL BE UNPLATED COPPER, MANUFACTURED BY BURNDY, OR APPROVED EQUAL, DESIGNED SPECIFICALLY FOR THE INTENDED CONNECTION.
   b. EXOTHERMIC WELD-TYPE CONNECTORS SHALL BE 'CADWELD' MANUFACTURED BY ERICO PRODUCTS, OR APPROVED EQUAL, DESIGNED SPECIFICALLY FOR THE INTENDED CONNECTION.
   c. MECHANICAL CONNECTORS SHALL NOT BE USED.
4. PROVIDE SEPARATE GREEN EQUIPMENT GROUND CONDUCTOR IN ALL ELECTRICAL RACEWAYS, TO EFFECTIVELY GROUND ALL FIXTURES, PANELS, CONTROLS, MOTORS, DISCONNECT SWITCHES, EXTERIOR LIGHTING STANDARDS, AND NON-CURRENT CARRYING METALLIC ENCLOSURES. USE BONDING JUMPERS, GROUNDING BUSHINGS, LUGS, BUSSES, ETC., FOR THIS PURPOSE. CONNECT THE EQUIPMENT GROUND TO THE BUILDING SYSTEM GROUND. USE THE SAME SIZE EQUIPMENT GROUND CONDUCTORS AS PHASE CONDUCTORS, UP THROUGH #10 AWG. USE CEC TABLE 250.122 FOR CONDUCTOR SIZE WITH PHASE CONDUCTORS #8 AND LARGER, IF NOT SHOWN ON THE DRAWINGS.
5. CLEAN THE CONTACT SURFACES OF ALL GROUND CONNECTIONS PRIOR TO MAKING CONNECTIONS.
6. DUCTWORK. PROVIDE A FLEXIBLE GROUND STRAP, NO. 6 AWG EQUIVALENT, AT EACH FLEXIBLE DUCTCONNECTION AT EACH AIR HANDLER, EXHAUST FAN, AND SUPPLY FAN, AND INSTALL TO PRECLUDE VIBRATION.
7. MOTORS. CONNECT THE GROUND CONDUCTOR TO THE CONDUIT WITH AN APPROVED GROUNDING BUSHING, AND TO THE METAL FRAME WITH A BOLTED SOLDERLESS LUG. BOLTS, SCREWS AND WASHERS SHALL BE BRONZE OR CADMIUM PLATED STEEL.
8. BUILDING GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS.

D. PREFABRICATED EQUIPMENT: INSTALLATION OF ALL PREFABRICATED ITEMS AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTION PAMPHLETS. WHERE CODE REQUIREMENTS AFFECT INSTALLATION OF MATERIALS AND EQUIPMENT, THE MORE STRINGENT REQUIREMENTS, CODE OR MANUFACTURER'S INSTRUCTIONS AND/OR SPECIFICATIONS, SHALL GOVERN THE WORK.

E. FIRESTOPPING:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONJUNCTION WITH THE SELECTION AND INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT UL-LISTED FIRE STOP ASSEMBLY/SYSTEM(S) AS REQUIRED BY PROJECT CONDITIONS.
2. EACH FIRE STOP ASSEMBLY/SYSTEM SHALL HAVE AN "F" AND/OR "T" RATING AS REQUIRED BY EACH CONDITION REQUIRING FIRE STOPPING. EACH FIRE STOP ASSEMBLY/SYSTEM SHALL HAVE A CURRENT U.L. LISTING, AS INDICATED IN THE LATEST EDITION OF THE U.L. FIRE RESISTANCE DIRECTORY. CONTRACTOR SHALL VERIFY ACCEPTABILITY OF ALL FIRE STOPPING METHODS AND SYSTEM SELECTIONS WITH THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. THE CONTRACTOR SHALL INSTALL EACH FIRESTOP ASSEMBLY/SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.
3. EACH FIRE STOP ASSEMBLY/SYSTEM SHALL BE LABELED WITH FIRE STOP MANUFACTURER - FURNISHED LABEL ON EACH SIDE OF THE FIRE STOPPING SYSTEMS DEPICTING UL NUMBER, ETC.

****END OF SECTION

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Architect
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CLIENT
TUSD

DATE	PROJECT NUMBER
xxxx	220513

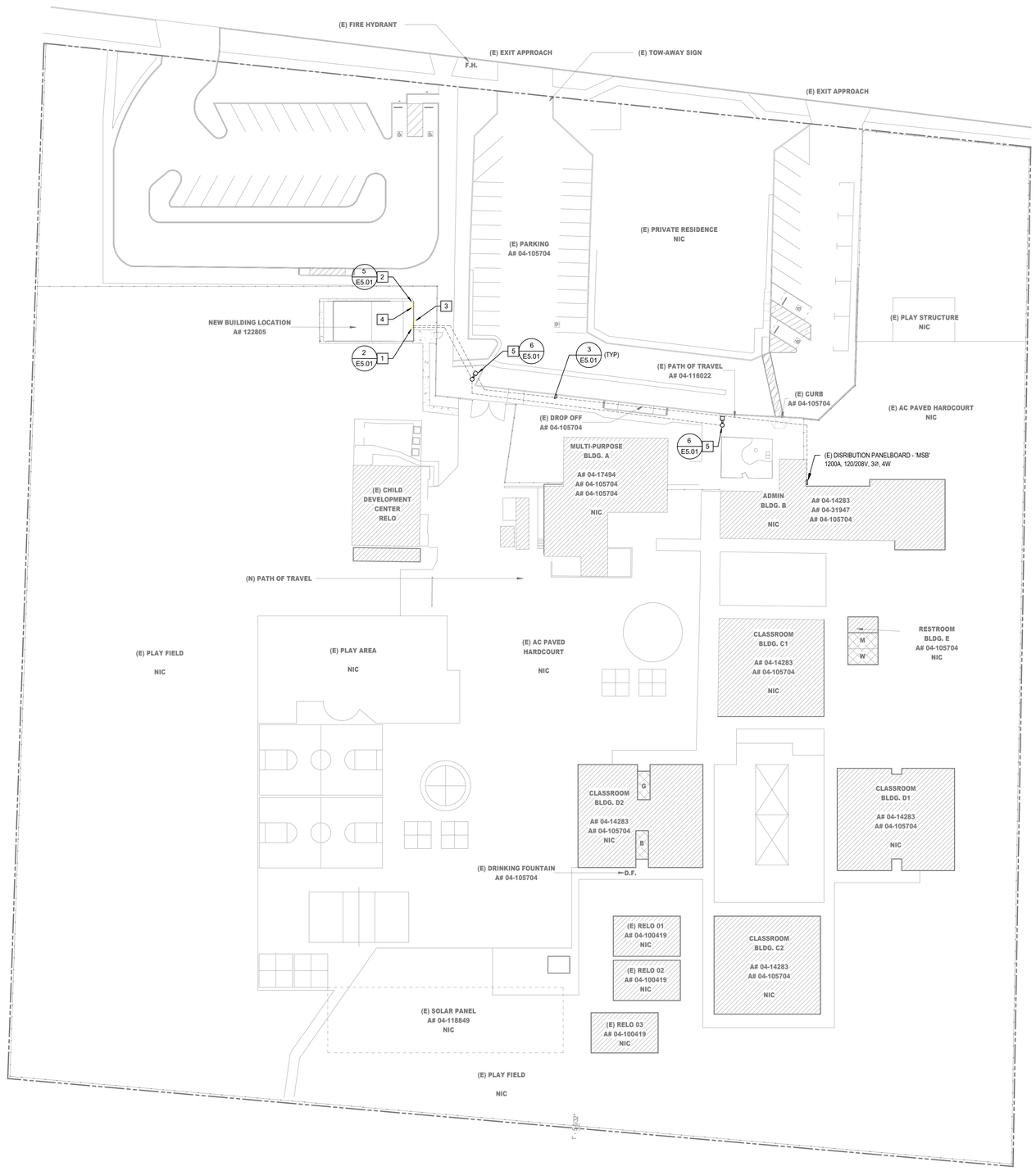
REVISIONS

No.	Description	Date

ELECTRICAL SPECIFICATIONS

E0.01

0" 1"



GENERAL NOTES

1. 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.
2. COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
3. UNLESS NOTED OTHERWISE, ALL UNDERGROUND CONDUIT SHOWN ON THIS PLAN TO BE MINIMUM 1" IN SIZE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.
5. ALL PANELBOARDS ARE PRE-INSTALLED BY PORTABLE MANUFACTURER. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND QUANTITY PRIOR TO ROUGH-IN.
6. PATHWAY IS APPROXIMATE. CONTRACTOR SHALL VERIFY PROPER PATHWAY PRIOR TO INSTALLATION.
7. REFER TO SINGLE LINE DIAGRAM ON 4/E5.01 FOR FEEDER SIZING.

KEY NOTES

1. 100A, 120/208V, 3PH, 4W PANEL TO BE PROVIDED WITH PORTABLE BUILDING. PANEL TO BE FED AS SHOWN ON SINGLE LINE DIAGRAM ON SHEET E5.01. CONTRACTOR TO FIELD VERIFY CIRCUITS ARE OPEN TO USE.
2. PROVIDE NEW LIGHTING INVERTER AT LOCATION SHOWN (MYERS ILLUMINATOR LVM - 250-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.
3. PROVIDE NEW LED WALL PACK LIGHTING AT LOCATION SHOWN (ELUCENT WALL PACK WPDS-40-40-120-G4). CONTRACTOR TO CIRCUIT NEW WALLPACKS INTO NEW MYERS INVERTER. CONTRACTOR TO VERIFY EXACT LOCATION OF LIGHTING.
4. PROVIDE 365-DAYS ASTRONOMICAL TIME CLOCK SWITCH - NEMA 3R WITH PHOTOCELL SENSOR AT ROOF LEVEL FACING NORTH.
5. INSTALL NEW POLE FIXTURE MOUNTED @ 15'-0", LITHONIA - DSX2 LED P2 40K 70CRI TFTM MVOLT SPA PIR DDBXD WITH POLE 'SSS XXFT 4C MOUNTING DDBXD'. ROUTE CIRCUIT THROUGH MYERS INVERTER LOCATED IN BLDG E.

Not for permitting or construction

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DATE	PROJECT NUMBER
xxxx	220513

REVISIONS

No.	Description	Date

This document is for plan review only

ELECTRICAL SITE PLAN

E1.01

ELECTRICAL SITE PLAN 1
1" = 30'-0"

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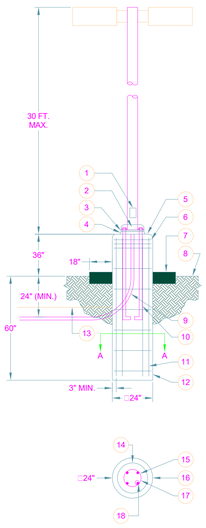
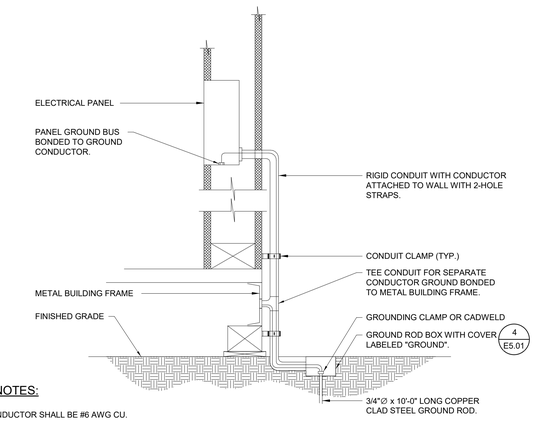
0" 1"



1. HANDHOLE IN BASE OF POLE COMPLETE WITH GASKETED COVER.
2. BOND GROUND WIRE/CONDUIT TO POLE.
3. POLE BASE WITH WASHERS AND NUTS ON TOP AND BOTTOM AND FULL BASE COVER.
4. GROUT AROUND POLE BASE AFTER LEVELING.
5. RAISED CONCRETE BASE WITH EASED TOP EDGE 1/2" RADIUS CORNERS. SACK AND PATCH SURFACE TO ACHIEVE A SMOOTH UNIFORM FINISH.
6. PLACE THREE #3 TIES IN TOP 5" BASE.
7. MOW STRIP SHALL BE FLUSH WITH SIDEWALK.
8. FINISHED GRADE.
9. THREE 3/4" CONDUITS - ONE FOR LIGHTING, ONE FOR POWER & ONE FOR SIGNAL.
10. 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).
11. FOUR #4 VERTICAL REBAR WITH #4 TIES ON 6" CENTER TO FORM CAGE.
12. CONCRETE BASE. CONCRETE TO BE MIN. 3000 PSI. IN 28 DAYS, POURED IN NATURALLY COMPACTED EARTH HOLE FREE OF LOOSE DIRT OR DEBRIS.
13. PLASTIC WARNING TAPE MARKED "ELECTRICAL" 6" ABOVE CONDUIT.
14. TYP. 18" DIAMETER ROUND STEEL CAGE.
15. TYP. 10" DIAMETER ROUND CAGE WITH 9.5" BOLT CIRCLE.
16. CONCRETE BASE.
17. #4 VERTICAL REBAR, TYPICAL OF FOUR FOR EACH STEEL CAGE.
18. BOLT WITH #3 TIE, TYP.

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

6 LIGHTING POLE MOUNTED DETAIL
NOT TO SCALE

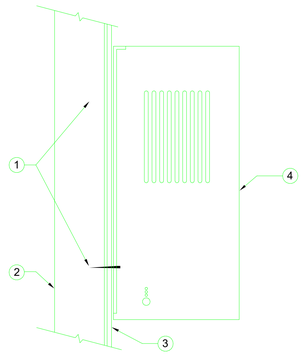


DETAIL NOTES:

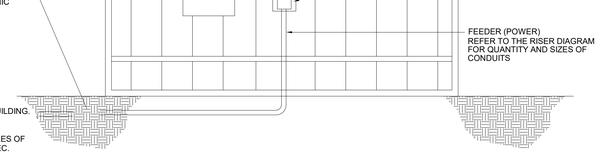
1. SIZE OF CONDUCTOR SHALL BE #6 AWG CU.
2. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL BUILDING FRAME (CEC. 250-81). IN ADDITION TO THE DETAIL SHOWN ABOVE, BOND THE ELECTRICAL GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FT. INTO THE SOIL IF AVAILABLE (CEC. 250-81 & 250.83).
3. ALL MODULES OF METAL FRAME BUILDINGS SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDINGS).
4. 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).
5. GROUND TEST SHALL BE WITNESSED BY PROJECT INSPECTOR, AND RECORDED FOR OWNER MANUAL.

1 PORTABLE BUILDING GROUNDING DETAIL
NOT TO SCALE

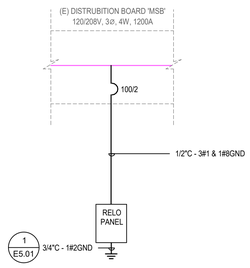
1. (4)1/4" PAN-HEAD TEK SCREWS X MIN. 2 1/2" EMBEDMENT INTO STUDS.
2. METAL WALL STUDS AT 16" O.C.
3. WALL FINISH
4. EMERGENCY LIGHTING INVERTER, IOTA #IIS-375-LED, CEC COMPLIANT, 90 MINUTES RUNTIME 23.0"W x 8.2"D x 17.9"H 114 LBS.



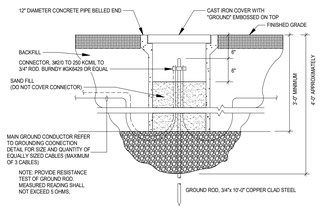
5 LIGHTING INVERTER WALL MOUNTING DETAIL
NOT TO SCALE



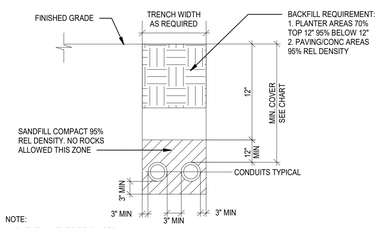
2 PORTABLE BUILDING POWER CONNECTION DETAIL
NOT TO SCALE



7 SINGLE LINE DIAGRAM
NOT TO SCALE



4 GROUND WELL ASSEMBLY
NOT TO SCALE



NOTE:
1. BACKFILL MTL TO BE PLACED IN 6" LAYERS OF PROPERLY MOISTENED MTL
2. SURFACING TO BE TRIMMED EXTRA WIDTH AFTER TRENCH IS BACKFILLED
3. POWER & LOW VOLTAGE/SIGNAL CONDUITS SHALL BE SEPARATED BY MIN. 12"
4. WHEN TRENCHING NEAR FOOTING, REFER TO 2/S0.1 & 12/S.01 FOR MORE INFORMATION

POWER	24" MIN COVER UNO
TEL/DATA/TV/FA/SIGNAL	24" MIN COVER UNO

3 TRENCH DETAIL
NOT TO SCALE

PBK

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Tustin Unified School District

NORTH: TRUE

Consultant

Architect
REGISTERED ARCHITECT
BRUCE OU
C-34832
REN: 10/31/25
STATE OF CALIFORNIA

CLIENT
TUSD

DATE	PROJECT NUMBER
xxxx	220513

REVISIONS

No.	Description	Date

SINGLE LINE DIAGRAM & DETAILS

This document is for plan review only

E5.01

T0.00 - TECHNOLOGY COVER SHEET

0" 1"

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 0N EMERGENCY POWER WHEN AVAILABLE. CONTRACTOR SHALL COORDINATE AND INSTALL ALL 120V POWER REQUIREMENTS AND LOCATIONS AS REQUIRED FOR ALL EQUIPMENT (TYPICAL)
2. CONTRACTOR SHALL COORDINATING WITH PBK TECHNOLOGY DEPARTMENT PRIOR TO THE INSTALLATION OF RACKS AND RACK EQUIPMENT. NO RACKS SHALL BE PERMANENTLY INSTALLED WITHOUT WRITTEN APPROVAL OF THE PROPOSED LOCATIONS.
3. THE PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUITS, BACK BOXES, AND OTHER RACEWAY REQUIRED FOR DEVICES AND PATHWAYS SHOWN ON THE FLOOR PLANS AND DETAIL SHEETS. ANY ADDITIONAL CONDUITS, SLEEVES, AND RACEWAY REQUIREMENTS FOR THE SCS SHALL BE THE RESPONSIBILITY OF THE SCS INSTALLER.
4. THE SELECTED, INSTALLING CONTRACTOR MUST BE A CERTIFIED INTEGRATOR/INSTALLER AUTHORIZED BY THE SPECIFIED SYSTEM MANUFACTURER TO INSTALL THE CABLE PLANT AND CONNECTIVITY PRODUCTS. REFER TO SPECIFICATIONS FOR PRODUCT TYPE AND DESCRIPTION.
5. SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH ENGINEERING BEST PRACTICES AS ESTABLISHED BY ANSI/EIA/TIA, BICSI, AND THE CEC.
6. ALL WIRING SHALL MEET ALL STATE AND LOCAL ELECTRICAL CODES.
7. ALL TELECOMMUNICATIONS SYSTEMS EQUIPMENT AND MOUNTING LOCATIONS SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY STANDARDS.
8. ALL INDUSTRY STANDARD CATEGORY 6A CABLING PRACTICES MUST BE FOLLOWED FOR ALL DATA CABLING.
9. ALL DATA CABLES ARE TO BE INSTALLED WITH A MINIMUM OF 12 INCHES OF SEPARATION FROM AC POWER CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.
10. ALWAYS CROSS OTHER SYSTEM CABLES AT A 90 DEGREE ANGLE.
11. ALL CABLES AND TERMINATION COMPONENTS SHALL BE MACHINE LABELED AT BOTH ENDS. LABEL ALL CABLES PER TS DRAWINGS AND/OR SPECIFICATIONS. FINAL CABLE/OUTLET IDENTIFICATION LABELS SHALL BE COORDINATED WITH THE OWNER AND PBK.
12. CONTRACTOR TO PROVIDE LIGHTNING PROTECTION ON ALL COMMUNICATION CABLE BETWEEN BUILDINGS.
13. ALL EXPOSED CABLING ROUTED IN PLENUM SHALL BE PLENUM-RATED. ALL NON PLENUM-RATED CABLING INSTALLED IN PLENUM SPACES SHALL BE INSTALLED IN CONDUIT.
14. NO TERMINATION OR SPLICES SHALL BE INSTALLED IN OR ABOVE CEILINGS UNLESS NOTED NOTED OTHERWISE.
15. TECHNOLOGY CONTRACTOR SHALL PROVIDE AND INSTALL ALL SLEEVES REQUIRED TO INSTALL COMMUNICATION CABLING THROUGH ALL CMU AND 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.
16. CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.
17. CONTRACTOR SHALL ROUTE ALL FIBER/VOICE/DATA AND CATV CABLING DOWN CORRIDORS AND PERPENDICULAR OR PARALLEL TO BUILDING WALLS ENTER INTO ALL ROOMS ABOVE THE MAIN DOORWAY.
18. ALL COMMUNICATION CABLE INSTALLED SHALL ROUTE TO THE CENTER OF THE ROOM IN WHICH IT SERVES AND THEN TO THE OUTLET LOCATION IT IS INTENDED FOR. EACH CABLE SHALL HAVE A 10' SERVICE LOOP AT THE CENTER OF EACH ROOM AND A 3' SERVICE LOOP ABOVE EACH OUTLET LOCATION.
19. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM A PANDUIT J-MOD CABLE SUPPORT SYSTEMS AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. PANDUIT J-MOD SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. IN LOCATION WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
20. CONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED CABLING AND COMPONENTS TO FURNISH TWO (2) ANALOG TELEPHONE CABLES TO THE FIRE ALARM SYSTEM. CONTRACTOR TO COORDINATE WITH THE SYSTEM INSTALLER FOR EXACT LOCATIONS AND TERMINATION INSTRUCTIONS PRIOR TO INSTALLATION.
21. ALL EXPOSED CABLING OR CABLING ROUTING ACROSS NON ACCESSIBLE CEILINGS SHALL BE INSTALLED IN CONDUIT. CONDUIT SHALL BE PROPERLY SIZED TO MAINTAIN THE 40% FILL RATIO.
22. 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 EXCEPTED. CONTRACTOR TO MAINTAIN A 40% MAXIMUM FILL RATION ON ALL SLEEVES INSTALLED.

AUDIO & VIDEO GENERAL NOTES

1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND 0N 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.
2. THE PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL IN WALL CONDUITS, BELOW GRADE CONDUITS, BELOW SLAB CONDUITS, CONDUITS ACROSS OPEN AREAS BACK BOXES, SLEEVES, AND OTHER RACEWAY REQUIRED FOR DEVICES AND PATHWAYS SHOWN ON THE FLOOR PLANS AND DETAIL SHEETS. ANY ADDITIONAL CONDUITS, SLEEVES, AND RACEWAY REQUIREMENTS FOR EACH SYSTEM SHALL BE THE RESPONSIBILITY OF EACH SYSTEM INSTALLER.
3. THE SECURITY CAMERA SYSTEM INSTALLER SHALL BE RESPONSIBLE FOR CONNECTING ALL APPLICABLE SYSTEM EQUIPMENT TO THE OWNER'S NETWORK.
4. ALL EXPOSED SYSTEM'S WIRING OR WIRING ROUTING ACROSS NON ACCESSIBLE CEILINGS SHALL BE ROUTED IN CONDUIT. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH 40% CABLE FILL RATIO. MINIMUM CONDUIT SIZE SHALL BE 3/4".
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL EXTERIOR WALL PENETRATIONS ARE PROPERLY SEALED TO PREVENT ANY MOISTURE FROM ENTERING BUILDING.
6. NO CONDUITS SHALL BE INSTALLED ON THE EXTERIOR OF THE BUILDING. IF EXTERIOR CONDUITS ARE REQUIRED FOR A COMPLETE INSTALLATION, EACH SYSTEM CONTRACTOR SHALL COORDINATE WITH THE PROJECTS CONSULTANT PRIOR TO ANY ROUGH-IN.
7. EACH SYSTEM CONTRACTOR SHALL PROVIDE AND INSTALL PROTECTIVE BUSHINGS ON ALL CONDUIT STUB OUTS AND SLEEVES TO PREVENT CABLE DAMAGE. BUSHING TO BE INSTALLED PRIOR TO CABLE INSTALLATION. CUTTING BUSHING AND INSTALLING AFTER CABLE IS INSTALLED WILL NOT BE EXCEPTED.
8. ALL CABLE SHALL BE ROUTED DOWN CORRIDORS, PARALLEL AND PERPENDICULAR TO THE BUILDING WALLS AND STRUCTURE. CABLE TO EACH DEVICE SHALL BRANCH OFF OF A MAIN CORRIDOR TRUNK. ROUTING CABLES THROUGH CLASSROOMS, OFFICES, STORAGE ROOMS, RESTROOMS OR ANY TYPE OF ROOM OTHER THAN A CORRIDOR WILL NOT BE ACCEPTED. ENTER ALL ROOMS ABOVE THE ASSOCIATED ROOM DOORWAY.
9. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM A PANDUIT J-MOD CABLE SUPPORT SYSTEMS AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. PANDUIT J-MOD SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
10. SECURITY CAMERA SYSTEM INSTALLER SHALL PROVIDE A CEILING MOUNTED INSTALLATION KIT RECOMMENDED BY THE MANUFACTURER OF THE CAMERA. EACH CEILING MOUNTED CAMERA KIT SHALL HAVE A SUPPORT WIRE ATTACHED TO THE BUILDING'S STRUCTURE TO PREVENT THE CAMERA FROM DROPPING TO THE FLOOR AT ANY TIME. AT NO POINT SHALL THE WEIGHT OF THE CEILING MOUNTED SECURITY CAMERA BE SUPPORTED BY THE CEILING GRID SYSTEM OR CEILING TILES. ALL CEILING MOUNTED CAMERAS SHALL BE FLUSH MOUNTED.
11. ALL EXTERIOR AND WALL MOUNTED CAMERA LOCATIONS MUST BE COORDINATED WITH THE OWNER PRIOR TO ROUGH-IN. ALL CAMERAS TO BE MOUNTED AT 12'-0" AFG. COORDINATION MEETINGS SHALL BE SCHEDULED THROUGH THE ARCHITECTS PROJECT MANAGER.
12. ALL SECURITY CAMERAS SHOWN TO WATCH EXTERIOR DOORS SHALL BE MOUNTED AT 40' FROM DOOR AT ALL LOCATIONS POSSIBLE. NO CAMERA SHALL BE INSTALLED MORE THAN 40' FROM DOOR.
13. CONDUIT, BACK BOX AND CABLING REQUIREMENTS FOR IP SECURITY CAMERAS: EACH IP CAMERA SHALL BE EQUIPPED WITH (1) CAT6 CABLE BY CABLING CONTRACTOR. CONTRACTOR SHALL MOUNT THIS OUTLET AT +12" ABOVE THE CEILING IN A PLENUM RATED JACK AND COORDINATE ALL FINAL LOCATIONS WITH OTHER TRADES ON THE PROJECT TO VERIFY THAT THE LOCATION OF THE OUTLET MAINTAINS 12" OF CLEARANCE FROM THE FRONT OF THE FACEPLATE FOR OWNER ACCESS. ELECTRICAL CONTRACTOR SHALL ROUTE (1) 1" CONDUIT FROM THE BUILDING STRUCTURE TO A SINGLE GANG BACK BOX MOUNTED AT 5' OR LESS ABOVE THE FINISHED CEILING. SECURE CONDUIT AND BACK BOX TO INSURE MINIMAL SWAY MOVEMENT.
14. VIDEO SURVEILLANCE CONTRACTOR SHALL PROVIDE ONE (1) ADDITIONAL OMNICAST LICENSE FOR EACH DOOR EQUIPPED WITH AN INTERIOR CARD READER AND SOUNDER TO ENABLE THE LOCAL CAMERA VIEW TO BE DISPLAYED ON THE LCD MONITOR IN THE RECEPTION AREA.
15. ALL NEW EXTERIOR CAMERAS COVERING DOORS EQUIPPED WITH SOUNDERS SHALL BE AXIS MODEL #F4005E. PROVIDE ALL REQUIRED AXIS HARDWARE FOR FULLY FUNCTIONAL SYSYTEMS AT ALL #F4005E CAMERA LOCATIONS, INTERIOR AND EXTERIOR.
16. PROVIDE LICENSES FOR ALL CAMERAS AS REQUIRED TO PROVIDE A TURNKEY SYSTEM. SALIENT SYSTEMS LICENSES FOR EXISTING ANALOG AND IP CAMERAS ARE TRANSFERABLE TO NEW IP CAMERAS. PROVIDE LICENSES ONLY FOR NEW CAMERAS THAT ARE NOT REPLACING EXISTING CAMERAS.

INTERCOM SYSTEM'S GENERAL NOTES

1. ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND 0N 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.
2. THE PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL IN WALL CONDUITS, BELOW GRADE CONDUITS, BELOW SLAB CONDUITS, CONDUITS ACROSS OPEN AREAS BACK BOXES, SLEEVES, AND OTHER RACEWAY REQUIRED FOR DEVICES AND PATHWAYS SHOWN ON THE FLOOR PLANS AND DETAIL SHEETS. ANY ADDITIONAL CONDUITS, SLEEVES, AND RACEWAY REQUIREMENTS FOR EACH SYSTEM SHALL BE THE RESPONSIBILITY OF EACH SYSTEM INSTALLER.
3. ALL EXPOSED SYSTEM'S WIRING OR WIRING ROUTING ACROSS NON ACCESSIBLE CEILINGS SHALL BE ROUTED IN CONDUIT. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH 40% CABLE FILL RATIO. MINIMUM CONDUIT SIZE SHALL BE 3/4".
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL EXTERIOR WALL PENETRATIONS ARE PROPERLY SEALED TO PREVENT ANY MOISTURE FROM ENTERING BUILDING.
5. NO CONDUITS SHALL BE INSTALLED ON THE EXTERIOR OF THE BUILDING. IF EXTERIOR CONDUITS ARE REQUIRED FOR A COMPLETE INSTALLATION, EACH SYSTEM CONTRACTOR SHALL COORDINATE WITH THE PROJECTS CONSULTANT PRIOR TO ANY ROUGH-IN.
6. EACH SYSTEM CONTRACTOR SHALL PROVIDE AND INSTALL PROTECTIVE BUSHINGS ON ALL CONDUIT STUB OUTS AND SLEEVES TO PREVENT CABLE DAMAGE. BUSHING TO BE INSTALLED PRIOR O CABLE INSTALLATION. CUTTING BUSHING AND INSTALLING AFTER CABLE IS INSTALLED WILL NOT BE EXCEPTED.
7. ALL CABLE SHALL BE ROUTED DOWN CORRIDORS, PARALLEL AND PERPENDICULAR TO THE BUILDING WALLS AND STRUCTURE. CABLE TO EACH DEVICE SHALL BRANCH OFF OF A MAIN CORRIDOR TRUNK. ROUTING CABLES THROUGH CLASSROOMS, OFFICES, STORAGE ROOMS, RESTROOMS OR ANY TYPE OF ROOM OTHER THAN A CORRIDOR WILL NOT BE ACCEPTED. ENTER ALL ROOMS ABOVE THE ASSOCIATED ROOM DOORWAY.
8. THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM AN APPROVED CABLE SUPPORT SYSTEM AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. THE CABLE SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
9. ALL INTERCOM CABLING FOR CLASSROOMS, OFFICES, CONFERENCE ROOMS, WORK ROOMS, AND LOUNGES SHALL BE HOME RUNS TO HEAD END EQUIPMENT TO ALLOW ZONING TO BE ACCOMPLISHED.
10. ALL EXTERIOR AND WALL MOUNTED SPEAKERS SHALL BE MOUNTED AT 10'-0" UNLESS OTHERWISE NOTED.
11. EXTERIOR SPEAKERS SHALL NOT BE GROUPED WITH INTERIOR SPEAKERS.
12. ALL SPEAKERS SHALL BE CONNECTED TO A STANDARD PUNCH DOWN BLOCK LOCATED NEAR HEAD END EQUIPMENT AND THEN CONNECTED TO HEAD END EQUIPMENT.
13. ALL CEILING MOUNTED SPEAKERS SHALL BE INSTALLED UTILIZING A TILE BRIDGE SUPPORT SYSTEM. AT NO POINT SHOULD THE WEIGHT OF A CEILING MOUNTED SPEAKER BE SUPPORTED BY A CEILING TILE ONLY.
14. ALL WALL MOUNTED CALL INITIATING DEVICES SHALL BE INSTALLED AT +42" ABOVE THE FINISHED FLOOR.

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 TECHNOLOGY CONNECTIONS IN FBO BUILDING AND SITE PER THE DESIGN DRAWINGS.
2. PROVIDE NEW CONDUITS, J-HOOKS ABOVE ACCESSIBLE CEILING SPACES TO SUPPORT NEW TECHNOLOGY WIRING AS REQUIRED BETWEEN END DEVICES AND TECHNOLOGY HEADEND EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL WIRING WITH TERMINATION AND TESTING AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
3. PROVIDE NEW EMPTY UNDERGROUND CONDUITS CAP IN-PLACE FOR FUTURE USE BETWEEN THE NEW COMMUNICATION ROOM 109 IN FBO BUILDING TO FUTURE TERMINAL EXPANSION, AND HANGAR. REFER TO SITE PLAN T1.01 FOR NUMBER AND SIZE OF UNDERGROUND CONDUITS.
4. PROVIDE COMPLETE INFRASTRUCTURE INCLUDING WIRING TO ALL SECURITY DEVICES PER PLANS.
5. THE CONTRACTOR SHALL PROVIDE CONDUITS, UNDERGROUND PULL BOXES, AND WIRING AS REQUIRED FOR CONNECTIONS TO ALL SITE DEVICES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TECHNOLOGY EQUIPMENT/DEVICES MOUNTING AS NOTED PER THE DESIGN DRAWINGS.
7. THE CONTRACTOR SHALL PROVIDE NEW UNDERGROUND CONDUITS FOR NEW UTILITY SERVICE PROVIDER CONNECTION, AND COORDINATE WITH UTILITY SERVICE PROVIDER COMPANY FOR FINAL POINT OF CONNECTION PRIOR TO INSTALLATION.
8. PROVIDE ACCESS CONTROL SYSTEM TO INCLUDE ACCESS CONTROL PANEL, POWER SUPPLY AND CARD READERS PER SPECIFICATIONS.
9. PROVIDE VIDEO SURVEILLANCE SYSTEM AND SECURITY CAMERAS WITH REQUIRED LICENSING FOR A COMPLETE WORKING SYSTEM INCLUDING INTEGRATION WITH ACCESS CONTROL SYSTEM.

TECHNOLOGY SYMBOL LIST

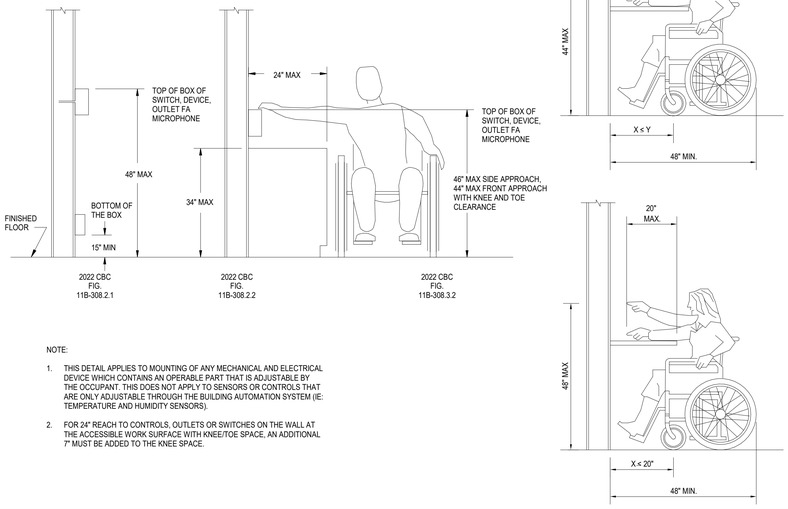
SYMBOL:	DESCRIPTION:	NOTE:
WAP	WIRELESS ACCESS POINT DEVICE/ENCLOSURE (CEILING)	.
# ▽	INFORMATION OUTLET (WALL)	1..2..5.
S	PUBLIC ADDRESS SPEAKER (CEILING) TYPE 1	1..2..5. .
UPB1	UNDERGROUND PULL BOX TYPE1	7.
UPB2	UNDERGROUND PULL BOX TYPE2	
———	CONDUIT (CONCEALED IN OR ABOVE CEILING/HORIZONTAL SURFACE)	.
– – – –	UNDERGROUND/FLOOR CONDUIT	.
○———	CONDUIT UP	.
○———	CONDUIT DOWN	.
⟆———	CONDUIT WITH CONTINUATION	.
[——]	CONDUIT SLEEVE	.
═══	FIRE RATED PATHWAY SLEEVE SYSTEM	.

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. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR FULL DETAILS.
2. DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.

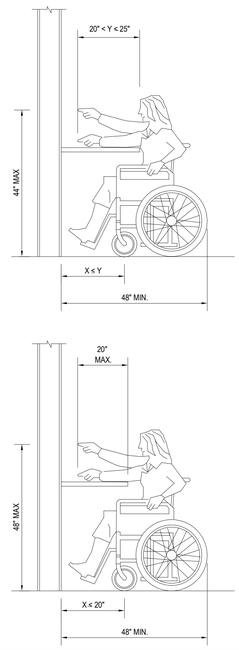
TECHNOLOGY SYMBOL LIST NOTES:

1. "#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION.
2. SYMBOL SUBSCRIPT INDICATES DEVICE TYPE.
3. INFORMATION OUTLET INSTALLED IN E.C. PROVIDED FLOOR BOX. "#" INDICATES DATA OUTLET FACEPLATE CONFIGURATION. REFER TO THE ELECTRICAL FLOOR PLANS FOR ADDITIONAL INFORMATION.
4. EQUIPMENT/DEVICE HEIGHT AS INDICATED ON PLANS.
5. REFER TO SPECIFICATION - EXTERIOR COMMUNICATION PATHWAYS AND DETAIL 6/T6.02 FOR UNDERGROUND COMMUNICATIONS PULL BOX.
6. REFER TO SPECIFICATION - EXTERIOR COMMUNICATION PATHWAYS FOR UNDERGROUND COMMUNICATIONS HANDHOLE.
7. PROVIDE AV OUTLET WITH (2) HDMI CONNECTORS AND CABLES. REFER TO FLOOR PLAN FOR 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.



DRAWING INDEX

TECHNOLOGY ABBREVIATION KEY

ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
C	CONDUIT
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
J-BOX	JUNCTION BOX
MPOE	MIMIMUM POINT OF ENTRY
MC	MAIN CROSS-CONNECT
S.C.	SECURITY CONTRACTOR
SIM	SIMILAR
T.C.	TECHNOLOGY CONTRACTOR
TR-#	TELECOMMUNICATIONS ROOM
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
+#	MOUNTING HEIGHT ABOVE FINISHED FLOOR

APPLICABLE CODES

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2022
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 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

PARTIAL LIST OF APPLICABLE STANDARDS
NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED): 2016 EDITION
NFPA 720 STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE DETECTION AND WARNING EQUIPMENT; 2016 EDITION
NFPA 80 STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES; 2016 EDITION
UL 464 AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES; 2003 EDITION
UL 521 STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS; 1999 EDITION
UL 1971 STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED; 2002 EDITION (R2010)
ICC 300 STANDARD FOR BLEACHERS, FOLDING AND TELESCOPING SEATING AND GRANDSTANDS; 2017 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.

Not for permitting or construction

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Tustin Unified School District

NORTH: TRUE

Consultant

Architect

LICENSED ARCHITECT BRUCE OU C-34832 REN: 10/31/25 STATE OF CALIFORNIA

CLIENT
TUSD

DATE	PROJECT NUMBER
xxxx	220513

REVISIONS

No.	Description	Date

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TECHNOLOGY COVER SHEET

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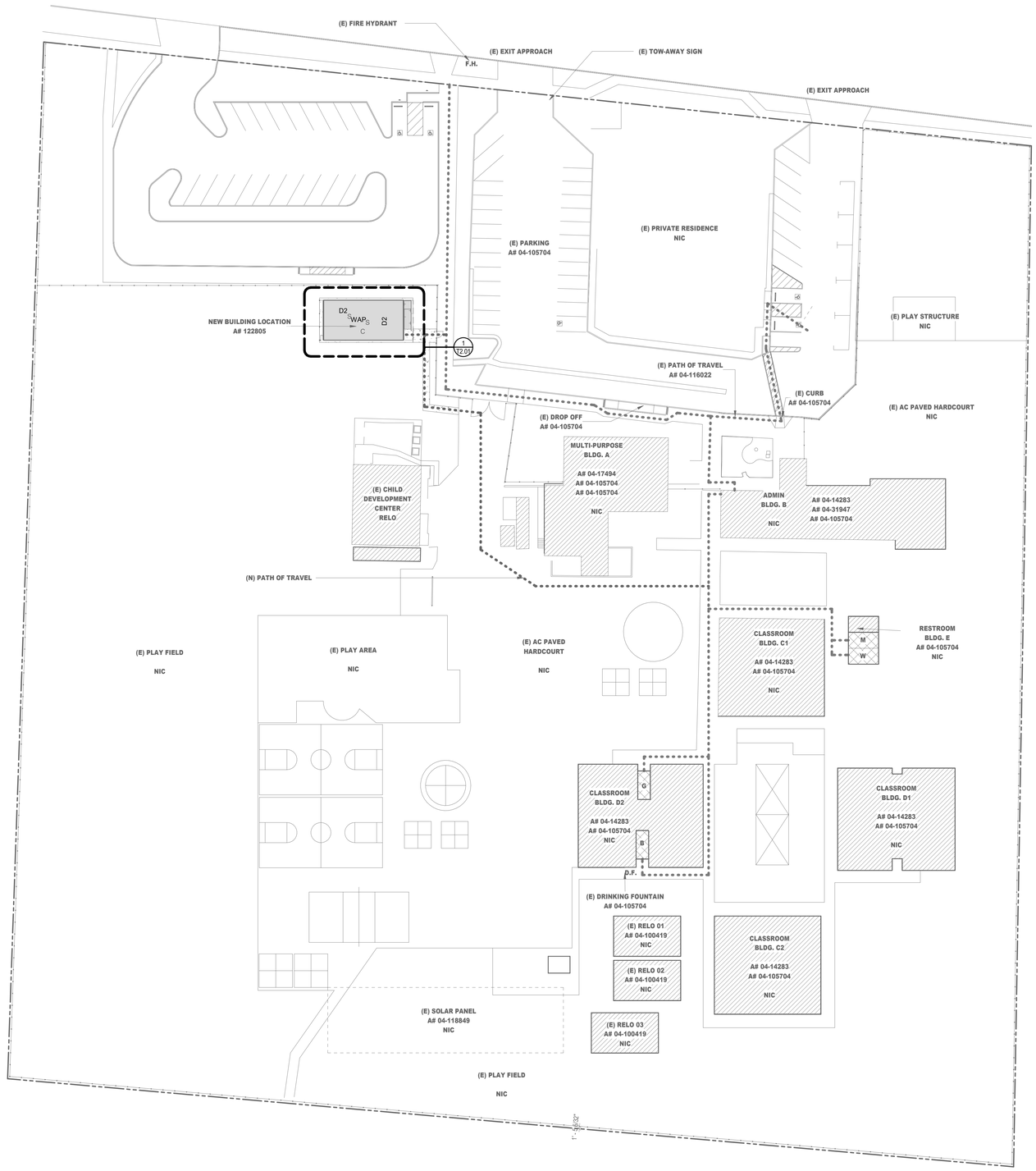

GENERAL NOTES

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

SITE PLAN 1
1" = 30'-0"

Not for permitting or construction

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Tustin Unified
School District

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LICENSED ARCHITECT
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REN: 10/31/25
STATE OF CALIFORNIA

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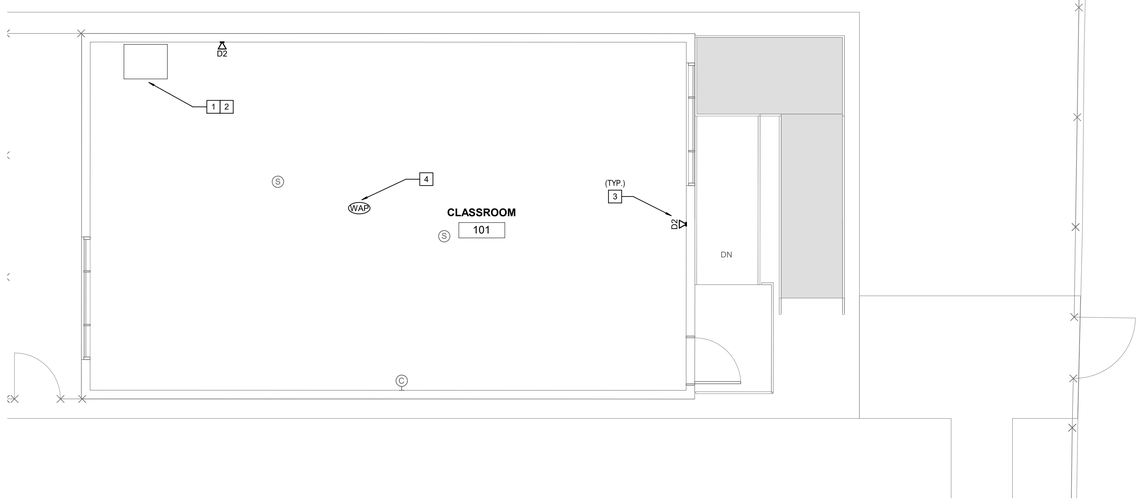
TECHNOLOGY SITE PLAN

T1.01

0" 1"



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 12SM FIBER FROM EXISTING IDF TO NEW PORTABLE IDF CABINET.

3 WALL MOUNTED DATA OUTLET. PROVIDE AND INSTALL OUTLET IN A 5S 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, "CFCI". PROVIDE DATA OUTLET FOR WIRELESS ACCESS POINT, (2) CAT6A CABLES, 2-PORT PLENUM RATED SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING AS INDICATED ON DRAWINGS. USE J-HOOKS TO SUPPORT NEW CABLING ABOVE ACCESSIBLE CEILING SPACE. FOR INACCESSIBLE CEILINGS 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.

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

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STATE OF CALIFORNIA

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TECHNOLOGY ENLARGED SITE PLAN

T2.01

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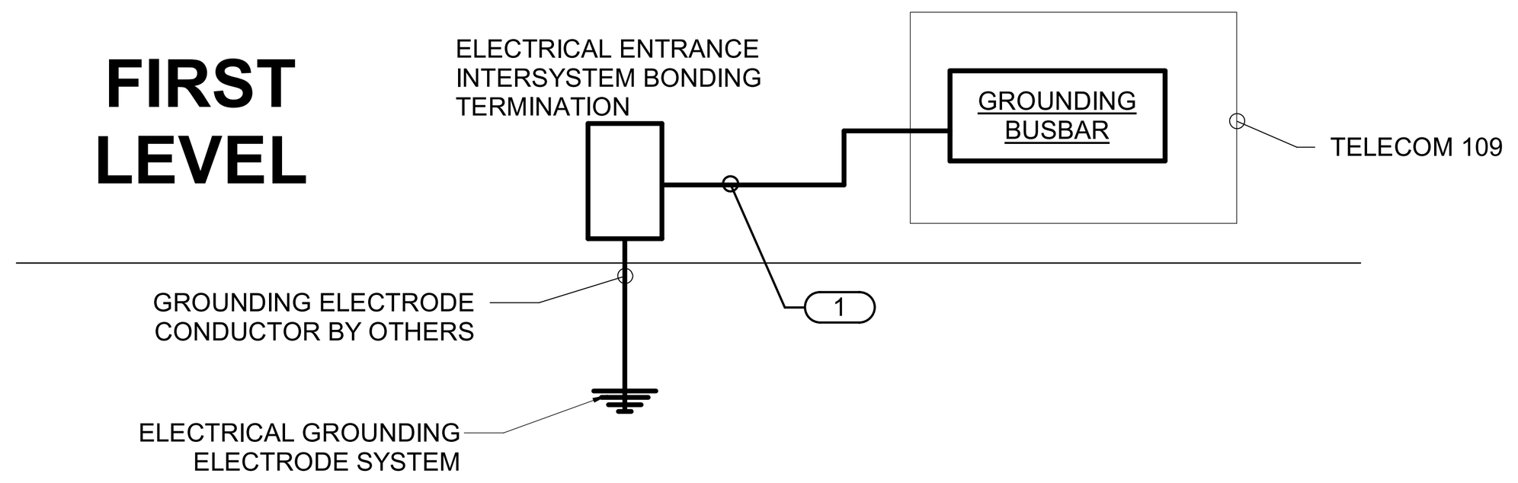


NOTES:

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 3/0 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.

KEYNOTES:

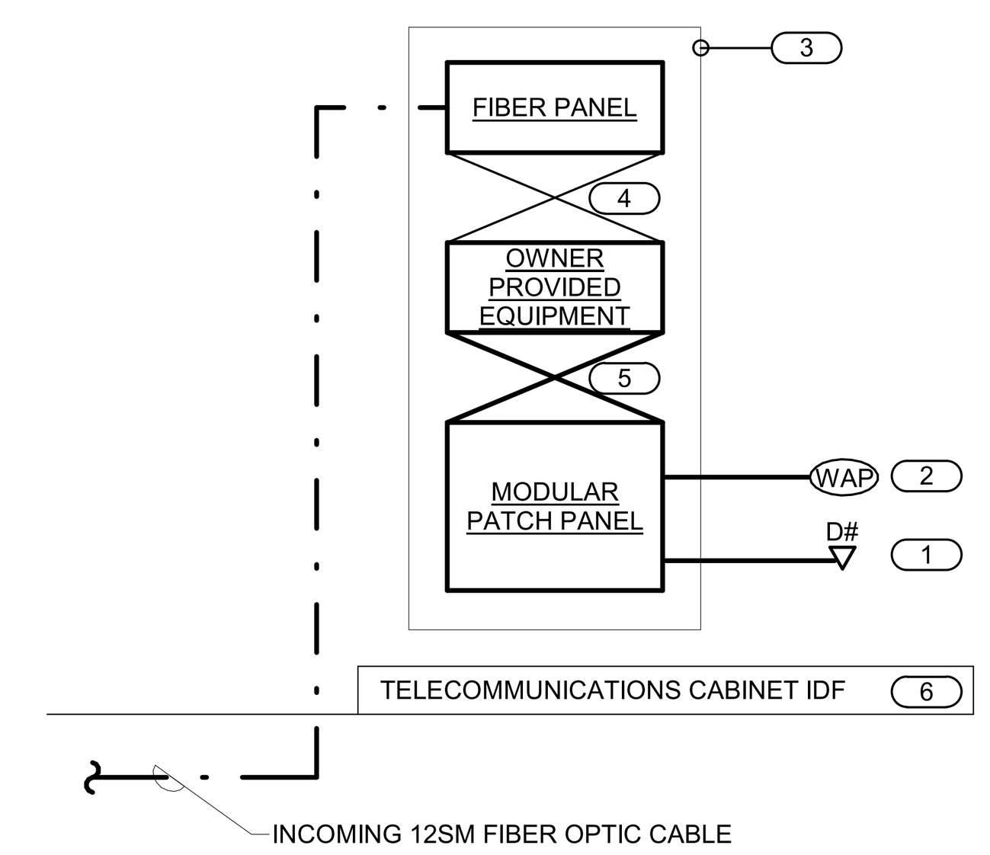
1. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT). BCT SHALL BE THE SAME SIZE AS THE TBB OR LARGER. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING REQUIREMENTS.

BONDING CONDUCTOR SIZING SCHEDULE

CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 26'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
GREATER THAN 66'	3/0

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 CONNECTION(S), 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 RJ45 CATEGORY 6A UTP PATCH CORDS, REFER TO SPECIFIATIONS FOR PATCH CORD REQUIRMENTS.

6. REFER TO COVERPAGE AND FLOOR PLANS FOR TELECOMMUNICATIONS ROOM LOCATIONS.

2 FIBER OPTIC AND COPPER RISER DIAGRAM

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Tustin Unified School District

NORTH: TRUE

Consultant

Architect

REN. 10/31/25

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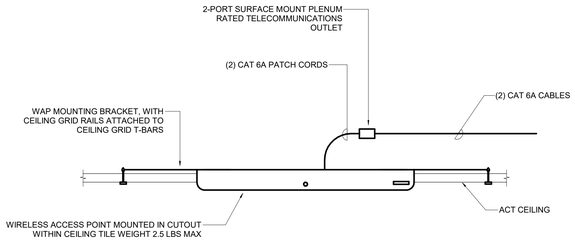
TECHNOLOGY RISER DIAGRAM AND SCHEDULES

T5.01

0" 1"

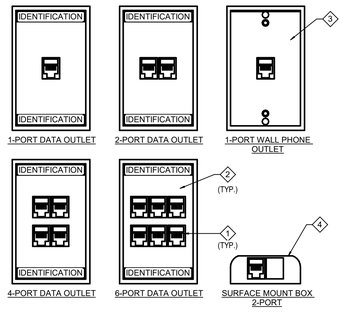


WAP ACT INSTALLATION DETAIL

NOTES:

1. 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 HANGER RESTRICTIONS CANNOT BE ACHIEVED, THE ADDITION OF SUPPLEMENTAL FRAMING OFF STEEL FRAMING WILL BE REQUIRED.

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



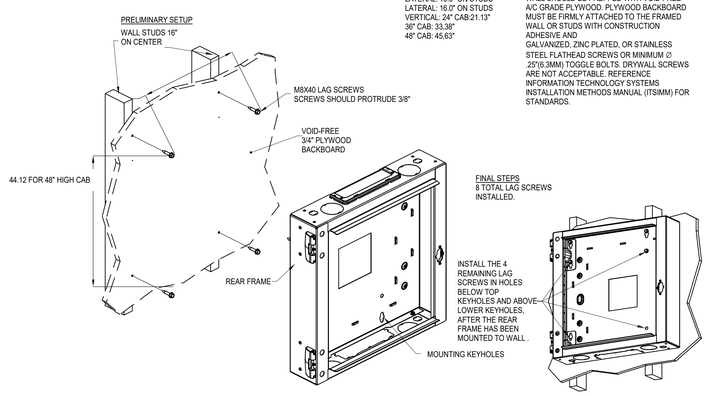
NOTES:

1. REFER TO SPECIFICATION SECTION 27 15 00 - HORIZONTAL CABLING REQUIREMENTS FOR CATEGORY CABLE PERFORMANCE REQUIREMENTS.
2. REFER TO SPECIFICATION SECTION 27 05 53 - IDENTIFICATION FOR DATA OUTLET PORT IDENTIFICATION.
3. DATA OUTLET SHALL BE INSTALL IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING. REFER TO DETAIL 1/T5.01 TECHNOLOGY ROUGH-IN MOUNTING DETAILS FOR CONDUIT SIZE.
4. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS.
5. USE T568B WIRING SCHEME TO TERMINATE THE TWISTED-PAIR CABLE ONTO THE CONNECTOR INTERFACE.
6. WHERE APPLIES PER PLANS, PROVIDE AV OUTLET WITH HDMI CONNECTION PER BELOW.
   - PANDUIT COVER PLATE: CBEIWY OR APPROVED EQUAL
   - PANDUIT JACK:(HDMI 2.0) CMHDMIIW OR APPROVED EQUAL
   - PANDUIT MODULAR INSERT: CHF2IW-X OR APPROVED EQUAL

KEYNOTE NOTES:

1. 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.
2. 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.
3. 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 "KWP6PY", COMMSCOPE OR APPROVED EQUAL.
4. 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.

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



NOTES:

1. 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.

STEP 1. 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.

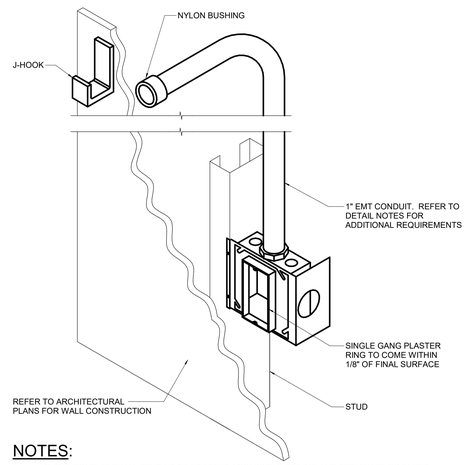
STEP 2. DRILL 5/32" PILOT HOLES FOR THE FOUR M8X40mm LAG SCREWS TO THE DIMENSIONS SHOWN ON THE DRAWING.
THE SCREWS SHOULD GO DIRECTLY INTO THE WALL STUDS.

STEP 3. INSTALL THE LAG SCREWS INTO THE HOLES. THE SCREW HEAD SHOULD PROTRUDE ABOUT 3/8" FROM THE WALL.

STEP 4. MOUNT THE REAR FRAME TO THE WALL BY HOOKING THE UPPER AND LOWER KEYHOLES OVER THE SCREWS. TIGHTEN THE SCREWS SECURELY.

STEP 5. 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"



NOTES:

1. 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.
2. 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.
3. ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT.
4. 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
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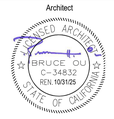

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TECHNOLOGY DETAILS

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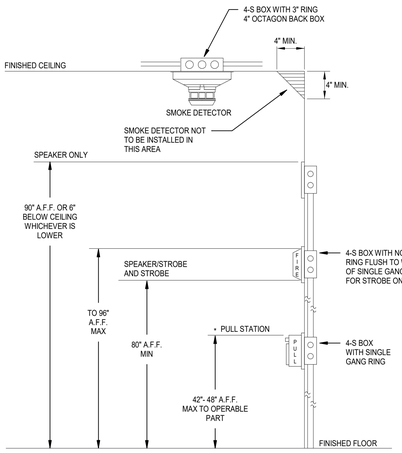

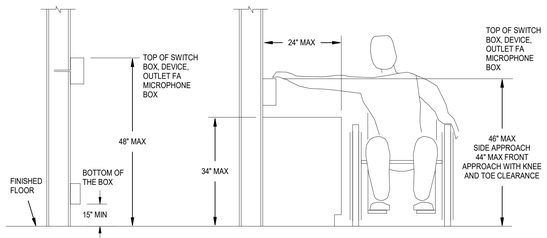

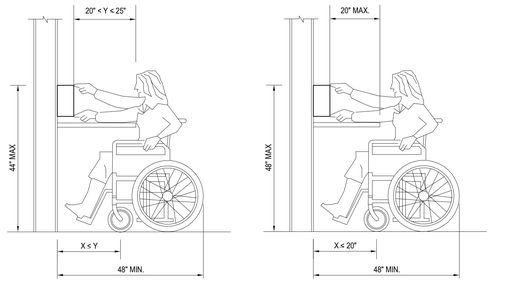

0" 1"

DEVICE SCHEDULE

SYMBOL	DESCRIPTION	MODEL	MANUFACTURER	BACKBOX	MOUNTING HEIGHT	C.S.F.M. NUMBER
FACP	EXISTING FIRE ALARM VOICE EVAC CONTROL PANEL A# 04-116022	E3	GAMEWELL-FCI	PROVIDED		----
FAPS	NEW FIRE ALARM POWER SUPPLY	HPF24S6	GAMEWELL-FCI	N/A		7315-1637:0102
S P	ADDRESSABLE AREA SMOKE DETECTOR (PHOTOELECTRIC)	ASD-PL3 B300-6	GAMEWELL-FCI	4S DEEP BOX W/ 3-0 RING	CEILING	7272-1703:0501 7300-1653:0109
A	ADDRESSABLE AREA HEAT DETECTOR	ATD-L3H B300-6	GAMEWELL-FCI	4S DEEP BOX W/ 3-0 RING	ATTIC/ CEILING	7270-1703-0502 7300-1653:0109
WP	FIRE ALARM EXTERIOR WEATHERPROOF SPEAKER	SPRK	SYSTEM SENSOR	4S DEEP BOX W/ 4S EXTENSION		7320-1653:0201
	FIRE ALARM CEILING MOUNTED SPEAKER/STROBE	SPSWRL	SYSTEM SENSOR	4S DEEP BOX W/ 4S EXTENSION		7320-1653:0505
EOL	END OF LINE RESISTOR	N/A	N/A	N/A		N/A

* ALL FIRE ALARM DEVICES AND EQUIPMENTS ARE NEW UNLESS NOTED AS EXISTING.

ELEVATION MOUNTING DETAIL

NOTES:

THE ENTIRE LENS OF STROBE LIGHTS MUST BE BETWEEN 80" AND 96" ABOVE FLOOR FINISH (AFF)

IF CEILING HEIGHTS EXCEED 30 FEET, STROBE LIGHTS MUST BE SUSPENDED AT OR BELOW 30 FEET

MANUAL FIRE ALARM BOXES SHALL BE INSTALLED IN ACCORDANCE WITH 2022 CBC SECTIONS 907.4.2

MANUAL FIRE ALARM BOXES SHALL BE LOCATED NOT MORE THAN 5 FEET FROM THE ENTRANCE TO EACH EXIT. ADDITIONAL MANUAL FIRE ALARM BOXES SHALL BE LOCATED SO THAT THE TRAVEL DISTANCE TO THE NEAREST BOX DOES NOT EXCEED 200 FEET.

THE HEIGHT OF THE MANUAL FIRE ALARM BOXES SHALL BE A MINIMUM OF 42 INCHES AND A MAXIMUM OF 48 INCHES, MEASURED VERTICALLY, FROM THE FLOOR LEVEL TO THE HIGHEST POINT OF THE ACTIVATING HANDLE OR LEVER OF THE BOX. MANUAL FIRE ALARM BOXES SHALL ALSO COMPLY WITH 2022 CBC SECTION 11B-309.4.

PER NFPA 72 CHAPTER A.17.7.4.1 DETECTORS SHOULD NOT BE LOCATED IN ADIRECT AIRFLOW OR CLOSER THAN 36 IN. (910 MM) FROM AN AIR SUPPLY DIFFUSER OR RETURN AIR OPENING. SUPPLY OR RETURN SOURCES LARGER THAN THOSE COMMONLY FOUND IN RESIDENTIAL AND SMALL COMMERCIAL ESTABLISHMENT CAN REQUIRE GREATER CLEARANCE TO SMOKE DETECTORS. SIMILARLY, SMOKE DETECTORS SHOULD BE LOCATED FARTHER AWAY FROM HIGH VELOCITY AIR SUPPLIES.

SEQUENCE OF OPERATIONS

ACTION \ DEVICE	AREA SMOKE/ BEAM DETECTOR	HEAT DETECTOR	120VAC POWER FAILURE	SHORT CIRCUIT	GROUND FAULT	BATTERY FAILURE
SOUND ALARM AT "FACP"	**YES**	**YES**	NO	NO	NO	NO
SOUND TROUBLE BUZZER AT "FACP"	NO	NO	**YES**	**YES**	**YES**	**YES**
ANNUNCIATE AT "FACP" AND THE REMOTE ANNUNCIATOR (ALARM OR TROUBLE)	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
ACTIVATE AUDIBLE / VISUAL ALARM SIGNAL THROUGHOUT BUILDING	**YES**	**YES**	NO	NO	NO	NO
ACTIVATE SIGNAL FOR OFF-SITE MONITORING	**YES**	**YES**	**YES**	NO	NO	NO
MUTE AUTONOMOUS LOCAL SOUND SYSTEM	**YES**	**YES**	**YES**	NO	NO	NO

LEGENDS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A OR AMP	AMPERES	NIC	NOT IN CONTRACT
AFF	ABOVE FINISHED FLOOR	NO.	NUMBER
AIC	AMPERES INTERRUPTING CAPACITY	PH. OR Ø	PHASE
ARCH.	ARCHITECT; ARCHITECTURAL	PNL	PANEL
AWG	AMERICAN WIRE GAUGE	PWR	POWER
C	CONDUIT	REC/RECEPT	RECEPTACLE
CKT	CIRCUIT	REQ'D	REQUIRED
CL.	CEILING MOUNTED DEVICE	RM	ROOM
C.O.	CONDUIT ONLY WITH PULL WIRE	SF	SQUARE FEET
CU	COPPER	SHT	SHEET
DWG	DRAWING	SP	SINGLE POLE
ER	EXISTING DEVICE TO BE REMOVED	SPECS	SPECIFICATIONS
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EQUIP	EQUIPMENT	TYP	TYPICAL
EXIST / (E)	EXISTING	UG	UNDERGROUND
FIN.	FINISH	U.O.N.	UNLESS OTHERWISE NOTED
FLR	FLOOR	V	VOLTS
FT	FEET	V-A	VOLT-AMPERES
GFI	GROUND FAULT INTERRUPTER	W	WATTS
GND	GROUND	W/	WITH
LTG.	LIGHTING	W/O	WITHOUT
MTG	MOUNTING	WP	WEATHERPROOF
N	NEW	CEC	CALIFORNIA ELECTRICAL CODE
FS	FLOW SWITCH	▭	PULL BOX (WEATHERPROOF)
JB	JUNCTION BOX	##	RISER UP AND DOWN
PIV	POST INDICATOR VALVE	TS	TEMPER SWITCH
DCDV	DOUBLE CHECK DETECTOR VALVE	SFD	COMBINATION SMOKE FIRE DAMPER

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 IR 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 EXISTING FIRE ALARM CONTROL PANEL TO CONNECT NEW FIRE ALARM SYSTEM DEVICES SHOWN PER DRAWING AND SPECIFICATION DOCUMENT. UPON COMPLETION, A COMPLETE PRE 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

NOTES:

1. THIS DETAIL APPLIES TO MOUNTING OF ANY MECHANICAL AND ELECTRICAL DEVICE WHICH CONTAINS AN OPERABLE PART THAT IS ADJUSTABLE BY THE OCCUPANT. THIS APPLIES 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 x27" HIGH x19" MIN. DEEP CLEAR OPENING. CBC SECTIONS 11B-306 & 11B-308.

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 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

PARTIAL LIST OF APPLICABLE STANDARDS
NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED): 2022 EDITION
NFPA 720 STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE DETECTION AND WARNING EQUIPMENT; 2015 EDITION
NFPA 80 STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES; 2019 EDITION
UL 464 AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES; 2003 EDITION
UL 521 STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS; 1999 EDITION
UL 1971 STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED; 2018 EDITION (R2010)

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.

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.

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS.

THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 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 ELECTRICITY, 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:
A. 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.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED 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 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

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

MECHANICALPIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

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

WIRE SCHEDULE

WIRE DESIGNATION	WIRE IN CONDUIT	WIRE IN CONDUIT UNDERGROUND/WET LOC.	UNDERGROUND/WET WIRE DESIGNATION
INIT. LOOP Z	2 CONDUCTOR #16 FPL TWISTED/ SHIELDED WEST PENN #D991	2 CONDUCTOR #16 FPLP SHIELDED WEST PENN #AQ-294	INIT. LOOP Z
SBUS B	4 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	4 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	SBUS B
VBUS C	2 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	2 CONDUCTOR #18 TWISTED SHIELDED PAIR CABLE	VBUS C
SPEAKER CKT. S	2 CONDUCTOR #14 THHN/THWN STRANDED	2 CONDUCTOR #14 THHN/THWN STRANDED	SPEAKER CKT. S
VISUAL CKT. V	2 CONDUCTOR #12 THHN/THWN STRANDED	2 CONDUCTOR #12 THHN/THWN STRANDED	VISUAL CKT. V
POWER CKT. P	2 CONDUCTOR #12 THHN/THWN STRANDED	2 CONDUCTOR #12 THHN/THWN STRANDED	POWER CKT. P

NOTE:

ALL WIRE MODEL NUMBERS ARE WEST PENN.
EQUIVALENT BY OTHER MANUFACTURER IS ACCEPTABLE.

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 ALL FIRE RATED WALLS.
B. ELECTRICAL CONTRACTOR'S AND FIRE ALARM SYSTEM INSTALLER'S NAME, ADDRESS, PHONE NUMBER AND C-10 LICENSE NUMBER.
C. LIST OF SYSTEM COMPONENTS, EQUIPMENT AND DEVICES, INCLUDING MANUFACTURERS' MODEL NUMBER(S) AND CALIFORNIA STATE FIRE MARSHALL 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 USED IN 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.

DRAWING INDEX

SHEET	DESCRIPTION
FA0.00	FIRE ALARM SYMBOLS, LEGENDS & GENERAL NOTES
FA0.01	FIRE ALARM SPECIFICATION
FA1.01	FIRE ALARM SITE PLAN
FA1.02	FIRE ALARM ENLARGED SITE PLAN
FA6.01	FIRE ALARM DETAILS

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 90" 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 OCCUPIABLE 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 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15. ALL FIRE ALARM WIRING SHALL BE 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, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS.
19. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
20. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
21. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
22. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 7.8.2.
23. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
24. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
25. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
26. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
27. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.
28. ALL CARBON MONOXIDE SIGNALS SHALL SOUND A FOUR-PULSE TEMPORAL PATTERN PER NFPA 720, 5.8.6.5.1.
29. ALL EQUIPMENT SHALL BE U.L. AND C.S.F.M. LISTED.
30. ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS THAT REQUIRE ACCESS FOR ATTIC HEAT DETECTOR, SERVICING, TROUBLESHOOTING, ETC.
31. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROP, ADDITIONAL PARTS, ENGINEERING, ETC., THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
34. ALL 120VAC POWER REQUIREMENTS FOR THE FIRE ALARM SYSTEM SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR AND SHALL MEET ALL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
35. ALL FIRE ALARM DEVICE BACKBOXES, FIRE ALARM TERMINAL CABINETS, GUTTERS, JUNCTION BOXES, AND ASSOCIATED CONDUITS SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. REFER TO FIRE ALARM SYMBOL LIST AND/OR MOUNTING DETAILS FOR ADDITIONAL INFORMATION. SYSTEM SUPPLIER PROVIDED BACKBOXES SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
36. SMOKE DETECTOR TESTING SHALL BE ACCOMPLISHED PER THE MANUFACTURER'S INSTRUCTIONS.
37. ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. THE FIRE ALARM CONTROL PANEL TO SUPERVISE THE ANNUNCIATOR PANEL, ALL INITIATING AND INDICATING DEVICE CIRCUITS.
38. ALL WIRING SHALL BE CUT FOR IN AND OUT. WIRING SHALL NOT BE LOOPED THROUGH DEVICES.
39. POINT, COMMON ANNUNCIATION, AND T-TAPPING ARE PROHIBITED.
40. PROVIDE 3/4" CONDUIT FROM FIRE ALARM CONTROL PANEL TO TELEPHONE BACKBOARD FOR OWNER PROVIDED CENTRAL STATION MONITORING.
41. MINIMUM CONDUIT SIZE SHALL BE 3/4" AND CONTRACTOR SHOULD PROVIDE APPLICABLE CONDUIT SIZE AS REQUIRED PER THE SHOP DRAWING AND SPECIFICATION.
43. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
44. FIRE ALARM SYSTEM SHALL BE UL LISTED.
45. CBC 907.6.6.3 (SFM AMENDMENT) REQUIRES FIRE ALARM TO... "TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISORY STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISORY STATION SHALL BE LISTED AS EITHER UUFX (CENTRAL STATION) OR UUJS (REMOTE AND PROPRIETARY) BY THE UNDERWRITERS LABORATORY INC. (UL) OR OTHER APPROVED LISTING AND TESTING LABORATORY OR SHALL COMPLY WITH THE REQUIREMENTS OF STANDARD, FM 3011)."
46. SUBSTITUTION OF SYSTEM COMPONENTS OR MANUFACTURER WILL REQUIRE THE CONTRACTOR TO SEPARATELY OBTAIN APPROVAL WITH THE 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.
47. FINAL ACCEPTANCE TEST TO INCLUDE TESTING THE CONNECTION BETWEEN THE FIRE ALARM PANEL AND THE SUPERVISING STATION.
48. COORDINATE WITH THE ENGINEER FOR USE OF EXISTING CONDUIT ON A CASE BY CASE BASIS.
49. 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.
50. CONTRACTOR SHALL DISCONNECT EXISTING FIRE ALARM SYSTEM FROM THE EXISTING INTERCOM SYSTEM. ENSURE THE INTERCOM SYSTEM IS COMPLETELY FUNCTIONAL AFTER DISCONNECTION.
51. CONTRACTOR SHALL CLEARLY MARK THE ABANDON SECTION OF PUBLIC ADDRESS SYSTEM.
52. PROVIDE A FIRE ALARM DOCUMENTATION CABINET PER NFPA72,7.7.
53. FIRE SAFETY DURING DEMOLITION AND CONSTRUCTION SHALL COMPLY WITH CBC CHAPTER 33 AND CFC CHAPTER 33.
54. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APRROVED DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATION CHANGE DOCUMENT, OR A SEPERATE 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 4-317(C)).
55. 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 -SAFETY PORTIONS OF THE PROJECT. CHANGES SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK SHOWN THEREON CAC 4-338(C)).
56. PROJECT INSPECTOR TO APPROVE SYSTEM VOICE-EVACUATION INTELLIGIBILITY DURING TESTING PHASE.
57. CONTRACTOR SHALL PROVIDE ALL CABLING, RELAYS, MOUNTING HARDWARE AND ANY OTHER DEVICES (FIRE ALARM SYSTEM DEVICES) TO PROVIDE A FULLY FUNCTIONING FIRE ALARM OVERRIDE SYSTEM. WHEN FIRE ALARM CEASES, EACH LOCAL SOUND SYSTEM SHALL AUTOMATICALLY REVERT TO NORMAL OPERATION. FIRE ALARM MODULES AND CABLING BY FIRE ALARM CONTRACTOR.
58. FOR ALL HEAT DETECTORS THAT ARE LOCATED ABOVE CEILING/ATTIC SPACES, CONTRACTOR SHALL PROVIDE STICKER AND LABEL "HD" AT THE REFLECTED CEILING DIRECTLY BELOW THE DEVICE TO INDICATE LOCATION.
60. AUTOMATIC FIRE ALARM SYSTEMS SHALL BE MONITORED AND SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX (CENTRAL STATION) OR UUJS (REMOTE & PROPRIETARY) 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 907.6.6.2.
61. 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.
62. INTELLIGIBILITY SHALL BE TESTED ACCORDING TO NFPA 72 ANNEX D.2 (SPEECH INTELLIGIBILITY).
63. 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.

Not for permitting or construction

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PROJECT ADDRESS:
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100%CONSTRUCTION DOCUMENT
DSA APPL NO.: XXXX DSA FILE NO.: XXXX

Tustin Unified School District

NORTH: TRUE

Consultant
E-19817
Exp.03/31/26

Architect
C-34832
REN.10/31/25

CLIENT
TUSD

DATE	PROJECT NUMBER
03/20/2024	220513

REVISIONS

No.	Description	Date

100%CONSTRUCTION DOCUMENT

FIRE ALARM SYMBOLS, LEGENDS & GENERAL NOTES

This document is for plan review only

FA0.00

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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. This 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. All equipment herein specified shall be engineer-approved and California State Fire Marshal (CSFM) listed. The entire installation shall conform to the National Fire Protection Association (NFPA) Standard 72, 2022 90A & CEC Article 760 and authorities having jurisdiction as applicable. The system specified and depicted on the plan is a complete and approved system. The entire fire alarm system has been submitted and approved by the Division of the State Architect as a complete submittal. Any routing of the system wiring that is significantly different than shown on the approved drawings shall have the approval of the engineer and must be obtained prior to construction.
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. 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. Batteries shall be supervised for connection to the system and low voltage threshold. The automatic battery charger shall be capable of charging fully discharged system batteries to 100% in 8 hours.
4. The system wiring and installation shall be as stated in drawings and as required by the manufacturer. All wiring shall be color coded, tagged and verified to assure that it is free from shorts and grounds and shall be rated for the appropriate environmental conditions such as well locations.
5. Testing: The completed system shall be tested in accordance with NFPA Standard 72 7.6.6 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. Devices shall be at least 15dBA above average ambient sound level, but not less than 75dBA at 10' or more than 120dBA.
   c. Visual devices shall not exceed 2 flashes per second and shall not be slower than 1 flash per second. Visual devices shall be synchronized when 3 or more devices are within the same field of view.
   d. Supervision of all circuits to indicate any abnormal wiring condition.
   e. N.O./N.C. integral relays for external device interface or as indicated on drawings.
   f. Central station connection capable of indicating (3) distinct separate signals as being tamper, trouble and alarm with point reporting capabilities.
8. All work shall be completed as shown on the plans and or as specified within this specification and shall include the following (but is not limited to):
   a. Life safety fire alarm detection and signaling system.
   b. Furnishing and installation of equipment and devices.
   c. Conductors, connections and interconnections where specified and all in conduit system.
   d. Conduit, wire and connections for control of heating and ventilation motors, smoke dampers and smoke exhaust.
   e. Testing, cleaning and adjusting of completed work.
   f. Wiring diagrams, as-built drawings and three (3) sets of equipment operations and maintenance instructions for Owner.
   g. Complete maintenance for two years.
   h. Proposal for subsequent maintenance contract.
   i. All work and material for complete and operable systems as indicated or specified.
   j. Permits, inspections and fees.
   k. Identification and instruction to Owner Representative. Training shall consist of a minimum or two (2) 6-hour sessions.
9. Coordination with Section 26 05 33: Raceway and Boxes for Electrical Systems.
10. Furnishing of special back boxes where required for installation of fire alarm devices.
11. All conductors to be installed in conduit pursuant to Specification Section 26 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) submittals 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 these functions.
   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 next to the control unit in accordance with UL Standard 864. The contractor shall warrant all equipment and wiring free from inherent mechanical and electrical defects for two years from the date of final acceptance.
16. The FACP shall integrate with the 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 IRA-1 chapter of approval for temporary school use of DSA approved relocatable buildings, Approval of fire alarm and/or fire sprinkler systems for temporary use buildings shall be in accordance with the Chapter 9, CCR, Title 24, Part 2.

   a. Fire Alarm: Section 3.4.4.4 For buildings sited 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 device(s) (with a minimum rating of 95 dBA at 10 feet).
   Buildings more than 25 feet apart are to be provided with additional audible devices to ensure the fire alarm signal can be heard within adjacent buildings.

   b. 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 telephone or “walkie-talkie” devices or other similar systems. Buildings that are less than 25 feet from existing permanent buildings on the site shall be interconnected with the campus fire alarm system.

B. Substitutions

1. Substitution of system components or manufacturer will require the contractor to separately obtain approval with DSA at Contractor’s expense and shall meet all requirements of the system as designed and pre-approved.
2. All proposed substitutions shall be listed with the California State Fire Marshal.

1.3 SUBMITTALS

A. Comply with applicable provisions of Section 26 05 00: Common Work Results for Electrical.

B. General:

1. Two (2) copies of all submittals shall be submitted to the Architect/Engineer for review and approval.
2. All references to manufacturers model numbers and other pertinent information herein is intended to establish minimum standards of performance, function, and quality.
3. 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.

C. 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, U.L. listing, equipment ratings, dimensions and finishes.
3. Highlight actual devices to be used and their amp draw in stand-by and alarm modes.

D. Shop Drawings:

1. Provide schematic layout, floor plan, drawings indicating location of all components and equipment, required size and location of conduit and outlets and type and quantity of system conductors. 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 FATC. Address numbers shall be noted on all appliances.
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 Instruction Manual:

1. Manual shall include the following tailored to this specific project:
   a. Operational description.
   b. Coded cabling plan.
   c. Two wire circuit diagrams.
   d. Wiring destination schedule.
   e. Schematic component diagrams and PC 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 that will 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 end of line 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 (IDC) 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. On Style 6 or 7 (Class A) configurations a single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.

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 refer 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 ratings.
   e. Operating voltage of capacitors shall not exceed 80% of rated voltage.
   f. Operating loads and voltages on transistors 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.

B. 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).

The FACP 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 time of 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, devices, etc. covered by the specifications and/or noted on the contract 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 preventative maintenance. The schedule shall include:

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 at this time.

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.

Placing 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 calibrated sensitivity 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 or 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 provided as specified on the fire alarm equipment legend and as shown on associated electrical drawing.

2.3 COMPONENTS

EXISTING FIRE ALARM CONTROL PANEL (FACP)

A. FACP shall be as indicated model on the drawing or approved equivalent.

2.1System 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 memory 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 upon completion of this project.

2.2Automatic 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. All audible alarm indicating devices shall sound the temporal signal code 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 requirements 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 lcd display.
6. Display type and location of alarm per point on remote lcd annunciator.
7. List on printer the time, date, type, and user defined message for each event printed.
8. Graphically display on the fireworks station, school diagram showing whole school, with graphic scrolling thru system prompts, down to point of alarm activation.
9. Subsequent alarms are to report to the main control panel and fireworks, 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.

2.3Automatic supervisory operation

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.

2.4operation

A. During the normal state, the normal led (green) shall flash. the first line of the lcd shall display the time in (hh: 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 lcd indicates the time, the number of messages waiting, the type of alarm, the point id number of devices, 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 resound.

E. During the trouble condition, the amber 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 the 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-amp notification power expander that provides its own AC power connection, battery charging circuit, and backup battery for use 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, resettable, 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) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.

D. Intelligent Thermal Detectors

1. The intelligent thermal detectors be as indicated model on the drawing or approved equivalent addressable devices rated at 135 degrees Fahrenheit (58 degrees Celsius) and have a rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. A high heat thermal detector rated at 190 degrees Fahrenheit shall also be available. The thermal detectors shall connect via two wires to the fire alarm control panel signaling line circuit.

E. Control Relay Module:

1. The Control Relay is intended for use in intelligent, two-wire systems where the individual address of each module is selected using 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 connections to 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 VRMS) to notification appliances. 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 their status to the panel as NORMAL, OPEN or SHORT CIRCUIT. The module contains a panel-controlled LED. The Series use 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. If one of the devices in the group has a status change, the panel’s microprocessor stops 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 selected using the built-in rotary switches.
2. It supports Class A supervised or Class B supervised 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 or approved equals. The Strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service.
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 inputs 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, 30, 75, 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 or 2 1/8”deep and 4” Octagonal, 1 ½” or 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 supervision 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 measuring.
9. When synchronization is required, the appliance shall be compatible with Sync Modules, PS Power Supplies, or other manufacturer’s panels with built-in manufacturer Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with patented sync protocol.

I. Combination Speaker Strobes

1. The Speaker Strobes are designed for high efficiency sound output for indoor applications. The product line features intelligible communications with crisp, clear voice messages and tone signaling, ideal for mass notification and voice evacuation.
2. Providing a sleek aesthetic appearance, the wall and ceiling appliances feature dual voltage (25/70 VRMS) capability and field-selectable taps from 1/8 to 2 watts. For faster and easier installation, the low-profile design incorporates a speaker mounting plate, and each model has a built-in level adjustment feature and Snap-On cover with no visible mounting screws.
3. For visible signaling to meet the hearing impaired, the E Speaker Strobe models incorporate the low current draw of the Strobes.
4. Ceiling mount models are available in multi-candela ceiling strobe with field selectable intensities of 15/30/75/95/110/115cd or the high intensity strobe with field selectable 135/150/177/185cd.
5. The strobe portion of all Speaker Strobes may be synchronized when used in conjunction with the Sync Modules, Power Supplies or other manufacturers panels incorporating the manufacturer Patented Sync Protocol.
   Synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy.
6. 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 IN/OUT wiring terminals for fast installation using #12 to #18 AWG wiring.
7. The speakers shall be UL Listed under UL 1480 for Fire Protective Service and speakers equipped with strobes shall be listed under UL 1971 for Emergency Devices for the Hearing-Impaired. In addition, the strobes shall be certified to meet the requirements of FCC Part 15, Class A.
8. 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.
9. The speaker and speaker strobe appliances shall be designed for indoor flush 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.
10. 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.

J. 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. Wall-mount outdoor speakers can be used indoors or outdoors in wet or dry applications, and can provide reliable operation from −40°F to 151°F. These speakers provide a broad frequency response range, low harmonic distortion and maintain a high sound pressure level at all tap settings to provide accurate and intelligible broadcast of evacuation messages.
3. Field-selectable settings, including candela, speaker voltage and power settings, and automatic selection 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. If necessary, to meet standby requirements, external battery and charger systems may be used.

PART 3 EXECUTION

3.1 COORDINATION

A. Refer to the 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 pathing requirements to electrical installer. For self-contained door release, coordinate with door supplier.

3.2 GENERAL

A. Comply with all applicable paragraphs in Section 26 05 00: Common Work Results for Electrical, apply as though repeated herein.

B. Install system(s) in accordance with manufacturer's instructions.

C. Include services of certified technicians to supervise installation, provide adjustments, provide final connections, system testing and system training to Owner Representative

3.3 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 contractor, will be allowed to install any portion of this system Including, but not limited to:

1. Wiring
2. Field device installation
3. System 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 CEC, 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 enclosure shall feature a quick removal chassis to facilitate rapid replacement of the FACP electronics.

3.4 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.

3.5 INSPECTION

A. Systems to meet all the requirements of the CSFM and IOR and AHJ and shall be approved thereby before installation and prior to final acceptance.

B. Closeouts:

1. It is the intent of these 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.
2. As part of the closeout 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 owner with electronic versions of the as-built CD’s.
3. Locate next to building FACP and other fire alarm panels.
4. 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.
5. State FML-005 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

3.6 LOCATION

A. Before installation, verify exact location of control equipment and outlets.

3.7 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 cables.

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 of the equipment manufacturer, and as indicated on the engineered shop drawings.

D. All wire shall be U.L. Listed FPL for limited energy (300V) and fire alarm applications and shall be installed in conduit. Limited energy FPLP or MPP wire may be run open in return air ceiling plenums provided such wire is U.L. Listed for such applications and is of the low smoke producing fluorocarbon type and complies with CEC Article 760 if 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 use of IDC 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 T-tapping NFPA Style 4 (Class B) Signaling Line Circuits (SLCs). Systems which do not allow or have restrictions in, for example, the number of T-taps, length of T-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.

J. All service loops shall be installed in the accessible ceiling that is nearest to each device and panel. No service loops shall be installed in open spaces or non-accessible spaces

3.8 TERMINAL BOXES, JUNCTION BOXES AND CABINETS:

A. All boxes and cabinets shall be UL listed for their use and purpose.

3.9 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 CEC.

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 760-29.

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 smoke control system shall be installed in conduit per current adopted codes regardless of voltages or ratings.

3.10 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 IOR, 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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100%CONSTRUCTION DOCUMENT

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

Tustin Unified
School District

NORTH: TRUE

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Architect

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REN. 10/31/25

CLIENT
TUSD

DATE	PROJECT NUMBER
03/20/2024	220513

REVISIONS

No.	Description	Date

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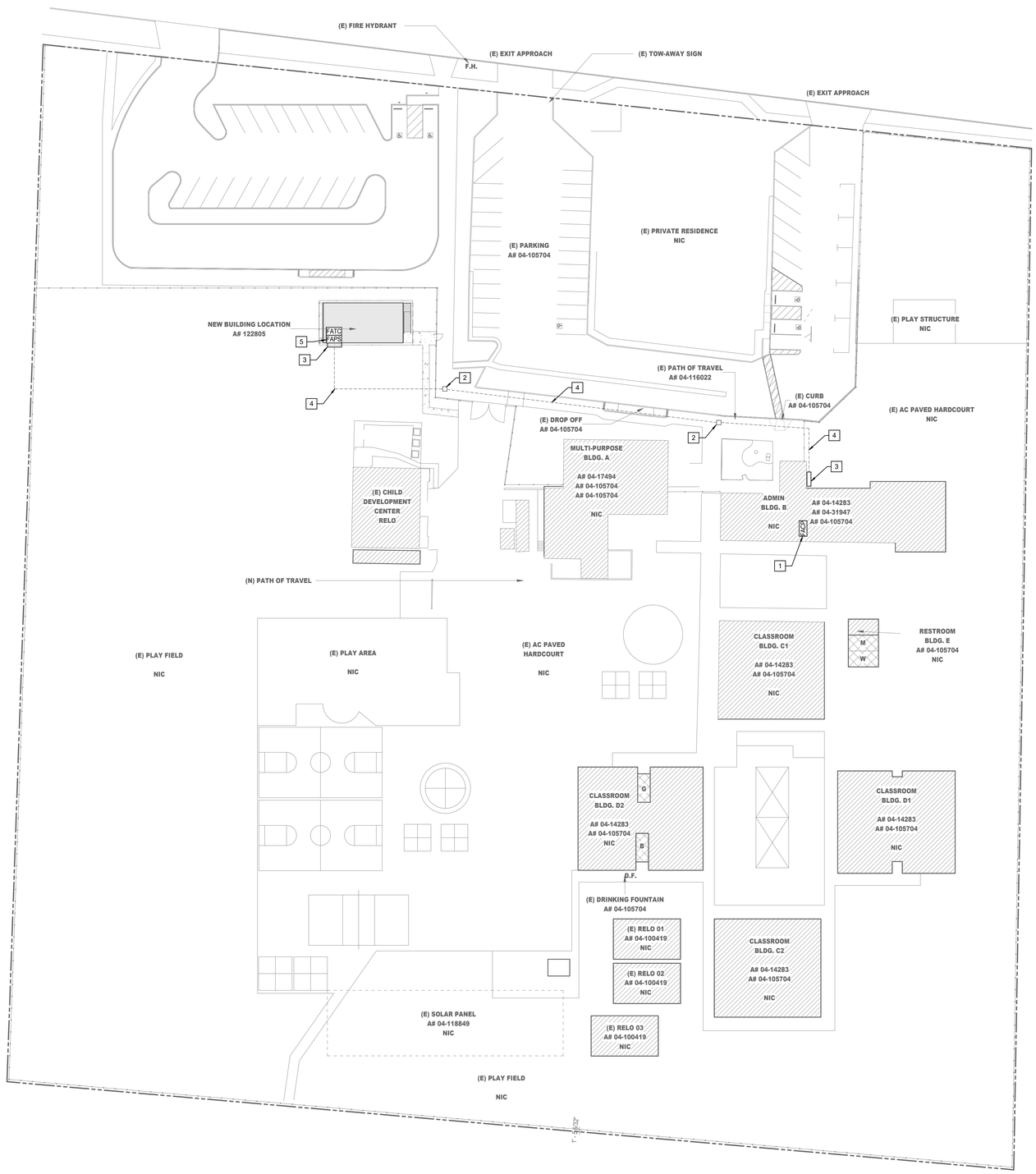
FIRE ALARM SPECIFICATION

0" 1"

FA1.01 - FIRE ALARM SITE PLAN



KEY NOTES

1. EXISTING FIRE ALARM CONTROL PANEL (A#04-116022). CONTRACTOR TO FIELD VERIFY 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"X6" 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 ASPHALTAND BACK FILL TO MATCH EXISTING SURFACES.
5. PROVIDE NEW FIRE ALARM POWER SUPPLY PANEL AND FIRE ALARM TERMINAL CABINET AS SHOWN.

SITE PLAN 1
1" = 30'-0"

Not for permitting or construction

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Tustin Unified School District

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FIRE ALARM SITE PLAN

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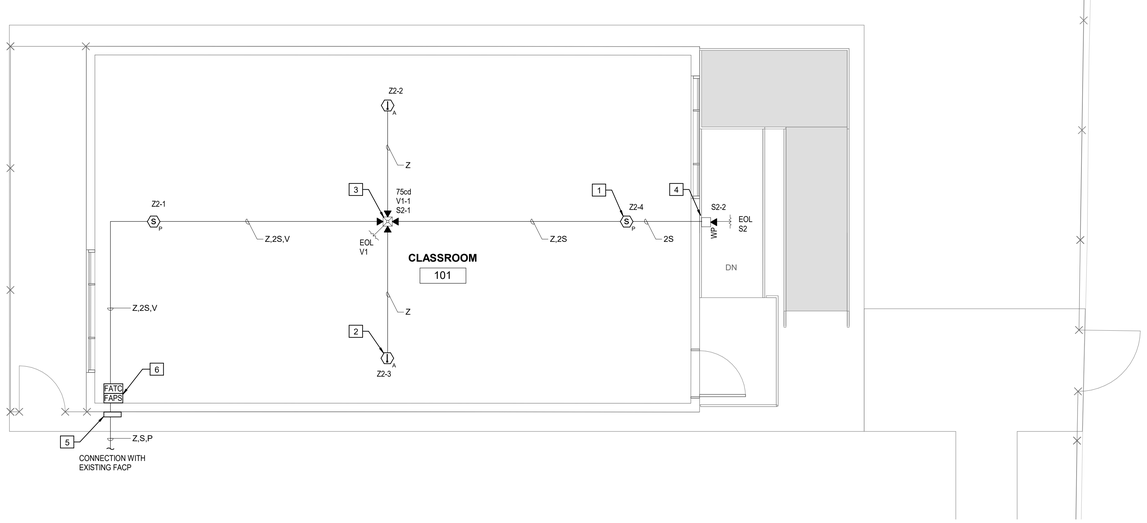

KEY NOTES

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 AND FIRE ALARM TERMINAL CABINET AS SHOWN.

GENERAL NOTES

1. ALL SPEAKER TAP SETTING SHALL BE SET AT 1/2 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 "HD" 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.

ENLARGED SITE PLAN 1 — 1/4" = 1'-0"

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FIRE ALARM ENLARGED SITE PLAN

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FACP BATTERY CALCULATION SHEET

FACP (EX)
LOCATION: BUILDING B (A# 04-116022)

QUANTITY			UNIT STANDBY CURRENT(A)	TOTAL STANDBY CURRENT(A)	UNIT ALARM CURRENT(A)	TOTAL ALARM CURRENT(A)
EX	1	CONTROLS	0.2900	0.2900	0.5300	0.5300
EX	1	ANNUNCIATOR	0.0250	0.0250	0.0500	0.0500
EX	7	SMOKE DETECTOR	0.0020	0.0140	0.0460	0.3220
EX	7	HEAT DETECTOR	0.0020	0.0140	0.0460	0.3220
NEW	2	SMOKE DETECTOR	0.0002	0.0004	0.0020	0.0040
NEW	2	HEAT DETECTOR	0.0002	0.0004	0.0020	0.0040
EX	1	MONITOR MODULE	0.0040	0.0040	0.0050	0.0050
EX	1	CONTROL RELAY MODULE	0.0040	0.0040	0.6830	0.6830
		SUB TOTAL		0.352		1.920
		STANDBY CURRENT x 24 Hrs. (AH)		8.443 AH		
		ALARM CURRENT x 15 MINUTES (AH)		0.480 AH		
		TOTAL (AH)		8.923 AH		
		25% DERATING		2.231 AH		
		TOTAL DEMAND (AH)		11.153 AH		
		MINIMUM AMP HOUR STANDBY BATTERY POWER REQUIRED		18 AH (EXISTING)		

BATTERY CALCULATION SHEET

FACP (EX)
(A# 04-116022)

QUANTITY			UNIT STANDBY CURRENT(A)	TOTAL STANDBY CURRENT(A)	UNIT ALARM CURRENT(A)	TOTAL ALARM CURRENT(A)
	1	AMPLIFIER	0.075	0.075	0.5300	0.5300
UPDATED	3	SPEAKER (1/2 W)	0.000	0.000	0.0071	0.0213
UPDATED	2	WP SPEAKER (2W)	0.000	0.000	0.0283	0.0566
		SUB TOTAL		0.075		0.608
		STANDBY CURRENT x 24 Hrs. (AH)		1.800 AH		
		ALARM CURRENT x 15 MINUTES (AH)		0.152 AH		
		TOTAL (AH)		1.952 AH		
		25% DERATING		0.488 AH		
		TOTAL DEMAND (AH)		2.440 AH		
		MINIMUM AMP HOUR STANDBY BATTERY POWER REQUIRED		5 AH (EXISTING)		

STROBES WORST CASE VOLTAGE DROP

PANEL NAME	CIRCUIT NUMBER	CEILING SPEAKER/STROBE 15cd 0.060	30cd 0.086	75cd 0.142	95cd 0.164	TOTAL CURRENT (AMPS)	TOTAL DISTANCE (FEET)	TOTAL VOLTAGE DROP (%)	TOTAL DEVICES
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				

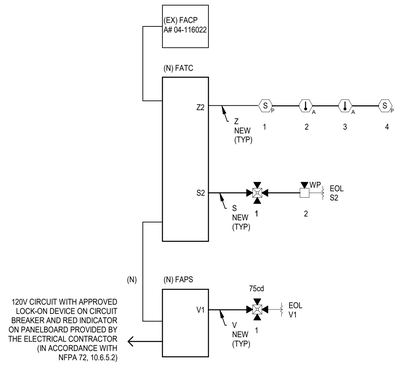
BATTERY CAPACITY CALCULATION SHEET

FAPS (N)
LOCATION: NEW PORTABLE BUILDING

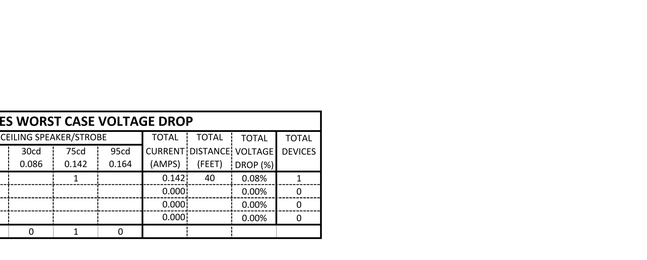
QUANTITY	Description	Unit Standby Current(A)	Total Standby Current(A)	Unit Alarm Current(A)	Total Alarm Current(A)
1	NAC TRIP	0.075	0.075	0.175	0.175
1	75cd ceiling speaker/strobe	0.000	0.000	0.142	0.142
	Sub Total		0.075		0.317
	A - Battery Backup - Standby (Hour)	24			
	B - Battery Backup (minutes)	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

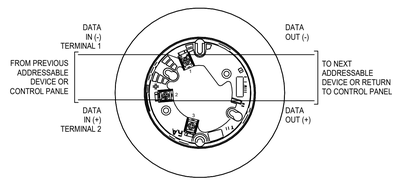
SPEAKER CIRCUIT DESCRIPTION		PANEL CIRCUIT NUMBER	WIRE GAUGE (18, 16,14 12)	CIRCUIT VOLTAGE (25 OR 70 VRMS)	APPLIANCES QUANTITIES / TAP VALUES SPEAKER TAPPED AT 0.25 WATTS	SPEAKER TAPPED AT 0.5 WATTS	SPEAKER TAPPED AT 1 WATTS	SPEAKER TAPPED AT 2 WATTS	TOTAL CIRCUIT LOAD (WATT)	ESTIMATED CIRCUIT LENGTH (FEET)	MFG. REC. MAXIMUM LOSS IS: -0.5dB ACTUAL WIRE/LOSS (dB)	MAXIMUM ALLOWABLE CKT, LENGTH (FEET)	TOTAL CIRCUIT RESISTANCE (OHMS)
AMPLIFIER#	CIRCUIT LOCATION												
FACP (AMP) -EX	NEW PORTABLE BUILDING	52	14 AWG	70		1		1	2.50	450	-0.01	21,000	2.32
								TOTAL	2.50				



4 FIRE ALARM VOLTAGE DROP AND BATTERY CALCULATIONS
NOT TO SCALE



2 SPEAKER/STROBE DETAIL
NOT TO SCALE



1 SMOKE/HEAT DETECTOR DETAIL
NOT TO SCALE

3 FIRE ALARM RISER DIAGRAM
NOT TO SCALE

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DSA APPL NO.: XXXX DSA FILE NO. XXXX

Tustin Unified School District

NORTH: TRUE

Consultant

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Architect

LICENSED ARCHITECT BRUCE OU C-34832 REN: 10/31/25 STATE OF CALIFORNIA

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TUSD

DATE	PROJECT NUMBER
03/20/2024	220513

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FIRE ALARM DETAILS

FA6.01

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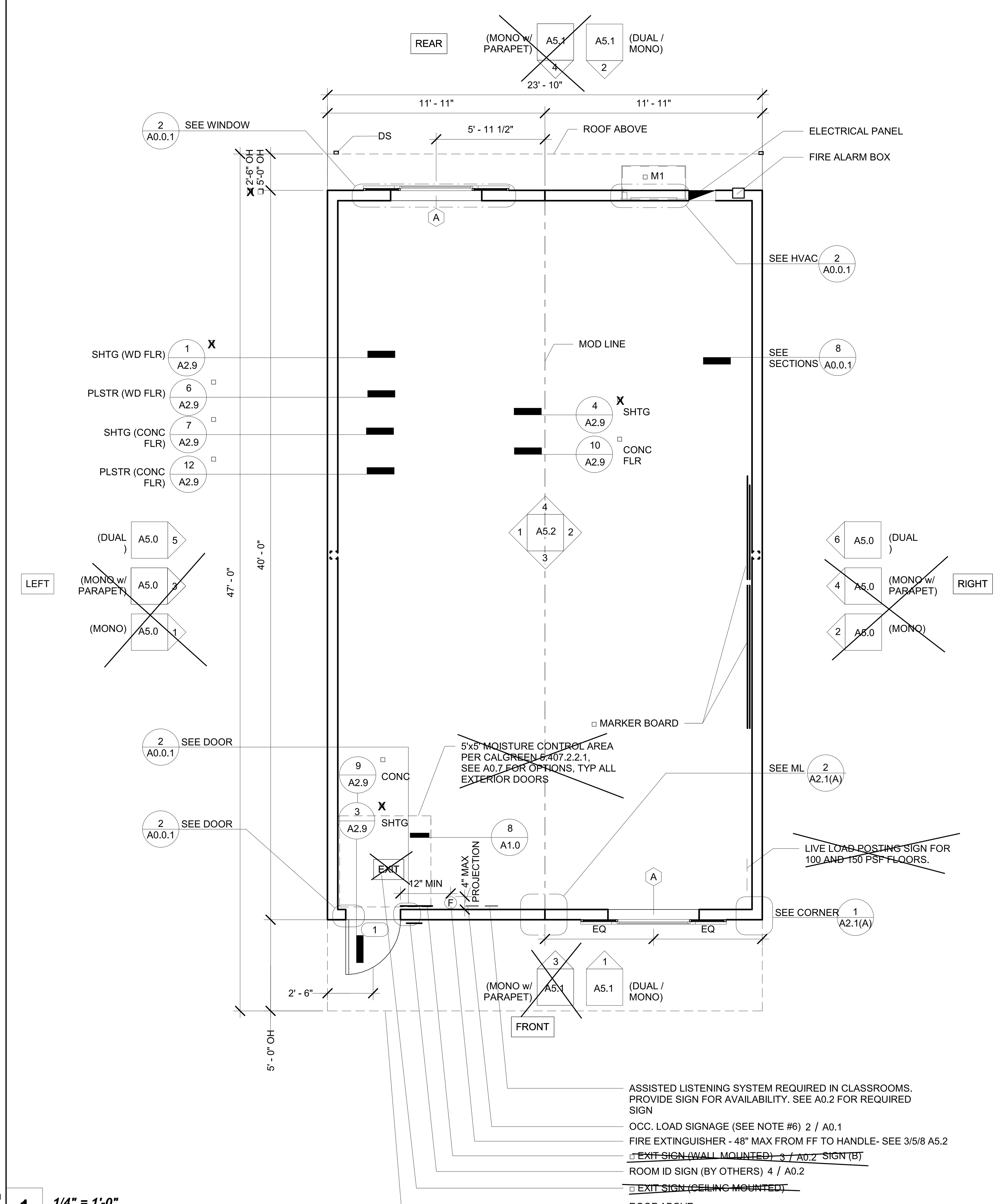


1 *1/4" = 1'-0"*
24x40 Floor Plan

All rated construction (both vertical and horizontal) must be clearly defined, correctly indentified, 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

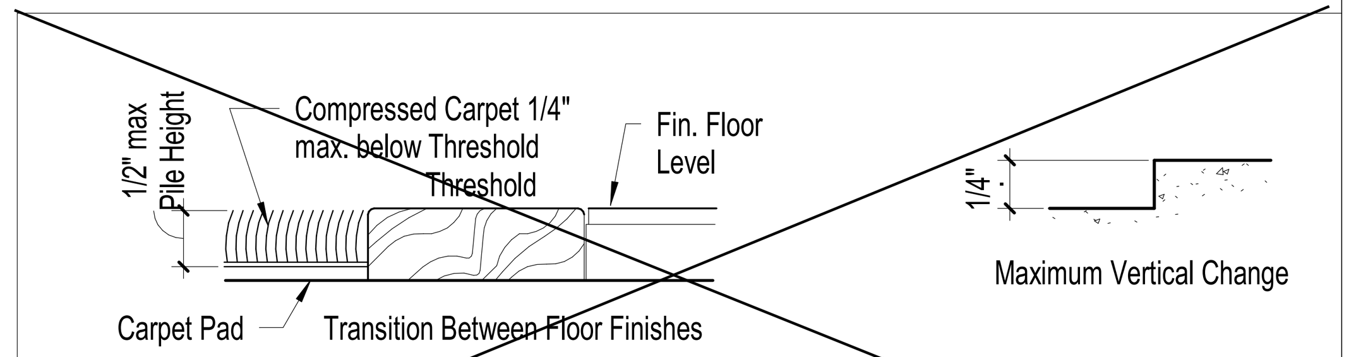
SECTION 915
CARBON MONOXIDE DETECTION

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

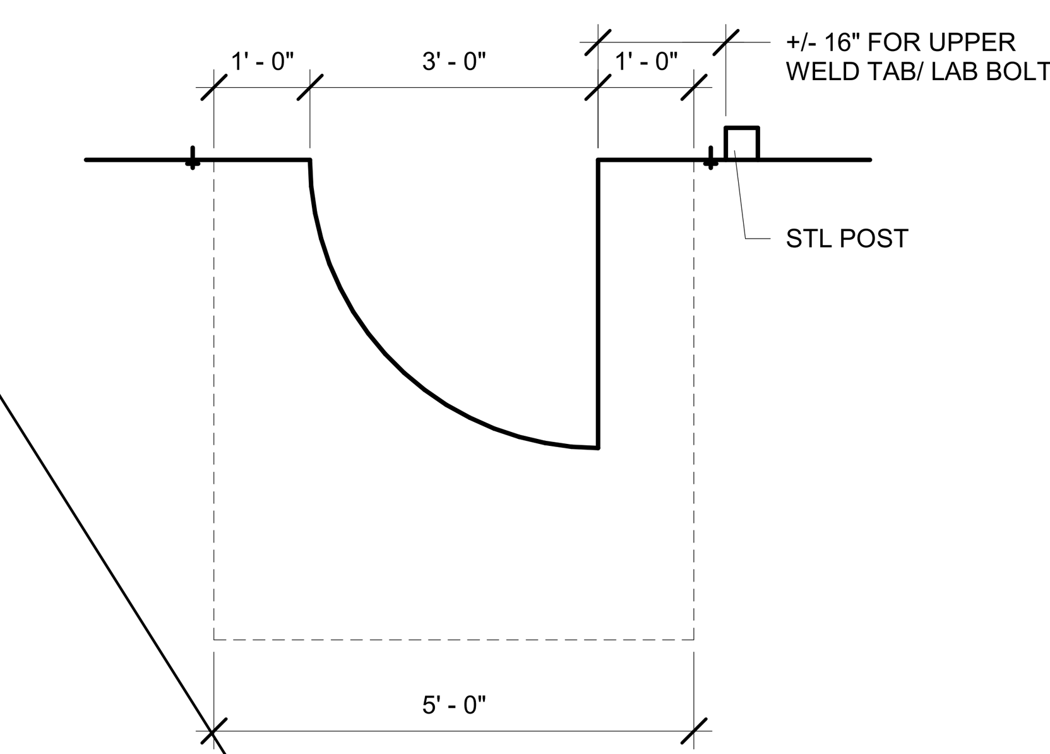
[F] 915.4.1 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and with-out a disconnecting switch other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

915.3 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.

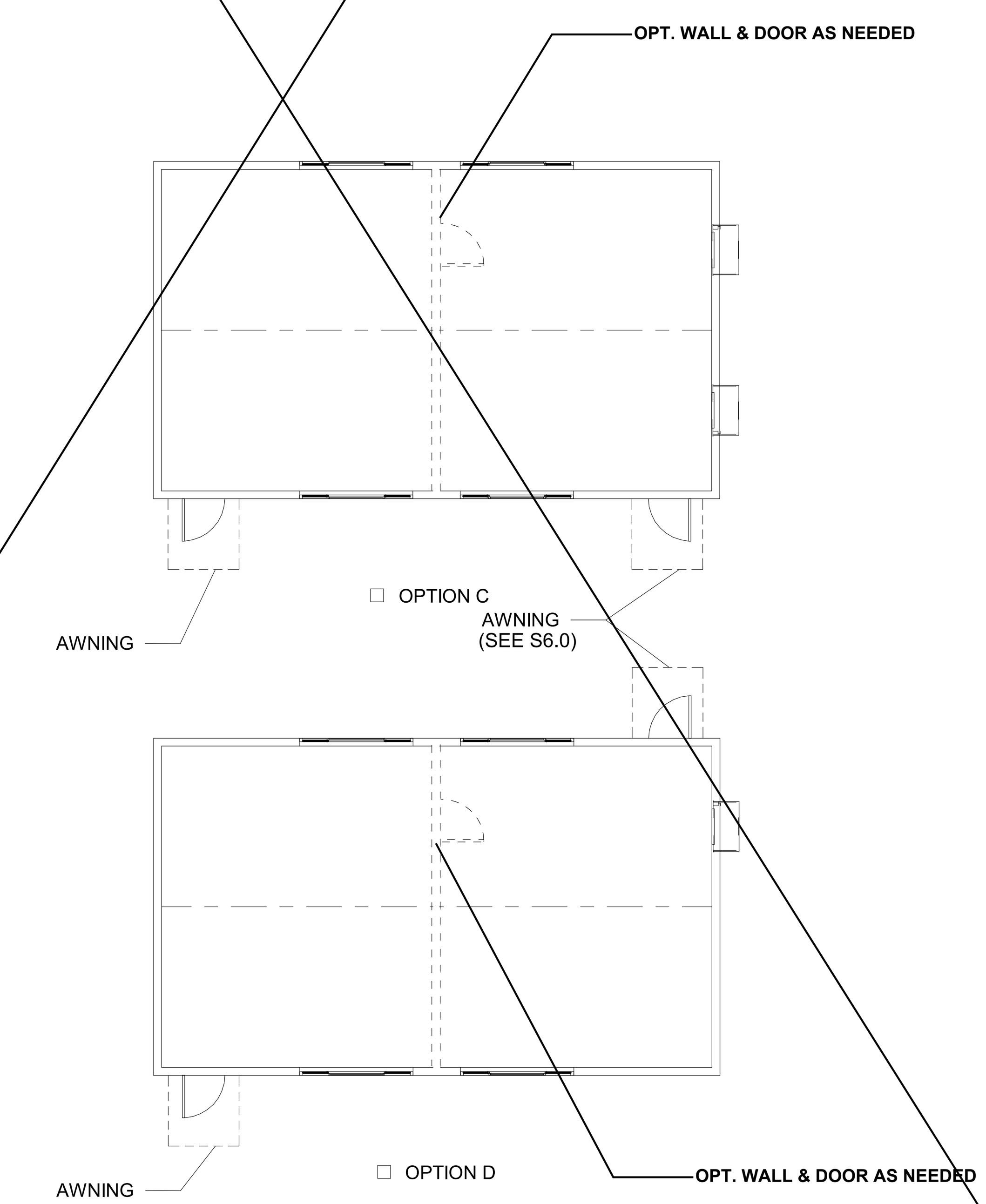


8 *1/4" = 1'-0"*
VCT TO CARPET DETAIL



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

FOR AWNING SEE 7 / A1.0



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

Wall Schedule

	Stud Size	Sheet	Notes
x	Wood Wall Stud	S4.5	
			FOR BURNING CHARACTERISTIC SEE 3 / A0.1

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

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	

SEE A3.0 FOR ADDITIONAL FIRE ASSEMBLY NOTES AND DETAILS

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

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	

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

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 HVAV	See (M)-Sheets

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
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www.rstavares.com

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ENGINEER MANNY D. FRISCH S3380 03/31/24 STRUCTURAL STATE OF CALIFORNIA
05/24/23
RST#22088

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

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
DRAWN BY rMc/SC
CHECKED BY RH/RT
DATE

SHEET NO.
A1.0

SHEET OF

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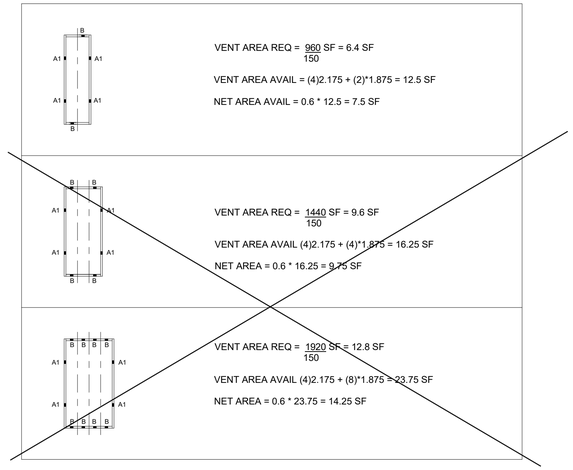
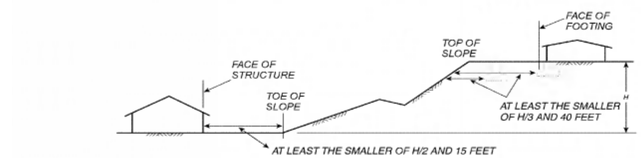


NOTE: WOOD FOUNDATION EXPANDABLE TO 48x40

1 ***50+15 VENTING LAYOUT***



For SI: 1 foot = 304.8 mm.

FIGURE 1808.7.1
FOUNDATION CLEARANCES FROM SLOPES

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

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

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

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

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

1. WOOD FOUNDATION CONSTRUCTION IS ALLOWED FOR BUILDINGS WITH 2160 SF AND UNDER.
2. SILL PLATES SHALL BE OF FOUNDATION GRADE REDWOOD OR PRESERVATIVE PRESURE TREATED MATERIAL AND IS ALLOWED TO REST DIRECTLY ON SOIL OR PAVEMENT. MATERIALS ABOVE THE SILL PLATES ARE NOT CONTROLLED BY THIS REQUIREMENT.
3. VENTS THAT OCCUR INSIDE RAMP BOUNDARIES SHALL REQUIRE A VENT OF EQUAL SIZE AT RAMP SKIRTING.
4. 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
5. STACKED FOUNDATION MEMBERS SHALL BE FASTENED TO ONE ANOTHER W/ CORROSION RESISTANT NAILS.
6. 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.
7. REFER TO ARCHITECT'S SITE PLAN FOR DRAINAGE.

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

(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~~

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

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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05/24/23
RST#22088

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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

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

CHECKED BY

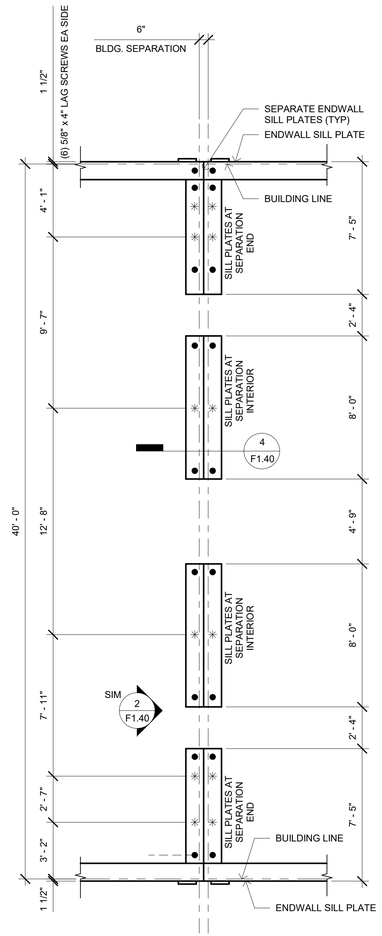
JA/RT

DATE

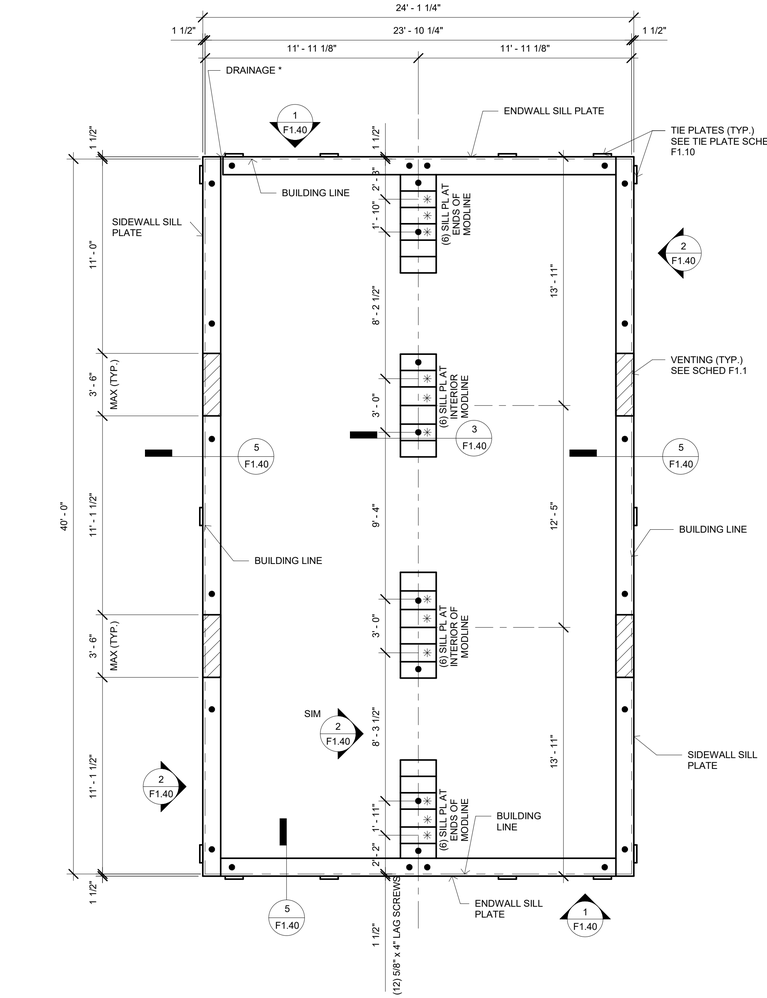
SHEET NO.

F1.10

SHEET OF



3 *1/4" = 1'-0"*
FOOTING AT SEPARATION



* REFER TO ARCHITECTURAL SITE PLAN FOR DRAINAGE

2 *1/4" = 1'-0"*
24x40 FOUNDATION PLAN

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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ORIGINAL PC STATE AGENCY APPROVAL

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APP: 04-121369 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 PLAN 24x40 BLDG W/ 50+15

PROJECT NUMBER

22088

DRAWN BY

rMc/SC

CHECKED BY

JA/RT

DATE

SHEET NO.

F1.11

SHEET OF

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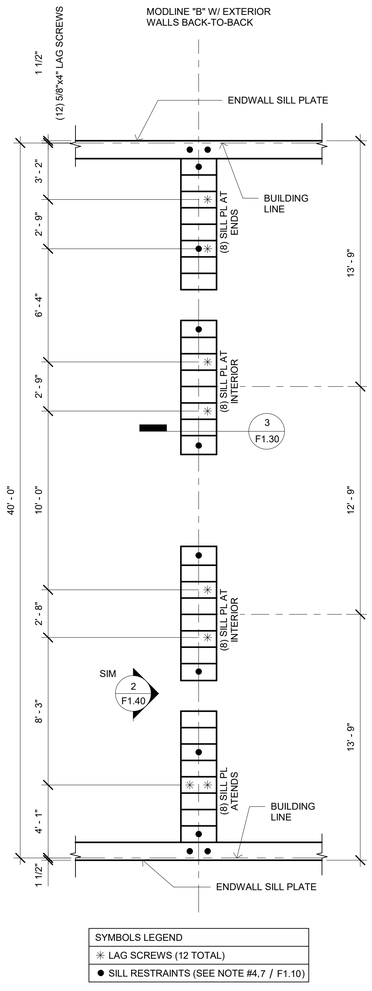
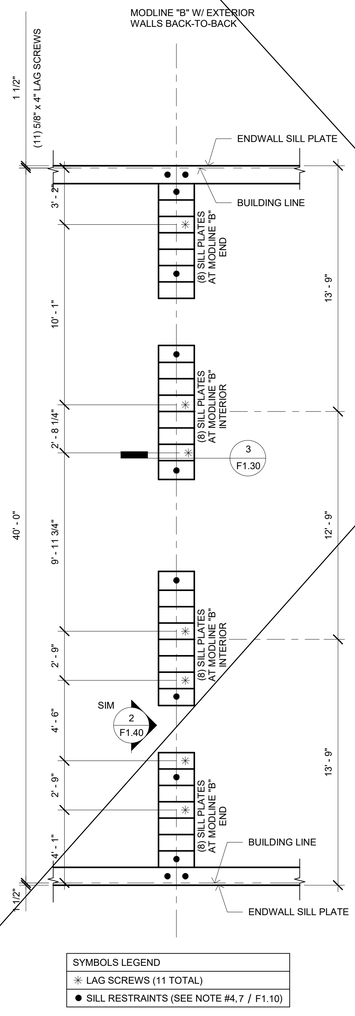


SYMBOLS LEGEND
✳ LAG SCREWS (12 TOTAL)
● SILL RESTRAINTS (SEE NOTE #4,7 / F1.10)

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

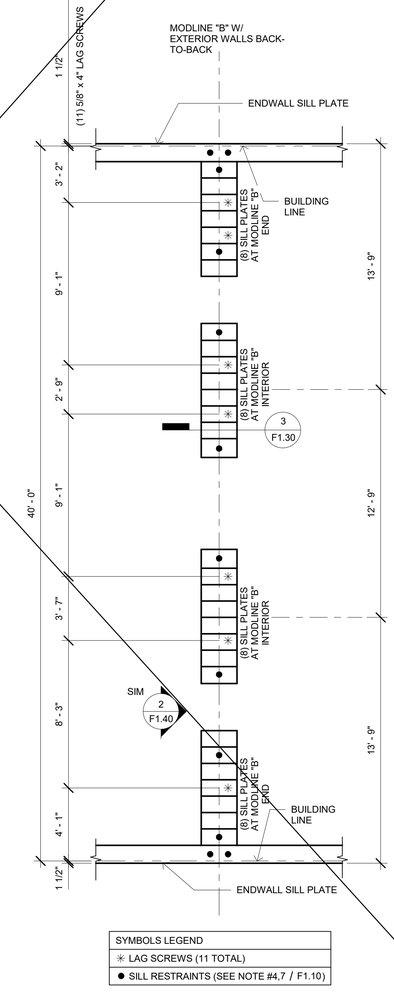
1 *1/4" = 1'-0"*
FOOTING AT MODELINE TYPE "B", 24x40



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 MODLINE 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)

3 *1/4" = 1'-0"*
FOOTING AT MODLINE TYPE "B", 48x40

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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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

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
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CHECKED BY
JA/RT

DATE

SHEET NO.
F1.14
SHEET OF

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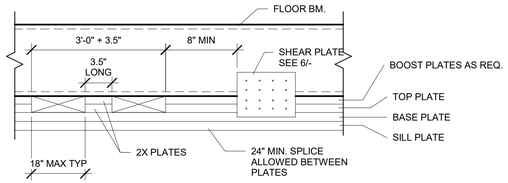
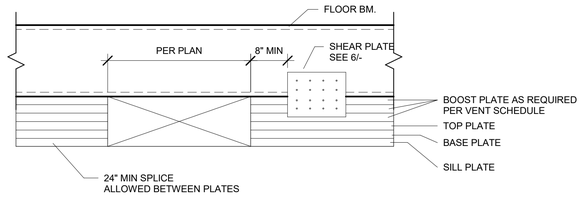
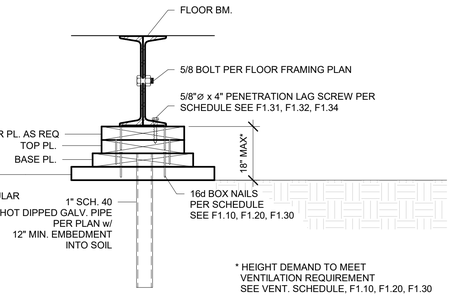


1 *1 1/2" = 1'-0"*
VENT OPENING OVER BASE PLATE

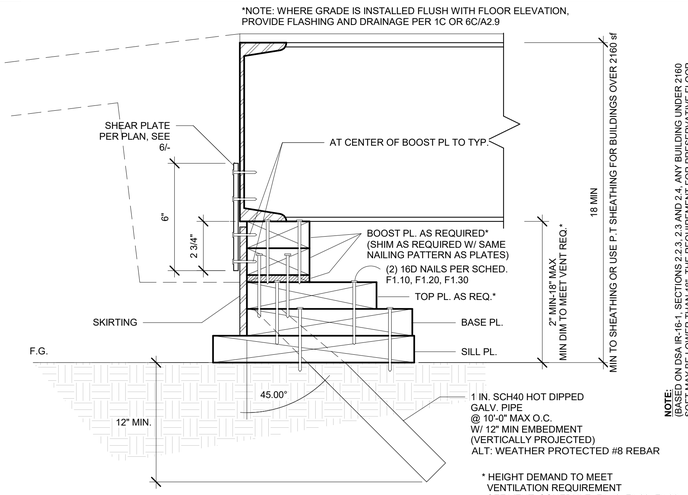


2 *1 1/2" = 1'-0"*
VENT OPENING @ SIDEWALL OR MODLINE @ SEPERATION



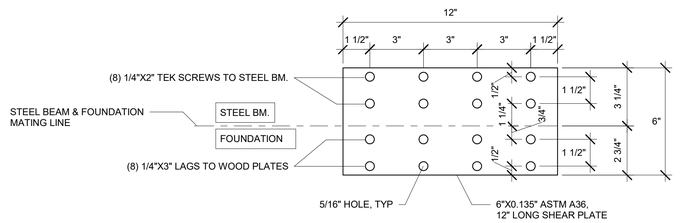
3 *1 1/2" = 1'-0"*
FOUNDATION PAD AT MOD LINE

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

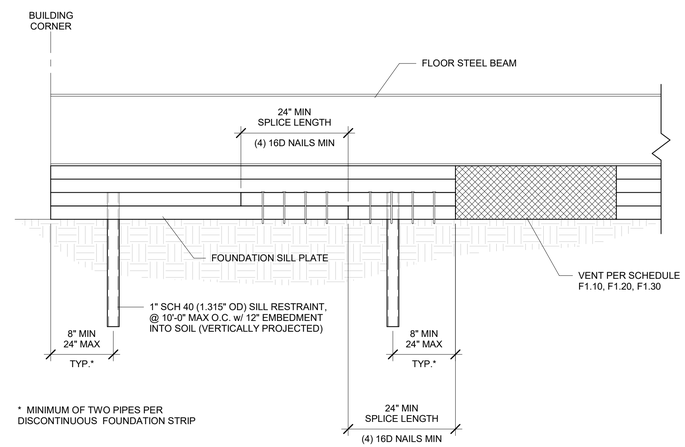


NOTE:
IF USED ON DSA IR-16-1, SECTIONS 2.2.3 AND 2.4, ANY BUILDING UNDER 2160 SQFT MAY BE LOWER THAN 18". THE REQUIREMENT FOR PRESERVATIVE FLOOR FINISH SHEATHING OR WALL FRAMING DOES NOT APPLY. A WAIVER OF DURABILITY WILL BE SUBMITTED FOR APPROVAL BY THE CLIENTS APPOINTED AGENT.)

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

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RST#22088
05/24/23

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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

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

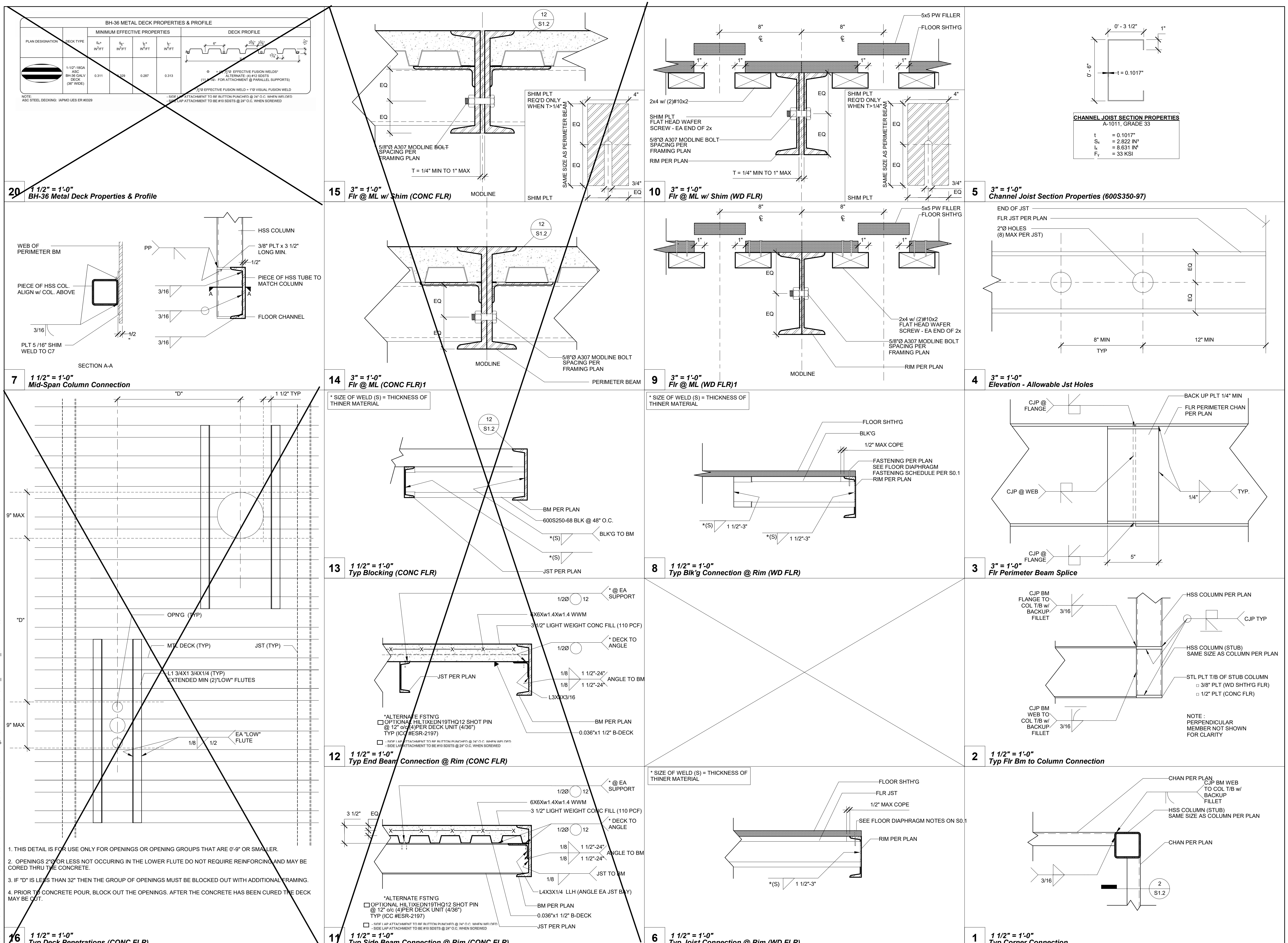
JA/RT

DATE

SHEET NO.

F1.40

SHEET OF



BH-36 METAL DECK PROPERTIES & PROFILE
PLAN DESIGNATION
DECK TYPE
MINIMUM EFFECTIVE PROPERTIES
DECK PROFILE
1-1/2"-18GA ASC BH-36 GALV DECK (36" WIDE)
0.311
0.287
0.313
NOTE: ASC STEEL DECKING: IAPMO UES ER #0329
20 1 1/2" = 1'-0" BH-36 Metal Deck Properties & Profile
15 3" = 1'-0" Flr @ ML w/ Shim (CONC FLR)
SHIM PLT REQ'D ONLY WHEN T>1/4"
SAME SIZE AS PERIMETER BEAM
5/8"Ø A307 MODLINE BOLT SPACING PER FRAMING PLAN
T = 1/4" MIN TO 1" MAX
MODLINE
SHIM PLT
10 3" = 1'-0" Flr @ ML w/ Shim (WD FLR)
5x5 PW FILLER
FLOOR SHTH'G
2x4 w/ (2)#10x2
SHIM PLT FLAT HEAD WAFER SCREW - EA END OF 2x
5/8"Ø A307 MODLINE BOLT SPACING PER FRAMING PLAN
RIM PER PLAN
5 3" = 1'-0" Channel Joist Section Properties (600S350-97)
CHANNEL JOIST SECTION PROPERTIES
A-1011, GRADE 33
t = 0.1017"
S_x = 2.822 IN³
I_x = 8.631 IN⁴
F_y = 33 KSI
7 1 1/2" = 1'-0" Mid-Span Column Connection
WEB OF PERIMETER BM
PIECE OF HSS COL. ALIGN w/ COL. ABOVE
PLT 5/16" SHIM WELD TO C7
HSS COLUMN
3/8" PLT x 3 1/2" LONG MIN.
PIECE OF HSS TUBE TO MATCH COLUMN
FLOOR CHANNEL
SECTION A-A
14 3" = 1'-0" Flr @ ML (CONC FLR)1
PERIMETER BEAM
9 3" = 1'-0" Flr @ ML (WD FLR)1
2x4 w/ (2)#10x2 FLAT HEAD WAFER SCREW - EA END OF 2x
4 3" = 1'-0" Elevation - Allowable Jst Holes
END OF JST
FLR JST PER PLAN
2"Ø HOLES (8) MAX PER JST)
8" MIN
TYP
12" MIN
16 1 1/2" = 1'-0" Typ Deck Penetrations (CONC FLR)
OPN'G (TYP)
MTL DECK (TYP)
JST (TYP)
L1 3/4X1 3/4X1/4 (TYP) EXTENDED MIN (2)"LOW" FLUTES
EA "LOW" FLUTE
9" MAX
1. THIS DETAIL IS FOR USE ONLY FOR OPENINGS OR OPENING GROUPS THAT ARE 0'-9" OR SMALLER.
2. OPENINGS 2"Ø OR LESS NOT OCCURING IN THE LOWER FLUTE DO NOT REQUIRE REINFORCING AND MAY BE CORED THRU THE CONCRETE.
3. IF "D" IS LESS THAN 32" THEN THE GROUP OF OPENINGS MUST BE BLOCKED OUT WITH ADDITIONAL FRAMING.
4. PRIOR TO CONCRETE POUR, BLOCK OUT THE OPENINGS. AFTER THE CONCRETE HAS BEEN CURED THE DECK MAY BE CUT.
13 1 1/2" = 1'-0" Typ Blocking (CONC FLR)
* SIZE OF WELD (S) = THICKNESS OF THINER MATERIAL
BM PER PLAN
600S250-68 BLK @ 48" O.C.
BLK'G TO BM
JST PER PLAN
8 1 1/2" = 1'-0" Typ Blk'g Connection @ Rim (WD FLR)
FLOOR SHTH'G
BLK'G
1/2" MAX COPE
FASTENING PER PLAN SEE FLOOR DIAPHRAGM FASTENING SCHEDULE PER S0.1
RIM PER PLAN
3 3" = 1'-0" Flr Perimeter Beam Splice
CJP @ FLANGE
CJP @ WEB
BACK UP PLT 1/4" MIN
FLR PERIMETER CHAN PER PLAN
12 1 1/2" = 1'-0" Typ End Beam Connection @ Rim (CONC FLR)
* @ EA SUPPORT
6X6Xw1.4Xw1.4 WWM
3 1/2" LIGHT WEIGHT CONC FILL (110 PCF)
* DECK TO ANGLE
JST PER PLAN
ANGLE TO BM
L3X3X3/16
BM PER PLAN
0.036"x1 1/2" B-DECK
*ALTERNATE FSTN'G OPTIONAL HILTIXEDN19THQ12 SHOT PIN @ 12" o/c (4)PER DECK UNIT (4/36") TYP (ICC #ESR-2197)
2 1 1/2" = 1'-0" Typ Flr Bm to Column Connection
CJP BM FLANGE TO COL T/B w/ BACKUP FILLET
HSS COLUMN PER PLAN
CJP TYP
HSS COLUMN (STUB) SAME SIZE AS COLUMN PER PLAN
STL PLT T/B OF STUB COLUMN
3/8" PLT (WD SHTH'G FLR)
1/2" PLT (CONC FLR)
CJP BM WEB TO COL T/B w/ BACKUP FILLET
NOTE : PERPENDICULAR MEMBER NOT SHOWN FOR CLARITY
11 1 1/2" = 1'-0" Typ Side Beam Connection @ Rim (CONC FLR)
JST TO BM
L4X3X1/4 LLH (ANGLE EA JST BAY)
JST PER PLAN
6 1 1/2" = 1'-0" Typ Joist Connection @ Rim (WD FLR)
FLR JST
SEE FLOOR DIAPHRAGM NOTES ON S0.1
1 1 1/2" = 1'-0" Typ Corner Connection
CHAN PER PLAN
CJP BM WEB TO COL T/B w/ BACKUP FILLET
HSS COLUMN (STUB) SAME SIZE AS COLUMN PER PLAN
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6/8/2021 1:52:34 AM

PROJECT SPECIFIC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP. 04-122805 INC:
REVIEWED FOR
SS ☑ FLS ☐ ACS ☐
DATE: 10/17/23

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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

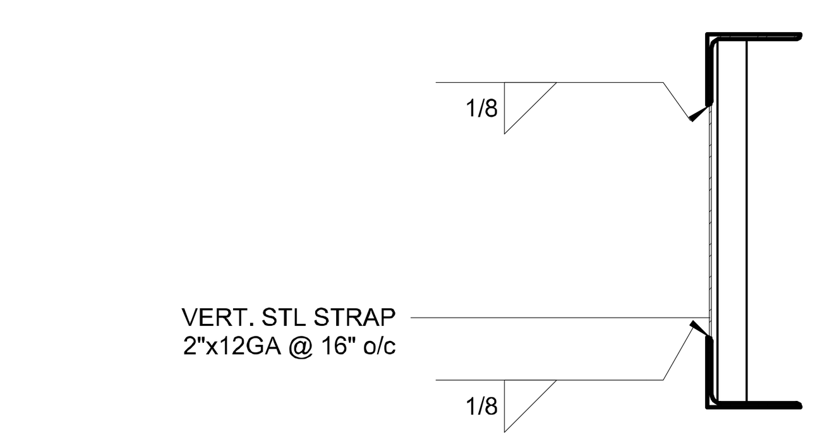
CHECKED BY: JA/RT

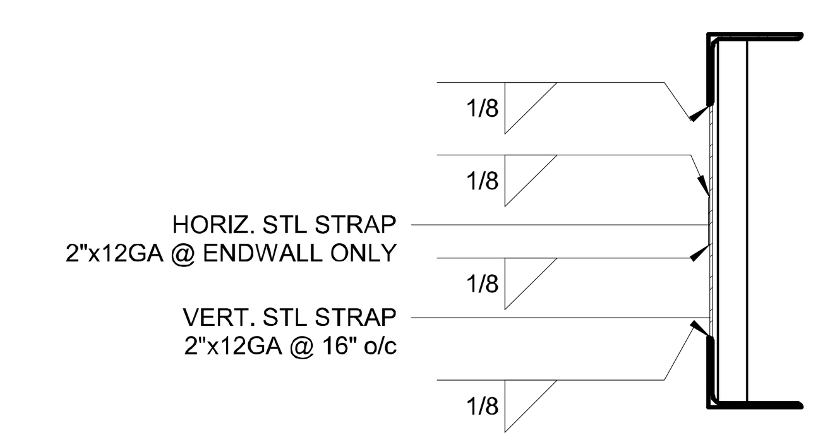
DATE

SHEET NO. S1.2 (1)

CCD_001

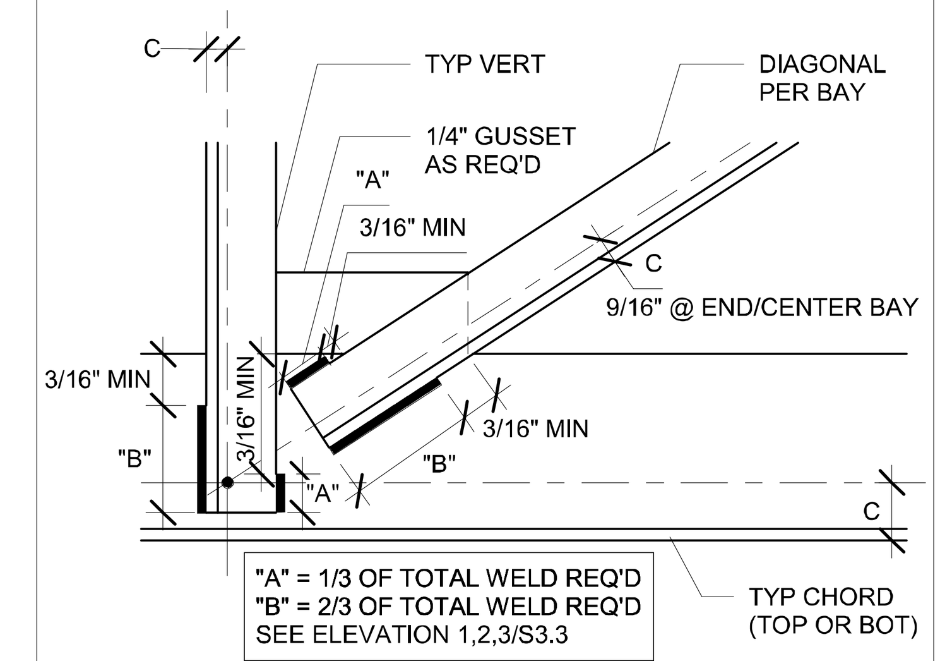
TABLE A-SECTION CENTROID	
SECTION	CENTROID C
L4X3 (LLV)	1 1/4"
L4X3 (LLH)	3/4"
L2X2X3/16	9/16"
L1.5X1.5X3/16	7/16"



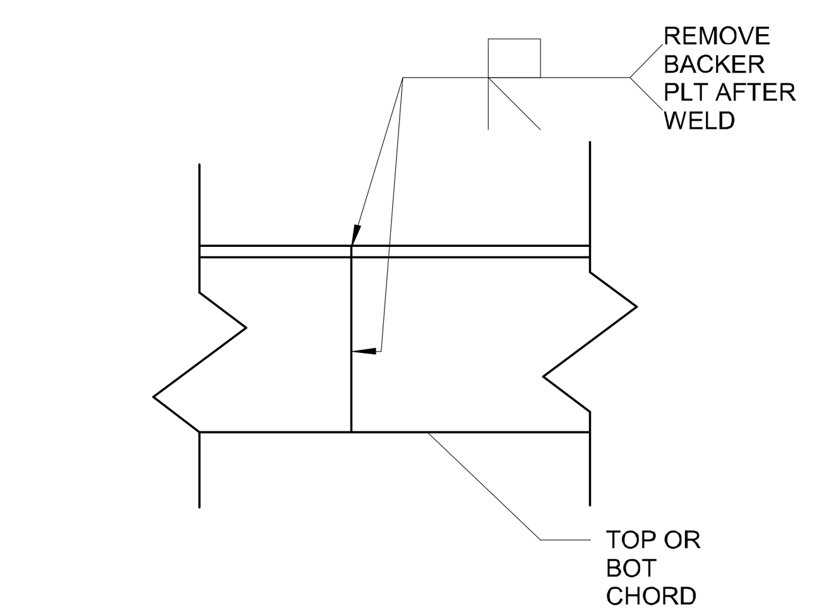


NOTE: SEE DETAIL 8 / S3.3

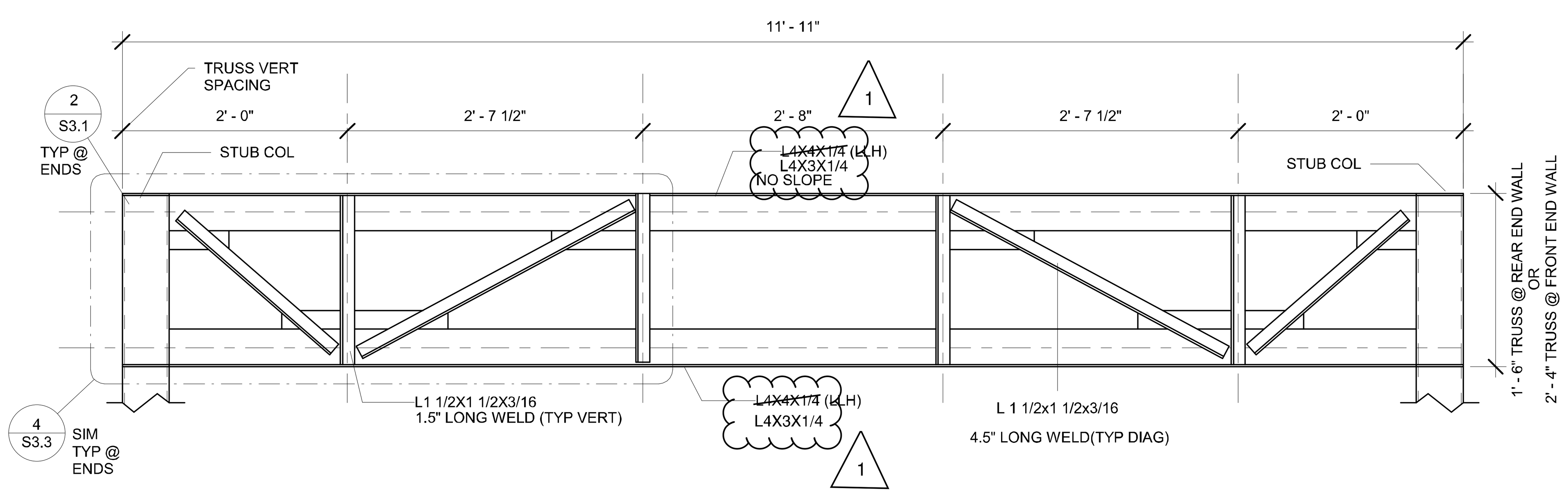
12 *1/2" = 1'-0"*
TABLE A - SECTION CENTROID



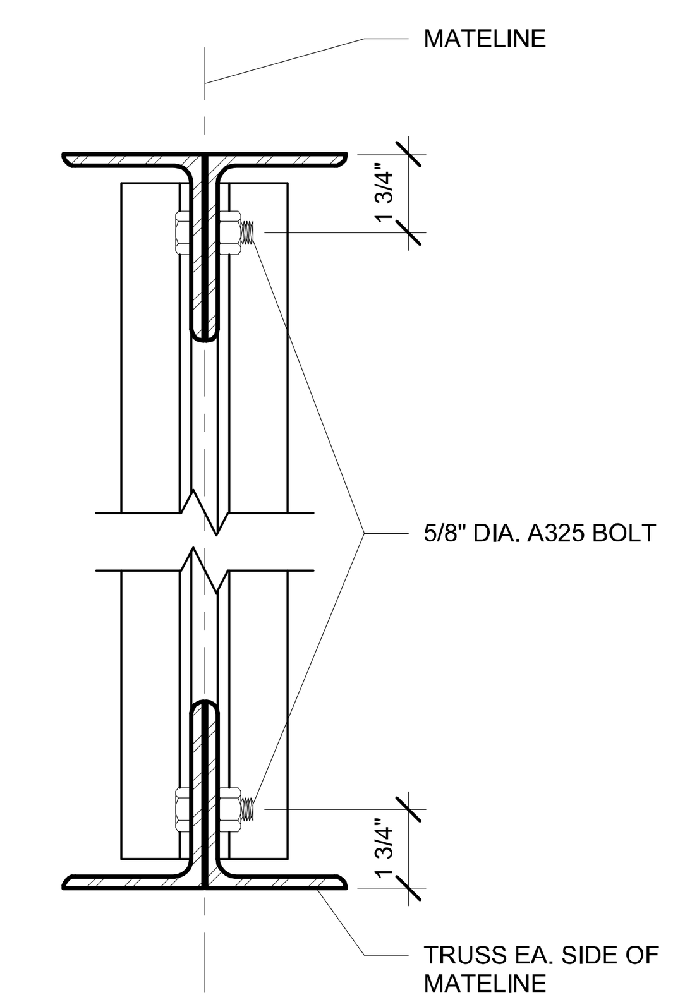
8 *3" = 1'-0"*
Typ Fillet Weld Lengths



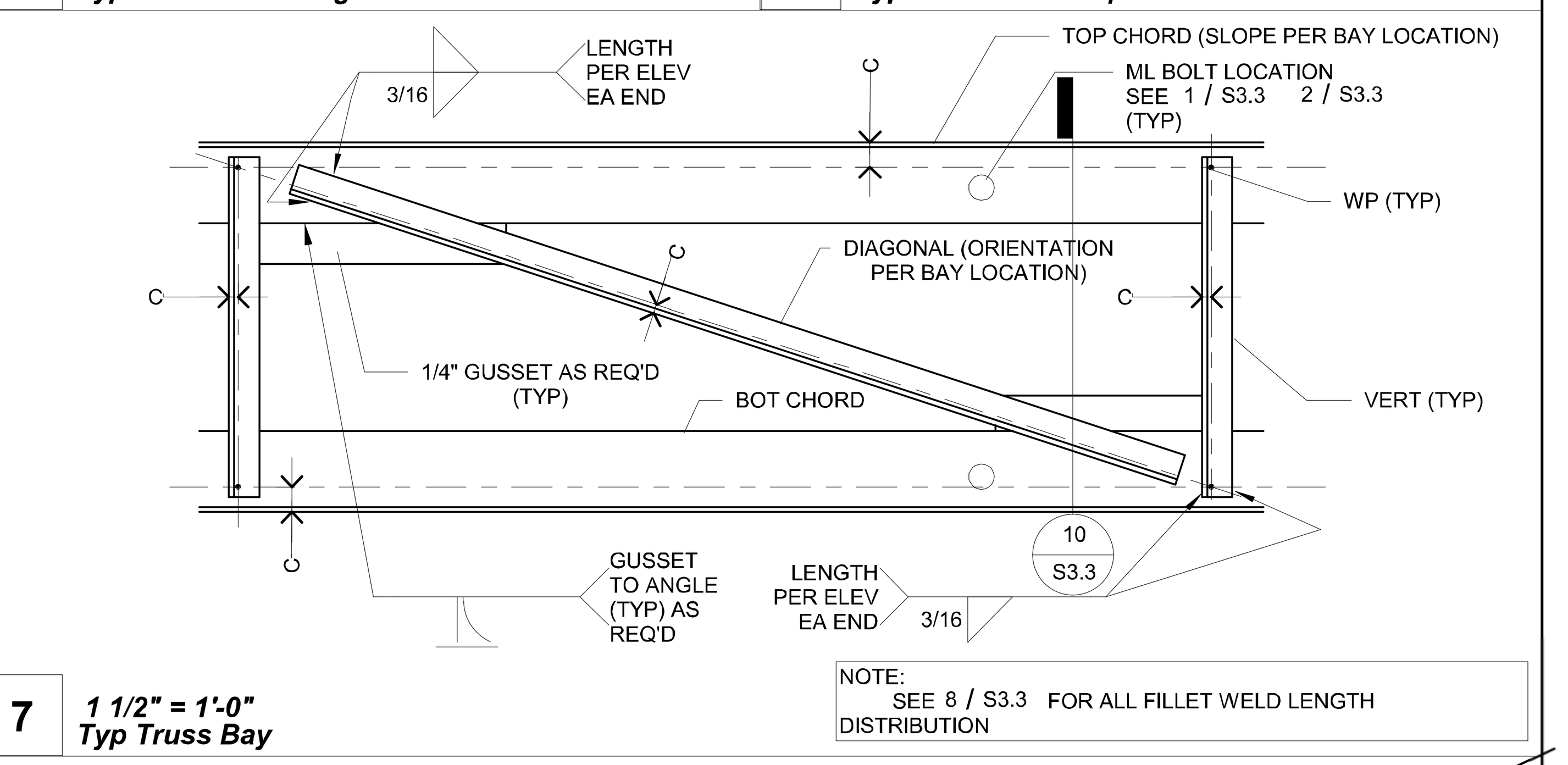
9 *3" = 1'-0"*
Typ Truss Chord Splice



3 *1" = 1'-0"*
End Wall Truss

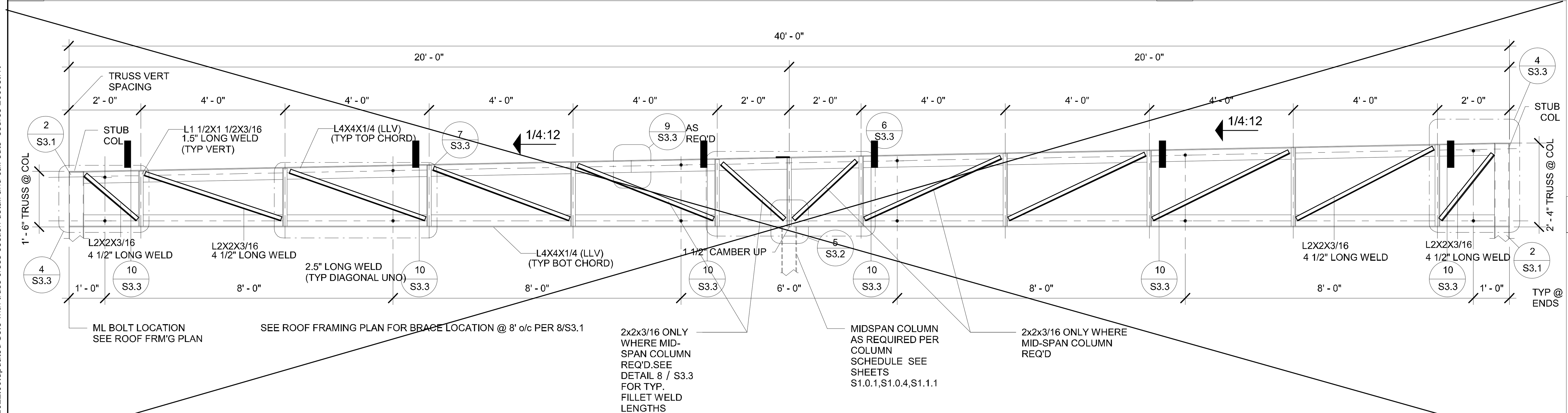


10 *3" = 1'-0"*
TRUSS CONN. @ MATELINE

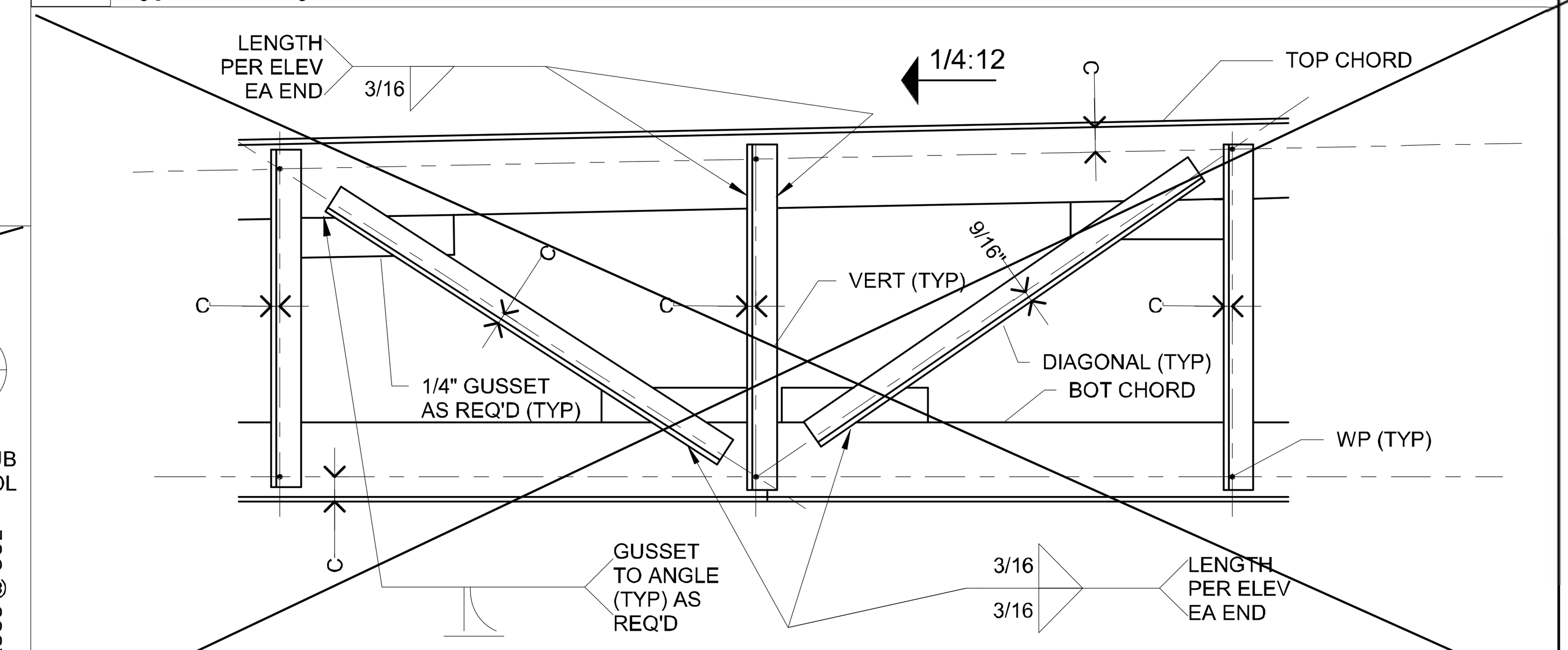


NOTE:
SEE 8 / S3.3 FOR ALL FILLET WELD LENGTH DISTRIBUTION

7 *1 1/2" = 1'-0"*
Typ Truss Bay

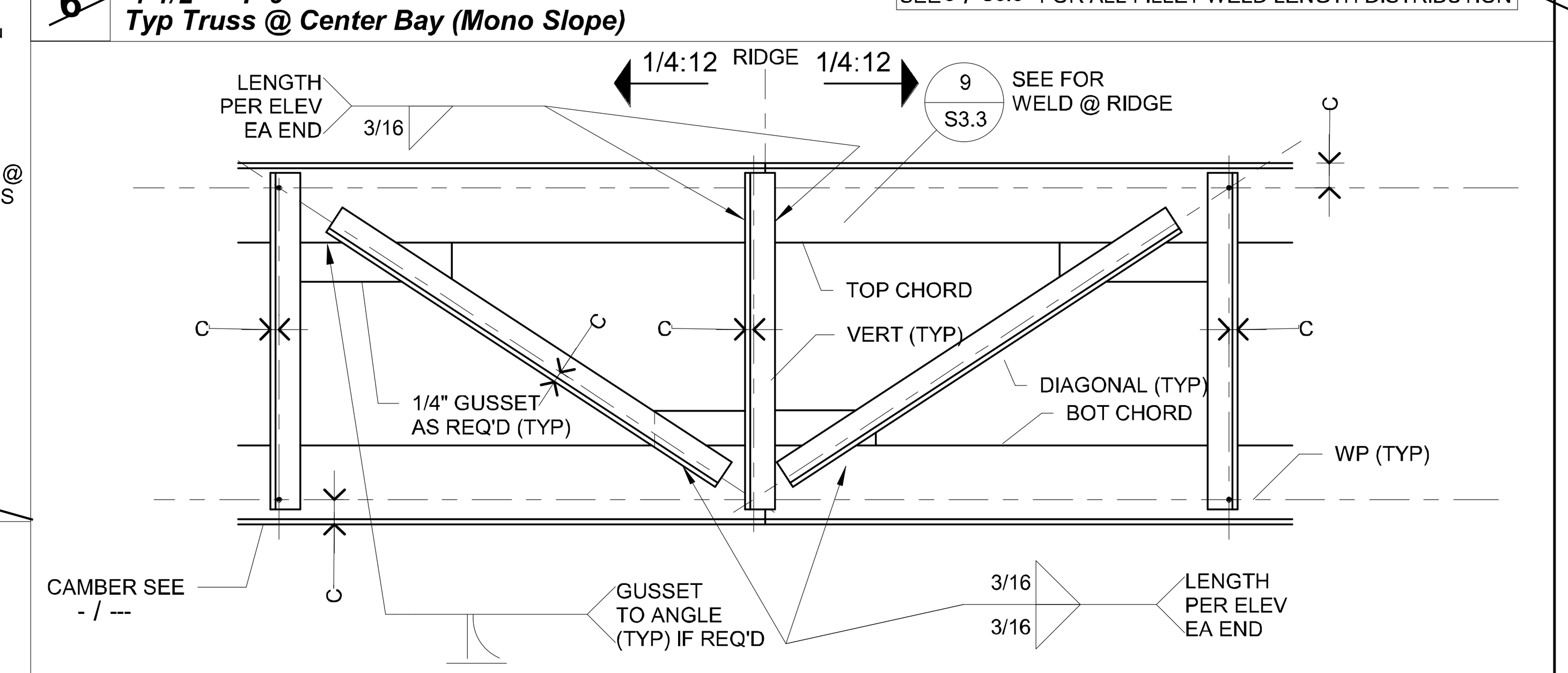


2 *1/2" = 1'-0"*
Mono Truss



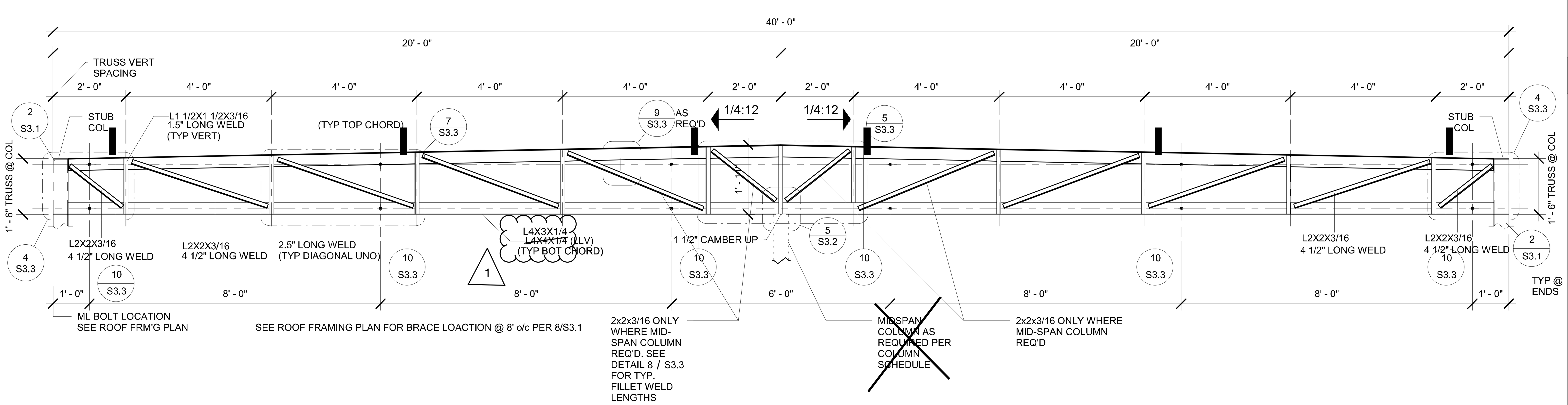
NOTE:
SEE 8 / S3.3 FOR ALL FILLET WELD LENGTH DISTRIBUTION

6 *1 1/2" = 1'-0"*
Typ Truss @ Center Bay (Mono Slope)

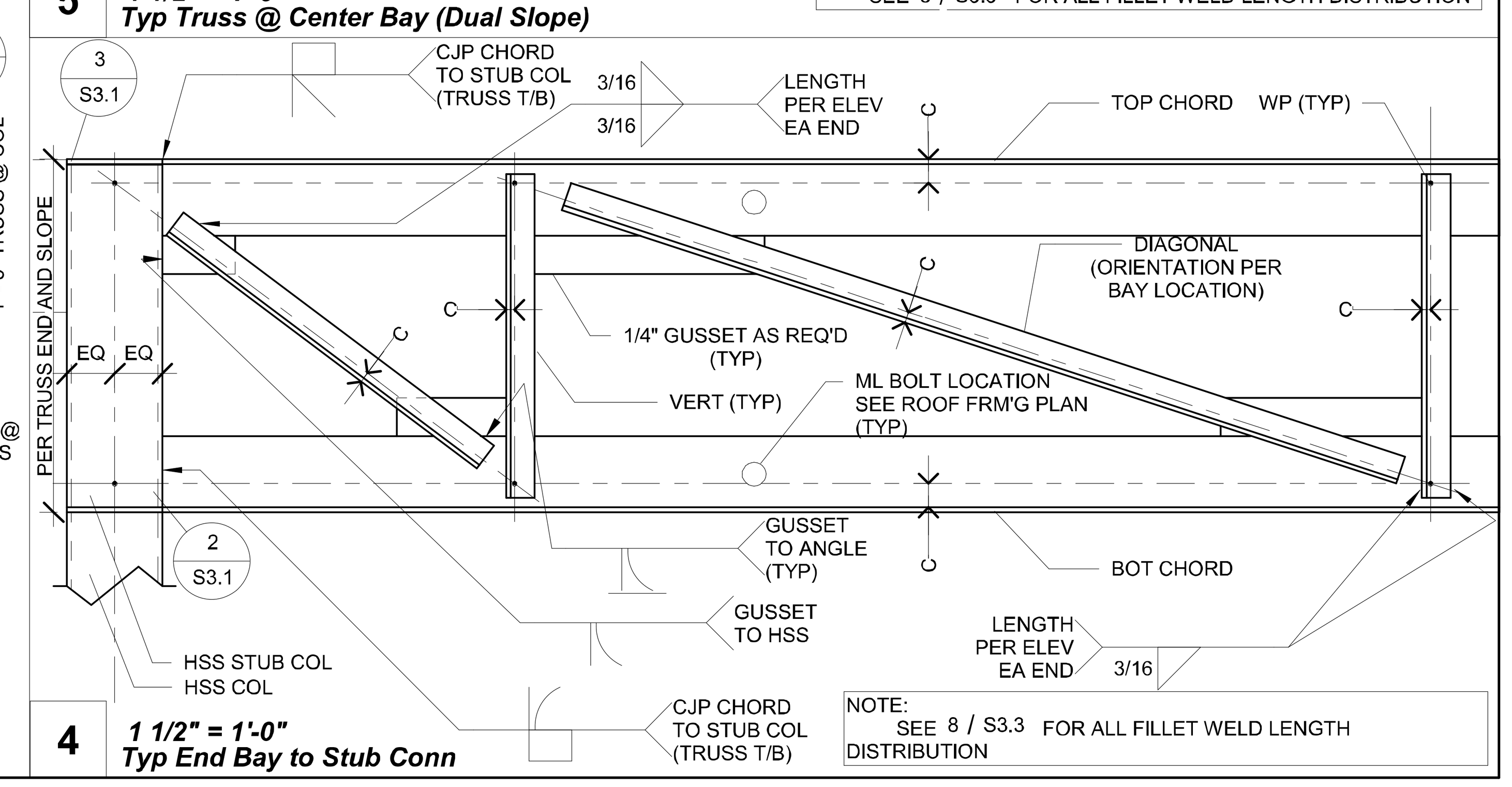


NOTE:
SEE 8 / S3.3 FOR ALL FILLET WELD LENGTH DISTRIBUTION

5 *1 1/2" = 1'-0"*
Typ Truss @ Center Bay (Dual Slope)



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



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

4 *1 1/2" = 1'-0"*
Typ End Bay to Stub Conn

PROJECT SPECIFIC STATE AGENCY APPROVAL

R&S TAVARES ASSOCIATES
DESIGN • CONSULTING • PROJECT MGT
11590 W BERNARDO COURT, SUITE 100
SAN DIEGO, CA 92127
WWW.RSTAVARES.COM

PROFESSIONAL STAMP

CLIENT

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

ORIGINAL PC STATE AGENCY APPROVAL

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

ROOF PERIMETER TRUSS

PROJECT NUMBER 22088

DRAWN BY rMc/SC

CHECKED BY RH/RT

DATE

SHEET NO. S3.3

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2020

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, PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARD CODE (CALGREEEN), 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 35 AND CFC CHAPTER 80.

NOTE: CAL/OSHA ELEVATOR UNIT ENFORCES CCR TITLE 8 AND USES THE 2004 ASME A17.1 BY ADOPTION

*CALIFORNIA ADMINISTRATIVE CODE, PART1, CHAPTER 10, ADMINISTRATIVE REGULATIONS FOR THE CALIFORNIA ENERGY COMMISSION (CEC)

GENERAL NOTES

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATION SHALL BE MADE BY AN ADDENDUM OR CONSTRUCTION CHANGE DOCUMENT(CCD) BY DSA AS REQUIRED BY SECTION 4-338 PART1, TITLE 24, CCR

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT(OWNER) AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. DUTIES OF INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1 TITLE 24, CCR

COMPLETE ACCESS IS A DIVISION OF INTEGRATED STAIR SYSTEMS INC. WITH CORPORATE OFFICES LOCATED IN 1345 RYAN RD, BUCKLEY, WA 98321, (360) 829-4220

DESIGN LOADS

LIVE LOAD:	100 PSF (4.8 kPa)
HANDRAIL IMPACT:	200 LBS (0.9kN)
HANDRAIL DIST. LOAD:	50 PLF (0.7 kN/m)
RISK CATAGORY:	III
SEISMIC:	Ss=2.80g, S1=1.99g, R=1.25, SITE CLASS D
LATERAL RESISTING SYST:	OTHER STRUCTURES SIMILAR TO BUILDINGS
WIND:	110 MPH, 3 SEC GUST EXPOSURE "C", Kzt=1.0
SEIS IMPORTANCE FACTOR:	Ie=1.25, Iw=1.0 Cs=1.493
DESIGN BASE SHEAR, V:	1493 W
SNOW LOAD:	0 PSF (0 kPa)
SOIL ALLOWABLE BEARING:	1,000 PSF (4.8 kPa

MATERIALS

SQUARE STEEL TUBE	ASTM A513 GR. C	Fy= 33 KSI (345 MPa
RAMP OVERHANG POST	ASTM A500 B	Fy= 46 KSI

*ALL STEEL TO BE COATED WITH GALVANIZED RUST INHIBITING COATING

WOOD FOUNDATION SHALL BE OF FOUNDATION GRADE REDWOOD OR PRESERVATIVE PRESSURE TREATED HEM-FIR #2 AND IS ALLOWED TO REST DIRECTLY ON SOIL OR PAVEMENT.

WELDS

WELDING SHALL BE IN ACCORDANCE WITH AWS D.1.1-10 USING E70XX ELECTRODES FOR STEEL
AND AWS D1.2 AND A5.10 FOR ALUMINUM, USING ALMIGWELD ER4043

BOLTS, SCREWS AND NAILS

STEEL TO STEEL CONNECTIONS: ASTM A307 CARBON STEEL BOLTS SHALL BE GRADE 5 ZINC PLATED, HOT DIPPED GALVANIZED TO ASTM A153 OR ELECTROGALVANIZED TO ASTM B63.3. FASTENER SHALL BE LUBRICATED TO ELIMINATE GALLING. ALL STEEL MEMBERS IN CONTACT WITH ALUMINIUM SHALL BE ZINC COATED TO ELIMINATE GALVANIC REACTION.

STEEL TO STEEL & WOOD CONNECTIONS: ANSI/ASME STEEL LAG SCREWS, STEEL STANDARD WOOD SCREWS, WOOD TO WOOD CONNECTION: ASTM STANDARD COMMOM STEEL NAIL.

ITW RED HEAD CONCRETE WEDGE ANCHORS SHALL BE INSTALLED PER RECOMMENDATION SHOWN IN ESR-2427

HANDRAIL NOTES:

1) MANEUVERING CLEARANCE ON EXTERIOR PULL SIDE OF DOOR SHALL BE 42" TYPICAL (610MM) MINIMUM WITH 60" (1524MM) MINIMUM LANDING IN FRONT OF DOOR.

2) HANDRAILS SHALL BE CONTINUOUS ALONG BOTH SIDES. HANDRAILS SHALL BE PARALLEL WITH THE SURFACE AND PROJECT 12" (301MM) ON BEYOND TOP OF RISER AND 12" (301MM) PLUS 1 TREAD AT BOTTOM RISER. AT RAMPS WHERE HANDRAIL ARE NOT CONTINUOUS BETWEEN RUNS THE HANDRAIL SHALL EXTEND HORIZONTALLY ABOVE THE LANDING 12" (301MM) MINIMUM BEYOND THE BEGINNING AND ENDING OF RAMPS

3) TOP OF HANDRAILS SHALL BE MOUNTED BETWEEN 34" (864MM) AND 38" (965MM) ABOVE THE WALKING SURFACE, ONE CONSISTENT HEIGHT, BEIGINNING TO END.

4) CLEARANCE BETWEEN HANDRAIL AND WALL SHALL BE A MINIMUM OF 1-1/2" (38MM).

5) GUARDS ARE TO BE DESIGNED FOR A CONCENTRATED LOAD OF 200 LBF (0.9 kN) APPLIED @ ANY POINT AND ANY DIRECTION ALONG THE RAIL OR A UNIFORM LOAD OF 50 PLF (0.7 kN/m) APPLIED HORIZONTALLY @ HANDRAIL HEIGHT.

7) HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION WITH AN OUTSIDE DIAMETER OF 1-1/4" (31.75MM) MINIMUM AND NOT GREATER THAN 2" (51MM) MAXIMUM. **11B-505.7.2** NON-CIRCULAR CROSS SECTIONS. HANDRAIL GRIPPING SURFACES WITH A NON-CIRCULAR CROSS SECTION SHALL HAVE A PERIMETER DIMENSION OF 4 INCHES (102 MM) MINIMUM AND 6¼ INCHES (159 MM) MAXIMUM, AND A CROSS-SECTION DIMENSION OF 2 ¼ INCHES (57 MM) MAXIMUM.

8) GRIPPING SURFACE SHALL BE CONTINUOUS ALONG THIER LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES.

9) HANDRAILS SHALL NOT ROTATE IN THEIR FITTINGS.

10) ENDS OF HANDRAILS SHALL RETURN SMOOTHLY TO FLOOR, WALL OR POST.

1 ***1 1/2" = 1'-0"***
Notes

RAMP NOTES

1) RAMPS SHALL CONFORM TO CBC 2022 TITLE 24 PART 2, CHAPTER 11B, 11B-405

2) RAMP SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1:12 (8% SLOPE) FOR A MAXIMUM RISE OF 30" (762MM)

3) THE MAXIMUM VERTICAL RISE OF RAMP RUN SHALL BE 30" (762MM) MAXIMUM

4) RAMPS SHALL HAVE LANDING AT BOTTOM AND TOP OF EACH RAMP RUN

5) THE SLOPE ON LANDINGS SHALL NOT BE STEEPER THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2% SLOPE) IN ANY DIRECTION

6) LANDING SHALL HAVE A WIDTH AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING AND A MINIMUM LENGTH OF 60" IN THE DIRECTION OF TRAVEL @ TOP LANDING - 72" MIN @ BOT LANDING

7) CHANGES IN DIRECTION OF TRAVEL SHALL HAVE A LANDING 60" WIDE BY 72" LONG (1524MM x 1829MM) MINIMUM, WITH WITH THE LENGTH BEING IN THE DIRCTION OF DOWNWARD TRAVEL AND CHANGES IN DIRECTION

8) MANEUVERING CLEARANCE ON LANDING ADJACENT TO DOORWAYS SHALL BE NO LESS THAN 42" WITH DOOR IN ANY POSITION AND SHALL NOT BE REDUCED BY MORE THAN 3" WHEN DOOR IS FULLY OPENED

9) WALKING SURFACE SHALL BE ROUGHED OR SHALL BE OF SLIP RESISTANT DIAMOND PLATE ALUMINUM AND ALL LANDINGS TO BE DESIGNED TO NOT RETAIN STANDING WATER - 2.083 MAX SLOPE ANY DIRECTION

ADDITIONAL NOTES

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR

SCOPE OF WORK

CONSTRUCTION OF RAMP AND STAIRS BUILDINGS (RELOCATABLE)

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2022 CBC

Application Number:	School Name:	School District:
DSA File Number:	Increment Number:	Date Created:

2022 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2022 CBC).

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

KEY TO COLUMNS

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

	CS. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☐	**a.** Inspect installation of post-installed anchors	**See Notes**	**SI***	**1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8** (See Appendix (end of this form) for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
☐	**b.** Test post-installed anchors.	**Test**	**LOR**	**1910A.5.** (See Appendix (end of this form) for exemptions.)
	S/A1. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify identification of all materials and: • Mill certificates indicate material properties that comply with requirements, • Material sizes, types and grades comply with requirements.	**Periodic**	*	**Table 1705A.2.1 Item 3a–3c.** 2202A.1; AISI S100-20 Section A3.1 & A3.2, AISI S240-20 Section A3 & A5, AISI S220-20 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
☑	**b.** Test unidentified materials	**Test**	**LOR**	**2202A.1.**
☑	**c.** Examine seam welds of HSS shapes	**Periodic**	**SI**	DSA IR 17-3.
☑	**d.** Verify and document steel fabrication per DSA-approved construction documents.	**Periodic**	**SI**	Not applicable to cold-formed steel light-frame construction, except for trusses (**1705A.2.4**).
	S/A3. WELDING:			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	**Periodic**	**SI**	**1705A.2.5, Table 1705A.2.1 Items 4 & 5:** AWS D1.1 and AWS D1.8 for structural steel; AWS D1.2 for Aluminum; AWS D1.3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17-3.
☑	**b.** Verify weld filler material manufacturer's certificate of compliance.	**Periodic**	**SI**	DSA IR 17-3.
☑	**c.** Verify WPS, welder qualifications and equipment.	**Periodic**	**SI**	DSA IR 17-3.
	S/A4. SHOP WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	**Type**	**Performed By**	**Code References and Notes**
☑	**a.** Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	**Continuous**	**SI**	**Table 1705A.2.1 Items 5a.1–4;** AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☑	**b.** Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	**Periodic**	**SI**	**1705A.2.2, Table 1705A.2.1 Items 5a.5 & Sa.6;** AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
☑	**c.** Inspect welding of stairs and railing systems.	**Periodic**	**SI**	**1705A.2.1;** AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.

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

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

THE EXAMPLE OF FORM DSA-103s SHOWN ON THIS SHEET ARE FOR ILLUSTRATION PURPOSE ONLY. A FORM DSA-103 IS TO BE COMPLETED FOR EACH APPLICATION THAT THIS PC IS BEING INCORPORATED INTO AND ALL EXAMPLE FORM DSA-103s ARE TO BE CROSSED OUT ON THIS DRAWING.

Ramp Option Schedule:

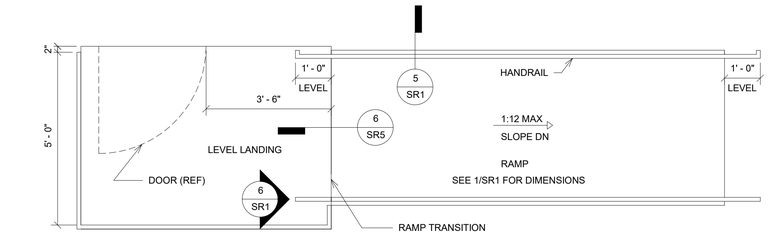
option1 : ramp & landing @ building
(plan view 1/SR1)

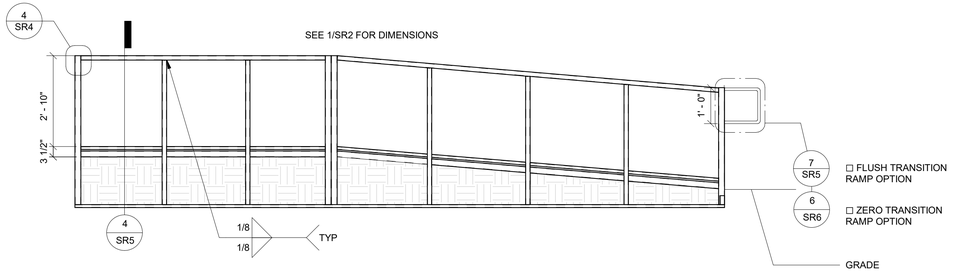
option 2 : ramp and landing with offset ramp
(plan view 2/SR1)

option 3: ramp and platform landing
(plan view 3/SR1)

option 4 : ramp and landing with switch back ramp
(plan view 4/SR1)

2 ***Ramps Options w/ Different Building Sizes***





3 ***1/2" = 1'-0"***
Standard Ramp

PROJECT SPECIFIC STATE AGENCY APPROVAL

R&S TAVARES ASSOCIATES
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11590 W BERNARDO COURT, SUITE 100
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REGISTERED PROFESSIONAL ENGINEER
MANNY D. FERNANDEZ
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STATE OF CALIFORNIA
07/24/23

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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
Module Plan and Notes
(COVER SHEET)

PROJECT NUMBER
22079

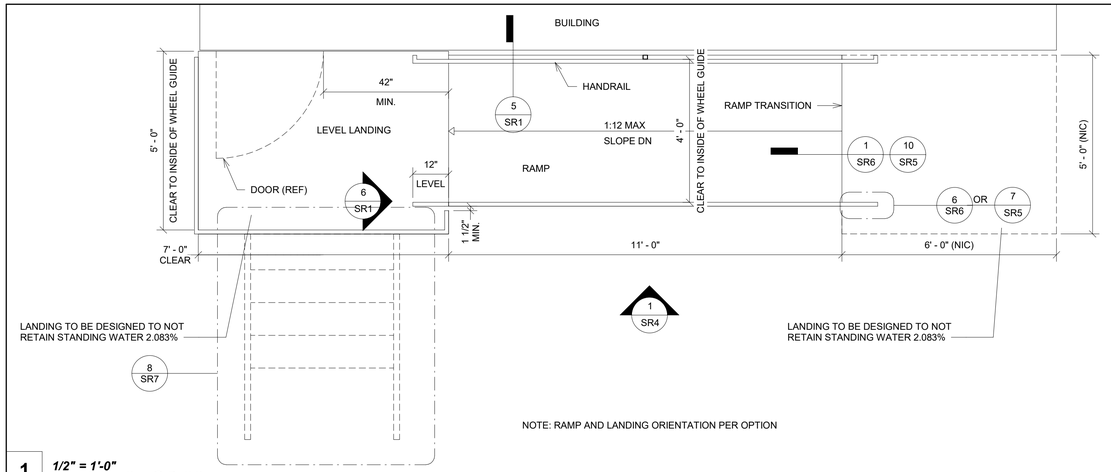
DRAWN BY
SM

CHECKED BY
rMc

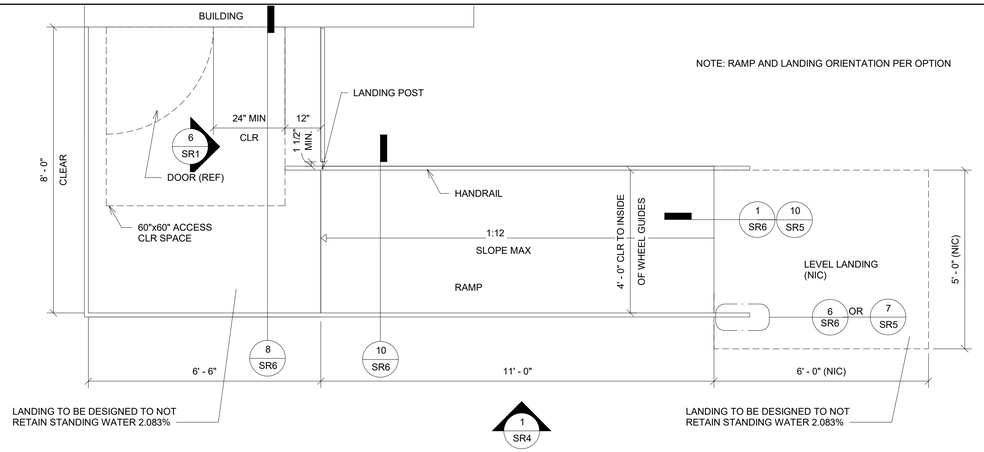
DATE
6/15/2021

SHEET NO.
SR0

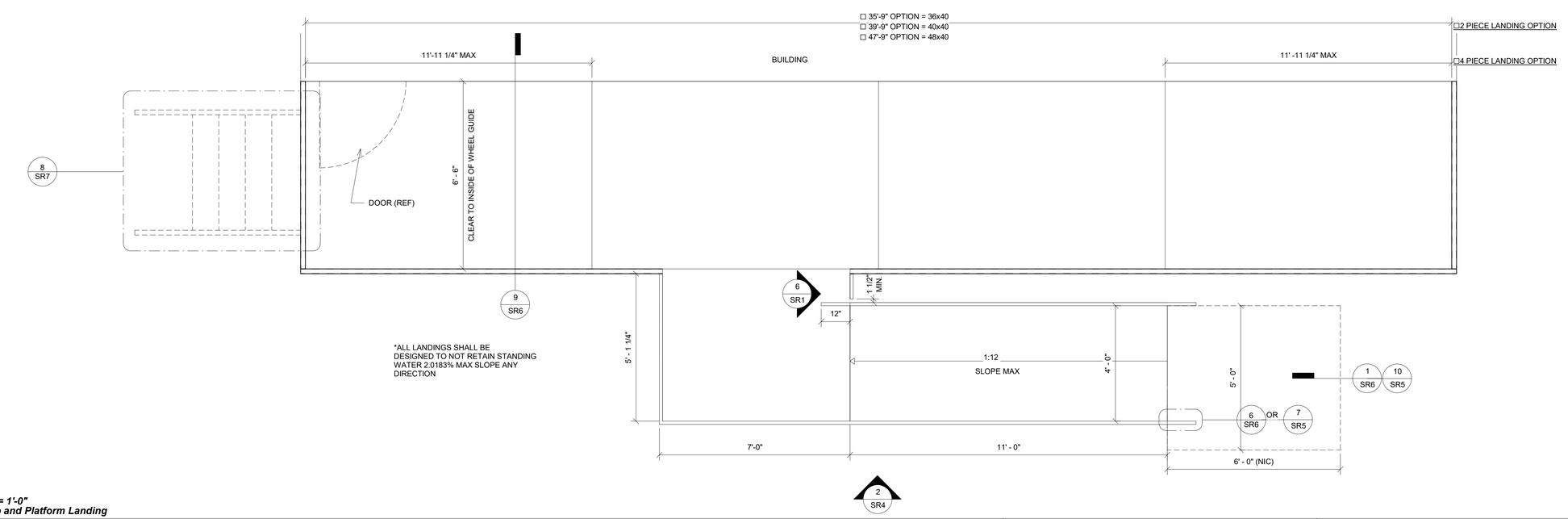
SHEET OF



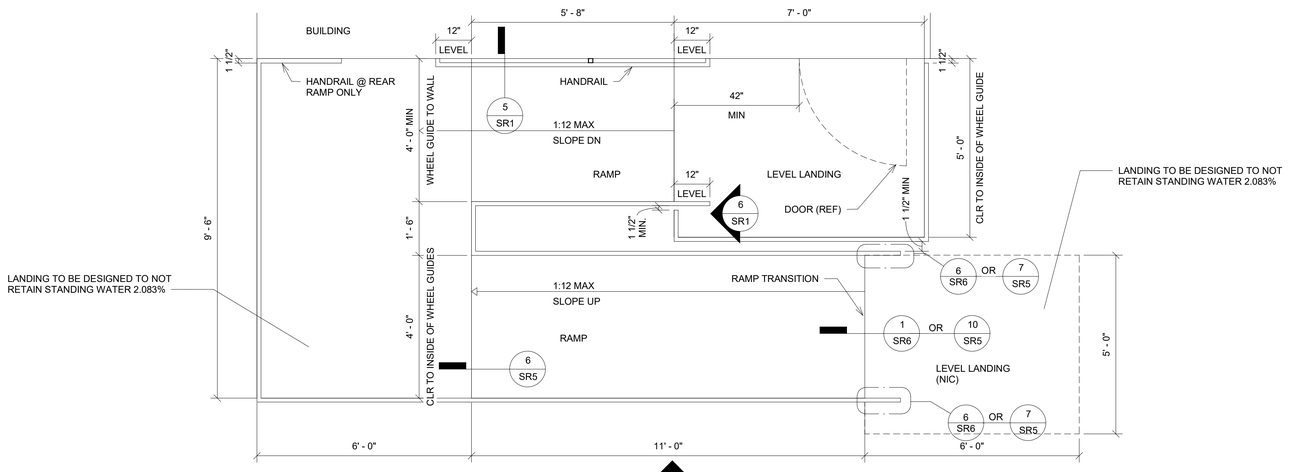
1 *1/2" = 1'-0"*
Ramp & Landing @ Building



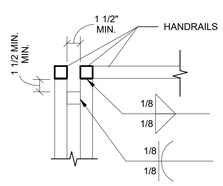
2 *1/2" = 1'-0"*
Ramp & Landing w/ Offset Ramp



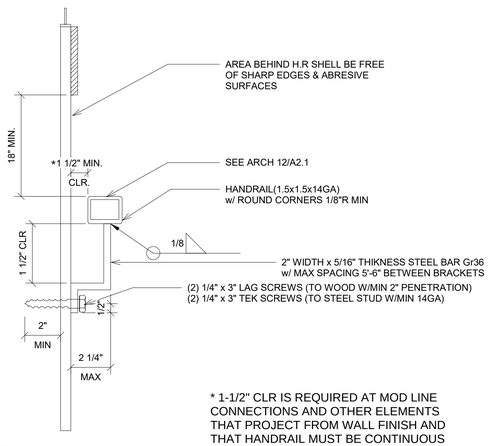
3 *1/2" = 1'-0"*
Ramp and Platform Landing



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



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



* 1-1/2" CLR IS REQUIRED AT MOD LINE CONNECTIONS AND OTHER ELEMENTS THAT PROJECT FROM WALL FINISH AND THAT HANDRAIL MUST BE CONTINUOUS (CANNOT CURVE AROUND PROJECTION)

5 *3" = 1'-0"*
Handrail

PROJECT SPECIFIC STATE AGENCY APPROVAL

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STRUCTURAL
STATE OF CALIFORNIA
07/24/23

CLIENT

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

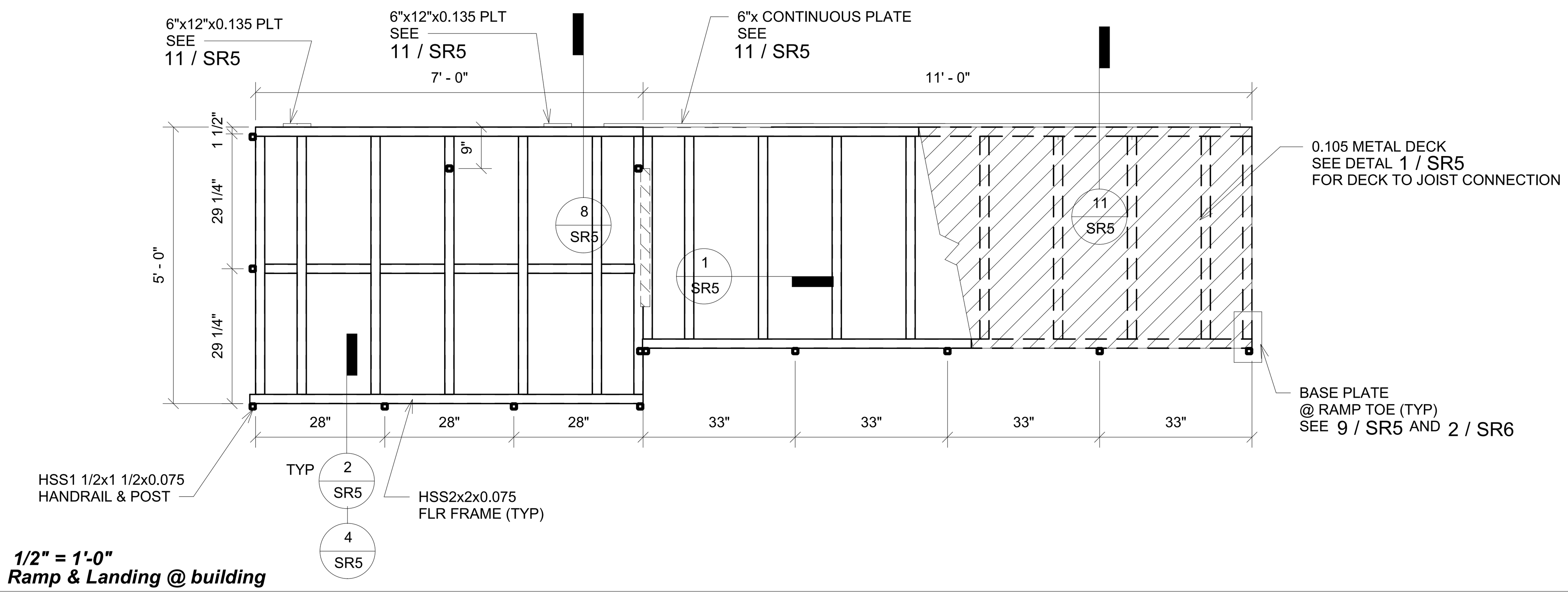
DRAWN BY
SM

CHECKED BY
rMc

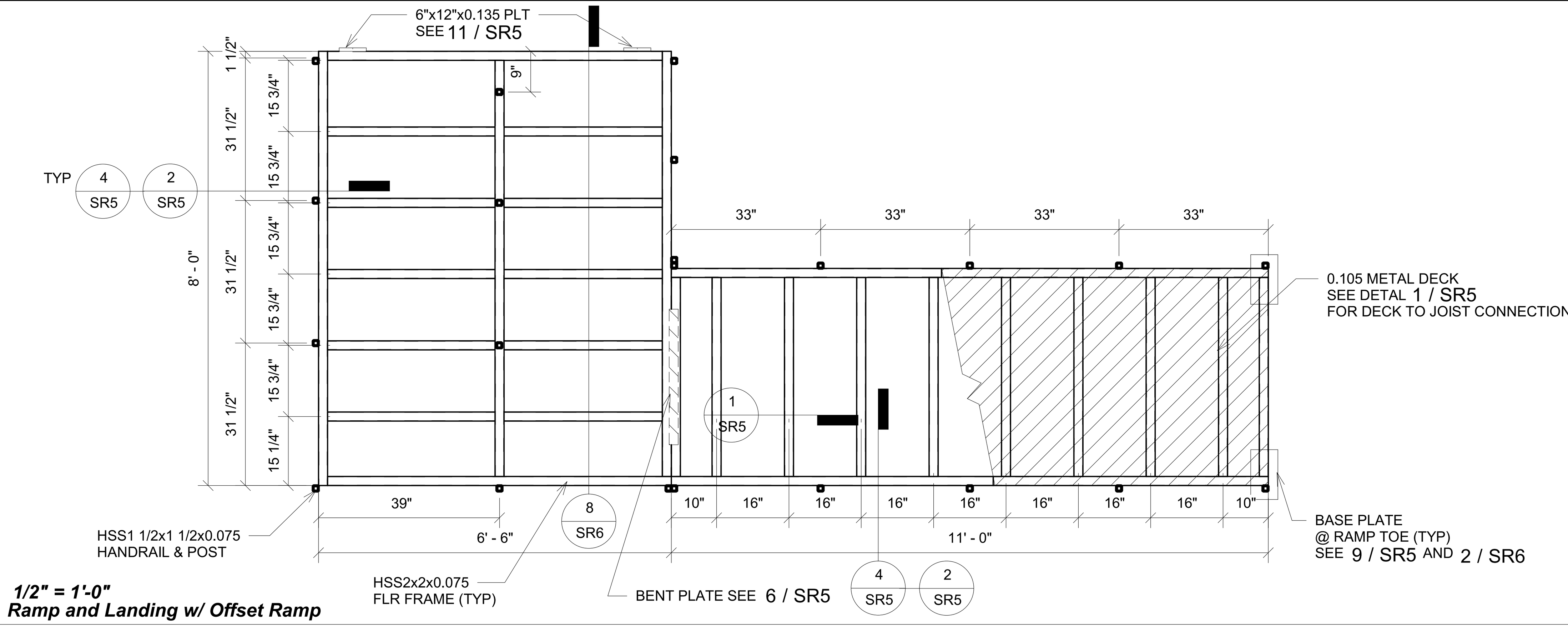
DATE
12/23/2022

SHEET NO.
SR1

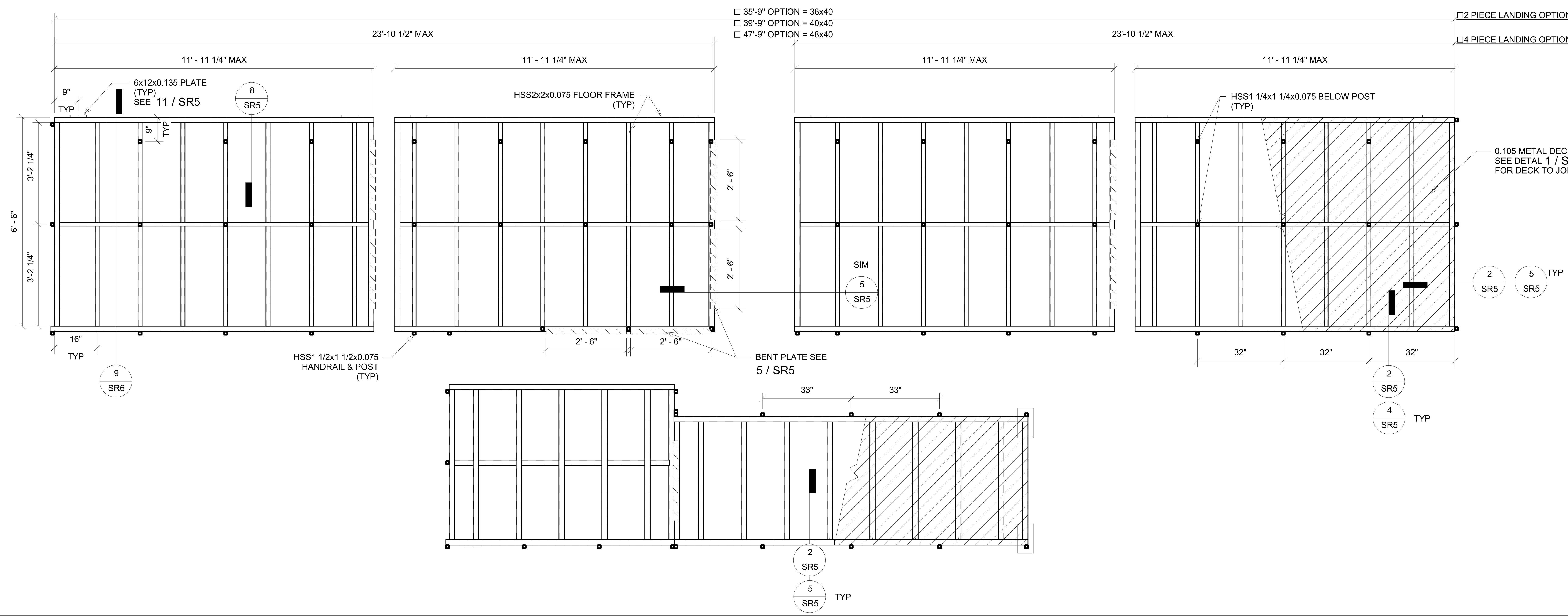
SHEET OF



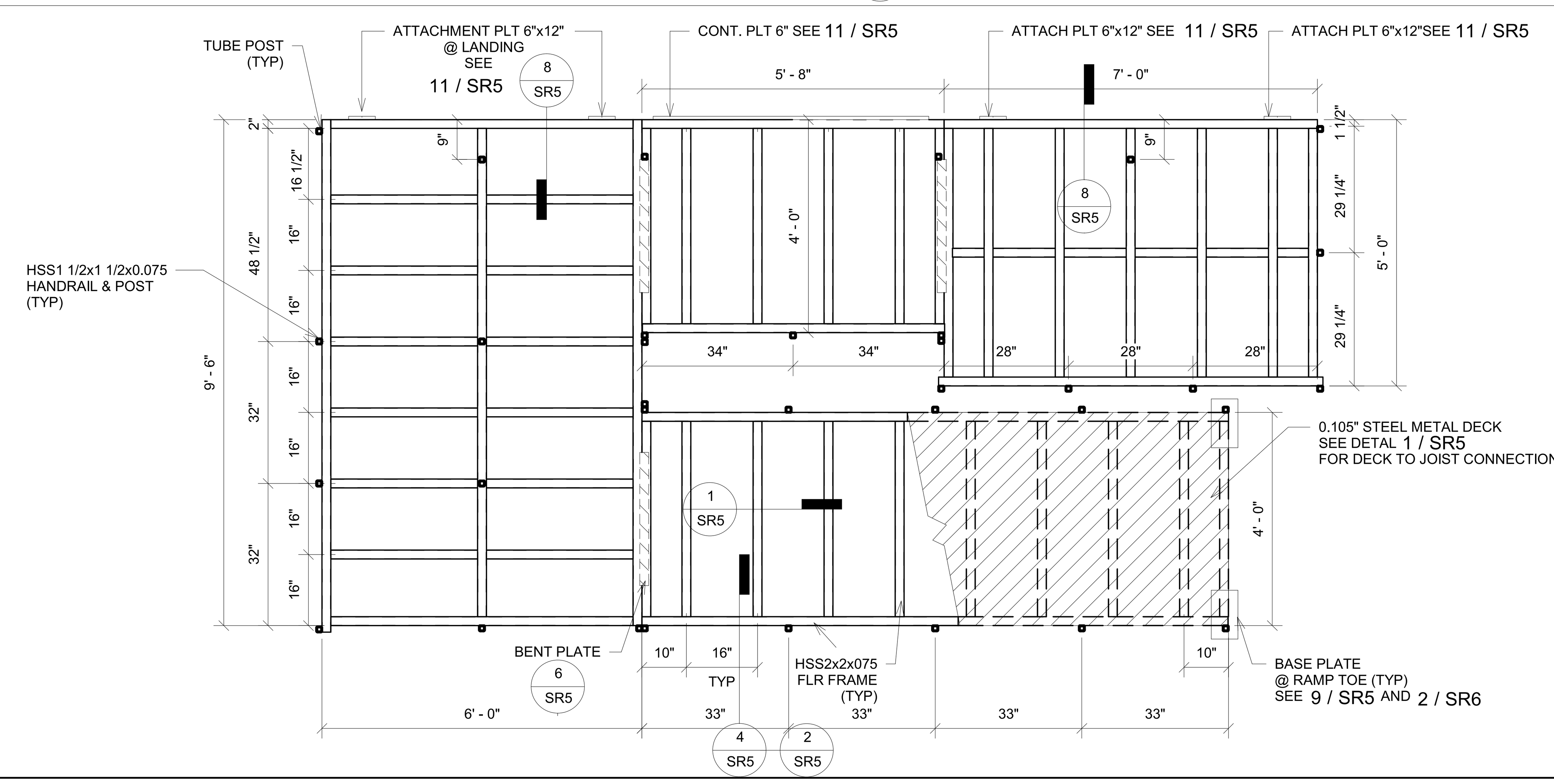
1 ***1/2" = 1'-0"***
Ramp & Landing @ building



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

M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REVIT\RST#20093 - Aries, Ramps and Stairs PC.rvt

6/15/2021 7:29:26 PM

PROJECT SPECIFIC STATE AGENCY APPROVAL

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APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

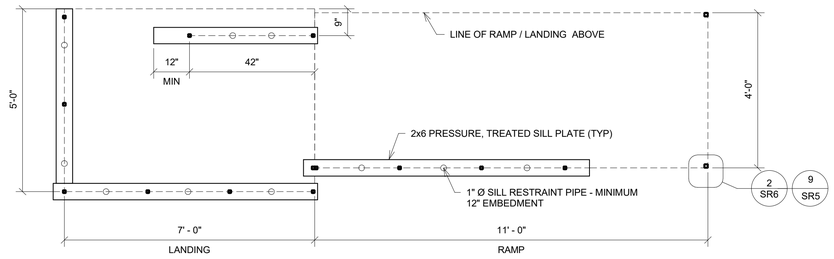
PRE-CHECK (PC) DOCUMENT
Code: 2022 CBC
A separate project application for construction is required

PROJECT TITLE
RAMPS PC
CLASS LEASING
PC#04-121419

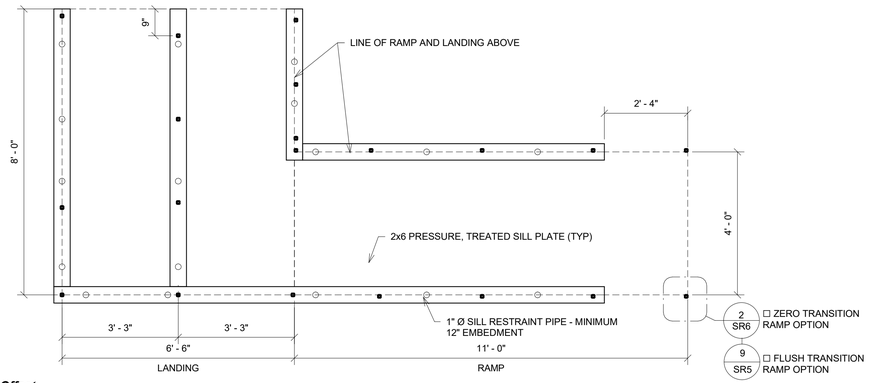
SHEET TITLE
Ramp and Landing Framing

PROJECT NUMBER	22079
DRAWN BY	SM
CHECKED BY	BR/rMc
DATE	12/23/2022
SHEET NO.	SR2

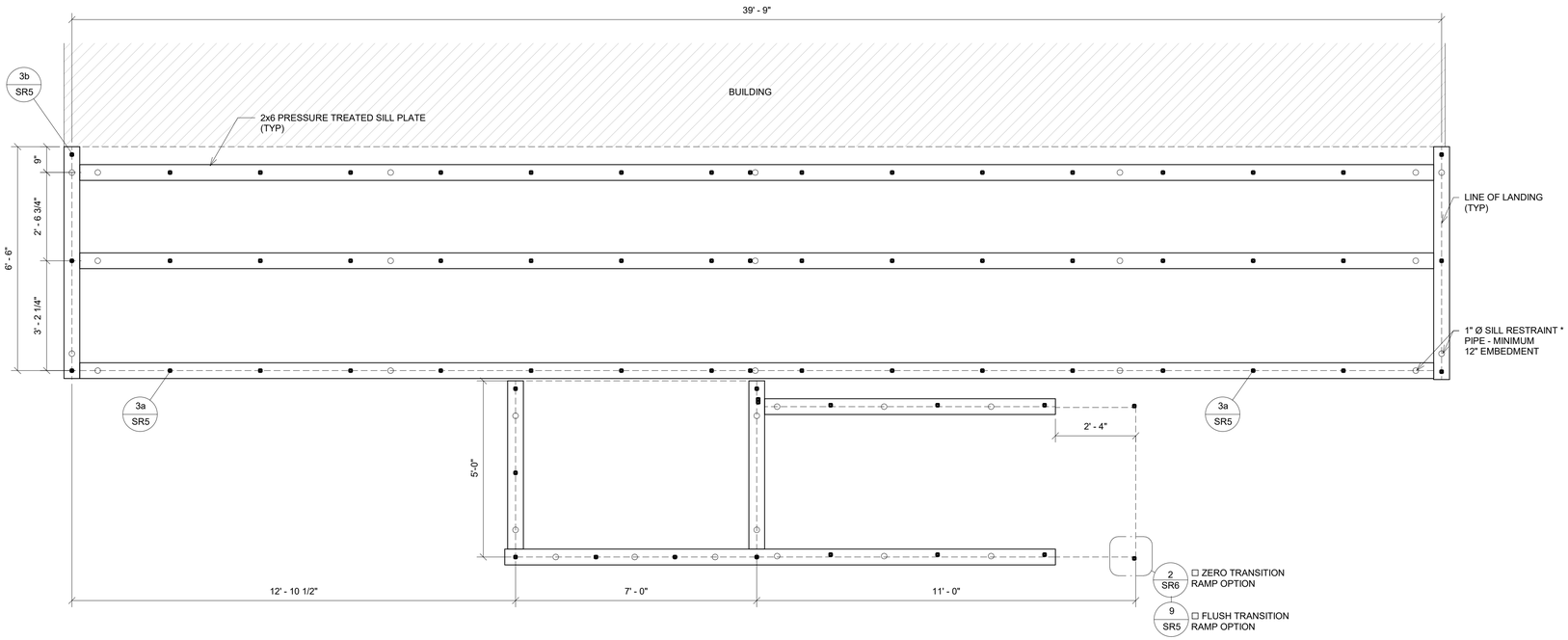
SHEET OF



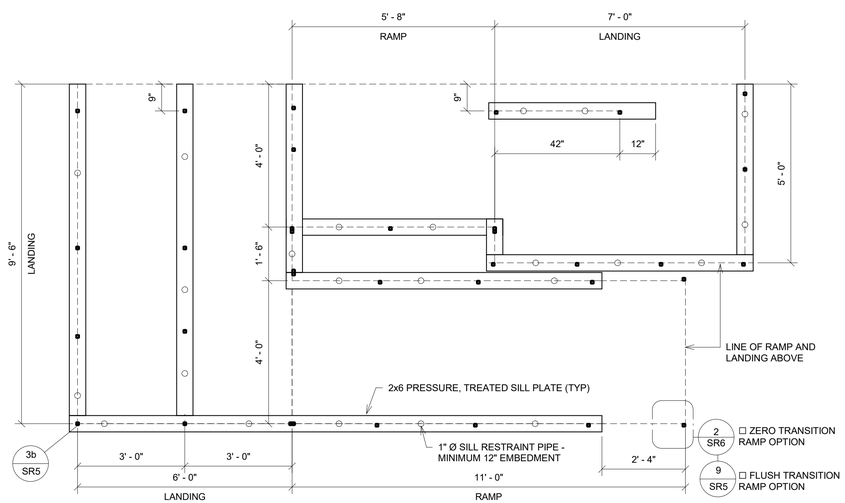
1 *1/2" = 1'-0"*
Sill Plan For Ramp & Landing



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 CORNERIN 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

R&S TAVARES ASSOCIATES
DESIGN ♦ CONSULTING ♦ PROJECT MGT
11590 W Bernardo Court, Suite 100
San Diego, CA 92127
www.rstavares.com

PROFESSIONAL STAMP

07/24/23

CLIENT

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

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

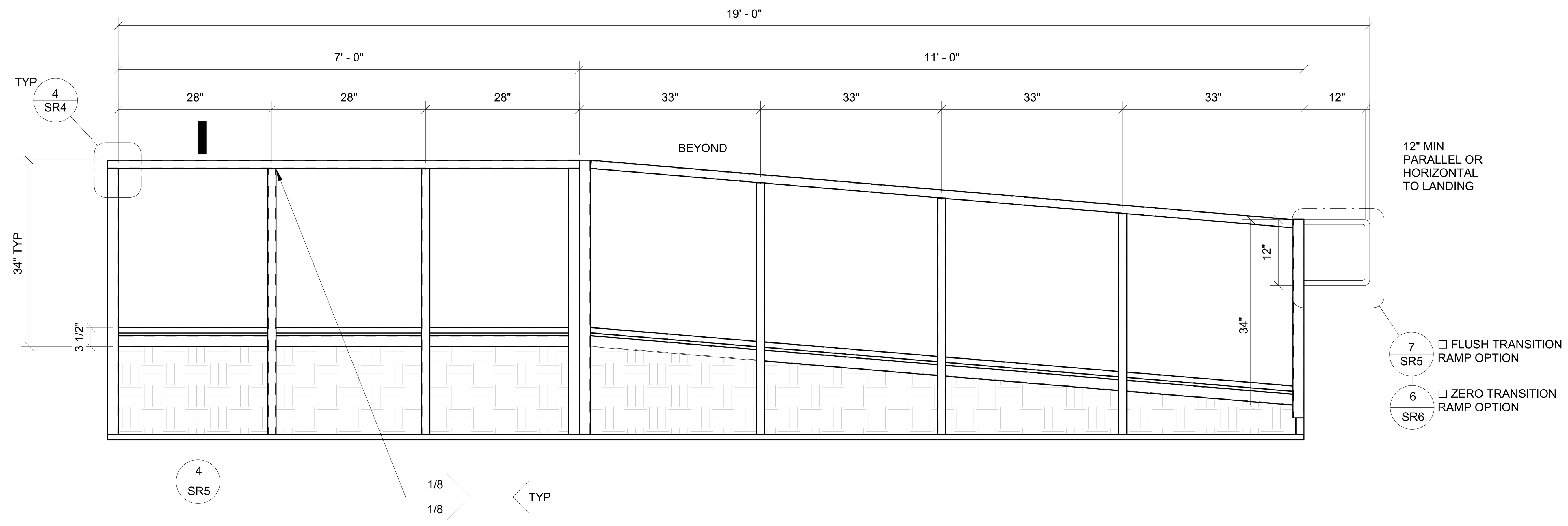
PROJECT NUMBER
22079

DRAWN BY
SM

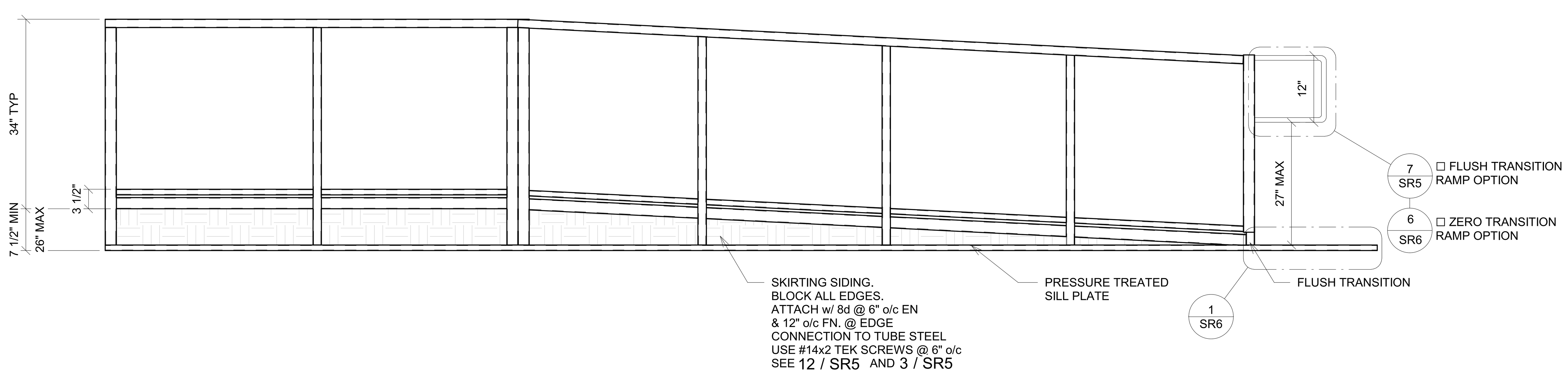
CHECKED BY
rMc

DATE
12/23/2022

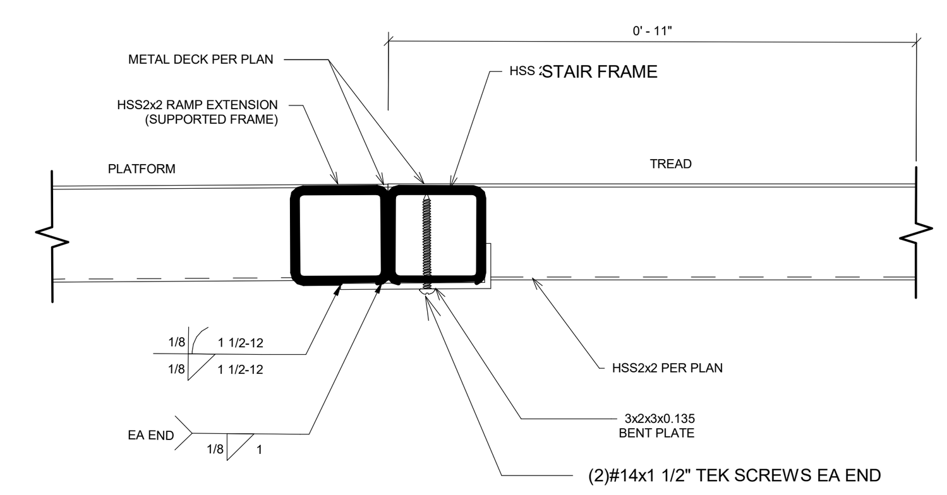
SHEET NO.
SR3
SHEET OF



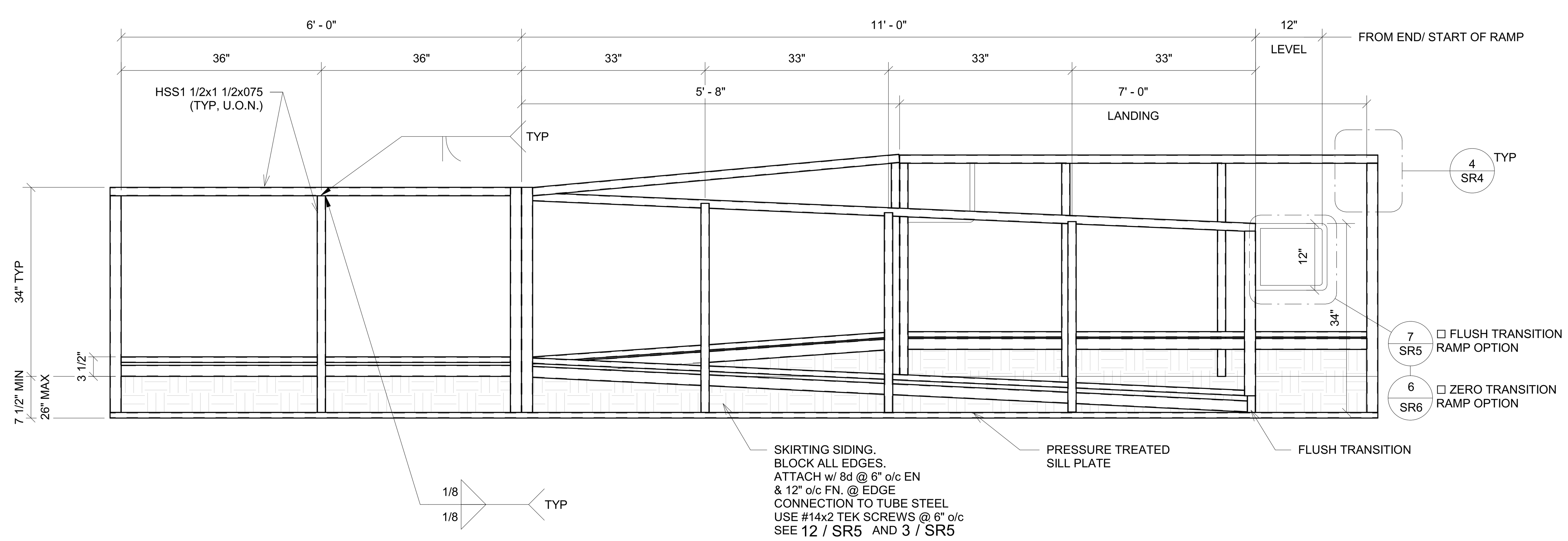
1 *3/4" = 1'-0"*
Ramp & Landing Elevation



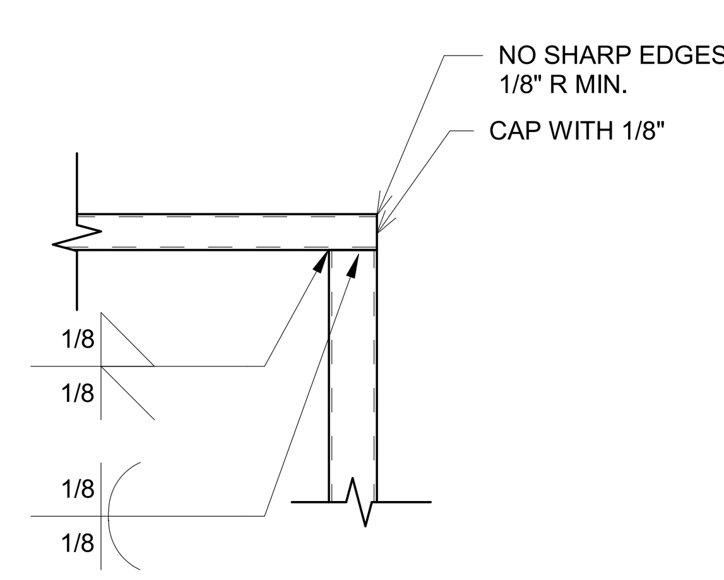
2 *3/4" = 1'-0"*
Ramp & Landing Elevation Option X Copy 1



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

M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REVIT\RST#20093 - Aries, Ramps and Stairs PC.rvt

6/15/2021 7:29:27 PM

PROJECT SPECIFIC STATE AGENCY APPROVAL

R&S TAVARES ASSOCIATES
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www.rstavares.com

PROFESSIONAL STAMP

REGISTERED PROFESSIONAL ENGINEER
MANNY D. FRANCH
S3380
Exp. 03/31/24
STRUCTURAL
STATE OF CALIFORNIA
07/24/23

CLIENT

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1320 W. Oleander Ave. Perris CA 92571-7408
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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

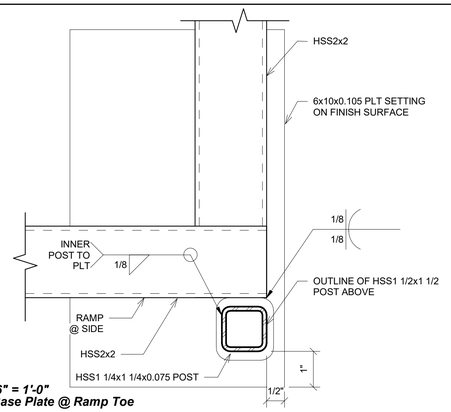
DRAWN BY
SM

CHECKED BY
rMc

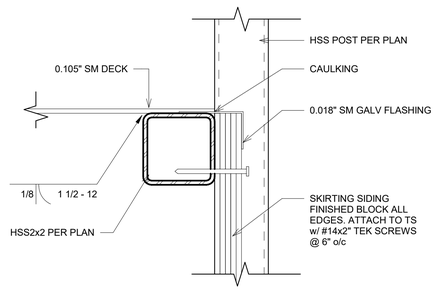
DATE
12/23/2022

SHEET NO.
SR4

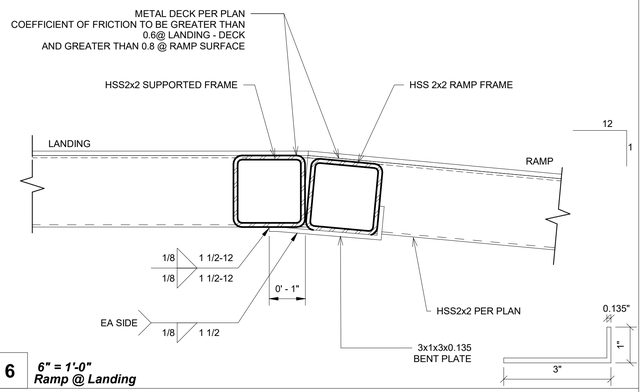
SHEET OF



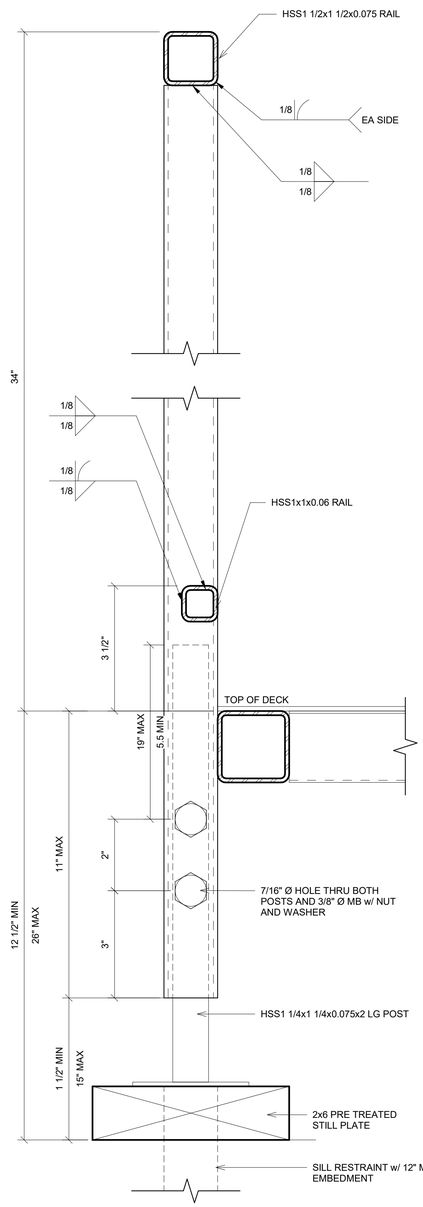
9 *6" = 1'-0"*
Base Plate @ Ramp Toe



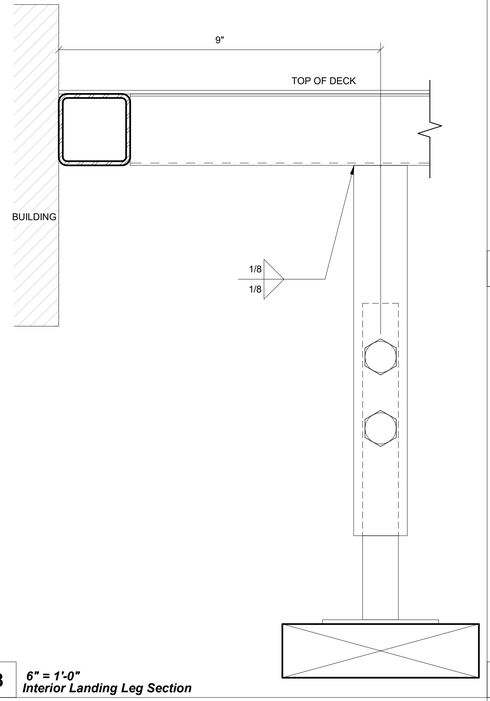
12 *6" = 1'-0"*
Skirt Flashing



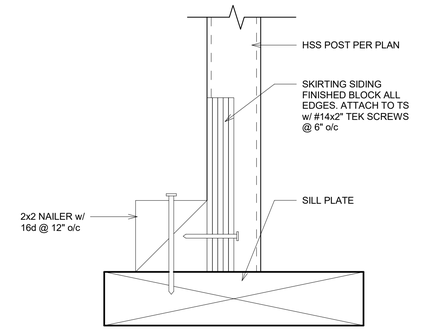
6 *6" = 1'-0"*
Ramp @ Landing



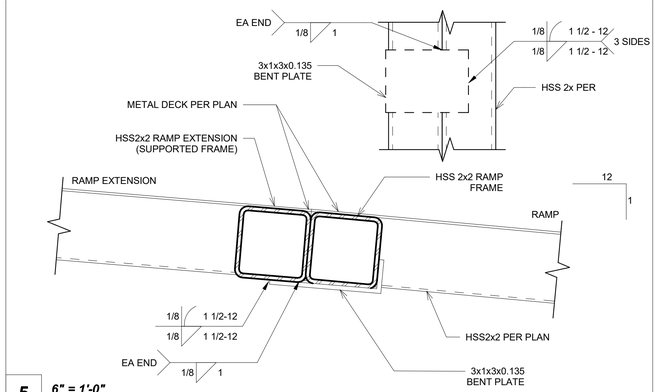
2 *6" = 1'-0"*
Adjustable Leg



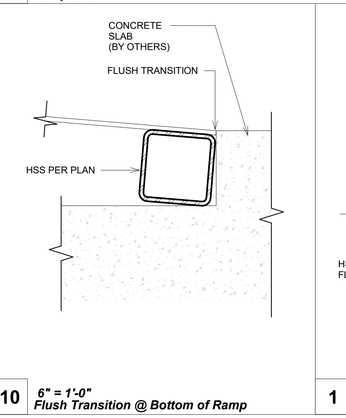
8 *6" = 1'-0"*
Interior Landing Leg Section



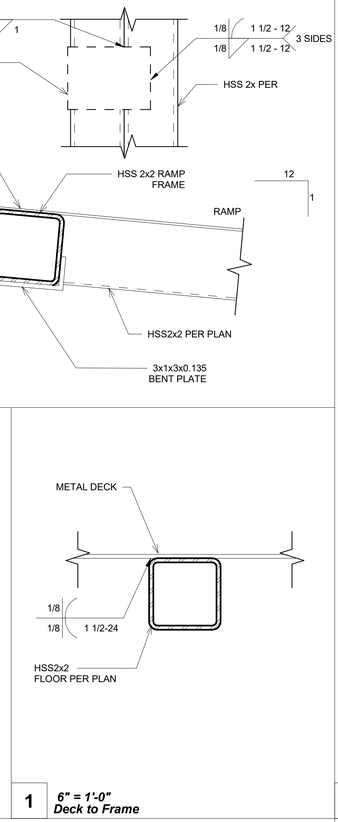
3 *6" = 1'-0"*
Skirt Flashing @ Sill Plate



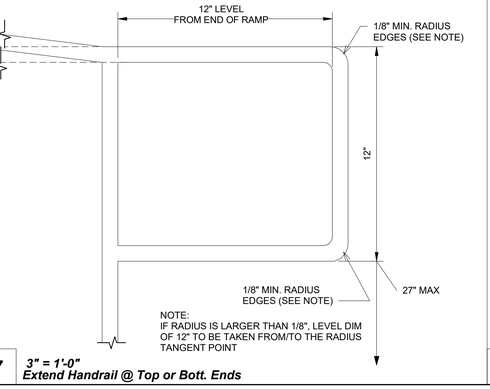
5 *6" = 1'-0"*
Ramp Extension



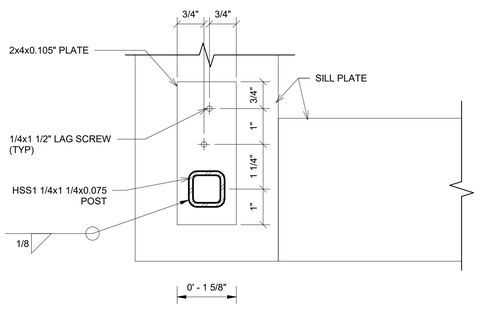
10 *6" = 1'-0"*
Flush Transition @ Bottom of Ramp



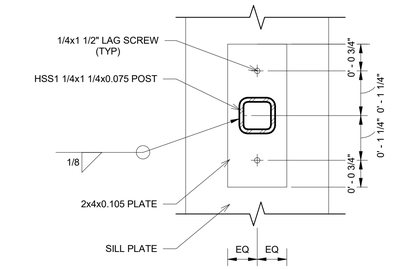
1 *6" = 1'-0"*
Deck to Frame



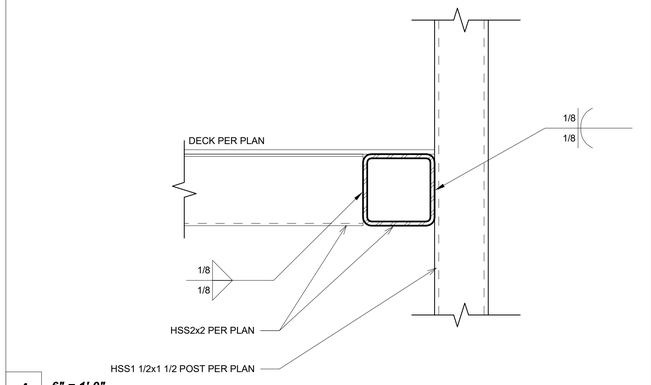
7 *3" = 1'-0"*
Extend Handrail @ Top or Bott. Ends



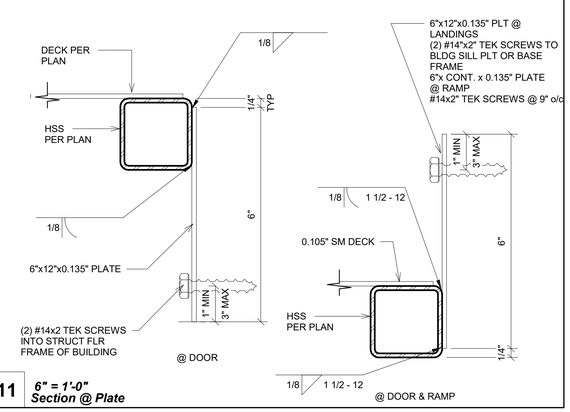
3b *6" = 1'-0"*
Adjustable Leg Base Plate



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



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



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

PROJECT SPECIFIC STATE AGENCY APPROVAL

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PROFESSIONAL STAMP

07/24/23

CLIENT

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ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

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

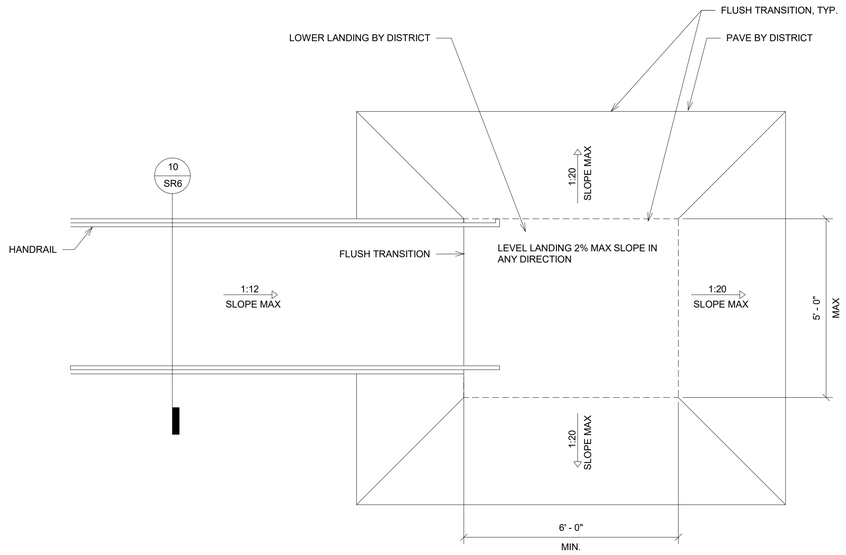
CHECKED BY
rMc

DATE
12/23/2022

SHEET NO.
SR5

SHEET OF

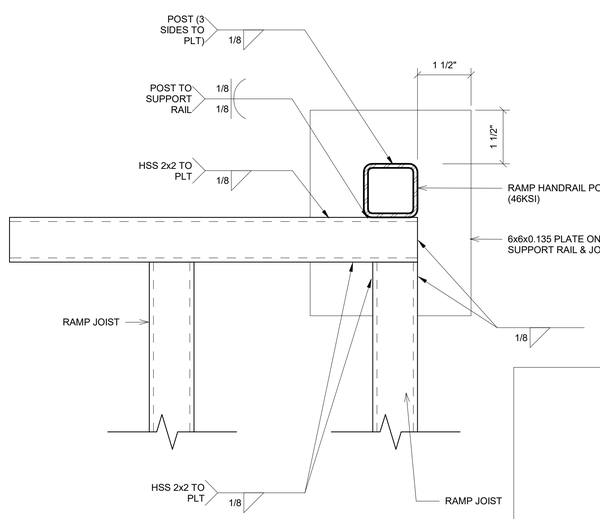
6/15/2021 7:29:28 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REVIT\RS1#20093 - Aries, Ramps and Stairs PC.rvt



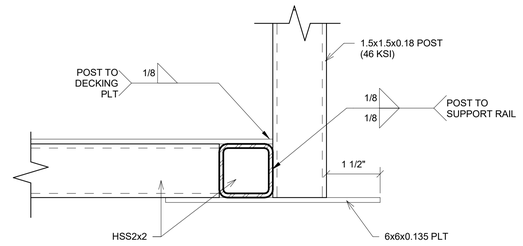
NOTE:
1. 1:20 TRANSITION OFF OF LOWER LANDING REQUIRES NO HANDRAIL.
2. TRANSITIONS EXCEEDING 1:20 BUT NOT EXCEED 1:12 REQUIRE REMOVAL OF 12" HANDRAIL EXTENSION AND ADDITIONAL HANDRAILING BY DISTRICT. (THIS CONDITION REQUIRES A SITE SPECIFIC DETAIL PROVIDED BY ARCHITECT TO DEMOSTRATE ACCESSIBLE RAMP)

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

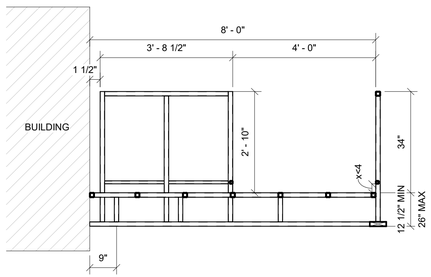
7 ***1/2" = 1'-0"***
Ramp Transition



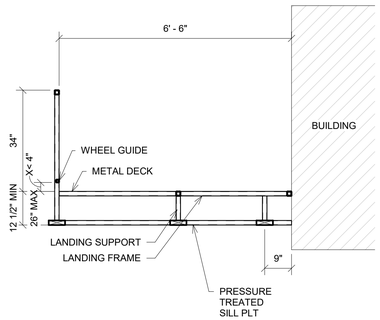
2 ***6" = 1'-0"***
Base Plt @ Ramp Toe For Zero Transition



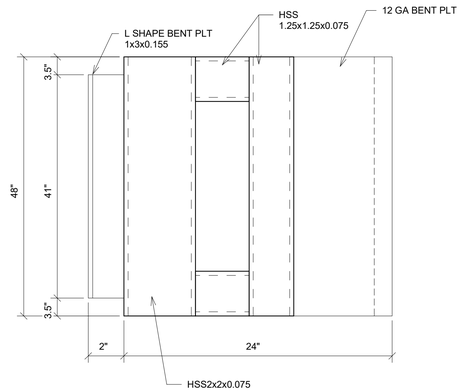
3 ***6" = 1'-0"***
Base Plt @ Ramp Toe Low Zero Side View



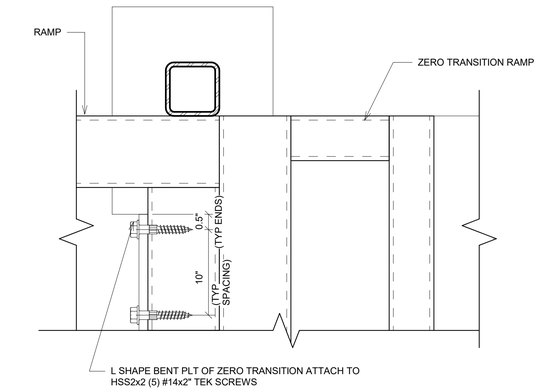
8 ***1/2" = 1'-0"***
Section @ Landing



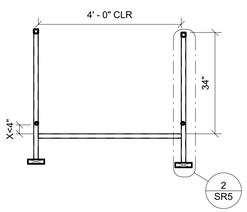
9 ***1/2" = 1'-0"***
Section @ Landing



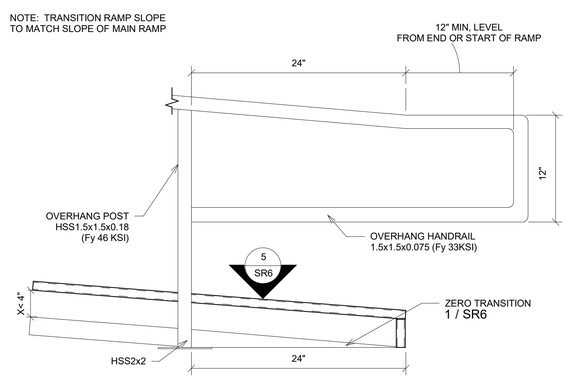
4 ***6" = 1'-0"***
Top View Ramp Zero Transition



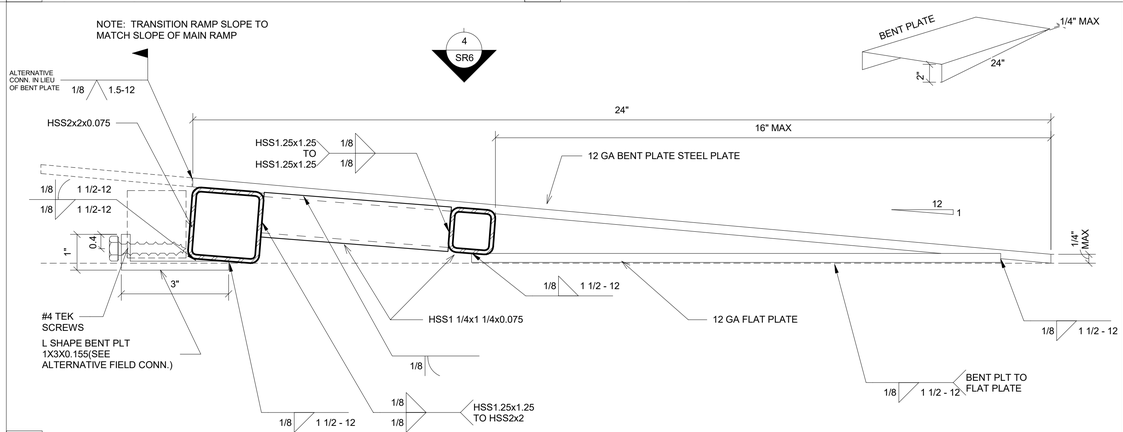
5 ***6" = 1'-0"***
Zero Transition Ramp Connection



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

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PROFESSIONAL STAMP

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STRUCTURAL
STATE OF CALIFORNIA
07/24/23

CLIENT

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ORIGINAL PC STATE AGENCY APPROVAL

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DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
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Revision Schedule

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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

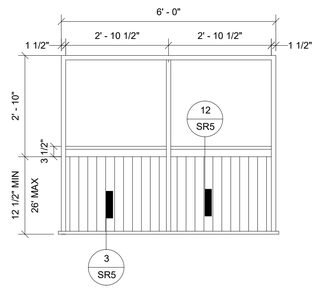
DRAWN BY
SM

CHECKED BY
rMc

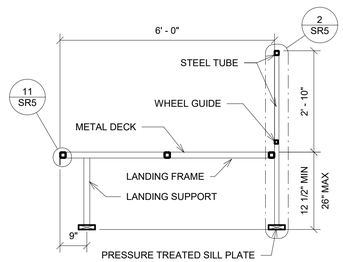
DATE
12/23/2022

SHEET NO.
SR6
SHEET OF

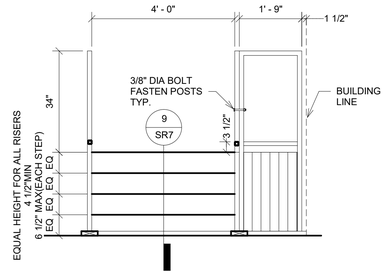
6/15/2021 7:29:30 PM M:\2020\20093 - Class Leasing, 24x40 - 120x40 2022 CBC Updates\REVITRST#20093 - Aries, Ramps and Stairs PC.rvt



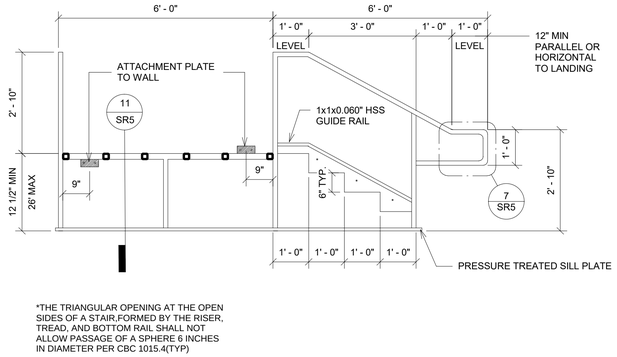
1 *1/2" = 1'-0"*
LANDING ELEVATION VIEW



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

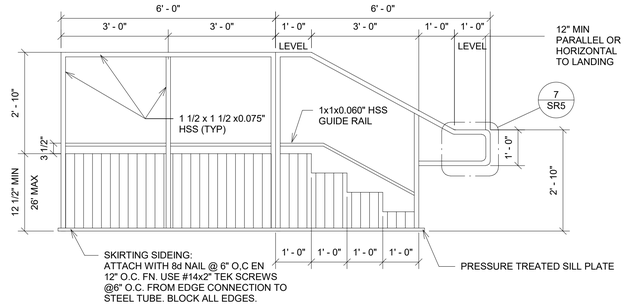


6 *1/2" = 1'-0"*
STEPS ELEVATION

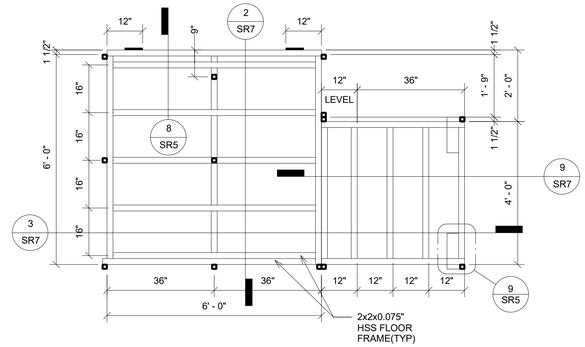


*THE TRIANGULAR OPENING AT THE OPEN SIDES OF A STAIR,FORMED BY THE RISER, TREAD, AND BOTTOM RAIL SHALL NOT ALLOW PASSAGE OF A SPHERE 6 INCHES IN DIAMETER PER CBC 1015.4(TYP)

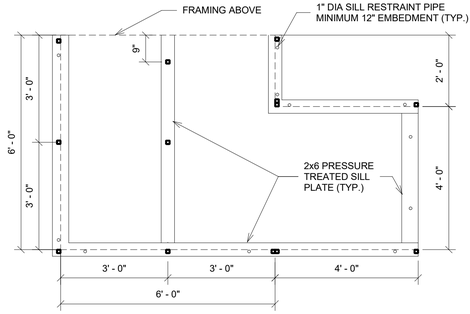
3 *1/2" = 1'-0"*
STEP AND LANDING SECTION



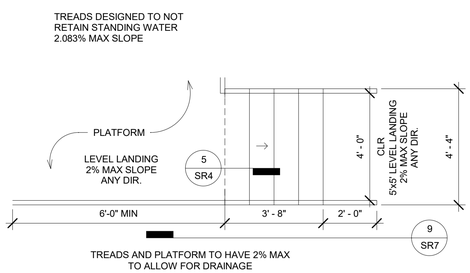
4 *1/2" = 1'-0"*
STEPS AND LANDING SECTION



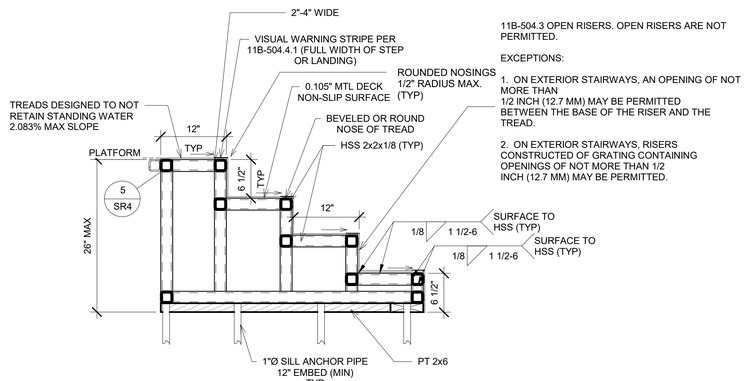
5 *1/2" = 1'-0"*
STEPS/LANDING FRAMING PLAN



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



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



11B-504.3 OPEN RISERS. OPEN RISERS ARE NOT PERMITTED.

EXCEPTIONS:

1. ON EXTERIOR STAIRWAYS, AN OPENING OF NOT MORE THAN 1/2 INCH (12.7 MM) MAY BE PERMITTED BETWEEN THE BASE OF THE RISER AND THE TREAD.

2. ON EXTERIOR STAIRWAYS, RISERS CONSTRUCTED OF GRATING CONTAINING OPENINGS OF NOT MORE THAN 1/2 INCH (12.7 MM) MAY BE PERMITTED.

9 *1" = 1'-0"*
Stair Elev

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

PROJECT SPECIFIC STATE AGENCY APPROVAL

R&S TAVARES ASSOCIATES
DESIGN ♦ CONSULTING ♦ PROJECT MGT
11590 W Bernardo Court, Suite 100
San Diego, CA 92127
www.rstavares.com

PROFESSIONAL STAMP

07/24/23

CLIENT

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

ORIGINAL PC STATE AGENCY APPROVAL

APPROVED
DIV. OF THE STATE ARCHITECT
APP: 04-121419 PC
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑ CG ☐
DATE: 04/19/2023

Revision Schedule

#	Description	Date22079

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

SHEET OF