



RUTH GRIMES ELEMENTARY SCHOOL

2023 PHASE I SITE UPGRADES (RESTROOM BUILDING & SHADE SHELTER)



- ALL WORK SHALL CONFORM TO 2022 EDITION TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- THE ARCHITECT OR ENGINEER MAY FIND DEFECTS IN THE WORK AND IF THEY DO, THEY WILL NOTIFY THE CONTRACTOR SO THE ERROR MAY BE CORRECTED. UNDER NO CIRCUMSTANCES IS IT EVER THE INTENT FOR THE ARCHITECT OR ENGINEER TO BECOME A GUARANTOR OF THE CONTRACTOR'S PERFORMANCE BY THESE ACTIVITIES. THE FACT THAT A CONTRACTOR'S ERROR GOES UNDETECTED DURING THE VISIT TO THE SITE DOES NOT MAKE THE ARCHITECT OR ENGINEER NEGLIGENT: THE CONTRACTOR IS NEVER RELIEVED OF THE RESPONSIBILITY FOR THE DISCOVERY OF HIS OWN ERRORS AND THE CORRECTION OF THEM, NOR OF THE RESPONSIBILITY OF PROPERLY PERFORMING THE WORK.
- THE ARCHITECT OR ENGINEER WILL MAKE VISITS TO THE JOB SITE TO OBSERVE THE PROGRESS OF THE WORK AND TO OBSERVE WHETHER OR NOT IT IS, IN GENERAL, BEING PERFORMED IN ACCORDANCE WITH THEIR PLANS AND SPECIFICATIONS. THIS DOES NOT IN ANY WAY MEAN THAT THE ARCHITECT OR ENGINEER IS A GUARANTOR OF THE CONTRACTOR'S WORK: RESPONSIBILITY FOR SAFETY IN, ON OR ABOUT THE JOB SITE: IN CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENT, SCAFFOLDING, FORMS, OR OTHER WORK AIDS: OR SUPERINTENDING THE WORK.
- DO NOT SCALE DRAWINGS. WORK TO THE DIMENSIONS INDICATED ON THE DRAWINGS. CONTRACTOR SHALL VERIFY THE DIMENSIONS AT THE JOB SITE AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FOR PROMPT CLARIFICATION.
- CONTRACTOR TO COORDINATE ALL PHASING AND UTILITY INTER-RUPTIONS OF THIS PROJECT WITH THE OWNER AND ARCHITECT AS TO DO THE LEAST POSSIBLE INTERRUPTIONS. (AS-REQUIRED)
- CONTRACTORS BIDDING OR PERFORMING WORK SHALL VERIFY THE CONDITIONS OF THE SITE, INCLUDING ACCESS BEFORE SUBMITTING BID OR COMMENCING WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FOR PROMPT DIRECTION.
- THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES INDICATED OR NOT ON THE DRAWING ARE OBTAINED BY SEARCH OF AVAILABLE RECORDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT LOCATIONS OF THE UTILITIES WITH SCHOOL DISTRICT MAINTENANCE AND OPERATION PERSONNEL. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES AND OTHER STRUCTURES. ANY DAMAGE SHALL BE PROMPTLY RESTORED TO THE SCHOOL DISTRICT'S SATISFACTION.
- REFERENCE CIVIL AND ELECTRICAL DRAWINGS FOR ALL UNDERGROUND UTILITY WORK TO BE COMPLETED IN THIS CONTRACT.
- PROVIDE CONSTRUCTION BARRICADES AS REQUIRED TO PROTECT PUBLIC'S HEALTH AND SAFETY INCLUDING WORK UNDER CONSTRUCTION TO THE REQUIREMENTS OF THE SCHOOL DISTRICT. COVER OPEN TRENCHES WITH SOLID MATERIAL.
- THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY AND STRUCTURES. ANY DAMAGE SHALL BE PROMPTLY RESTORED TO THE SATISFACTION OF THE OWNER/ARCHITECT AT CONTRACTOR'S EXPENSE.
- BIDDERS REQUIRED TO LOOK AT ALL DRAWINGS NOT JUST THOSE SHEETS RESPECTIVE OF THEIR TRADE.
- A PROJECT INSPECTOR SHALL BE RETAINED BY THE OWNER AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT, STRUCTURAL SAFETY SECTION. THE INSPECTOR SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK AS DESCRIBED IN TITLE 24, PART 1, CALIFORNIA CODE OF REGULATIONS. WORK SHALL NOT COMMENCE WITHOUT THE PRESENCE OF THE INSPECTOR. DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24 C.C.R. CLASS 2.
- A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS.
- CHANGES TO THE STATE APPROVED DRAWINGS SHALL BE MADE BY ADDENDA DURING THE BID PERIOD OR BY A CONSTRUCTION CHANGE DOCUMENT(CCD) BEARING DSA APPROVAL DURING CONSTRUCTION, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24 C.C.R AND DSA IR A-6.
- UNLESS SPECIFIED ON DRAWINGS, ANY ALTERATIONS OR MODIFICATIONS TO A STRUCTURAL ELEMENT BY CUTTING, DRILLING, BORING, BRACING, WELDING, ETC. SHALL HAVE WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO START OF WORK.
- ALL DETAILS CONTAINED IN THESE CONSTRUCTION DOCUMENTS ARE PART OF THE CONSTRUCTION SCOPE REGARDLESS OF THEM BEING REFERENCED IN THE SET.
- GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS, AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
- FIRE PROTECTION AND PREVENTION DURING DEMOLITION AND CONSTRUCTION SHALL COMPLY WITH THE 2022 CALIFORNIA FIRE CODE, CHAPTER 33
- SAFEGUARDS DURING DEMOLITION AND CONSTRUCTION SHALL COMPLY WITH THE 2022 CBC, CHAPTER 33
- DETERIORATION OR EXISTING NON-COMPLIANT CONSTRUCTION: IF ANY CONDITION IS DISCOVERED WHICH, IF LEFT UNCORRECTED, WOULD MAKE THE BUILDING NON-COMPLIANT WITH THE REQUIREMENTS OF THE EDITION OF THE CBC IN FORCE AT THE TIME OF ORIGINAL CONSTRUCTION, THE CONDITION MUST BE CORRECTED IN ACCORDANCE WITH THE CURRENT CODE REQUIREMENTS. A CONSTRUCTION CHANGE DOCUMENT(CCD), 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.

COLTON JOINT UNIFIED SCHOOL DISTRICT

1212 N VALENCIA DR
COLTON, CA 92324

OWNER

FRANK MIRANDA, Ed.D.

SUPERINTENDENT

BERTHA FLORES

DAN FLORES

ISRAEL FUENTES

PATT HARO

BERENICE SANDOVAL

BOARD OF EDUCATION



RUTH GRIMES ELEMENTARY SCHOOL

1609 SPRUCE AVE
BLOOMINGTON, CA 95377

SCHOOL ADDRESS

THIS CONSTRUCTION DOCUMENT PACKAGE INCLUDES, BUT ARE NOT LIMITED TO THE FOLLOWING SCOPE:

- INSTALLATION OF (1) WOOD FOUNDATIONS (PC# 04-119396)
INSTALLATION OF (1) 12' x 40' RELOCATABLE RESTROOM BUILDING (A# 04-120632)
INSTALLATION OF (1) ACCESSIBLE RAMP / HANDRAILS (PC# 04-120031)
- INSTALLATION OF WET AND DRY UTILITIES FOR NEW MODULAR RESTROOM BUILDING
- INSTALLATION OF (1) 30X40 SHADE SHELTER (A# 02-118654) AND CONCRETE PAD
- UPGRADES TO PARKING LOT 1 INCLUDING ACCESSIBLE PARKING, LOADING ZONE INSTALLATION AND DRIVE APRON



PJHM ARCHITECTS, INC.

ORANGE COUNTY

24461 RIDGE ROUTE DRIVE #100
LAGUNA HILLS, CA 92653

949.496.6191

LOS ANGELES COUNTY

837 TRACTION AVENUE, #410
LOS ANGELES, CA 90013

213.278.0172

SAN DIEGO COUNTY

804 PIER VIEW WAY #103
OCEANSIDE, CA 92054

760.730.5527

ARCHITECT

CIVIL ENGINEER

SLR ENGINEERING, INC.

6800 INDIANA AVENUE, SUITE 260
RIVERSIDE, CA 92506

ELECTRICAL ENGINEER

tk1sc

11870 PIERCE ST, SUITE 160
RIVERSIDE, CA 92505

ENGINEERING CONSULTANTS

SKC COMPANY

13617 12 STREET, SUITE B
CHINO, CA 91710

MODULAR BUILDING MANUFACTURER

AMERICANA OUTDOORS

#2 INDUSTRIAL DRIVE
SALEM, IL 62881

SHADE SHELTER MANUFACTURER

WOOD FOUNDATION SYSTEM PC# 04-119361
MODULAR RESTROOM BUILDING A# 04-120632
ACCESSIBLE RAMP / LANDING A# 04-120031
SHADE SHELTER A# 02-118654

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. 04-122576 File No. 36-14)

- The drawings or sheets listed on the cover or index sheet
 These drawings, 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:

- Design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
- 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: <input type="checkbox"/> All drawings or sheets listed on the cover or index sheet	
<input checked="" type="checkbox"/> These drawings	
<input checked="" type="checkbox"/> Are in general conformance and <input checked="" type="checkbox"/> Have been coordinated	<input type="checkbox"/> Is/are in general conformance and <input type="checkbox"/> Have been coordinated
Signature  Date <u>06/27/2023</u>	Signature _____ Date _____
Architect or Engineer designated to be in general responsible charge KENNETH J. PODANY	Architect or Engineer designated to be in general responsible charge _____
Print Name C28889	Print Name _____
License Number C28889	License Number _____
Exp. Date 03/25	Exp. Date _____

STATEMENT OF CONFORMANCE

COVER SHEET

CS-1 COVER SHEET

CIVIL

C-1.0 SITE DEMOLITION PLAN
C-2.0 DETAILS
C-3.0 SITE GRADING INDEX PLAN
C-3.1 SITE GRADING AND PATH OF TRAVEL PLAN
C-3.2 SITE GRADING AND PATH OF TRAVEL PLAN
C-3.3 SITE GRADING AND PATH OF TRAVEL PLAN
C-4.0 SITE UTILITY PLAN

ARCHITECTURAL

A-0.1 FIRE AUTHORITY SITE PLAN
A-1.0 COMPOSITE SITE PLAN AND ENLARGED PLANS
A-1.1 PARKING LOT A - PLANS AND DETAILS
A-1.2 ENLARGED PLANS AND DETAILS

ELECTRICAL

E-0.1 SYMBOLS LIST
E-1.0 SITE PLAN
E-1.1 ENLARGED RESTROOM BUILDING FLOOR PLAN
E-2.1 SINGLE LINE DIAGRAM
E-4.1 DETAILS
E-6.1 ELECTRICAL SPECIFICATIONS
E-6.2 ELECTRICAL SPECIFICATIONS
EFA-0.1 FIRE ALARM GENERAL NOTES & SYMBOLS
EFA-0.2 FIRE ALARM DETAILS
EFA-0.3 FIRE ALARM RISER DIAGRAM & CALCULATIONS
EFA-1.1 ENLARGED RESTROOM BUILDING FIRE ALARM PLAN
EFA-2.1 FIRE ALARM SPECIFICATIONS
T-1.0 SITE PLAN - TECHNOLOGY
T-1.1 ENLARGED RESTROOM BUILDING TECHNOLOGY FLOOR PLAN
T-4.1 TECHNOLOGY DETAILS

WOOD FOUNDATION SYSTEM PC# 04-119361

F-1 COVER SHEET
F-1A APPLICATION NUMBERS
F-1B APPLICATION NUMBERS
F-5 DETAILS
F-7 12X40 PLAN
F-9 SPECIFICATIONS

MODULAR RESTROOM BUILDING A# 04-120632

A0.0 TITLE SHEET
A1.D FLOOR PLAN OPTIONS "D" & "D-1"

ACCESSIBLE RAMP / LANDING A# 04-120031

R-1 COVER SHEET
R-2 DSA 103 TEST & SPECIAL INSPECTIONS SAMPLE
R-3 CONSTRUCTION SPECIFICATIONS AND NOTES
R-6 COMMON LANDING PLAN
R-8 SWITCHBACK RAMP PLAN
R-9 STAIR AND LANDING PLAN AND DETAILS

SHADE SHELTER A# 02-118654

MT30.0 30' MERAMEC DESIGN NOTES, EXAMPLE FORM DSA 103
MT30.1 30' MERAMEC SHELTER PLANS, SECTIONS AND DETAILS

GENERAL NOTES

- 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 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 MARSHALL REGULATIONS

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

APPLICABLE CODES

BRIEF PROJECT SCOPE

STATEMENT OF CONFORMANCE

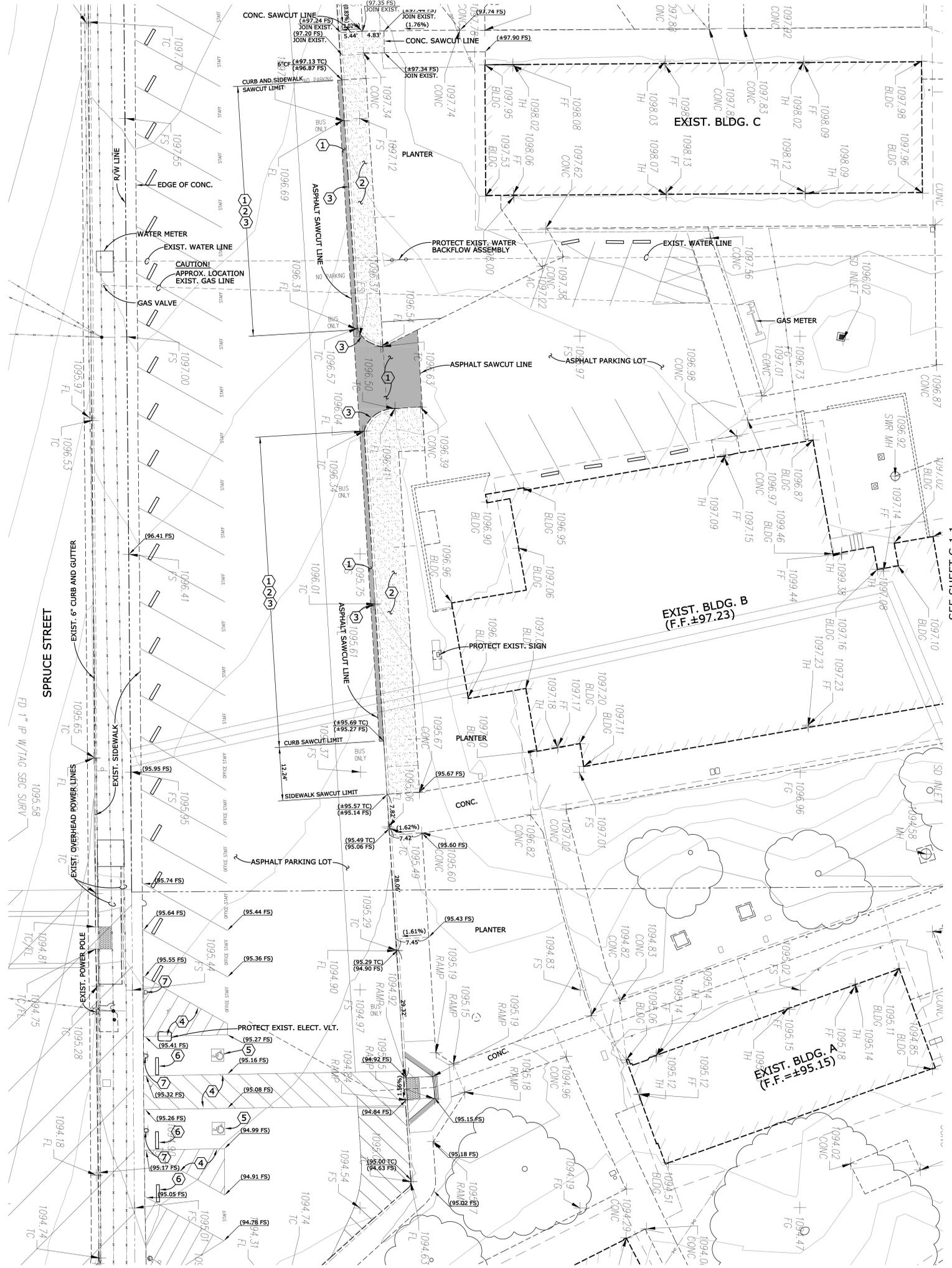
SCHEDULE OF DRAWINGS

TOTAL SHEETS: 43

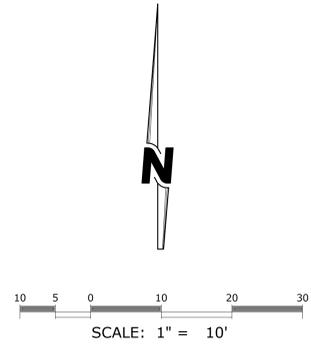
RUTH GRIMES ELEMENTARY SCHOOL
2023 PHASE I SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)
COLTON JOINT UNIFIED SCHOOL DISTRICT

COVER SHEET

CS-1



- DEMOLITION NOTES**
- ① SAWCUT, DEMOLISH AND REMOVE EXISTING A.C. PAVEMENT.
 - ② SAWCUT, DEMOLISH AND REMOVE EXISTING CONCRETE CURB, SIDE ETC.
 - ③ SAWCUT, DEMOLISH AND REMOVE EXISTING CONCRETE CURB.
 - ④ REMOVE EXISTING PARKING STALL STRIPING.
 - ⑤ REMOVE EXISTING ADA PARKING SYMBOL STRIPING.
 - ⑥ REMOVE EXISTING CONCRETE WHEEL STOP.
 - ⑦ REMOVE EXISTING ACCESSIBLE SIGN, SIGN POST AND ASSOCIATED FOOTING. PATCH EXISTING ASPHALT TO PROVIDE A SMOOTH, FLUSH FINISH.



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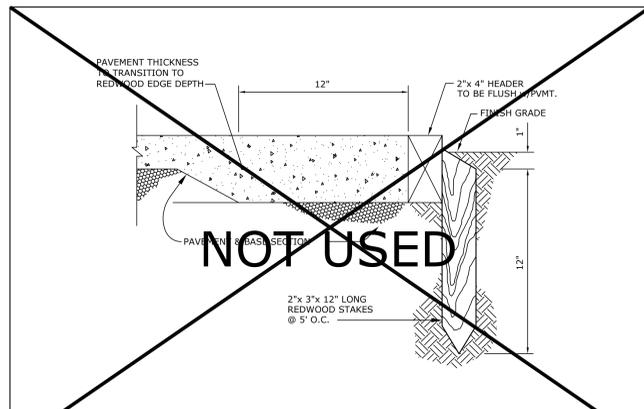
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COLTON UNIFIED SCHOOL DISTRICT

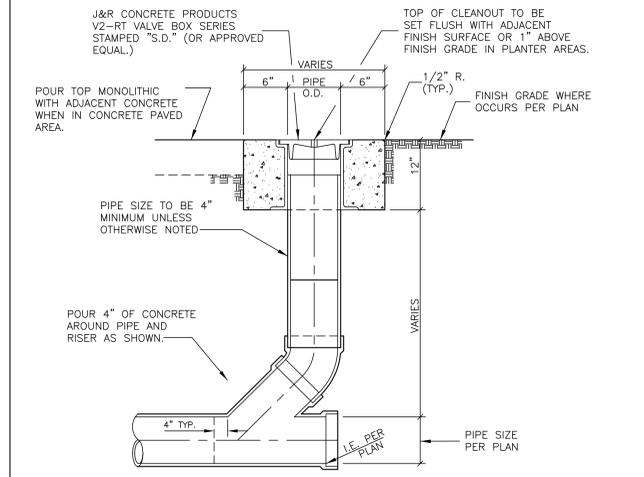
SITE DEMOLITION PLAN

C-1.0

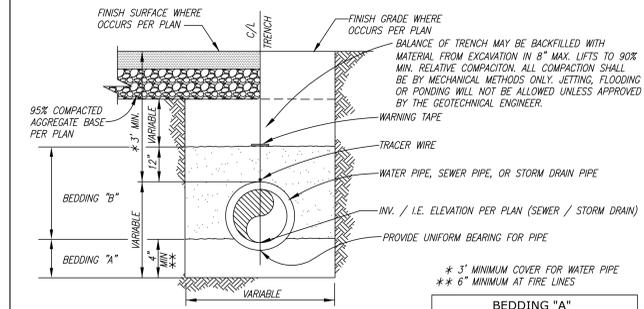
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REDWOOD HEADER DETAIL



SEWER CLEANOUT DETAIL



S.P.P.W.C. STD. PLAN 120-2

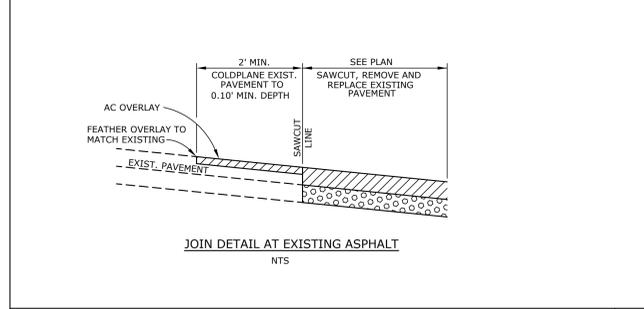
- CURB SHALL BE CONSTRUCTED MONOLITHICALLY OF 2500 PSI MINIMUM CONCRETE.
- WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 10-FOOT INTERVALS, EXCEPT THAT THE INTERVAL SHALL BE VARIED TO ALLOW MATCHING OF JOINTS IN ADJACENT EXISTING IMPROVEMENTS.
- CURING COMPOUND SHALL BE SPRAYED UNIFORMLY ON EXPOSED SURFACES.

BEDDING "A" CRUSHED ROCK GRADATION	
SIEVE SIZE	% PASSING SIEVES
1"	100
3/4"	90-100
1/2"	30-60
3/8"	0-20
No. 4	0-5

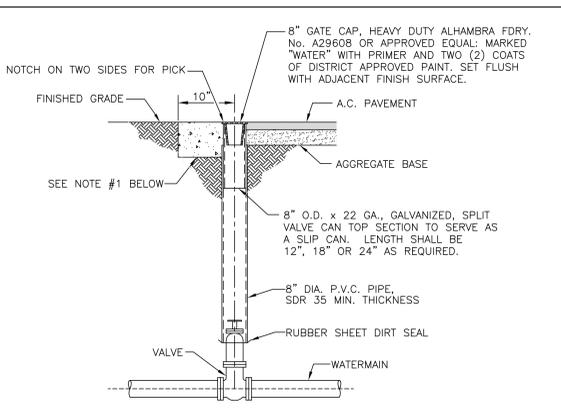
ASTM C131 TEST GRADING-B

* 3" MINIMUM COVER FOR WATER PIPE
** 6" MINIMUM AT FIRE LINES

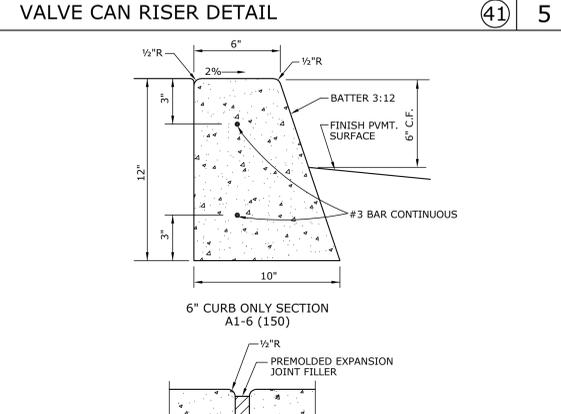
TYPICAL PIPE TRENCH DETAIL



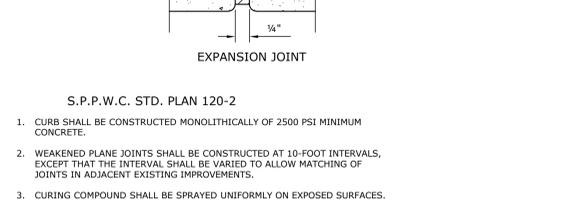
ASPHALT JOIN DETAIL



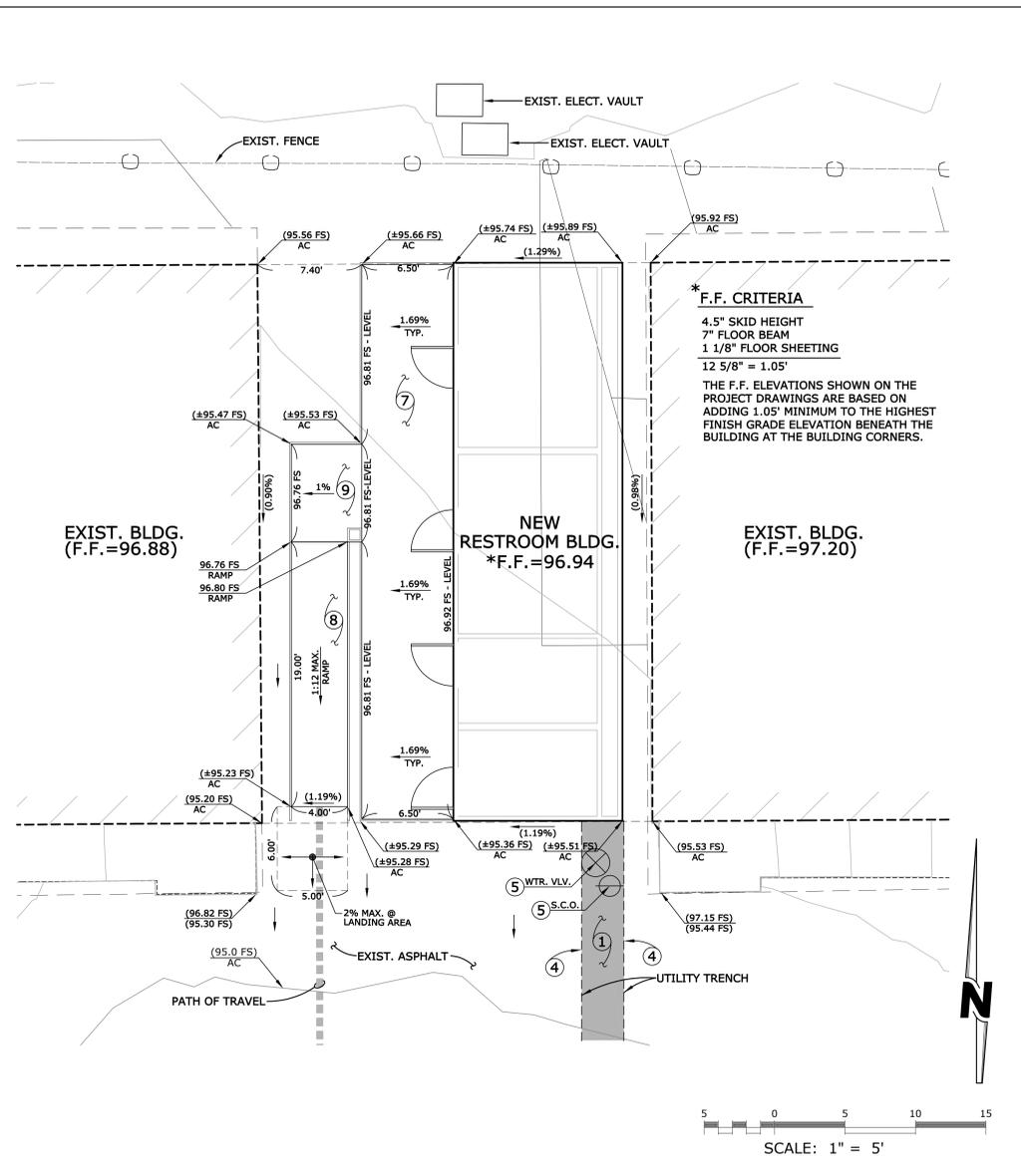
NOTE:
1. CLASS "B" CONCRETE FLANGE 20" SQ. POUR AGAINST WELL COMPACTED EARTH. 90% MIN. RELATIVE COMPACTION AT FINISHED GRADE IN NON-PAVED AREAS.



6" CURB ONLY SECTION A1-6 (150)



ENLARGED AREA DETAIL



ENLARGED AREA DETAIL

- CONSTRUCTION NOTES**
NOTE ALL NOTES USED ON THIS SHEET
- CONSTRUCT 3" AC OVER 6" CLASS II A.B.
 - CONSTRUCT 4" THICK 520-C-2500 PCC CONCRETE PAVING.
 - CONSTRUCT 6" CONCRETE CURB ONLY PER DETAIL No. 6, SHEET C-2.0.
 - JOIN EXISTING ASPHALT PER DETAIL No. 4, SHEET C-2.0.
 - ADJUST SEWER CLEANOUT AND WATER VALVE TO FINISH SURFACE.
 - CONSTRUCT 0" TO 6" CURB FACE TRANSITION.
 - INSTALL 6.5'x40' MANUFACTURED LANDING.
 - INSTALL 4'x19' MANUFACTURED RAMP.
 - INSTALL 5'x7' MANUFACTURED LANDING.
 - NOT USED.
 - CONSTRUCT ASPHALT OVERLAY TO MAINTAIN 2% MAXIMUM CROSS FALL ALONG PATH OF TRAVEL. MAXIMUM SIDE SLOPE SHALL BE 5% TO DAYLIGHT POINT.



SJR
Civil Engineering, Inc.
6846 INDIANA AVENUE • SUITE 130
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(951) 883-8088 FAX (951) 883-6915



RUTH GRIMES ELEMENTARY SCHOOL
2023 PHASE I SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)

COLTON UNIFIED SCHOOL DISTRICT

SITE GRADING INDEX PLAN



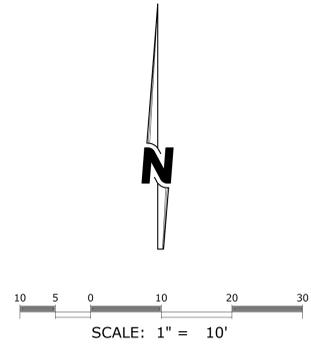
CONSTRUCTION NOTES

NOTE ALL NOTES USED ON THIS SHEET

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LEGEND

- (95.00 FS) INDICATES EXISTING ELEVATION PER FIELD SURVEY.
- 95.00 FS INDICATES PROPOSED ELEVATION.
- /// EDGE OF PAVING.
- AC ASPHALT CONCRETE
- EG EDGE OF GUTTER
- EOC EDGE OF CONCRETE
- EP EDGE OF PAVEMENT
- FF FINISH FLOOR
- FG FINISH GRADE
- FL FLOW LINE
- FS FINISH SURFACE
- (NG) NATURAL GROUND
- TC TOP OF CURB
- TCO TOP OF CLEANOUT
- TOG TOP OF GRATE
- - - - - INDICATES A.D.A. PATH OF TRAVEL



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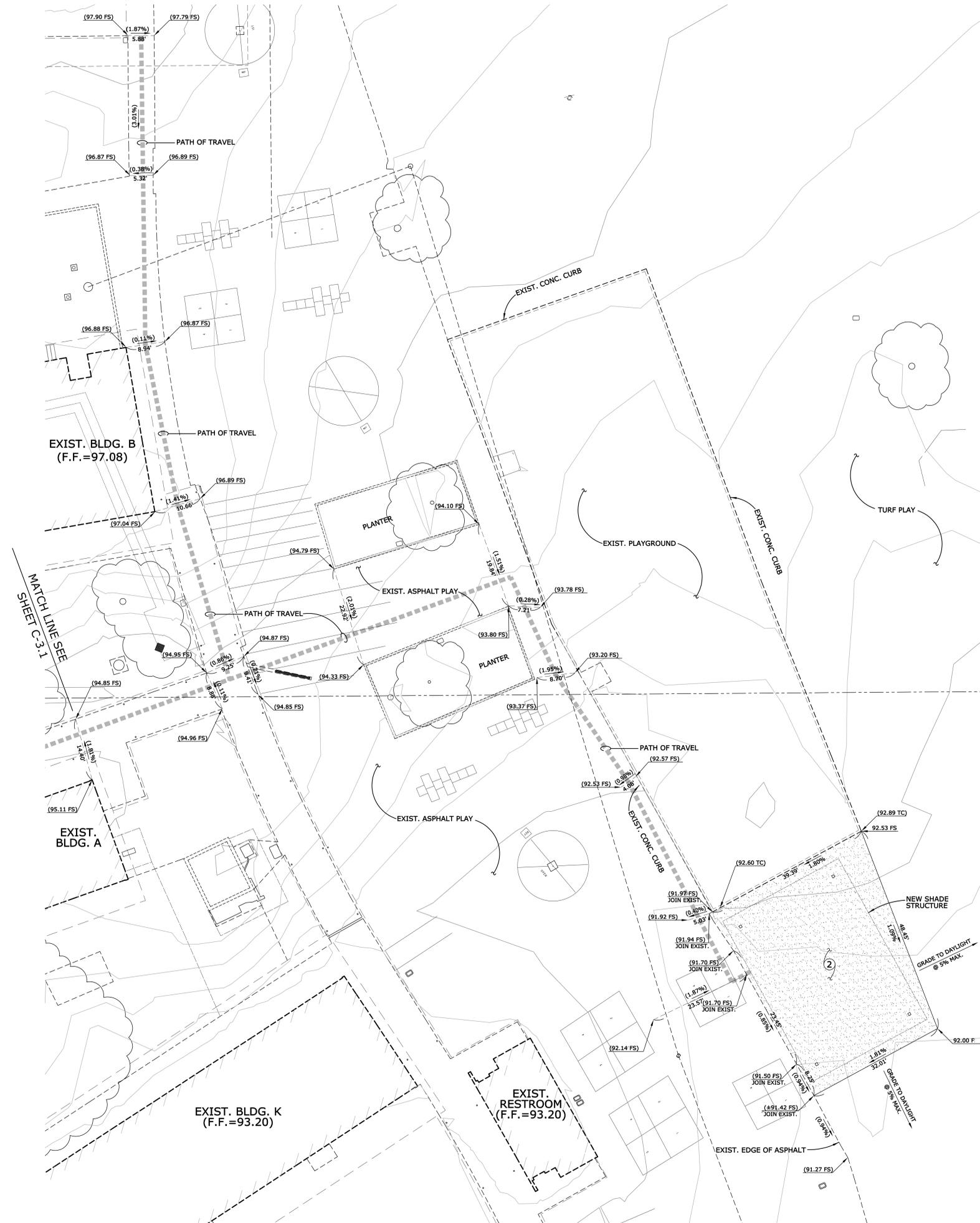
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COLTON UNIFIED SCHOOL DISTRICT

SITE GRADING AND PATH OF TRAVEL PLAN

C-3.1

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Plot date: 6/16/2023 11:59 AM



- CONSTRUCTION NOTES**
NOTE ALL NOTES USED ON THIS SHEET.
- ① CONSTRUCT 3" AC OVER 6" CLASS II A.B.
 - ② CONSTRUCT 4" THICK 520-C-2500 PCC CONCRETE PAVING.
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LEGEND

(95.00 FS)	INDICATES EXISTING ELEVATION PER FIELD SURVEY.
95.00 FS	INDICATES PROPOSED ELEVATION.
---	EDGE OF PAVING.
AC	ASPHALT CONCRETE
EG	EDGE OF GUTTER
EOC	EDGE OF CONCRETE
EP	EDGE OF PAVEMENT
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOW LINE
FS	FINISH SURFACE
(NG)	NATURAL GROUND
TC	TOP OF CURB
TCC	TOP OF CLEANOUT
TGG	TOP OF GRATE
---	INDICATES A.D.A. PATH OF TRAVEL

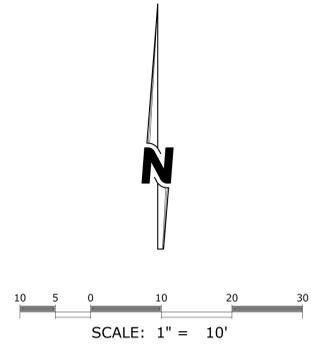
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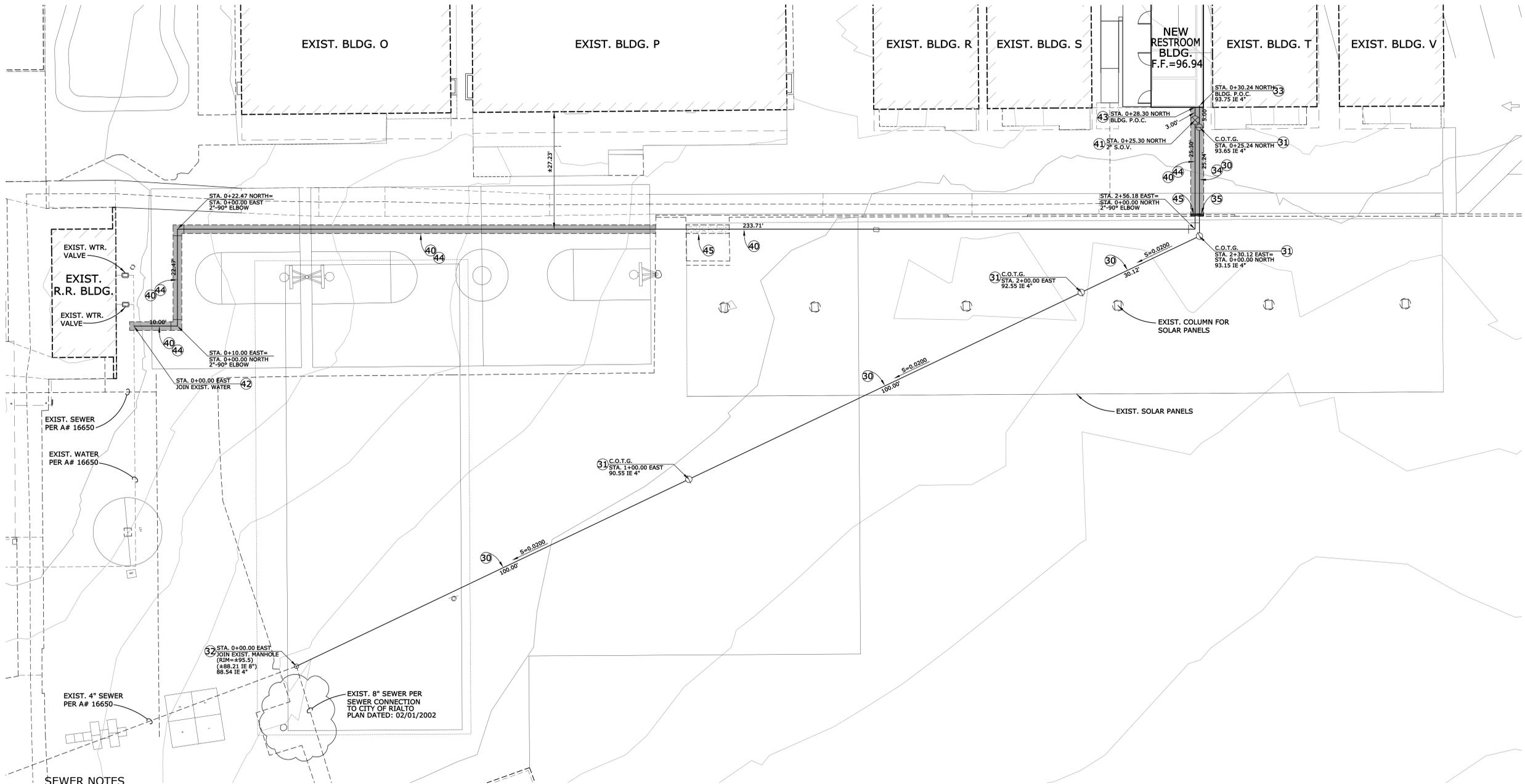


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2023 PHASE I SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)
COLTON UNIFIED SCHOOL DISTRICT



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SITE GRADING AND PATH OF TRAVEL PLAN



SEWER NOTES

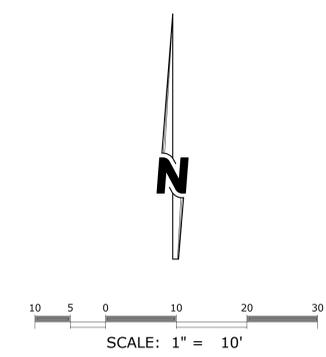
- 30 INSTALL 4" PVC (SDR 35 OR EQUAL), PER DETAIL No. 3, SHEET C-2.0.
- 31 CONSTRUCT SEWER CLEANOUT PER DETAIL No. 2, SHEET C-2.0.
- 32 LOCATE EXISTING SEWER MANHOLE AND CORE DRILL NEW 4" SEWER CONNECTION. MATCH NEW 4" SOFFIT TO EXISTING 8" SOFFIT ELEVATION.
- 33 MAKE APPROVED CONNECTION TO BUILDING P.O.C. FOR SEWER (VERIFY BUILDING CONNECTION POINT WITH BUILDING PLUMBING PLANS).
- 34 REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT SECTION AT SEWER TRENCH.
- 35 REMOVE AND REPLACE EXISTING CONCRETE PAVEMENT SECTION AT SEWER TRENCH.

DOMESTIC WATER NOTES

- 40 INSTALL 2" SCHEDULE 40 PVC WATER LINE (SOLVENT-CEMENTED JOINTS) PER DETAIL No. 3, SHEET C-2.0.
- 41 INSTALL 2" BRASS SHUT OFF VALVE (S.O.V.) IN VALVE CAN RISER PER DETAIL No. 5, SHEET C-2.0.
- 42 LOCATE EXISTING WATER LINE AT RESTROOM BUILDING AND JOIN EXISTING WATER LINE.
- 43 MAKE APPROVED CONNECTION TO BUILDING P.O.C. FOR WATER (VERIFY BUILDING CONNECTION POINT WITH BUILDING PLUMBING PLANS).
- 44 REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT SECTION AT WATER TRENCH.
- 45 REMOVE AND REPLACE EXISTING CONCRETE PAVEMENT SECTION AT WATER TRENCH.

GENERAL UTILITY NOTES

1. THE EXISTING UTILITY LINES SHOWN ON THIS DRAWING HAVE BEEN LOCATED PER EXISTING AS-BUILT RECORD DRAWINGS AND A FIELD SURVEY TO IDENTIFY SURFACE IMPROVEMENTS.
2. CONTRACTOR SHALL FIELD VERIFY THE PROPOSED POINTS OF CONNECTION AND SHALL REPORT TO THE ARCHITECT ANY DISCREPANCIES FOUND WITH THE APPROVED PLAN.
3. NO PORTIONS OF THE PROPOSED UTILITY LINES SHALL BE INSTALLED UNTIL THE POINT OF CONNECTION HAS BEEN FIELD VERIFIED.
4. THE CONTRACTOR SHALL TAKE CAUTION TO PROTECT ALL EXISTING UTILITIES DURING THE COURSE OF CONSTRUCTION. ANY DAMAGED LINE SHALL BE REMOVED AND REPLACED PRIOR TO BACKFILL OF OPEN TRENCH.



SJR
Civil Engineering, Inc.
6846 INDIANA AVENUE SUITE 130
RIVERSIDE, CA 92506
(951) 883-8088 FAX (951) 883-6915



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Plot date: 6/16/2023 11:56 AM

FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

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. Acknowledgment by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

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

PROJECT INFORMATION			
School District/Owner: COLTON JOINT UNIFIED SCHOOL DISTRICT			
Project Name/School: RUTH GRIMES ELEMENTARY SCHOOL			
Project Address: 1609 SPRUCE AVE, BLOOMINGTON, CA 92316			
FIRE & LIFE SAFETY INFORMATION			
1.	Has a fire hydrant flow test been performed within the past 12 months? (If yes, provide a copy of the test data.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
3.	Is the project located within a designated fire hazard severity zone (FHSZ) as established by Cal-Fire? (If yes, indicate FHSZ classification below.)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Refer to the following website for FHSZ locations: http://egis.fire.ca.gov/FHSZ/		Moderate <input type="checkbox"/>	High <input type="checkbox"/>
Wildland Interface Area (WIFA) (If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)		WIFA <input type="checkbox"/>	
CONDITION MEANS AND METHODS RESOLUTION		ALTERNATE ACCEPTED	
4.	Emergency vehicle access roadways do not meet CFC requirements.	Yes	No
4a.	Acceptable Alternate: Emergency vehicle and personnel access as proposed by the project architect is acceptable for providing fire suppression and protection of life and property.		X
5.	Fire Hydrants: Number and spacing does not meet CFC requirements.		X
5a.	Acceptable Alternate: Number of fire hydrants and spacing as proposed by the project architect is acceptable for fire suppression and protection of life and property.		
6.	Fire Hydrants: Water flow and pressure are less than CFC minimum.		X
6a.	Acceptable Alternate: The available flow and pressure is acceptable for providing fire suppression and protection of life and property.		
7.	Location of fire department connection(s) serving fire sprinkler systems or standpipe systems does not meet CFC requirements.		X
7a.	Acceptable Alternate: The location of fire department connection serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property.		

DSA 810

NEW PC MODULAR RESTROOM:	
(E) MODULAR CLASSROOM 'R' (A# 04-118323)	960 SF
(E) MODULAR CLASSROOM 'S' (A# 04-118323)	960 SF
(E) MODULAR CLASSROOM 'T' (A# 04-118323)	960 SF
(E) MODULAR CLASSROOM 'V' (A# 04-118323)	960 SF
NEW RESTROOM (A# 04-120632)	480 SF
TOTAL	4,320 SF
1. OCCUPANCY TYPE:	E
2. CONSTRUCTION TYPE:	V-B
3. STORIES:	1
4. BUILDING HEIGHT:	12'-0"
5. AUTOMATIC FIRE SPRINKLERS:	NO
6. ALLOWABLE AREA:	9,500 SF
	4,320 SF < 9,500 SF = AREA OKAY
NEW 42' x 30' PC SHADE SHELTER:	
NEW SHADE SHELTER (A# 02-118654)	1,260 SF
TOTAL	1,260 SF
1. OCCUPANCY TYPE:	A-3
2. CONSTRUCTION TYPE:	V-B
3. STORIES:	1
4. BUILDING HEIGHT:	15'-6" MAX
5. AUTOMATIC FIRE SPRINKLERS:	NO
6. ALLOWABLE AREA:	6,000 SF
	1,260 SF < 6,000 SF = AREA OKAY

BUILDING DATA

- EXISTING FIRE HYDRANT PER A# 04-118323
- EXISTING "TOW-AWAY" SITE SIGNAGE PER A# 04-118323
- NEW "FIRE LANE" ENTRY SIGN PER DETAIL 2/A-D.1
- EXISTING FIRE LANE PER A# 04-118323.
- EXISTING MANUAL OPERATED FIRE LANE ACCESS GATE WITH KNOX BOX PER A# 04-118323
- NEW PC MODULAR RESTROOM BUILDING PER A# 04-120632
- NEW PC SHADE SHELTER PER PC# 02-118654
- NEW CONCRETE PAVING PER CIVIL DRAWINGS
- PAINT FIRE LANE PER DETAIL 3/A-0.1, SEE SHEET A-1.0 FOR LOCATION OF STRIPING

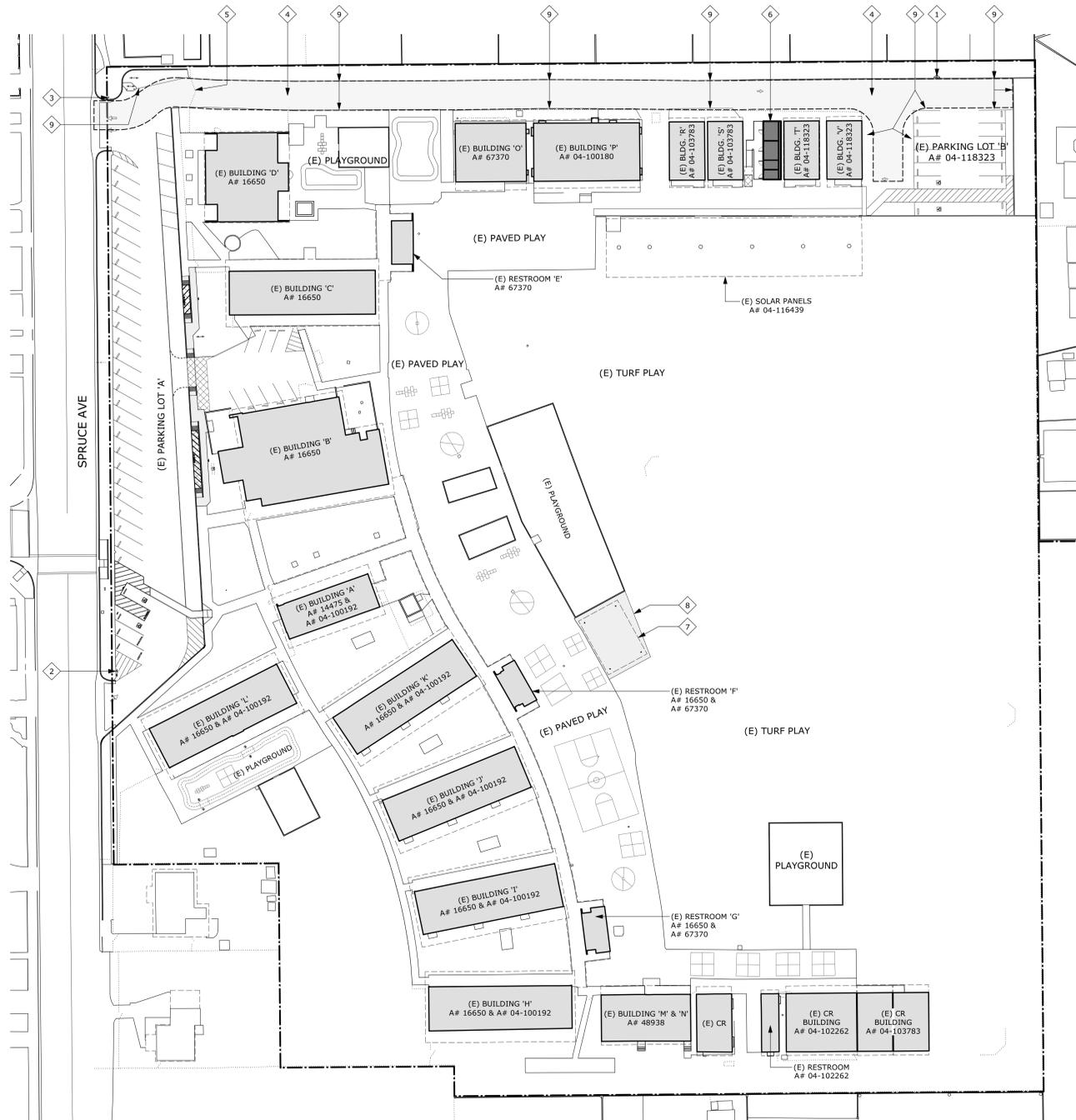
FIRE ACCESS PLAN KEYNOTES

- EXISTING BUILDINGS
- NEW PC MODULAR RESTROOM BUILDING

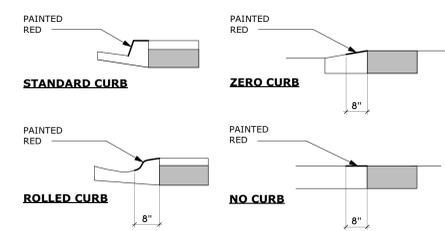
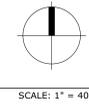
SITE PLAN SYMBOLS

- ALL VEGETATION AND OTHER OBSTRUCTIONS OVERHANGING A FIRE ACCESS ROADWAY SHALL BE MAINTAINED TO A CLEAR HEIGHT OF 13'-6".
- ALL POLES, BACKBOARDS, AND OTHER OBSTRUCTIONS ON PLAYGROUNDS NEAR A FIRE ACCESS ROADWAY SHALL BE PROVIDED WITH REFLECTIVE TAPE OR PAINT.
- KNOX KEY SWITCHES, KNOX LOCKS, OR FRANGIBLE PADLOCKS/CHAINS SHALL BE PROVIDED FOR ALL GATES AND BARRIERS IN THE PATH OF VEHICLE OR FIREFIGHTER ACCESS.
- THE CAMPUS IS IDENTIFIED WITH MIN. 6" HIGH ADDRESS NUMBERS EASILY VISIBLE FROM THE PUBLIC ROAD FRONTING THE PROPERTY. INDIVIDUAL STRUCTURES ARE IDENTIFIED WITH MIN. 6" HIGH ADDRESS NUMBERS OR LETTERS EASILY VISIBLE FROM THE PUBLIC WAY OR FIRE ACCESS ROADWAY.
- ALL-WEATHER ACCESS ROADWAYS AND ALL FIRE HYDRANTS SHALL BE IN PLACE AND OPERATIONAL BEFORE BRINGING COMBUSTIBLE BUILDING MATERIALS OR PORTABLE UNITS ON-SITE.
- P.V.S., D.D.C.S., F.D.C.S SHALL BE UNOBSTRUCTED AND VISIBLE FROM THE FIRE LANE OR PUBLIC ROAD. THEY SHALL BE PAINTED OSHA SAFETY RED.
- ALL EXISTING BUILDINGS ARE TYPE V-B CONSTRUCTION WITH NO SPRINKLERS
- ALL FIRE LANES, HYDRANTS, FLOW RATES AND CLEARANCES ARE EXISTING AND WILL REMAIN UNCHANGED.
- ALL STRUCTURES ARE IN COMPLIANCE WITH STATE OF CALIFORNIA FIRE CODE STANDARDS.

FIRE ACCESS PLAN GENERAL NOTES

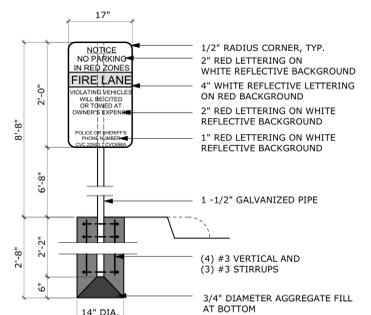


FIRE AUTHORITY SITE PLAN



- GENERAL NOTES:
- CURBS ALONG ACCESS LANES SHALL BE PAINTED OSHA SAFETY RED
 - "FIRE LANE NO PARKING" SHALL BE PAINTED ON TOP OF CURB IN WHITE LETTERING 3" HIGH AND SHALL BE SPACED 30'-0" ON CENTER OR PORTION THEREOF

PAINTED CURBS

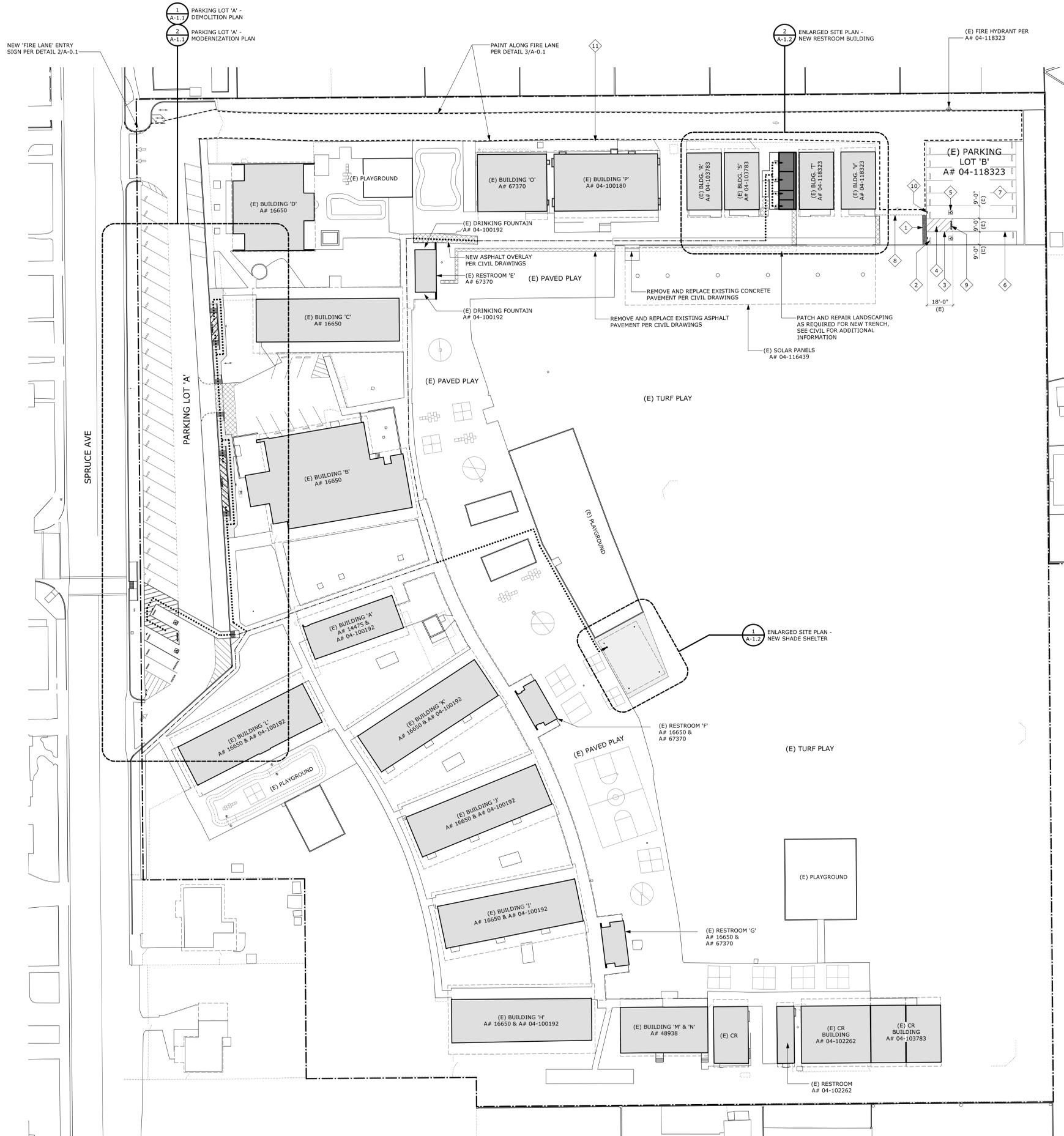


FIRE ENTRY SIGN



RUTH GRIMES ELEMENTARY SCHOOL
2023 PHASE I SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)
COLTON JOINT UNIFIED SCHOOL DISTRICT

FIRE AUTHORITY
SITE PLAN



NEW 'FIRE LANE' ENTRY SIGN PER DETAIL 2/A-0.1

- 1 PARKING LOT 'A' - DEMOLITION PLAN
- 2 PARKING LOT 'A' - MODERNIZATION PLAN

PAINT ALONG FIRE LANE PER DETAIL 3/A-0.1

- 2 ENLARGED SITE PLAN - NEW RESTROOM BUILDING

(E) FIRE HYDRANT PER A# 04-118323

- 1 ENLARGED SITE PLAN - NEW SHADE SHELTER

GENERAL NOTE:

REMOVE EXISTING ACCESSIBLE AISLE STRIPING AND CROSS STRIPING, REPAINT AS NOTED BELOW

1. NEW DETECTABLE PAVERS PER DETAIL 7/A-1.1
2. EXISTING WHEEL STOP PER A# 04-118323
3. NEW PAINTED 3" WIDE BLUE STRIPING AT ACCESSIBLE PARKING AISLES / BORDERS
4. NEW PAINTED 3" WIDE WHITE STRIPING AT 36" O.C.
5. NEW PAINTED SYMBOL OF ACCESSIBILITY, REFERENCE DETAIL 5/A-1.1
6. REPAINT 3" WIDE WHITE VEHICLE LANE / PARKING LOT STRIPING
7. EXISTING AC PAVING
8. NEW CHAINLINK FENCE PER DETAIL 4/A-1.2
9. NEW PAINTED WHITE 12" HIGH "NO PARKING" SIGNAGE, HATCH STRIPING SHALL NOT CROSS OVER "NO PARKING"
10. EXISTING ACCESSIBLE PARKING SIGN PER A# 04-118323
11. EXISTING CHAINLINK FENCE TO REMAIN

KEYNOTES

1. CONTRACTORS BIDDING OR PERFORMING WORK SHALL VERIFY THE CONDITIONS OF THE SITE, INCLUDING ACCESS BEFORE SUBMITTING BID OR COMMENCING WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FOR PROMPT DIRECTION.
2. THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES INDICATED OR NOT ON THE DRAWINGS ARE OBTAINED BY SEARCH OF AVAILABLE RECORDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT LOCATIONS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES AND OTHER STRUCTURES. ANY DAMAGE SHALL BE PROMPTLY RESTORED TO THE OWNERS SATISFACTION.
3. REFERENCE CIVIL AND ELECTRICAL DRAWINGS FOR ALL UNDER GROUND UTILITY WORK TO BE COMPLETED IN THIS CONTRACT.
4. GENERAL CONTRACTOR TO COORDINATE ALL PHASING AND UTILITY INTERRUPTIONS OF THIS PROJECT WITH THE OWNER AND ARCHITECT AS TO DO THE LEAST POSSIBLE INTERRUPTIONS.
5. PROVIDE CONSTRUCTION BARRICADES AS REQUIRED TO PROTECT THE PUBLIC'S HEALTH AND SAFETY INCLUDING WORK UNDER CONSTRUCTION TO THE REQUIREMENTS OF THE OWNER. COVER OPEN TRENCHES WITH ADEQUATE SOLID MATERIAL.
6. EXCAVATION AND TRENCHING SHALL COMPLY WITH THE REQUIREMENTS OF THE TESTING LAB AND JURISDICTIONAL REQUIREMENTS AT THE TIME WORK COMMENCES AND UP TO COMPLETION OF THE WORK.

GENERAL NOTES

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 NONCOMPLIANT 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.

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

PATH OF TRAVEL, TECHNICAL REQUIREMENTS FOR ACCESSIBLE ROUTE
 "ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" 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."

- (EXISTING PATH OF TRAVEL PER 04-118323)
- - - - - NEW PATH OF TRAVEL. REFER TO CIVIL DRAWINGS FOR FINISH SURFACE ELEVATIONS, RUNNING AND CROSS SLOPES AND SURFACE MATERIALS FOR COMPLIANCE WITH CBC REQUIREMENTS

ACCESSIBLE PATH OF TRAVEL

- EXISTING BUILDINGS
- NEW PC MODULAR RESTROOM BUILDING

SITE PLAN SYMBOLS

- PARKING LOT 'A' (NEW CONFIGURATION)**
- 37 TOTAL PARKING STALLS
 - 35 STANDARD PARKING STALLS
 - 1 ACCESSIBLE PARKING STALL
 - 1 VAN ACCESSIBLE PARKING STALL
- PARKING LOT 'B' (EXISTING PER A# 04-118323)**
- 14 TOTAL PARKING STALLS
 - 12 STANDARD PARKING STALLS
 - 1 ACCESSIBLE PARKING STALL
 - 1 VAN ACCESSIBLE PARKING STALL

ACCESSIBLE PARKING RATIO

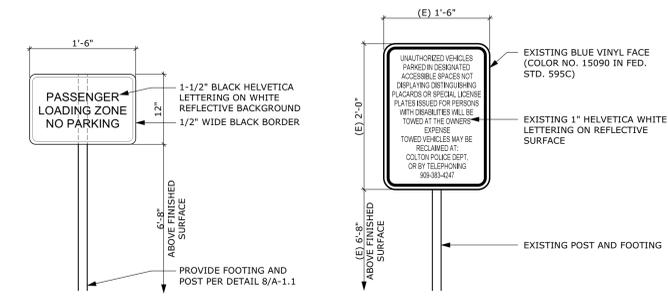


COMPOSITE SITE PLAN (SITE PLAN INDICATES UPGRADES)

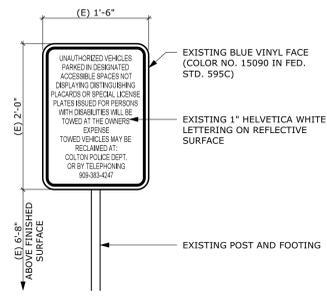


RUTH GRIMES ELEMENTARY SCHOOL
 2023 PHASE I SITE UPGRADES
 (RESTROOM BUILDING AND SHADE SHELTER)
 COLTON JOINT UNIFIED SCHOOL DISTRICT

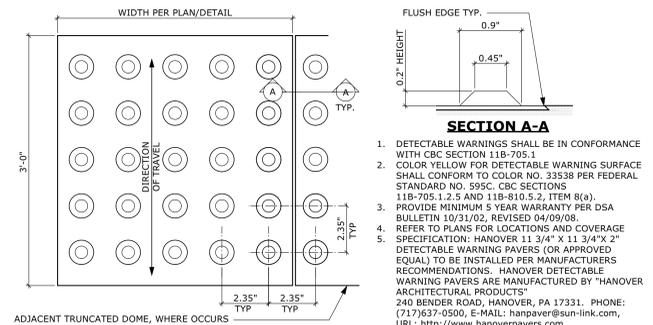
COMPOSITE SITE PLAN



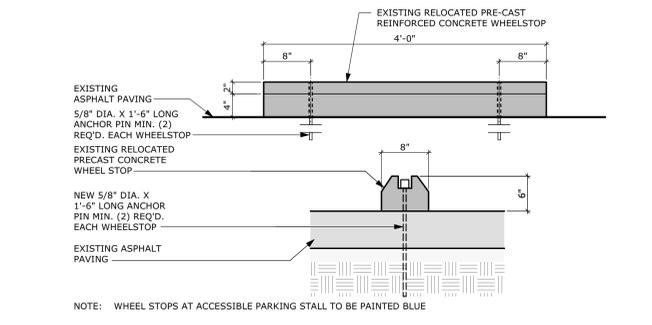
LOADING ZONE SIGN 10
SCALE: 1" = 1'-0"



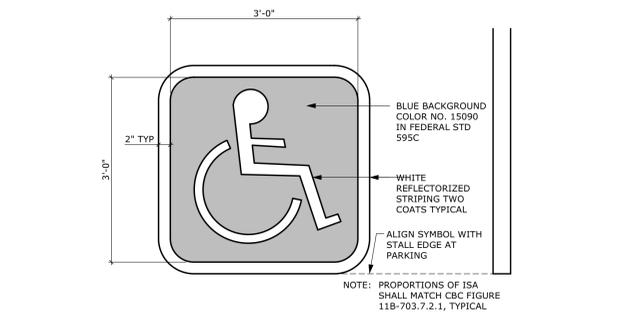
EXISTING 'TOW AWAY' SIGN 9
PER A# 04-118323 (FOR REFERENCE ONLY)
SCALE: 1" = 1'-0"



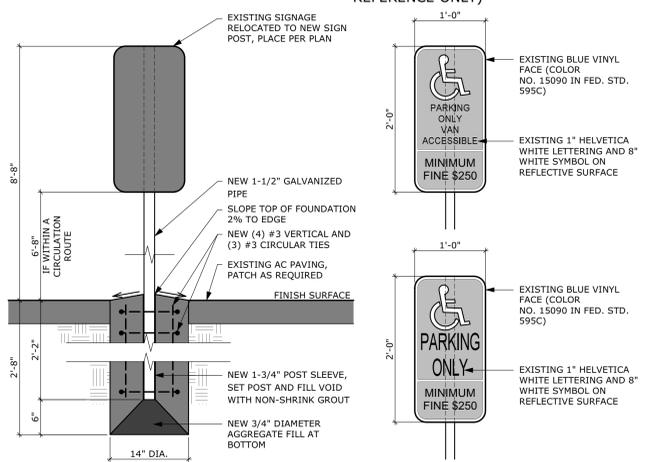
DETECTABLE WARNING PAVERS 7
SCALE: 1" = 1'-0"



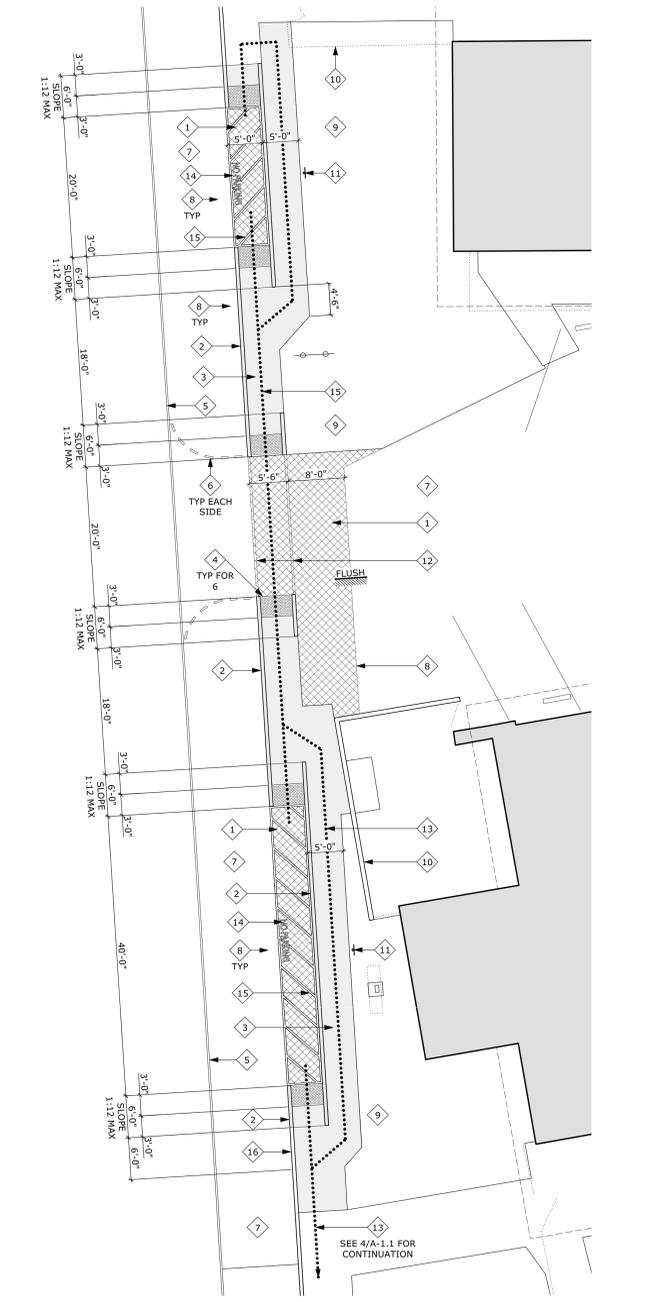
RELOCATED CONCRETE WHEEL STOP 6
SCALE: 1" = 1'-0"



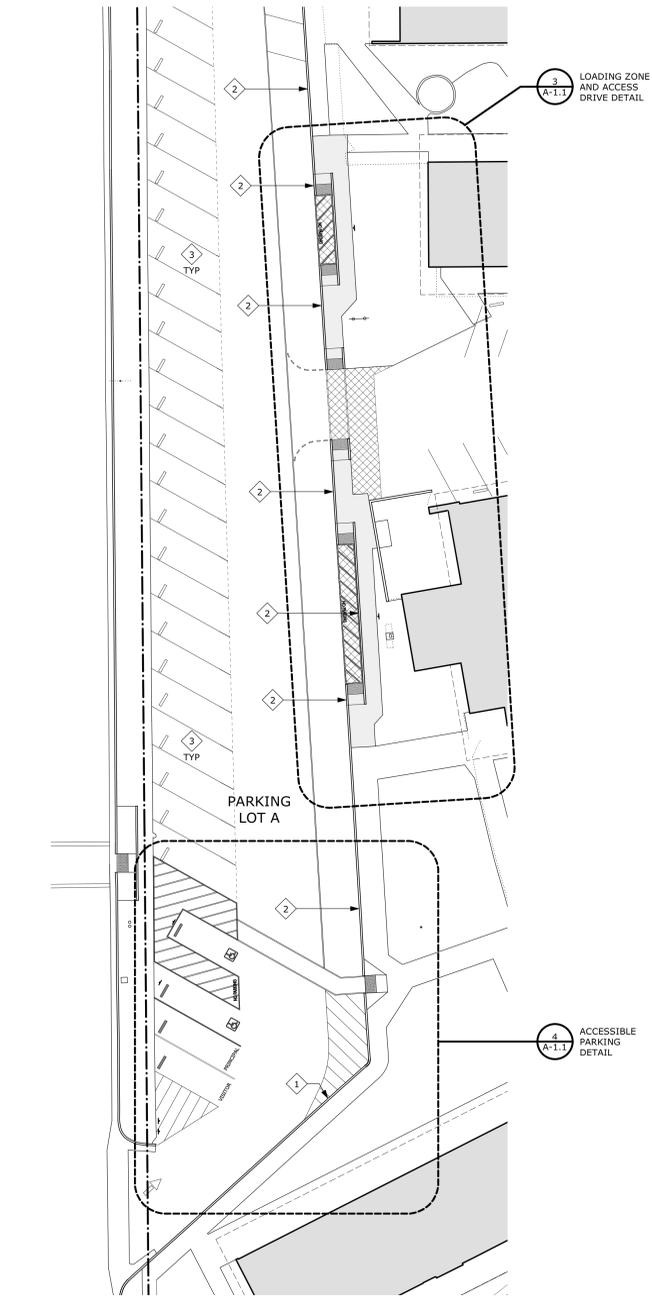
SYMBOL OF ACCESSIBILITY 5
SCALE: 1" = 1'-0"



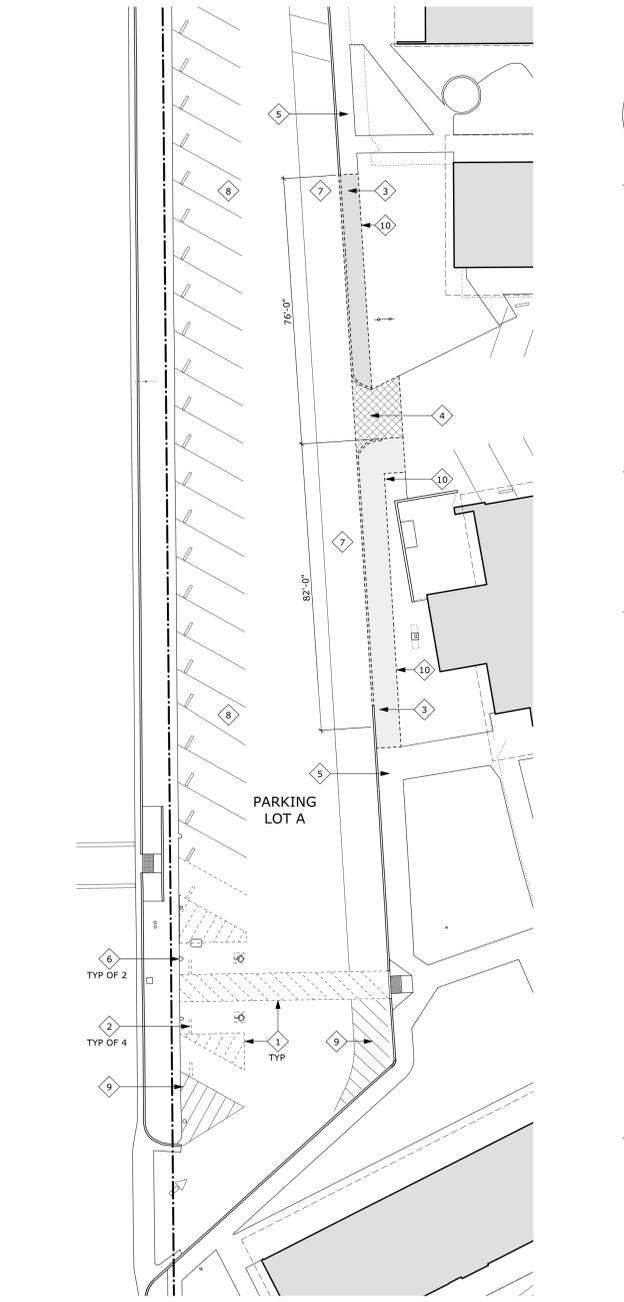
RELOCATED ACCESSIBLE PARKING SIGN ON NEW POST 8
SCALE: 1" = 1'-0"



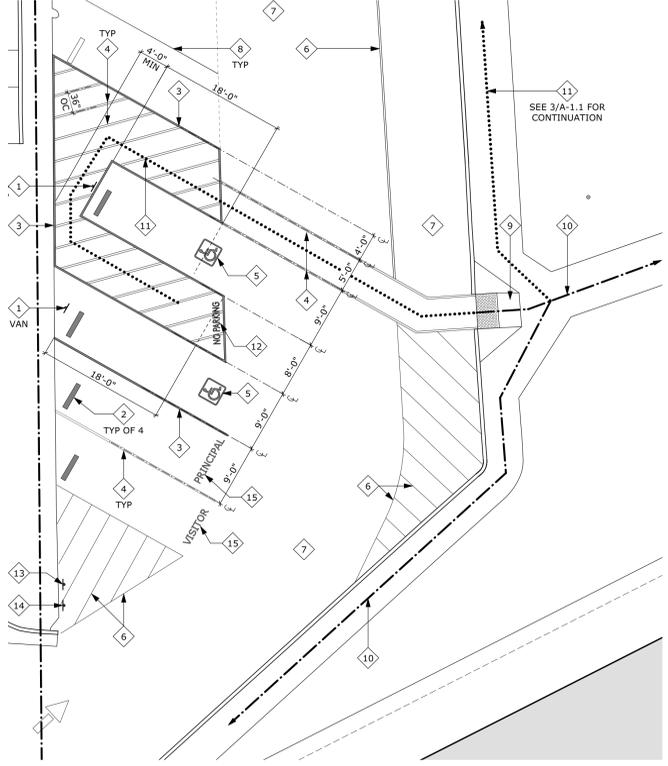
LOADING ZONE AND ACCESS DRIVE DETAIL 3
SCALE: 1" = 10'-0"



PARKING LOT A - MODERNIZATION PLAN 2
SCALE: 1" = 20'-0"



PARKING LOT A - DEMOLITION PLAN 1
SCALE: 1" = 20'-0"



ACCESSIBLE PARKING DETAIL 4
SCALE: 1" = 10'-0"

- KEYNOTES:
1. RELOCATED ACCESSIBLE PARKING SIGN WITH NEW POST AND FOOTING, REFERENCE DETAIL 8/A-1.1. PATCH AC PAVING AT AREA OF REMOVAL
 2. RELOCATED CONCRETE WHEEL STOP, REFERENCE DETAIL 6/A-1.1. PATCH AC PAVING AT AREA OF REMOVAL
 3. NEW PAINTED 3" WIDE BLUE STRIPING AT ACCESSIBLE PARKING AISLES / BORDERS
 4. NEW PAINTED 3" WIDE WHITE STRIPING
 5. NEW PAINTED SYMBOL OF ACCESSIBILITY, REFERENCE DETAIL 5/A-1.1
 6. REPAINT 3" WIDE WHITE VEHICLE LANE / PARKING LOT STRIPING
 7. EXISTING AC PAVING
 8. EXISTING PARKING LOT STRIPING / WHEEL STOPS / MARKINGS TO REMAIN AND BE PROTECTED IN PLACE
 9. EXISTING CURB CUT PER A# 04-100192
 10. EXISTING ACCESSIBLE PATH OF TRAVEL PER A# 04-118323
 11. NEW ACCESSIBLE PATH OF TRAVEL
 12. NEW PAINTED WHITE 12" HIGH "NO PARKING" SIGNAGE, HATCH STRIPING SHALL NOT CROSS OVER "NO PARKING"
 13. EXISTING "TOW AWAY" SIGN PER DETAIL 9/A-1.1 AND A# 04-118323
 14. EXISTING "STAFF PARKING ONLY" SIGN TO REMAIN
 15. NEW PAINTED WHITE 12" HIGH "PRINCIPAL" AND "VISITOR" SIGNAGE

- KEYNOTES:
1. NEW AC PAVING, REFERENCE CIVIL DRAWINGS
 2. NEW CONCRETE CURB, REFERENCE CIVIL DRAWINGS
 3. NEW CONCRETE SIDEWALK, REFERENCE CIVIL DRAWINGS
 4. NEW TACTILE WARNING PAVERS, REFERENCE DETAIL 7/A-1.1
 5. REPAINT 3" WIDE WHITE VEHICLE LANE / PARKING LOT STRIPING
 6. NEW DASHED PAINTED 3" WIDE WHITE STRIPING
 7. EXISTING AC PAVING TO BE PROTECTED IN PLACE
 8. EXISTING AC PAVING TO BE PATCHED AS REQUIRED DUE TO CONSTRUCTION
 9. EXISTING LANDSCAPE TO BE PROTECTED IN PLACE, ADJUST AND PATCH LANDSCAPE AND IRRIGATION AS REQUIRED DUE TO CONSTRUCTION
 10. EXISTING SITE WALL/FENCE TO REMAIN AND BE PROTECTED IN PLACE
 11. NEW LOADING ZONE SIGNAGE PER DETAIL 10/A-1.1
 12. NEW PAINTED 4" WIDE WHITE CROSSWALK STRIPING
 13. NEW ACCESSIBLE PATH OF TRAVEL
 14. NEW PAINTED WHITE 12" HIGH "NO PARKING" SIGNAGE, HATCH STRIPING SHALL NOT CROSS OVER "NO PARKING"
 15. NEW PAINTED 3" WHITE BORDER AND CROSS STRIPING

- MOD KEYNOTES:
1. EXISTING CONCRETE CURB TO BE PAINTED RED
 2. EXISTING AND NEW CONCRETE CURBS TO BE PAINTED YELLOW
 3. EXISTING PARKING LOT STRIPING / WHEEL STOPS / MARKINGS TO REMAIN AND BE PROTECTED IN PLACE. EXTEND ALL PARKING 3" WIDE STANDARD PARKING STRIPES ALONG ENTIRE ROW OF PARKING TO ALIGN WITH ACCESSIBLE PARKING AISLES, TYPICAL

- DEMO KEYNOTES:
1. EXISTING STRIPING AND PAINTED ACCESSIBLE PARKING MARKINGS TO BE REMOVED
 2. EXISTING CONCRETE WHEEL STOPS TO BE RELOCATED PER MODERNIZATION PLAN
 3. EXISTING CONCRETE WALK AND CURB TO BE REMOVED AS INDICATED
 4. EXISTING AC PAVING TO BE REMOVED AS INDICATED
 5. EXISTING CONCRETE WALK AND CURB TO REMAIN AND PROTECTED IN PLACE
 6. EXISTING ACCESSIBLE PARKING SIGNAGE TO BE REMOVED
 7. EXISTING AC PAVING TO REMAIN AND PROTECTED IN PLACE
 8. EXISTING PARKING STALLS TO REMAIN AND PROTECTED IN PLACE
 9. EXISTING STRIPING TO REMAIN AND PROTECTED IN PLACE
 10. EXISTING LANDSCAPE TO BE REMOVED AS REQUIRED DUE TO NEW CONSTRUCTION. ADJUST IRRIGATION PER MODERNIZATION PLAN



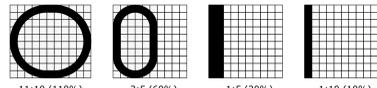
RUTH GRIMES ELEMENTARY SCHOOL
2023 PHASE I SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)
COLTON JOINT UNIFIED SCHOOL DISTRICT

PARKING LOT A
PLANS AND DETAILS
A-1.1

CHAINLINK FENCE DETAIL

- ATTACH WITH (3) #12 x 1-1/4" TAMPER PROOF DRYWALL SCREW WITH ADHESIVE.
- PROVIDE WOOD BACKING AT WALL SIGNS.
- DEPTH:** IT SHALL BE 1/32 INCH (0.8MM) MINIMUM ABOVE THEIR BACKGROUND AND SHALL BE SANS SERIF UPPERCASE AND BE DUPLICATED IN BRAILLE.
- HEIGHT:** IT SHALL BE 5/8 INCH (15.9MM) MINIMUM AND 2 INCHES (51MM) MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I" PER **CBC SECTION 11B-703.2.5**.
- FINISH AND CONTRAST:** CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTER SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND PER **CBC SECTION 11B-703.5.1**.
- PROPORTIONS:** IT SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE "I" SHALL BE 15% MAXIMUM OF THE HEIGHT OF THE CHARACTER. PER **CBC SECTIONS 11B-703.2.4** AND **11B-703.2.6**.

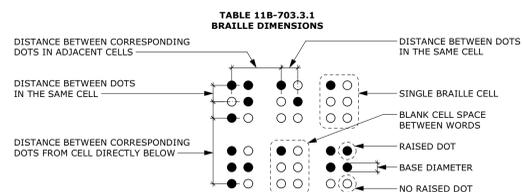
TEMPLATE FOR CHECKING CHARACTER AND STROKE WIDTH TO HEIGHT PROPORTIONS



- CHARACTER SPACING:** SPACING BETWEEN INDIVIDUAL TACTILE CHARACTERS SHALL COMPLY WITH **CBC SECTION 11B-703.2.7** AND **CBC SECTION 11B-703.2.8**.
- POSITION:** BRAILLE SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT IN A HORIZONTAL FORMAT. FLUSH LEFT OR CENTERED PER **CBC SECTION 11B-703.2.9**. IF TEXT IS MULTI-LINED, BRAILLE SHALL BE PLACED BELOW THE ENTIRE TEXT. BRAILLE SHALL BE SEPARATED 3/8 INCH (9.5 mm) MINIMUM AND 1/2 INCH (12.7 mm) MAXIMUM FROM ANY OTHER TACTILE CHARACTERS AND 3/8 INCH (9.5 mm) MINIMUM FROM RAISED BORDERS AND DECORATIVE ELEMENTS PER **CBC SECTION 11B-703.3.2**.
- BRAILLE:** IT SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH **CBC SECTIONS 1B-703.3** AND **11B-703.4**. BRAILLE DOTS SHALL HAVE A DOMED AND ROUNDED SHAPE AND SHALL COMPLY WITH **CBC TABLE AND FIGURE 11B-703.3.1**. THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, AND ACRONYMSTION.

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	0.100 (2.5 mm)
DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS	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	0.039 (1.0 mm) TO 0.400 (10.2 mm)

1. MEASURED CENTER TO CENTER

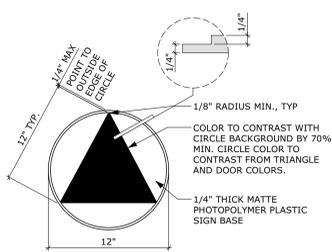


- MOUNTING HEIGHT:** A TACTILE SIGN SHALL BE LOCATED 48" MINIMUM TO THE BASELINE OF THE LOWEST BRAILLE CELLS AND 60" MAXIMUM TO THE BASELINE OF THE HIGHEST LINE OF THE RAISED CHARACTERS ABOVE THE FINISH FLOOR OR GROUND SURFACE PER **CBC SECTION AND FIGURE 11B-703.4.1**.
- MOUNTING LOCATION:** A TACTILE SIGN SHALL BE LOCATED ON THE APPROACH SIDE, AS ONE ENTERS OR EXITS ROOMS OR SPACE, AND BE REACHED WITHIN 0" OF THE REQUIRED CLEAR FLOOR SPACE PER **CBC SECTION AND FIGURE 11B-703.4.2** AS FOLLOWS:
 - A CLEAR FLOOR SPACE OF 18" X 18" MINIMUM, CENTERED ON THE TACTILE CHARACTERS, SHALL BE PROVIDED BEYOND THE ARC OF ANY DOOR SWINGS BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION.
 - ON THE WALL AT THE LATCH SIDE OF A SINGLE DOOR.
 - ON THE INACTIVE LEAF OF A DOUBLE DOOR WITH ONE ACTIVE LEAF.
 - ON THE WALL AT THE RIGHT SIDE OF A DOUBLE DOOR WITH TWO ACTIVE LEAFS.
 - ON THE NEAREST ADJACENT WALL WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR NO SPACE AT THE RIGHT SIDE OF A DOUBLE DOOR WITH TWO ACTIVE LEAFS.

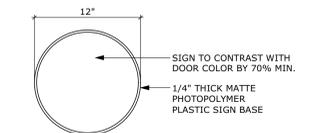
- VISUAL CHARACTERS** SHALL COMPLY WITH **CBC SECTION 11B-703.5** AND SHALL BE 40" MINIMUM FINISH FLOOR OR GROUND STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 10% MINIMUM AND 20% MAXIMUM OF THE HEIGHT OF THE CHARACTER PER **CBC SECTION 11B-703.5.7**. **PROPORTIONS FOR VISUAL CHARACTERS** SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I". STROKE THICKNESS SHALL BE 10% MINIMUM AND 20% MAXIMUM OF THE HEIGHT OF THE CHARACTER. **CBC SECTIONS 11B-703.5.4** AND **11B-703.5.7**.
- PICTOGRAMS** SHALL COMPLY WITH **CBC SECTION 11B-703.6**.
- SYMBOL OF ACCESSIBILITY** SHALL COMPLY WITH **CBC SECTION 11B-703.7**.
- VARIABLE MESSAGE SIGNS** SHALL COMPLY WITH **CBC SECTION 11B-703.8**.
- EDGES AND VERTICES ON GEOMETRIC SYMBOLS/ EDGES** SHALL BE EASED OR ROUNDED AT 1/16 INCH (1.59 mm) MINIMUM, OR CHAMFERED AT 1/8 INCH (3.2 mm) MAXIMUM. VERTICES SHALL BE RADIUSSED BETWEEN 1/8 INCH (3.2 mm) MINIMUM AND 1/4 INCH (6.4 mm) MAXIMUM PER **CBC SECTION 11B-703.7.2.6.4**.



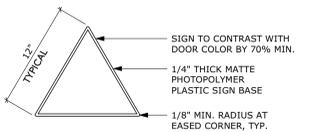
FIGURE 11B-703.7.2.6.4
EDGES AND VERTICES ON GEOMETRIC SYMBOLS



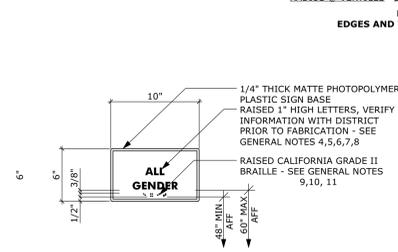
A - RESTROOM



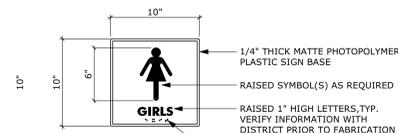
B - ACCESSIBLE FEMALE RESTROOM



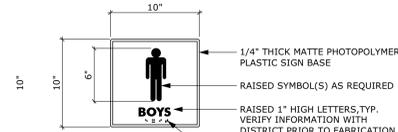
C - ACCESSIBLE MALE RESTROOM



D - RESTROOM



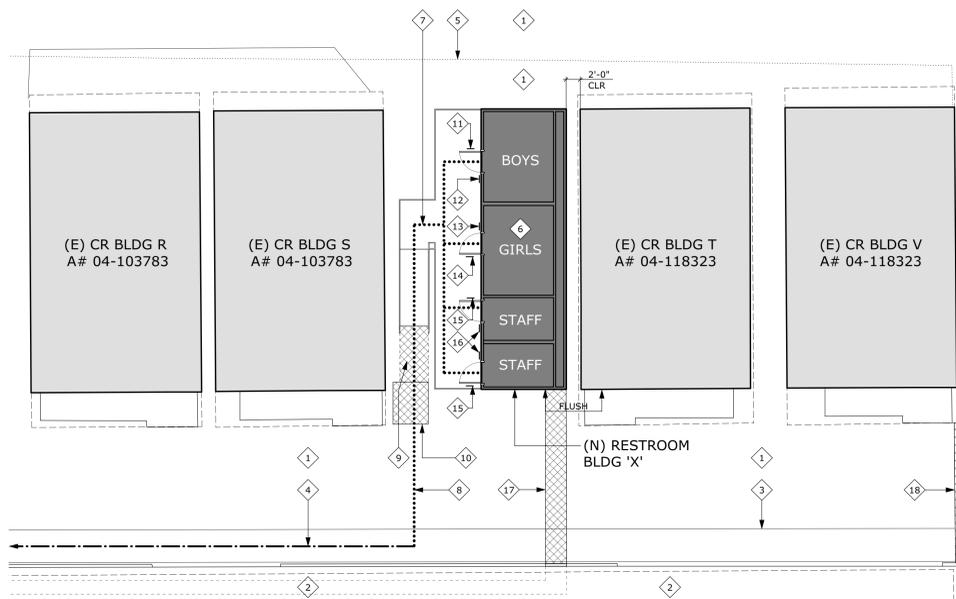
E - GIRLS RESTROOM



F - BOYS RESTROOM

PLASTIC SIGNAGE

ENLARGED SITE PLAN - NEW RESTROOM BUILDING



- EXISTING AC PAVING
- EXISTING PLAY TURF
- EXISTING PAINTED LINES
- EXISTING PATH OF TRAVEL PER A# 04-118323
- EXISTING CHAIN LINK FENCE
- NEW MODULAR RESTROOM BUILDING PER A# 04-120632
- NEW ACCESSIBLE RAMP / LANDING PER A# 04-120031
- NEW PATH OF TRAVEL
- NEW LEVEL AC PAVED LANDING. REFERENCE CIVIL DRAWINGS
- NEW AC PAVED TRANSITION AS REQUIRED TO (E) AC PAVING, MAX 2% SLOPE ANY DIRECTION. REFERENCE CIVIL DRAWINGS
- NEW PLASTIC "BOYS RESTROOM" SIGN PER DETAIL 3C/A1.2
- NEW PLASTIC "GIRLS RESTROOM" SIGN PER DETAIL 3E/A1.2
- NEW PLASTIC "GIRLS RESTROOM" SIGN PER DETAIL 3E/A1.2
- NEW PLASTIC "GIRLS RESTROOM" SIGN PER DETAIL 3B/A-1.2
- NEW PLASTIC "ALL GENDER RESTROOM" SIGN PER DETAIL 3A/A-1.2
- NEW PLASTIC "ALL GENDER RESTROOM" SIGN PER DETAIL 3D/A-1.2
- REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT SECTION PER CIVIL DRAWINGS
- REMOVE EXISTING TRUNCATED DOMES AND PATCH WITH ASPHALT PAVEMENT

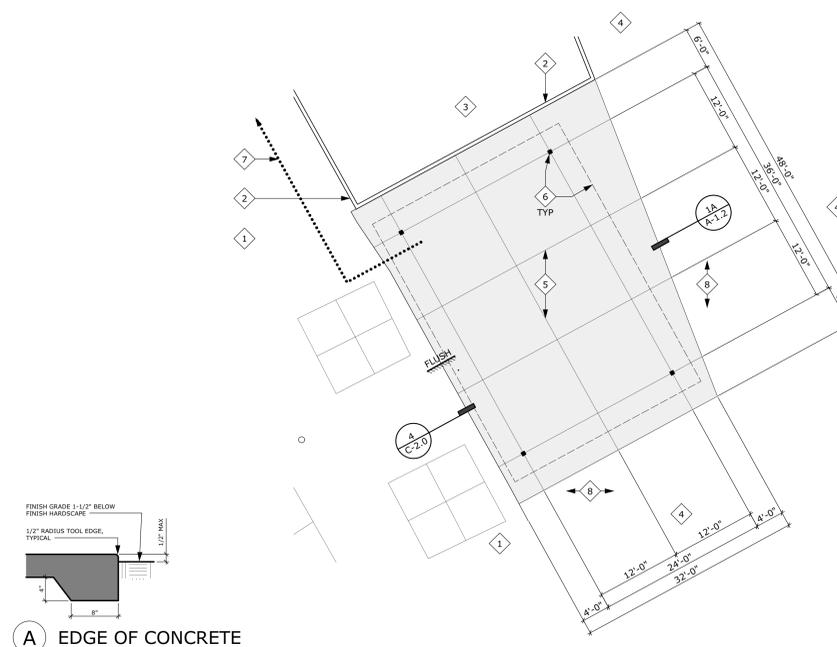
KEYNOTES

NEW PC MODULAR RESTROOM:		
(E) MODULAR CLASSROOM 'R' (A# 04-118323)	960 SF	
(E) MODULAR CLASSROOM 'S' (A# 04-118323)	960 SF	
(E) MODULAR CLASSROOM 'T' (A# 04-118323)	960 SF	
(E) MODULAR CLASSROOM 'V' (A# 04-118323)	960 SF	
NEW RESTROOM (A# 04-120632)	480 SF	
TOTAL	4,320 SF	

1. OCCUPANCY TYPE:	E
2. CONSTRUCTION TYPE:	V-B
3. STORES:	1
4. BUILDING HEIGHT:	12'-0"
5. AUTOMATIC FIRE SPRINKLERS:	NO
6. ALLOWABLE AREA:	9,500 SF
	4,320 SF < 9,500 SF =
	AREA OKAY

BUILDING DATA

ENLARGED SITE PLAN - NEW SHADE SHELTER



- EXISTING AC PAVING
- EXISTING CONCRETE CURB
- EXISTING PLAY AREA
- EXISTING PLAY TURF
- NEW CONCRETE PAVING WITH CONTROL JOINTS AT 12' O.C. AS INDICATED
- NEW 30' X 42' SHADE SHELTER PER PCA 02-118454. LOCATE HSS 6" X 6" X 3/8" TUBE STEEL POSTS AS INDICATED
- NEW ACCESSIBLE PATH OF TRAVEL
- EXISTING LANDSCAPE TO BE PROTECTED IN PLACE, ADJUST AND PATCH LANDSCAPE AND IRRIGATION AS REQUIRED DUE TO CONSTRUCTION

KEYNOTES

NEW 42' x 30' PC SHADE SHELTER:		
NEW SHADE SHELTER (A# 02-118654)	1,260 SF	
TOTAL	1,260 SF	
1. OCCUPANCY TYPE:	A-3	
2. CONSTRUCTION TYPE:	V-B	
3. STORES:	1	
4. BUILDING HEIGHT:	16'-6" MAX	
5. AUTOMATIC FIRE SPRINKLERS:	NO	
6. ALLOWABLE AREA:	6,000 SF	
	1,260 SF < 6,000 SF =	
	AREA OKAY	

BUILDING DATA

PLASTIC SIGNAGE

ABBREVIATIONS

4S/DP	4" SQUARE BY 2-1/8" DEEP BOX	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NO	NORMALLY OPENED
ADA	AMERICAN WITH DISABILITIES ACT	GFP	GROUND FAULT PROTECTION	NF	NON-FUSED
A.F.F.	ABOVE FINISH FLOOR	GE or HACR	GROUNDING ELECTRODE CONDUCTOR	NIC	NOT IN CONTRACT
A.F.G.	ABOVE FINISH GRADE	HGC	HEATING AIR CONDITIONING	NLS	NOT TO SCALE
AWP	AMERICAN WIRE GAUGE	REFRIGERATION	REFRIGERATION	NL	NIGHT LIGHT
AMP, A	AMPERE	HAND-OFF-AUTO	HAND-OFF-AUTO	NO, or #	NUMBER
A.I.C. or AIC	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)	HOA	HEATING, VENTILATING AND AIR CONDITIONING	OF/CI	OWNER FURNISHED, CONTRACTOR INSTALLED
A.F.C. or AFC	AVAILABLE FAULT CURRENT	H, W, D, L.	HEIGHT, WIDTH, DEPTH, LENGTH	%Z	PERCENT IMPEDANCE
AFAT	AMP FRAME, AMP TRIP	HID	HIGH INTENSITY DISCHARGE	PH, or Ø	PHASE
AHJ	AUTHORITY HAVING JURISDICTION	HP	HORSEPOWER	PC	PHOTOCELL
AS/AF	AMP SWITCH, AMP FUSE	HPS	HIGH PRESSURE SODIUM	P.C.	PLUMBING CONTRACTOR
ATS	AUTOMATIC TRANSFER SWITCH	IN, or "	INCHES	P	POLE
AVG	AVERAGE	ISG	ISOLATED GROUND	PV	POLY VINYL CHLORIDE
BJ	BONDING JUMPER	IBC	INTERNATIONAL BUILDING CODE	PDU	POWER DISTRIBUTION UNIT
BDF	BUILDING DISTRIBUTION FRAME BRANCH	I.D.C.S.	INTEGRATED DIMMING CONTROL PANEL	P	OVER 600 VOLTS
BR	BUILDING	IDF	INTERMEDIATE DISTRIBUTION FRAME	PROVIDE	FURNISH, INSTALL AND CONNECT
BLDG	BUILDING	JBOX	JUNCTION BOX	PT	POTENTIAL TRANSFORMER
CBC	CALIFORNIA BUILDING CODE	K	DEGREE KELVIN	PA	PUBLIC ADDRESS
CEC	CALIFORNIA ELECTRICAL CODE	KCMIL	THOUSAND CIRCULAR MILS	(R)	DENOTES RELOCATED DEVICE
CIRC., CKT.	CIRCUIT	KVA	KILOVOLT AMPERES	LOCATION.	LOCATION.
CB	CIRCUIT BREAKER	KW	KILOWATT	REC. RECEPT	RECEPTACLE
CSFD	COMBINATION SMOKE FIRE DAMPER	KWH	KILOWATT HOUR	REF	REFRIGERATOR
C.O.	CONDUIT ONLY, COMPLETE WITH FULLSTRING	LCL	LONG CONTINUOUS LOAD	RGS	RIGID GALVANIZED STEEL
CONN	CONNECTED	L.F.	LINEAR FEET	RMS	ROOT MEAN SQUARE
CPT	CONTROL POWER TRANSFORMER	LFS, LTS	LOW PRESSURE SODIUM	SCC	SHORT CIRCUIT CURRENT
CLCB	CURRENT LIMITING CIRCUIT BREAKER	LPS	LOW PRESSURE SODIUM	SCCR	SHORT CIRCUIT CURRENT RATING
CLF	CURRENT LIMITING FUSE	MAX.	MAXIMUM	SCS	STRUCTURED CABLING SYSTEM
CT	CURRENT TRANSFORMER	MBJ	MAIN BONDING JUMPER	SFD	SMOKE FIRE DAMPER
(D)	EXISTING DEVICE TO BE DEMOLISHED	MD	MAIN DISTRIBUTION FRAME	600 VOLTS AND LESS	SHEET METAL AND AIR COND. CONTRACTOR'S NAT'L ASSOC.
DAS	DISTRIBUTED ANTENNA SYSTEM	MCP	MAXIMUM OVERCURRENT PROTECTION	SMACNA	SECONDARY
DA	DIAMETER	MCB	MAIN CIRCUIT BREAKER	SQ	SQUARE
DISC	DISCONNECT	MLO	MECHANICAL CONTRACTOR	SSBJ	SUPPLY SIDE BONDING JUMPER
DIST	DISTRIBUTION	M.C.	METER	SBJ	SYSTEM BONDING JUMPER
D.P.C.S.	DIMMING PANEL CONTROL STATION	MM	METER MAIN	TC	TIMECLOCK
EC	ELECTRICAL CONTRACTOR	MV	MERCURY VAPOR	TEL/DATA	TELEPHONE AND DATA TELEVISION
EMS	ENERGY MANAGEMENT CONTROL SYSTEM	MIN.	MINIMUM	T.V.S.S.	TRANSIENT VOLTAGE SURGE SUPPRESSION
EMT	ELECTRICAL METALLIC TUBING	MCA	MINIMUM CIRCUIT AMPS	TV	TYPICAL
ENT	ELECTRICAL NON-METALLIC TUBING	MCC	MOTOR CONTROL CENTER	UNDERGROUND PULL SECTION	UNLESS OTHERWISE NOTED
EW	ELECTRIC WATER COOLER	MCM	THOUSAND CIRCULAR MILS	U.G.P.S.	UNINTERRUPTABLE POWER SYSTEM
E.P.O.	EMERGENCY POWER OFF	MCP	MOTOR CIRCUIT PROTECTOR	U.O.N.	UNLESS OTHERWISE NOTED
E-O-L	END-OF-LINE CIRCUIT TERMINATOR	MFR	MANUFACTURER	U.P.S. or UPS	UNINTERRUPTABLE POWER SYSTEM
EF	EXHAUST FAN	MTD	MOUNTED	VAV	VARIABLE AIR VOLUME
EGC or EG or E/G	EQUIPMENT GROUND (GREEN)	MW	MICROWAVE	V	VOLTS
EGC	EXISTING DEVICE TO REMAIN	NATS	NON AUTOMATIC DISCONNECT	VA	VOLT AMPERES
EP	EXPLSION PROOF	NEC	NATIONAL ELECTRICAL CODE	VD	VOLTAGE DROP
(ER)	EXISTING DEVICE TO BE RELOCATED	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	WP	WEATHERPROOF
FT or ' FEET	FEET	W	WIRE	W	WEATHERPROOF
FA or F.A.	FIRE ALARM	NC	NORMALLY CLOSED	XFMR	TRANSFORMER
FLA	FULL LOAD AMPS				
GRD	GROUND				

FIRE ALARM SYSTEM SYMBOLS

SEE FIRE ALARM OR CENTRAL MONITORING SYSTEM DRAWINGS FOR FIRE ALARM SYMBOLS.

SIGNAL SYSTEM SYMBOLS

	WALL MOUNTED CLOCK. FIELD VERIFY MOUNTING HEIGHT PRIOR TO INSTALLATION. "B" INDICATES BATTERY OPERATED CLOCK. "D" INDICATES DIGITAL CLOCK. "NO LETTER" INDICATES ANALOG CLOCK. REFER TO SPECIFICATIONS.
	CONCEALED CLOCK CONDUIT RUN 1/2" CONDUIT, OR AS NOTED, WITH CONDUCTORS PER SPECIFICATIONS.
	TV OUTLET, WALL MOUNTED. STUB A 3/4" C.O. UP 6" ABOVE THE ACCESSIBLE CEILING AND PROVIDE BUSHING.
	TV OUTLET FLUSH CEILING MOUNTED.
	CONCEALED TELEVISION CONDUIT RUN, 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.
	MICROPHONE OUTLET, WALL MOUNTED. PROVIDE 3/4" C.O. (WITH PULL ROPE) UP TO 6" ABOVE ACCESSIBLE CEILING SPACE. PROVIDE BUSHING AT EACH END.
	MICROPHONE OUTLET, FLUSH CEILING MOUNTED.
	CONCEALED MICROPHONE CONDUIT RUN, 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.
	SURFACE WALL MOUNTED SPEAKER. "V" INDICATES VOLUME CONTROL.
	SURFACE MOUNTED SPEAKER. "V" INDICATES VOLUME CONTROL.
	FLUSH WALL MOUNTED SPEAKER. "V" INDICATES VOLUME CONTROL.
	CEILING FLUSH MOUNTED SPEAKER. "V" INDICATES VOLUME CONTROL.
	ABOVE CEILING MOUNTED SPEAKER. "V" INDICATES VOLUME CONTROL.
	VOLUME CONTROL, WALL MOUNTED.
	CONCEALED SPEAKER CONDUIT RUN 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.

PROJECT SPECIFIC SYMBOLS

REQUIRED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE REQUIRED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS AND SHOULD BE INCLUDED AS PART OF THE BASE BID. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER.

NONE

ALLOWED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE ALLOWED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER.

NONE

DEDUCTIVE/ADDITIVE ALTERNATE PRICING

IN ADDITION TO ANY DEDUCTIVE OR ADDITIVE LINE ITEM PRICING CALLED FOR ON THE DRAWING OR IN THE SPECIFICATIONS, CONTRACTOR SHALL PROVIDE SEPARATE LINE ITEM DEDUCTIVE/ADDITIVE ALTERNATE PRICING FOR EACH OF THE FOLLOWING ITEM(S):

NONE

LIGHTING SYMBOLS

SITE LIGHTING FIXTURE SYMBOLS DEPICTED WITH CAPITAL LETTER(S) ADJACENT TO RESPECTIVE SYMBOL(S) INDICATE(S) LIGHT FIXTURE MOUNTING BASE DETAIL(S). SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE SYMBOL INFORMATION.

	LIGHTING FIXTURE CALL OUT, NUMBER(S) AND/OR UPPER CASE LETTER(S) (i.e. "1") INDICATES FIXTURE TYPE (REFER TO LIGHTING FIXTURE SCHEDULE). LOWER CASE LETTER (i.e. "a") ADJACENT TO FIXTURE TYPE INDICATES BALLAST OPTION (SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES).
	INDICATES FINAL CONNECTION TO A LIGHTING FIXTURE, NUMBER OF CONDUCTORS AS REQUIRED.

LIGHTING CONTROL SYMBOLS

SEE THE DISTRIBUTED LIGHTING CONTROL (DLCS) SPECIFICATIONS AND SEQUENCE OF OPERATIONS (SOO) FOR MORE INFORMATION.

	LOW VOLTAGE WIRING INTERCONNECTING DLCS COMPONENTS AS REQUIRED. SEE DLCS SPECIFICATIONS FOR MORE INFORMATION.
	WALL MOUNTED DIMMER. SEE SINGLE POLE SWITCH SYMBOL FOR RELATED SUBSCRIPTS. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF DIMMERS REQUIRED. PROVIDE DIMMER TYPE TO MATCH INDICATED BALLAST TYPE AND CONTROL REQUIREMENTS.
	WALL MOUNTED STAND ALONE OCCUPANCY SENSOR.
	WALL MOUNTED SYSTEM-BASED OCCUPANCY SENSOR.
	1-WAY DIRECTIONAL CEILING MOUNTED, SYSTEM-BASED OCCUPANCY SENSOR.
	2-WAY DIRECTIONAL CEILING MOUNTED, SYSTEM-BASED OCCUPANCY SENSOR.
	LOW VOLTAGE MOMENTARY SWITCHES, WALL MOUNTED, FOR MANUAL ON/OFF SWITCHING, DIMMING, AND OVERRIDE CONTROL OF LIGHTING.
	AUTOMATIC SWITCHING/STEP-DIMMING DAYLIGHTING CONTROLLER USED TO SWITCH OFF LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. REFER TO THE DLCS SOO FOR TARGET ILLUMINATION VALUE.
	AUTOMATIC CONTINUOUS DIMMING DAYLIGHTING CONTROLLER USED TO DIM LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. REFER TO THE DLCS SOO FOR TARGET ILLUMINATION VALUE.

LIGHTING CONTROL SYMBOL SUPERSCRIPIT & SUBSCRIPT KEY:

- "y" INDICATES THAT SWITCH LEG "Y" TO BE CONFIGURED PER THE SOO. ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF SWITCHLEGS TO BE CONTROLLED. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/DRIVER/FIXTURE TYPE.
- ADJACENT UPPER CASE LETTER(S) INDICATE THE FOLLOWING:
 - AV INDICATES CONNECTION TO AV CONTROL SYSTEM.
 - DM INDICATES DUAL MODE CONTROL AT CORRIDORS, STAIRWELLS AND WAREHOUSE AISLEWAYS
 - H INDICATES CONNECTION TO HVAC SYSTEM CONTROLS VIA CONTROLLED DRY-CONTACT CLOSURE.
 - K INDICATES LOCKING SWITCH FOR THE SUBSEQUENT LOWER CASE LETTER.
 - P INDICATES CONNECTION TO MOVEABLE PARTITION INTERFACE, SENSOR AND STATUS INDICATOR.
 - V INDICATES VANDAL RESISTANT SWITCH.
- ADJACENT LOWER CASE LETTER(S) INDICATE SWITCH LEG(S) CONTROLLED EXCEPT WHERE "DM" INDICATES DUAL MODE CONTROL SWITCH.
- ADJACENT "+, ++ AND +" INDICATES PORTION OF SWITCHLEG CONTROLLED BY SENSOR WHERE "+* INDICATES PRIMARY SIDELIT DAYLIT ZONE, "+** INDICATES SECONDARY SIDELIT DAYLIT ZONE, AND "+*** INDICATES SKYLIT DAYLIT ZONE.

BRANCH CIRCUIT SYMBOLS

	HOME RUN TO PANEL. LETTER DESIGNATES PANEL. NUMBERS INDICATE CIRCUITS. HASH MARKS INDICATE NUMBER OF CONDUCTORS IN CONDUIT RUN. #12 AWG MINIMUM UNLESS OTHERWISE NOTED.
	HOME RUN TO PANEL. LETTER DESIGNATES PANEL. NUMBERS INDICATE CIRCUITS WITH SEPARATE NEUTRALS. "8" INDICATES SEPARATE NEUTRALS.
	HOME RUN TO PANEL. LETTER DESIGNATES PANEL. NUMBERS INDICATE CIRCUITS. "+*" INDICATES SEPARATE #10 NEUTRAL THROUGHOUT BRANCH CIRCUIT. HASH MARK "*" INDICATES AN ISOLATED GROUND CONDUCTOR.
	CONCEALED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM. (2) #12 AWG CONDUCTORS MINIMUM.
	CONDUIT OR BRANCH CIRCUIT CONCEALED BELOW GRADE, 3/4" CONDUIT MINIMUM WITH (2) 12 AWG CONDUCTORS MINIMUM AND A CODE SIZED EQUIPMENT GROUND.
	SURFACE-MOUNTED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM. (2) #12 AWG CONDUCTORS MINIMUM.
	TANDEM WIRING CONNECTION.
	CONDUIT STUB OUT. CAP. MARK AND RECORD ON AS-BUILT DRAWINGS
	CONDUIT CONTINUATION.
	FLEXIBLE CONNECTION AS REQUIRED. NUMBER OF CONDUCTORS AS REQUIRED. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN.
	CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION DOWN WALL TO FLOOR BELOW
	CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION UP WALL TO FLOOR ABOVE

ANNOTATIONS

	PANEL CALLOUT. "A" INDICATES PANELBOARD OR EQUIPMENT DESIGNATION.
	MECHANICAL EQUIPMENT CALLOUT. "AC" INDICATES UNIT TYPE AND "2" INDICATES UNIT NUMBER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS.
	DETAIL CALLOUT. "3" INDICATES DETAIL NUMBER "E-1" INDICATES SHEET NUMBER.
	PLAN NOTE REFERENCE. REFER TO NOTES ON SHEET, OR AS DIRECTED.
	REVISION REFERENCE.
	WYE CONFIGURATION
	DELTA CONFIGURATION
	GROUND

TELEPHONE/DATA SYMBOLS

	TELEPHONE OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6" ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
	"W" = WALL MOUNTED PHONE "PP" = PUBLIC (PAY) PHONE. VERIFY ALL REQUIREMENTS WITH THE TELEPHONE UTILITY COMPANY. PROVIDE 1" C.O. (MIN) TO THE MAIN TELEPHONE BACKBOARD. MOUNTING HEIGHT AS REQUIRED.
	DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
	COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
	TELEPHONE OUTLET BOX, FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	DATA OUTLET BOX FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	COMBINATION TELEPHONE AND DATA OUTLET BOX FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	TELEPHONE OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
	DATA OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
	COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
	COMBINATION TELEPHONE AND DATA OUTLET BOX MOUNTED IN ACCESSIBLE CEILING SPACE OR IN FLOOR BOX PER PLAN FOR FLEXIBLE CONNECTION TO FURNITURE SYSTEM. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	COMBINATION TELEPHONE AND DATA OUTLET, WALL MOUNTED AT +18-INCHES A.F.F. FOR FLEXIBLE CONNECTION TO FURNITURE SYSTEM. PROVIDE THE FOLLOWING: <ul style="list-style-type: none"> - IN A NON-RATED INSULATED WALL, OR NON-RATED UNINSULATED WALL, PROVIDE A 2-GANG MUD RING OR CADDY #RBS SERIES BOX MOUNTING BRACKET (EQUAL BY B-LINE OR RAYCO) WITH (2) 1-1/2" C.O. WITH PULL STRING TO ACCESSIBLE CEILING. PROVIDE 1-1/2" BUSHINGS AT CONDUIT ENDS. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION/TYPE AND CEILING CONDITIONS. - IN A RATED WALL, PROVIDE (1) 4S/DP BOX WITH (2) 1-1/4" C.O. AND (1) 4S/DP BOX WITH (1) 1-1/4" C.O. WITH PULL STRINGS IN EACH CONDUIT TO ACCESSIBLE CEILING. PROVIDE 1-1/4" BUSHINGS AT CONDUIT ENDS. UTILIZE CADDY #RBS SERIES BOX MOUNTING BRACKET TO MAINTAIN BOX ALIGNMENT (EQUAL BY B-LINE OR RAYCO). UTILIZE FIRESTOPPING SYSTEM PADS RATED FOR USE ON THE INSIDE OR OUTSIDE OF THE BOX (STI OR EQUAL) AS REQUIRED TO MAINTAIN RATING OF WALL OR MEMBRANE. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION/TYPE AND CEILING CONDITIONS.
	CONCEALED TELEPHONE/DATA CONDUIT RUN, 1-INCH CONDUIT ONLY (MIN). SEE TABLE FOR CONDUIT SIZE VARIATIONS. <ul style="list-style-type: none"> T2 = 1-1/4" C.O. T3 = 1-1/2" C.O. T4 = 2" C.O.
	FLUSH MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
	SURFACE MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
	TELEPHONE TERMINAL BACKBOARD SIZED AS NOTED. REFER TO SYSTEM GROUND DETAIL.

POWER SYMBOLS

ALL RECEPTACLE OUTLETS SHOWN WITH A DIAGONAL SLASH SHALL BE CONTROLLED BY OCCUPANCY SENSOR OR LIGHTING CONTROL PANEL. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS. WHERE DOUBLE DUPLEX RECEPTACLE OUTLETS ARE INDICATED AS CONTROLLED, ONLY A SINGLE DUPLEX RECEPTACLE OUTLET (NON-IGFCI TYPE) SHALL BE CONTROLLED. WITHIN ANY CONTROLLED DUPLEX RECEPTACLE OUTLET, ONLY ONE RECEPTACLE SHALL BE CONTROLLED. NOTE THAT FOR FLOOR BOXES OR POKE-THRU DEVICES, THE ASSOCIATED CONTROL RELAY MAY NEED TO BE LOCATED WITHIN THE ELECTRICAL ROOM WHERE THE CONTROLLED CIRCUIT ORIGINATES.

	OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY. WHERE LETTER DESIGNATION "a" REPRESENTS OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROL ZONE. SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATION FOR MORE INFORMATION.
	DUPLEX RECEPTACLE, WALL MOUNTED.
	DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED.
	DUPLEX, GFCI RECEPTACLE, WALL MOUNTED. WP INDICATES WEATHERPROOF. A, B OR C INDICATES THE TYPE OF COVER. REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
	DOUBLE DUPLEX, WALL MOUNTED, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF. A, B OR C INDICATES THE TYPE OF COVER. REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
	DUPLEX RECEPTACLE, ONE HALF SWITCHED, WALL MOUNTED.
	DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED.
	COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED.
	COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND RECEPTACLES, WALL MOUNTED.
	SIMPLEX RECEPTACLE, WALL MOUNTED.
	SPECIAL RECEPTACLE, WALL MOUNTED. REFER TO PLAN NOTES.
	DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	DOUBLE DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	DUPLEX RECEPTACLE, ONE HALF SWITCHED, FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	DUPLEX, ISOLATED GROUND RECEPTACLE, FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, MOUNTED FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	COMBINATION DOUBLE DUPLEX FLUSH IN CEILING: TWO ISOLATED GROUND RECEPTACLES - MOUNT FLUSH IN FLOOR WHEN INDICATED IN FLOOR BOX SYMBOL.
	SIMPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	SPECIAL RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
	DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
	DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
	DUPLEX, GFCI RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. WP INDICATES WEATHERPROOF. A, B OR C INDICATES THE TYPE OF COVER. REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
	DOUBLE DUPLEX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF. A, B OR C INDICATES THE TYPE OF COVER. REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
	DUPLEX RECEPTACLE, BOTTOM HALF SWITCHED, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
	DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
	COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
	COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND DUPLEX RECEPTACLES, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
	SIMPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
	SPECIAL RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. REFER TO PLAN NOTES.
	WET LOCATION-LISTED (RAINTITE-IN-USE) RECEPTACLE - SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
	DAMP LOCATION-LISTED (NOT-RAINTITE-IN-USE) RECEPTACLE - SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
	DUPLEX RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
	QUAD RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
	JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F. OR AS NOTED. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED.
	JUNCTION BOX, MOUNTED IN ACCESSIBLE CEILING FOR APPLICATION DENOTED ON PLAN. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED.
	JUNCTION BOX, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED.
	JUNCTION BOX, 4S MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED. MOUNTED IN ACCESSIBLE CEILING SPACE PER PLAN FOR FLEXIBLE CONNECTION TO PREWIRED FURNITURE SYSTEM. MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALL OUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
	JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED. FOR FLEXIBLE CONNECTION TO PREWIRED FURNITURE SYSTEM. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALLOUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
	SURFACE MOUNTED MULTI-OUTLET ASSEMBLY. REFER TO GENERAL PRODUCT SPECIFICATIONS. PROVIDE ALL COMPONENTS NECESSARY FOR A COMPLETE INSTALLATION.
	THERMOSTAT OUTLET BOX, PROVIDE 1/2" C.O. TO RESPECTIVE MECHANICAL UNIT.
	EXHAUST FAN, OR MOTOR LOAD. REFER TO MECHANICAL, PLUMBING OR KITCHEN DRAWINGS FOR SPECIFIC LOAD REQUIREMENTS OR AS NOTED.
	FLUSH MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
	SURFACE MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
	DISTRIBUTION SWITCHBOARD. REFER TO SINGLE LINE



PLAN NOTES:

- 1 EXISTING ELECTRICAL EQUIPMENT TO REMAIN PROTECTED IN PLACE.
- 2 WATT WEATHERPROOF EXTERIOR FIRE ALARM SPEAKER. SEE FIRE ALARM PLAN FOR EXACT LOCATION.

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC., AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" - U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. - U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
9. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

1 SITE PLAN
SCALE: 1" = 30' - 0"



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RUTH GRIMES ELEMENTARY SCHOOL
2023 PHASE 1 SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)
COLTON JOINT UNIFIED SCHOOL DISTRICT

SITE PLAN

PLAN NOTES:

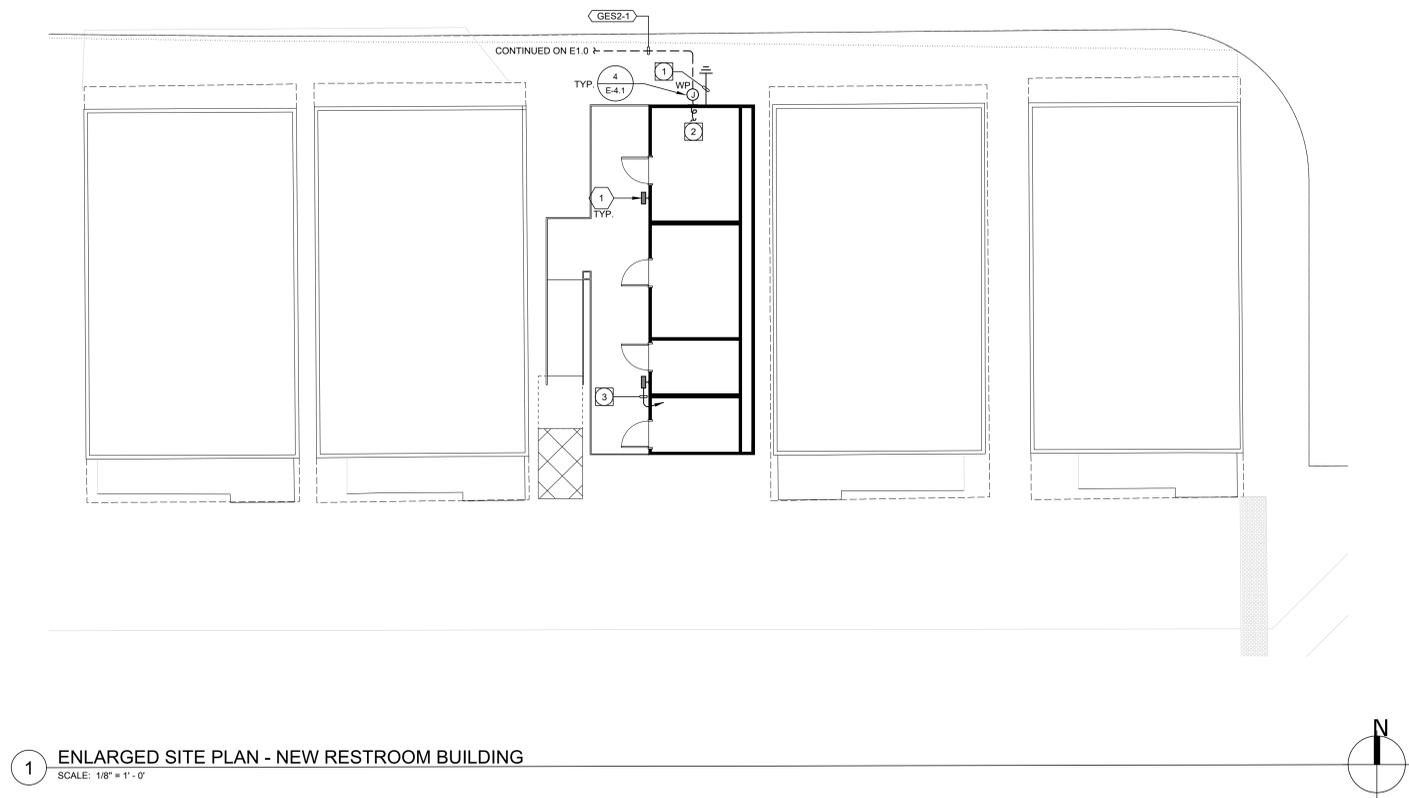
- 1 PROVIDE GROUNDING PER DETAIL 3, SHEET E-4.1.
- 2 CONNECT TO RELOCATABLE BUILDING PANELBOARD PER MANUFACTURER'S REQUIREMENTS.
- 3 PROVIDE 3/4" C. WITH 2#12, 1#12 GRD. TO MODULAR PANELBOARD SPARE 20AMP, 1-POLE CIRCUIT BREAKER. PROVIDE ALL REQUIRED MOUNTING HARDWARE. MATCH A.I.C. RATING OF DEVICES USED. PROVIDE AN ADDITIONAL UNSWITCHED HOT WIRE FOR EMERGENCY LIGHTING.

POWER PLAN GENERAL NOTES:

1. ALL RECEPTACLES ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 24-INCHES MINIMUM.
2. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
3. ALL WALL-MOUNTED DEVICE HEIGHTS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO ROUGH-IN.
4. ALL FURNITURE FEED LOCATIONS TO BE VERIFIED WITH ARCHITECT AND FURNITURE VENDOR PRIOR TO ROUGH-IN.
5. ALL FURNITURE WHIPS SHALL BE TRIMMED TO REDUCE EXCESS WHIP LENGTH.
6. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, THE CONTRACTOR WILL NEED TO PROVIDE THE FOLLOWING ITEMS:
 - a. ALL BRANCH CIRCUITS SHALL BE EMT.
 - b. ALL BRANCH CIRCUITS SHALL BE ROUTED ORTHOGONALLY, NEATLY TRAINED, IN PARALLEL TO STRUCTURES OR DUCTWORK. THE TERM "TRAINED" MEANS ALL PARALLEL CONDUITS SHALL MAINTAIN THE SAME SPATIAL RELATIONSHIP WITH EACH OTHER FOR ENTIRE RUN TO INCLUDE RADIUS BENDS AND SWEEPS.
 - c. VISUALLY OBJECTIONABLE BRANCH CIRCUITS WILL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.
7. EXPOSED CABLE/CONDUCTORS INSTALLED IN A PLENUM SPACE SHALL CONFORM TO NEC, OR CEC WHERE ADOPTED, ARTICLE 300.22(C).
8. PROVIDE G.F.C.I. TYPE RECEPTACLE(S) OR RECEPTACLE(S) PROTECTED BY A GFCI CIRCUIT BREAKER(S) WHEN RECEPTACLES ARE 80A OR LESS, 150V TO GROUND OR LESS AND ARE LOCATED WITHIN 6 FEET OF ANY SINK OR THERAPEUTIC TUB, LAUNDRY AREA, SERVING ANY DRINKING FOUNTAIN OR VENDING MACHINE, WITHIN ANY KITCHEN SPACE, LOCKER ROOM AREA, GARAGE AND BATHROOM SPACE AND/OR LOCATED OUTDOORS. WHERE RECEPTACLES ARE NOT READILY ACCESSIBLE, PROVIDE GFCI CIRCUIT BREAKER(S) TO PROTECT THE RESPECTIVE BRANCH CIRCUIT AND PROVIDE ADDITIONAL NEUTRAL CONDUCTORS IN THE BRANCH CIRCUITING AS REQUIRED TO ENSURE PROPER GFCI FUNCTION.
9. PROVIDE OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY(S) AS REQUIRED TO SWITCH CONTROLLED RECEPTACLES, CONNECT BRANCH CIRCUITRY AND CONTROL WIRING AS REQUIRED TO ALLOW OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM RELAY TO SWITCH STANDALONE AND/OR SYSTEMS FURNITURE CONTROLLED RECEPTACLES AS INDICATED ON PLANS. PROVIDE ADDITIONAL CONDUIT, WIRING AND PATHWAYS NECESSARY TO CONNECT BRANCH CIRCUITRY AND CONTROL WIRING TO REMOTE RELAYS TO INCLUDE RELAY(S) LOCATED ON ALTERNATE FLOORS, IN ELECTRICAL ROOMS, ETC.
10. PROVIDE ADDITIONAL J-BOX NEAR PANEL FOR MULTIPLE HOMERUN CIRCUITRY.
11. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
12. PROVIDE REDUNDANT GROUND PATH IN ALL BRANCH CIRCUITS SERVING PATIENT CARE AREAS CONSISTING OF A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR PER NEC, OR CEC WHERE ADOPTED, ART 517.13.

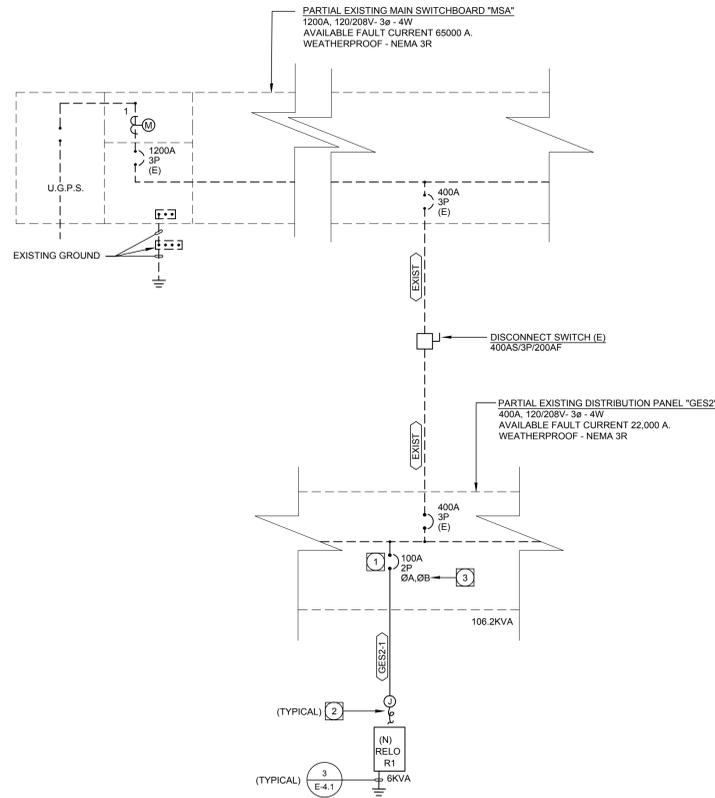
LIGHTING PLAN GENERAL NOTES:

1. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES AND ALL DEVICES. ALL WALL-MOUNTED DEVICE HEIGHTS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO ROUGH-IN.
2. VERIFY EXACT CEILING CONSTRUCTION WITH ARCHITECTURAL REFLECTED CEILING PLAN AND SPECS. PROVIDE LIGHTING FIXTURES WITH ALL NECESSARY MOUNTING HARDWARE.
3. ALL RECESSED FIXTURES SHALL BE PROVIDED WITH ALL STRUCTURAL SUPPORTS AS REQUIRED BY THE IBC, OR CBC WHERE ADOPTED, IN ADDITION TO ANY LOCAL CODES.
4. ALL PERIMETER AND COVE LIGHTING SHALL EXTEND THE FULL LENGTH OF THE WALLS OR COVE. CONTRACTOR TO FIELD MEASURE COVE LENGTH AND ORDER QUANTITY OF FIXTURES AS REQUIRED.
5. ALL LINE VOLTAGE DIMMING BRANCH CIRCUITS SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
6. RECESSED FIXTURES LOCATED IN A FIRE-RATED CEILING OR WALL SHALL BE PROVIDED WITH A 5-SIDED, RATED ENCLOSURE SO CONSTRUCTED AS TO ALLOW CODE AND MANUFACTURER-REQUIRED CLEARANCES BETWEEN THE FIXTURE AND THE ENCLOSURE.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXIT SIGN CHEVRONS AND NUMBER OF FACES PER EXIT SIGN. ANY DISCREPANCIES BETWEEN EXIT SIGNS SHOWN ON THE ELECTRICAL AND ARCHITECTURAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO ORDERING EXIT SIGNS.
8. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, THE CONTRACTOR WILL NEED TO PROVIDE THE FOLLOWING ITEMS:
 - a. ALL BRANCH CIRCUITS SHALL BE EMT.
 - b. ALL BRANCH CIRCUITS SHALL BE ROUTED ORTHOGONALLY, NEATLY TRAINED, IN PARALLEL TO STRUCTURES OR DUCTWORK. THE TERM "TRAINED" MEANS ALL PARALLEL CONDUITS SHALL MAINTAIN THE SAME SPATIAL RELATIONSHIP WITH EACH OTHER FOR ENTIRE RUN TO INCLUDE RADIUS BENDS AND SWEEPS.
 - c. VISUALLY OBJECTIONABLE BRANCH CIRCUITS WILL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.
9. ALL LED REMOTE INDICATORS FOR DUCT DETECTORS AND FIRE/SMOKE DAMPERS REQUIRED BY THE LOCAL AHJ SHALL BE LOCATED IN CEILINGS IN COORDINATION WITH ARCHITECT PRIOR TO ANY ROUGH-IN.
10. PROVIDE ADDITIONAL J-BOX NEAR PANEL FOR MULTIPLE HOMERUN CIRCUITRY.
11. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
12. REFER TO GENERAL POWER PLAN NOTES AND COMMUNICATIONS PATHWAYS GENERAL NOTE FOR ADDITIONAL REQUIREMENTS WHEN POWER AND/OR DATA DEVICES ARE SHOWN ON THIS PLAN.
13. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.



1 ENLARGED SITE PLAN - NEW RESTROOM BUILDING
SCALE: 1/8" = 1'-0"





FEEDER SCHEDULE

FEEDER	CONDUIT AND CONDUCTORS	LOAD (A)	DISTANCE (FT)	V.D. (%)	AVAIL FAULT CURRENT (A)	NOTES
GES2-1	2" C., 4#1 + 1#6 GRD.	(25)	215'	0.72	<10K	

PLAN NOTES:

- 1 PROVIDE NEW CIRCUIT BREAKER IN SPACE OF EXISTING BOARD. CIRCUIT BREAKER TO MATCH MANUFACTURER AND AIC RATING OF EXISTING WITHIN BOARD.
- 2 CONNECT TO PANEL PER MANUFACTURER'S REQUIREMENTS.
- 3 CONNECT TO PHASE BUSSING INDICATED SO THAT LOADS ARE BALANCED ACROSS ALL THREE PHASES.

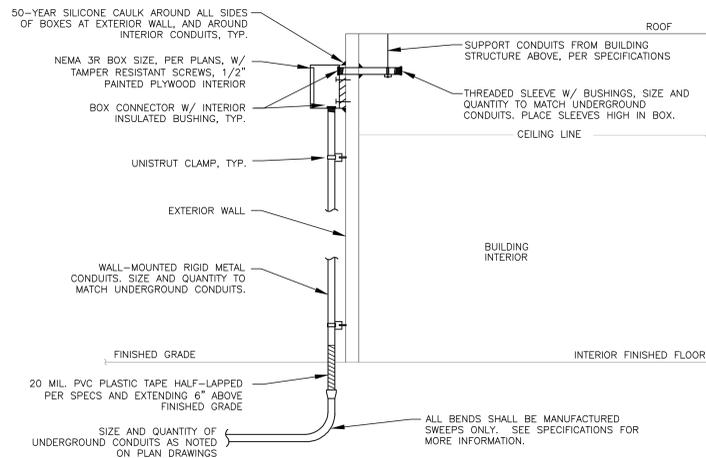
GENERAL SINGLE LINE DIAGRAM NOTES:

1. ALL SWITCHGEAR SHALL BE SQUARE D OR EQUAL BY CUTLER-HAMMER, RSE-SIERRA, G.E., SIEMENS, OR Z-POWER AND DISTRIBUTION.
2. ALL ITEMS DEPICTED ON THE SINGLE LINE DRAWINGS SHALL BE ASSUMED AS NEW U.O.N.
3. ALL OVERCURRENT DEVICES IN AN INDIVIDUAL PIECE OF EQUIPMENT SHALL HAVE AN AIC RATING EQUAL TO THE OVERALL RATING OF THE EQUIPMENT-SERIES RATING OF DEVICES WITHIN A PIECE OF EQUIPMENT IS NOT ALLOWED. SEE SPECIFICATIONS FOR MORE INFORMATION. WHERE SERIES RATINGS ARE ALLOWED, THE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE A SERIES COMBINATION RATING WHICH SHALL BE READILY VISIBLE AND STATE THE FOLLOWING:

CAUTION - SERIES COMBINATION SYSTEM RATED AT ??,???, AMPERES. USE ONLY IDENTIFIED REPLACEMENT COMPONENTS IN THIS SYSTEM.

WHERE ??,???, REPRESENTS AVAILABLE FAULT CURRENT. SEE SPECIFICATIONS FOR PLACARD REQUIREMENTS.
4. ALL SERVICE ENTRANCE EQUIPMENT RATED AT 400A OR GREATER SHALL BE PROVIDED WITH A BACKFEED-RATED, SOLID STATE MAIN OVERCURRENT DEVICE AND BUSSING RATED AT 100% OPERATION (1000A_{req.in.} FOR CU, 750A_{req.in.} FOR AL). NO HEAT RISE RATED BUSINGS ALLOWED. NON-SERVICE ENTRANCE SWITCHBOARDS AND DISTRIBUTION BOARDS LARGER THAN 600A SHALL BE PROVIDED WITH BUSSING RATED FOR 100% OPERATION - SEE SPECIFICATION FOR CIRCUIT BREAKER REQUIREMENTS. ALL NON-SERVICE ENTRANCE SWITCHBOARDS AND DISTRIBUTION BOARD MAIN OVERCURRENT DEVICES SHALL BE BACKFEED-RATED. BACKFEED RATINGS SHALL COMPLY WITH NEC, OR CEC WHERE ADOPTED, 710.15 (E) AND 705.12(B)(4). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING CIRCUIT BREAKERS.
5. ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 75 DEGREE CELSIUS CONDUCTORS.
6. PROVIDE CIRCUIT BREAKER ARC ENERGY REDUCTION MAINTENANCE SWITCHING PER NEC, OR CEC WHERE ADOPTED, 240.87(B)(3) FOR ANY CIRCUIT BREAKER, 1200A FRAME AND LARGER. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
7. ALL SWITCHBOARDS AND DISTRIBUTION BOARDS SHALL HAVE:
 - a. TIN-PLATED ALUMINUM BUSSING WITH RECTANGULAR CROSS SECTION. HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL LENGTH AND SHALL HAVE PROVISIONS FOR FUTURE EXTENSIONS. ALL BUSSING SHALL HAVE MINIMUM WITHSTAND RATING EQUAL TO THE AVAILABLE FAULT CURRENT INDICATED. ALL VERTICAL AND HORIZONTAL BUSINGS SHALL BE RATED AT FULL CAPACITY IN ALL SWITCHBOARD AND DISTRIBUTION BOARD SECTIONS. PROVIDE 100% NEUTRAL BUSSING MINIMUM UNLESS OTHERWISE NOTED. PROVIDE FULL LENGTH GROUND BUS AND, WHERE INDICATED ON PLANS, ISOLATED GROUND BUSSING. PROVIDE REAR WIRE WAY IN ALL SWITCHBOARD SECTIONS.
 - b. LUGS SUITABLE FOR USE WITH COPPER OR ALUMINUM CONDUCTORS LISTED FOR USE WITH 75 DEGREE CELSIUS AMPACITY CONDUCTORS.
 - c. PERMANENT PLACARD(S) MARKED PER THE SPECIFICATIONS AND PER NEC (OR CEC-WHERE ADOPTED) SECTIONS 225.37, 230.2(E), 690.56, 692.56, 700.7, 701.7, 702.7, AND 705.10 AND IFC (OR CFC - WHERE ADOPTED) SECTION 608.2.6.1. DENOTING THE PRESENCE OF ADDITIONAL SERVICES, PHOTOVOLTAIC SYSTEMS, FUEL CELLS, EMERGENCY, STATIONARY BATTERY STORAGE SYSTEMS, OR STAND-BY POWER SOURCES AS APPLICABLE.
8. CONTRACTOR SHALL SUBMIT SWITCHBOARD SHOP DRAWINGS TO THE SERVING UTILITY FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR SHALL SECURE CONFIRMATION THAT THE PROPOSED SWITCHBOARD COMPLIES WITH ELECTRIC UTILITY COMPANY REGULATIONS.
9. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE SPECIFICATIONS FOR SWITCHBOARDS, DISTRIBUTION BOARDS, TRANSFORMERS, PANEL BOARDS, AND ALL OTHER DEVICES SHOWN ON THE SINGLE LINE, PRIOR TO FABRICATION.
10. ALLOWABLE DIMENSIONS IN MAIN ELECTRICAL ROOM ARE A CRITICAL COORDINATION ITEM. CONTRACTOR SHALL PROVIDE 1/4"= 1'-0" SCALE DRAWINGS WITH SWITCHGEAR SUBMITTALS SHOWING THAT ALL PROPOSED EQUIPMENT WILL FIT IN THE SPACE PROVIDED. SUBMITTALS WITHOUT THIS DRAWING SHALL BE REJECTED AS INCOMPLETE.
11. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
12. WHERE REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION OR WHERE A NEW GROUND FAULT PROTECTIVE DEVICE IS BEING INSTALLED, A GROUND FAULT SYSTEM TEST SHALL BE CONDUCTED BY AN INDEPENDENT TESTING AGENCY PER NEC (OR CEC-WHERE ADOPTED) 230.95(C). THE GROUND FAULT SYSTEM TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL AUTHORITY HAVING JURISDICTION. VERIFICATION OF DEVICE SETTINGS PER THE POWER SYSTEMS STUDY SPECIFICATION SHALL BE PERFORMED BY THE SAME INDEPENDENT TESTING AGENCY. THE GROUND FAULT TEST RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD, DURING THE CONSTRUCTION PHASE OF THE PROJECT. ALL NEW GROUND FAULT RELAYS SHALL BE SET AT THE LOWEST AVAILABLE TIME DELAY AND PICK-UP SETTINGS.
13. SEE POWER SYSTEMS STUDY SPECIFICATION FOR ADDITIONAL REQUIREMENTS. ALL REQUIRED POWER SYSTEMS STUDIES MUST BE COMPLETED AND SUBMITTED WITH ELECTRICAL POWER DISTRIBUTION EQUIPMENT SUBMITTAL. FAILURE TO DO SO WILL PREVENT THE ENGINEER FROM EFFECTIVELY EVALUATING THE SUBMITTAL AND SHALL RESULT IN REJECTION OF THE ELECTRICAL POWER DISTRIBUTION EQUIPMENT SUBMITTAL AS INCOMPLETE.



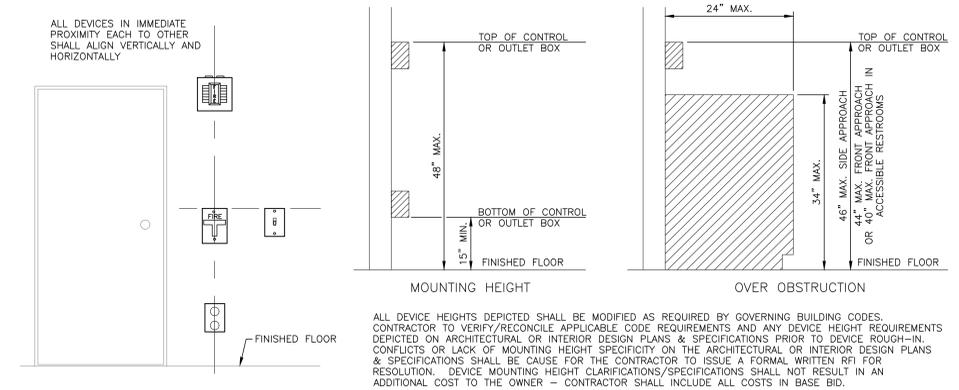


- NOTES:**
1. ALL BOXES/PLYWOOD TO BE SECURED TO BUILDING STRUCTURE USING MIN. 3/8" X 2" WALL ANCHORS/LAG BOLTS.
 2. 50-YEAR SILICONE CAULK AROUND ALL PENETRATIONS, BOXES AND ALL THREADS AS REQUIRED.
 3. SEAL ALL UNDERGROUND CONDUITS PER COMMUNICATION PATHWAY NOTES, GENERAL PROJECT NOTES, AND PROJECT SPECIFICATIONS.
 4. SEE SPECIFICATIONS FOR MORE INFORMATION.

TYPICAL EXTERIOR JUNCTION BOX DETAIL

SCALE: N.T.S.

4

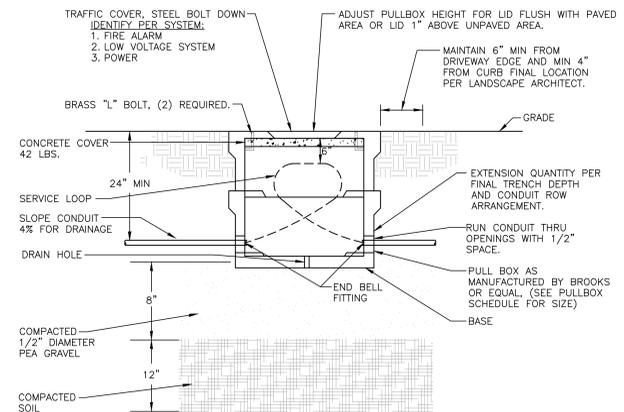


ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN RFI FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER - CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.

DEVICE ALIGNMENT & MOUNTING HEIGHT DETAILS

SCALE: N.T.S.

1



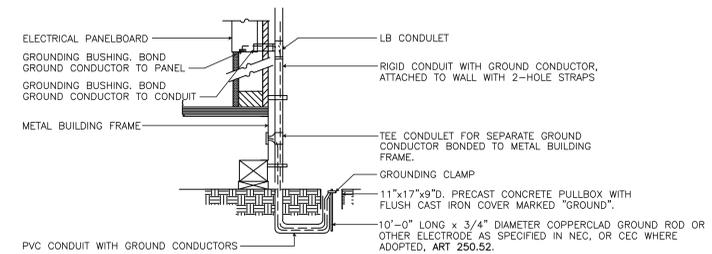
PULL BOX NOTES

1. ALL BOXES SHALL BE SET ON A MINIMUM 6" GRAVEL BASE WITH 1/2" DIAMETER PEA GRAVEL.
2. ALL INCIDENTAL CONCRETE SHALL BE REMOVED FROM BOXES.
3. PROVIDE WATERTIGHT SPLICES AND CAPS FOR POWER CONDUCTORS.
4. PROVIDE SEALING GEL IN ALL CONDUITS (BOTH W/ CONDUCTORS AND IN EMPTY SPARE CONDUITS.) THE GEL SHALL BE INSERTED IN THE CONDUIT TO A DEPTH OF 6" AND FLUSH W/ THE END OF THE CONDUIT. THE GEL SHALL BE MANUFACTURED BY 3M #4442 RE-ENTERABLE ENCAPSULANT.
5. PROVIDE IDENTIFYING TAGS ON ALL POWER AND COMMUNICATION CONDUCTORS IN PULLBOXES.
6. PULLBOX SHALL BE SIZED PER N.E.C. REQUIREMENTS.

PULL BOX DETAIL

SCALE: N.T.S.

2



NOTES:

1. METAL MODULAR BUILDINGS: WHEN METAL BUILDINGS ARE MADE OF COMPONENTS, EACH BUILDING COMPONENT, INCLUDING STEEL RAMPS, MUST BE ELECTRICALLY BONDED TOGETHER IN A MANNER ACCEPTABLE TO DSH/SSS. PAINT ON THE SURFACE WILL INHIBIT PASSAGE OF ELECTRICAL CURRENT; THEREFORE, BOLTED CONNECTIONS OF COMPONENT PARTS ARE NOT AN ACCEPTABLE ELECTRICAL BOND.
2. WOOD MODULAR BUILDINGS: IN WOOD FRAME MODULAR BUILDINGS, THE ELECTRICAL SYSTEM MUST BE GROUNDED AS REQUIRED IN TITLE 24, C.E.C.
3. GROUNDING: THE ELECTRICAL CIRCUITS ARE USUALLY PROPERLY GROUNDED, HOWEVER, IT IS ALSO NECESSARY TO INDEPENDENTLY GROUND THE STEEL FRAMES. THIS IS PARTICULARLY IMPORTANT WHEN THE BUILDING IS SUPPORTED ON A FOUNDATION MADE OF WOOD.
4. INSPECTOR OF RECORD (I.O.R.) SHALL WITNESS GROUND TEST AND SUBMIT A COPY OF THE REPORT TO THE ARCHITECT. ALL BUILDING COMPONENTS MUST BE ELECTRICALLY BONDED TOGETHER AND MUST BE INDEPENDENTLY GROUNDED. ALL GROUNDING SYSTEMS ARE TO BE TESTED WITH A MEGGER UNIT OR IN AN OTHERWISE ACCEPTABLE MANNER. REFER TO C.E.C. SECTIONS 250-52 AND NEC. 250-53 FOR SPECIFIC GROUNDING REQUIREMENTS.
5. SIZE OF CONDUCTORS SHALL COMPLY WITH NEC. TABLE 250-95.
6. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL BUILDING FRAME (NEC. 250-52). IN ADDITION TO THE DETAIL SHOWN ABOVE, BOND THE ELECTRICAL CONDUCTOR GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FEET INTO THE SOIL IF AVAILABLE (N.E.C. 250-52 AND NEC. 250-53).
7. ALL MODULES OF METAL FRAME BUILDINGS AND RAMPS SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDING).
8. 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. (NEC. 250-53).
9. SEE SPECIFICATIONS FOR TESTING OF GROUNDING REQUIRED.
10. ALL ELECTRICAL WORK TO MEET THE REQUIREMENTS OF THE STATE ELECTRICAL CODES, PART 3 OF TITLE 24, CAC, WHICH REQUIRES PROPER GROUNDING OF ALL ELECTRICAL CIRCUITS, EQUIPMENT, ETC. FOR PUBLIC SCHOOL BUILDING(S), REGARDLESS OF THE TYPE OF CONSTRUCTION.

RELOCATABLE BUILDING GROUNDING DETAIL

SCALE: N.T.S.

3

1.1 WORK INCLUDED:

- A. This specification shall apply to all phases of work hereinafter 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 or noted on Drawings, and its delivery to the Owner complete in every respect ready for use.
- 2. The electrical Work involves 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 layout out Work and verify spaces for installation of materials and equipment based on actual dimensions of equipment furnished.

1.2 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:
 - 1. Institute of Electrical and Electronic Engineers – IEEE
 - 2. National Electrical Manufacturers' Association – NEMA
 - 3. Underwriter's Laboratories, Inc. – UL
 - 4. National Fire Protection Association – NFPA
 - 5. Federal Specifications – Fed. Spec.
 - 6. American Society for Testing and Materials – ASTM
 - 7. American National Standards Institute – ANSI
 - 8. National Electrical Code – NEC
 - 9. National Electrical Safety Code – NESCC
 - 10. Insulated Cable Engineers Association – ICEA
 - 11. American Institute of Steel Construction – AISC
 - 12. State and Municipal Codes In Force In The Specific Project Area
 - 13. Occupational Safety and Health Administration (OSHA)
 - 14. Electronics Industries Association/Telecommunications Industry Association (EIA/TIA)
 - 15. California Electrical Code (where adopted)
 - 16. Local Authority Having Jurisdiction (AHJ) Published Electrical Standards and Codes (as applicable).
- B. Perform Work in accordance with the National 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 code conflicts occur, the most stringent shall apply unless variance is approved.
- 1. Comply with all requirements for permits, licenses, fees and 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.

- 1.3 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.
 - D. The Contractor shall be responsible for patching and repairing surfaces where he is required to penetrate for work under this contract.
 - E. Penetrations shall be sealed to meet 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.
 - F. Verifying Drawings and Job Conditions:
 - 1. The Contractor shall examine all Drawings and Specifications in a manner to be fully compliant of all work required under this Section.
 - 2. The 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.

- 1.4 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 a conduit-only system 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, conduits, and backboxes required for installing conduit 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.
- 1.5 TESTING AND ADJUSTMENT
 - A. Upon completion of all electrical work, the Contractor shall test all circuits, switches, light fixtures, lighting control and dimming systems installed distributed systems, UPS's, generators, SPD's, lighting inverters, transfer switches, motors, circuit breakers, motor starter(s) 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 Form Code Compliance Forms) shall be submitted to the Engineer at completion of project.
- 1.6 IDENTIFICATION
 - A. Nameplates shall be provided for unit substitutions, switchgear, switchboards, distribution boards, distribution panels, motor control centers, transformers, transfer switches, contactors, starters, disconnect switches, enclosed circuit breakers/dividers, inverters, UPS's, PDU's, RDC's, SPD's, 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 and control cabinets.
 - 1. Nameplate inscriptions shall be identical to the equipment designations indicated in plans and specifications. Nameplates shall be engraved with the device designation/identification on the top line, provide identification for the device on the 2nd line per NEC, or CEC where adopted, Art 408.4 and load designation for the device on the bottom line. Where load designation consists of a branch circuit, omit bottom line. Where device designation is not indicated on drawings/specifications, Contractor shall submit a written clarification request to the Engineer.
 - Example: Transformer 1TA
Source Disconnecting Location: Switchboard 5MA located in RM 110 Load: Panels 1LA & 1LB
 - B. All circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDU sub-feed 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.
 - C. Identification nameplates, unless otherwise noted (UON), shall be laminated/extruded modified acrylic, with beveled edges and engraved white letters 3/8" high, minimum, on 1-1/2" high black background (utility/norma) and optional standby power systems) for single line of text. Where two lines of text are required, provide min. 2" high nameplate. Where three lines of text are required, provide min. 2.5" high nameplate. Provide white letters on red background for all NEC, or CEC where adopted, Article 517 essential power systems, Article 700 Emergency Systems, Article 701 Legally required standby systems and Article 708 COCP's.

- C. Identification nameplates for new switchgear, switchboards, distribution boards, distribution panels, panelboards and 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. Fire-filling or other mechanical attachment methods that change/weld the NEMA or NRTL rating of the enclosure are strictly forbidden.
- D. Identification nameplates for transformers, transfer switches, disconnect switches, enclosed circuit breakers/dividers, inverters, UPS's, PDU's, RDC's, SPD's, lighting control panels, dimming panels, door-releasing system panels, terminal cabinets and all circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDU's, PDU sub-feed circuit breakers, and motor control centers shall be attached to the equipment by self-adhesive backing integral to the nameplates. When equipment is located outdoors, provide nameplates without self-adhesive backing and attach to equipment using weather-rated, UV-resistant epoxy. In all cases, clear surfaces before applying identification nameplates parallel to equipment lines.
- E. Warning Plaques, as required by General Single Line Diagram Notes for multiple power sources, or instruction placards, as required for all link-link interface schemes, all UPS bypass procedures or as required elsewhere in the plans/specifications shall be engraved 1/2" high with white lettering on a red background using the same material specified for identification nameplates with a self-adhesive backing. Warning/Instruction placards shall be attached to the face of the equipment directly related to the placards. Provide a formal placard submitted for review by the Engineer prior to ordering any warning/Instruction placards. In all cases, clear surfaces before applying warning/Instruction placards parallel to equipment lines.
- F. Receptacles that are part of a UL-listed under floor computer room whip assembly, ceiling and/or cable/ladder tray-mounted receptacles used in lab, manufacturing, commercial kitchen environments or that are serving as data/AV racks and cabinets shall have identification nameplates located on the wiring device plate cover. Nameplates shall be self-adhesive, 3/32" thick, mica with beveled edges, engraved 1/4" high white lettering on black background with a minimum 1/8" wide clear margin and NEMA type receptacle type. Use of two (2) separate nameplates per device plate cover is acceptable. Affix nameplates to be visible when plugs are occupying receptacles.
- G. See wiring device section of this specification for additional wiring device plate cover labeling requirements.
- H. See drawings for panel board schedule directory installation requirements.
- I. See conduit installation section of this specification for conduit labeling requirements.

1.7 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. The Contractor shall provide complete information 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.

1.8 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 change 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 to the work without the written approval of the Architect. The final set of drawings, 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 legible ink in a neat, logical and professional manner. Refer to the Supplementary General Conditions for complete requirements.

1.9 APPROVALS, EQUALS, SUBSTITUTIONS, ALTERNATIVES, NO KNOWN EQUAL

- A. Approvals: Where the words (or similar terms) "approved", "approval", "acceptable", and "acceptance" are used, it shall be understood that acceptance by the Owner, Architect and Engineer are required.
- B. Equal: Where the words (or similar terms) "equal", "approved equal", "equal to", or "equal to or above" and "equal" or "equivalent" are used, the above words are followed by the expression "In the opinion of the Owner, Architect, and Engineer," for the purposes of specifying products, the above words shall indicate the same size, finish, and the aesthetic appearance/style (includes craftsmanship, physical attributes, color and finish), and the same performance.
- C. Substitution: For the purposes of specifying products, "substitution" shall refer to the substitution of a product not explicitly approved by the construction documents/specifications.
 - 1. Substitutions of specified equipment shall be submitted and received by the Engineer ten (10) days prior to the bid date for review and written approval. Regulatory Agency approval for all substitutions will be the sole responsibility of the contractor. To receive consideration, requests for substitution must be accompanied by documentary proof of its equality with the specified material. Documentary proof shall be in letter form and identify the specified values/materials alongside proposed equal values/materials. In addition, catalog brochures and other information shall be included in the submittal. ONLY PRE-BID APPROVED PRODUCTS, ISSUED VIA A FORMAL BID ADDENDUM TO ALL BIDDERS, WILL BE ALLOWED ON THE PROJECT. REGARDLESS OF THE APPROVAL ON ANY SUBSTITUTION, ALL BIDS SHALL BE BASED ON THE PRODUCTS EXACTLY AS SPECIFIED. PRICING FOR EACH APPROVED SUBSTITUTION SHALL BE INCLUDED IN THE BID SUBMITTAL AS A SEPARATE LINE ITEM.
 - 2. In the event that written authorization is given for a substitution after award of contract, the Contractor shall submit to the Engineer quotations from suppliers/distributors of both the specified and proposed equal material for price comparison, as well as a verification of delivery dates that conform to the project schedule.
 - 3. In the event of cost reduction, the Owner will be credited with 100 percent of the reduction, earned by change order.
 - 4. The Contractor warrants that substitutions proposed for specified items will fully perform the functions required.
- D. Alternates/Alternatives: For the purposes of specifying products, "alternates/alternates" may be established to enable the Owner/Architect/Engineer to compare costs where alternative materials or methods might be used. An alternate price shall be submitted in addition to the base bid for consideration. If the alternate is deemed acceptable, written authorization will be issued.
- E. No Known Equal: For the purposes of specifying products, "No Known Equal" shall mean that the Owner/Architect/Engineer is not aware of an equivalent product. The Contractor will need to submit a "Substitution" item per the requirements listed above, if a different product is proposed to be utilized.

1.10 SHOP DRAWINGS/SUBMITTALS

- A. Shop Drawings/Submittals, unless required otherwise by general project specifications or instructions to bidders, shall be submitted in electronic format (PDF) to include a Letter of Transmittal (LOT), which shall give a list of the drawings submitted with dates and/or system(s) components contained within the submittal. Drawings and material cut sheets shall be complete in every respect and edited/marked to indicate specific items being provided. Printed/hard copies are not acceptable.
- B. The shop drawings/submittals 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 resubmittal.
- 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, which 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. Review comments used in response to shop drawings/submittals are:
 - 1. "No Exception Taken" Product approved as submitted.
 - 2. "Furnish as Corrected" Re-submittal not required, although the Contractor shall provide the submitted product with corrections as noted.
 - 3. "Revise and Resubmit" Re-submittal required with corrections as noted.
 - 4. "Rejected" Re-submittal required based upon the originally specified product.
- F. Shop drawings shall be submitted on the following, but not limited to:
 - 1. Lighting fixtures, lamps and ballasts.
 - 2. Switchgear, switchboards, distribution boards, motor control centers, panelboards, and bus ducts completed with overcurrent device information.
 - 3. Transformers.
 - 4. Fire Alarm System/Central Monitoring System.
 - 5. Wiring Devices.
 - 6. Lighting control products/dimming system products.
 - 7. Pull boxes and underground vaults.
 - 8. Terminal cabinets.
 - 9. Lighting inverters, UPS's, RDC's, PDU's, generators, transfer switches, SPD systems.
 - 10. Cable tray, flexible cable tray and cable runway.
 - 11. Power poles and floor boxes.
 - 12. Arc flash, short-circuit, and coordination studies.
 - 13. All other products called out on drawings that call for shop drawing submittal.

1.11 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:
 - 1. Lighting control systems/dimming systems.
 - 2. Fire Alarm System.
 - 3. Transformers.
 - 4. Switchgear, switchboards, distribution boards, motor control centers, panel boards, and bus ducts: completed with overcurrent device information.
 - 5. Lighting inverters, UPS's, PDU's, generators, transfer switches, SPD systems.
- B. All wiring diagrams shall specifically cover the system supplied. Typical drawings will not be accepted. Four (4) copies shall be presented to the Owner.

1.12 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 drawings 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. Switchgear/Switchboards/Distribution Boards/Motor Control Centers:
 - 1. See general single line diagram notes on drawings for more information.
- C. Panelboards – Branch Circuit:
 - 1. See drawings for panel board schedules and specifications.
- D. Transformers:
 - 1. See drawings for transformer schedules and specifications.
- E. Lighting Fixtures:
 - 1. See drawings for lighting fixture and lamp schedules and additional specifications. Furnish, install, and connect a lighting fixture at each outlet where a lighting fixture type symbol (designated on plans) is shown as being installed. Each fixture shall be complete with all required accessories including sockets, glassware, boxes, spacers, mounting devices, fire rating enclosure and lamps.
 - 2. Ballasts: See lighting fixture schedule notes. All noisy ballasts shall be replaced at no cost to the Owner.
 - 3. Lamps: See lamp/fixture schedule and lamp/lighting fixture schedule notes.
- F. Wiring Devices:
 - 1. Provide wiring devices indicated per plan. Devices shall be specification grade. Acceptable manufacturers are Leviton, Pass & Seymour and Hubbell. Provide all similar devices of same manufacturer, unless indicated otherwise. All device colors shall be selected from the full range of manufacturer standard color options as selected by the Architect. This direction will be provided in the shop drawing review process.

a. Wiring Devices (Decora)	
1) Convenience Receptacle	#16252-COLOR
2) Dedicated Receptacle	#16352-COLOR
3) Convenience I.G. Receptacle	#16282-IG-COLOR
4) Dedicated IG Receptacle	#16382-IG-COLOR
5) Convenience G.F.C.I. Receptacle	#GFNT1-COLOR
6) Dedicated G.F.C.I. Receptacle	#GFNT2-COLOR
7) Convenience Hospital Grade Receptacle	#61252-HG-COLOR
8) Dedicated Hospital Grade Receptacle	#61352-HG-COLOR
9) Convenience G.F.C.I. Hospital Grade Receptacle	#GFNT1-HG-COLOR
10) Dedicated G.F.C.I. Hospital Grade Receptacle	#GFNT2-HG-COLOR
11) Tamper Resistant Convenience Receptacle	#TDR15-COLOR
12) Tamper Resistant Dedicated Receptacle	#TDR20-COLOR
13) Tamper Resistant Hospital Grade Receptacle	#GFTR1-HG-COLOR
14) Tamper Res. Conv. G.F.C.I. Hospital Grade Receptacle	#GFTR1-HG-COLOR
15) Tamper Res. Ded. G.F.C.I. Hospital Grade Receptacle	#GFTR2-HG-COLOR
16) Weather/Tamper Resistant GFI Receptacle	#GFRT1-COLOR
17) Convenience Simplex Receptacle	#16251-COLOR
18) Dedicated Simplex Receptacle	#16351-COLOR
19) Recessed Clock Receptacle	#6222-COLOR
20) Single Pole Switch	#5623-2-COLOR
21) Double Pole Switch	#5623-2-COLOR
22) Three Way Switch	#5624-2-COLOR
23) Four Way Switch	#5624-2-COLOR
24) Pilot Light Switch "On"	#5631-2-COLOR
25) Pilot Light Switch "Off"	#5631-2-COLOR
26) Projection Screen Switch	#5657-2-COLOR
27) Low Voltage Momentary Switch	#11221-2L-COLOR
28) Keyed Switch	(Non-Decora)
29) Door Jam Switch	(Non-Decora)

- b. Use of dedicated receptacles is required where plans depict a branch circuit supplying only a single simplex or duplex receptacle. Use of controlled receptacles is required where depicted on plans – See controlled receptacle specifications for additional information.
- c. I.G. (isolated ground) receptacle bodies shall be of a basic color specified above with an orange triangle to symbolize isolated ground.
- d. H.G. (hospital grade) receptacle bodies shall be of a basic color specified above with a green circle to symbolize hospital grade.
- e. When shown equipped with an I.G. conductor, all receptacles shall be of the I.G. type. An exception, a NEMA LG-30R denoted on the plans and shown circled with an I.G. conductor shall be of an I.G. version of the receptacle.
- f. Wiring devices located in wood finished areas shall generally be black unless otherwise indicated by the Architect.
- g. Wiring devices located in mirrors shall generally be white with stainless steel cover plates unless otherwise indicated by the architect.
- h. In addition to other device requirements listed elsewhere in this specification and NEC, or CEC where adopted, Articles 406.12 & 517.18, all 125V & 250V, 15A and 20A, non-locking receptacles shall be Tamper-Resistant when located in the following locations:
 - a. In dwelling units per NEC, or CEC where adopted, Article 210.52
 - b. In guest rooms and guest suites of hotels and motels
 - c. In child care or daycare facilities.
 - d. In preschool and elementary education facilities
 - e. In business offices, corridors, waiting rooms and the like in clinics, medical and dental offices and outpatient facilities.
 - f. In a subset of Assembly Areas outlined in NEC, or CEC where adopted, Article 518.2 including transportation waiting areas, gymnasiums, skating rinks, and auditoriums.
 - g. In dormitories.
 - h. In pediatric care areas per NEC, or CEC where adopted, Article 517.18 (C).

- h. Wiring devices shall be listed "hospital grade", and so identified, in the following locations:
 - a. Patient bed locations within general care areas per NEC, or CEC where adopted, Article 517.18(B).
 - b. Patient bed locations within critical care areas per NEC, or CEC where adopted, Article 517.18(D).
 - c. In "other-than-hazardous" anesthetizing locations per NEC, or CEC where adopted, Article 517.61(C)(2).
- i. Wiring device cover plates located on recessed boxes shall be commercial grade nylon. Plate color shall match wiring device color UON on plans. Cover plates utilized on receptacle boxes and panels shall be contractor offering. However, the controlled receptacle location within a controlled receptacle outlet shall remain consistent throughout the project.
 - 1. Except as otherwise noted, all wiring device plates on the project shall be labeled with panel and circuit number(s) utilizing a Brother P-Touch labeling system with 1/2" tape (yellow on black) or equal by Herman-Telleman or Panduit. Locate label on the concealed side of the wiring device plate. Handwritten labels are unacceptable.
- 11. The Contractor shall provide duplex receptacle outlets in the appropriate configurations necessary to comply with applicable energy code requirements for controlled receptacles and as shown on plans. All wiring devices indicated to be controlled receptacles shall be NEMA-approved, electrical code-compliant with factory markings on the face of the receptacle(s) with the word "Controlled" or utilize further markings and symbols to indicate which receptacles on each outlet is/are controlled. Stickers, factory-applied markings or other non-permanent markings are not acceptable. Where a GFI receptacle outlet is required to be controlled, provide an adjacent controlled duplex receptacle connected on the load side of the GFCI outlet. Generally, one receptacle in a duplex receptacle outlet is required to be controlled. It may be the lower receptacle or upper receptacle based on manufacturer offering. However, the controlled receptacle location within a controlled receptacle outlet shall remain consistent throughout the project. Where an existing duplex receptacle outlet is required to be controlled, provide a new wiring device outlet with an alternate controlled configuration necessary to comply with plans. All controlled receptacles shall be connected to a branch circuit controlled by an occupancy sensor-based or relay panel lighting control system. Acceptable manufacturers are Leviton, Pass and Seymour, and Hubbell.
- 12. The following wiring device plates shall have custom engraving:
 - a. Key operated switches, switches with pilot lights, and switches for the control of motors, heaters and ventilators. Engraving shall be black and occur on the exposed side of the plate indicating the motor, heater, or ventilator controlled.
 - b. Receptacles on optional standby generator and/or UPS power shall have custom engraved plates with the words "Generator" or "UPS" in black letters. In addition, where located in telecommunications closets, IDF's, server rooms, data centers, labs (wet, dry or electronic) indicating panel board and circuit number.

- c. For Health Care Facilities, provide custom engraved device cover plates, for all devices, indicating panel board and circuit number. Devices served by normal/utility power circuits shall have black lettering; devices served by essential electrical system power circuits shall have white lettering.
- d. All stainless steel and nylon device plates shall be engraved using a rotary engraving process except for black lettering on stainless steel device plates which may be accomplished via laser etching process. All lettering shall be 3/16" high. Provide a recessed area for the engraved device plate with a typical device faceplate with engraving.
- G. Weatherproof Outlet Covers/Assemblies: All Receptacles identified as weatherproof on the drawings shall be weather-resistant, tamper-resistant, GFCI type and equipped as follows:
 - 1. Type WP-A: Recessed wall box with a hinged, lockable, cast aluminum, self-closing, gasket-equipped door that is wet location-listed raintight while "in use". Unit shall comply with NEC, or CEC where adopted, Article 406.4(B) (3) unless specified otherwise, provide a minimum of 2 separate compartments suitable for installation of power receptacles, AV or communications outlets. Additionally, unless otherwise noted on drawings, provide the following:
 - a. 20A Weather-resistant, tamper-resistant, GFCI duplex receptacle in the first compartment. Provide branch circuiting per plans.
 - b. A blank metal plate suitable for field installation of power, AV or communications devices in the second compartment.
 - c. Where indicated on plans as requiring data, AV, or other low voltage service outlet, provide min. 3/4" C.O. with pull string routing from the second compartment to nearest low voltage pull box. Where shown mounted in a building wall, any blank/unused compartment shall be equipped minimum 3/4" C.O. with pull string routing to the nearest accessible ceiling space.
 - d. See wiring device section of this specification for additional wiring device plate labeling requirements.
 - e. (1) key minimum per device (minimum of 2 per project) to the Owner's project manager upon completion of project.
 - f. Custom color powder coat finish as selected by Architect – include all costs in base bid for same.
 - g. In locations with sufficient wall depth, provide 6" wide x 6" tall x 5-1/2" deep recessed wall box (C.W. Cole #TL310-WCS-K1-CUSTOM COLOR).
 - h. In locations utilizing shallow stud walls construction or other walls of insufficient depth, provide 10-3/4" wide x 7-3/8" tall x 3-7/8" deep recessed wall box (C.W. Cole #TL310-WCS-SH-K1-CUSTOM COLOR).
- I. See drawings for additional details.

- 2. Type WP-Subscript WP-B: Wet location-listed raintight while "in use" cast copper-free aluminum, extra-duty, lockable cover with baked aluminum lacquer finish and one-gang, weather-resistant, tamper-resistant GFCI receptacle. Hubbell WP2E series. Polycarbonate covers are unacceptable. Unit shall comply with NEC, or CEC where adopted, Article 406.9(A) and (B). Contractor shall powder coat assembly to a custom color where receptacle locations are deemed by the Architect to be in aesthetically sensitive or public spaces. Custom color as selected by Architect.
- 3. Type WP-C: (C.W. Cole #TL310-WCS-PED-ADA-K1-CUSTOM COLOR or #TL310-WCS-PED-K1-CUSTOM COLOR) pedestal device box with a hinged, lockable, cast aluminum, self-closing, gasket-equipped door that is wet location – listed raintight while "in use". Unit shall comply with NEC, or CEC where adopted, Article 406.4(B) (3) unless specified otherwise, provide a minimum of 2 separate compartments suitable for installation power receptacles, AV or communications outlets. Additionally, unless otherwise noted on drawings, provide the following:
 - a. 20A weather-resistant, tamper-resistant, GFCI duplex receptacle in the first compartment. Provide branch circuiting per plans.
 - b. A blank metal plate suitable for field installation of power, AV or communications devices in the second compartment.
 - c. Where indicated on plans as requiring data, AV or other LV outlet, provide min. 3/4" C.O. with pull string routing from the second compartment to nearest low voltage pull outlet.
 - d. See wiring device section of this specification for additional wiring device plate labeling requirements.
- e. 1 key minimum per device (minimum of 2 per project) to the Owner's project manager upon completion of project.
- f. Include all costs in base bid for ADA version (22.5" tall) of pedestal box. Prior to ordering material, contractor shall coordinate with architect and/or AHJ to determine which pedestal box locations do not require ADA compliance and may be changed to the standard (11.5" tall) version of the pedestal box.
- g. Custom color powder coat finish as selected by Architect. Include all costs in base bid for same.
- h. See drawings for additional details.

- 4. Type WP-Subscript WP-D: Damp location-listed (not-raintight-in-use) cast copper-free, pad lockable, die-cast aluminum cover with baked aluminum lacquer finish and one gang receptacle. Polycarbonate covers are unacceptable. Unit shall comply with NEC, or CEC where adopted, article 406.9(A) and (B). Custom color powder coat finish as selected by Architect. Include all costs in base bid for same.
- H. Motor Controllers/Starters: See drawings for motorized equipment schedules and specifications.
- I. Circuit Breakers.
 - 1. Service entrance circuit breakers smaller than 400A frame shall be thermal-magnetic trip with inverse time current characteristics unless otherwise indicated below. Service entrance main circuit breakers shall be thermal-magnetic trip. 400A frame and larger shall be 100% rated, solid-state type as outlined in this specification. All other service entrance circuit breakers, 400A frame and larger, shall be 100% rated, solid-state type as outlined in this specification.
 - 2. All non-service-entrance circuit breakers 225A and larger shall be thermal magnetic type and have continuously adjustable instantaneous pick-ups of approximately 5 to 10 times trip rating. Breakers shall have either tamper-resistant ratings or easily changed trip rating plugs with trip ratings as indicated on the Drawings. Rating plugs shall be easily changed without the need for intervention between frames. Additionally, all non-service-entrance circuit breakers, 800A frame and larger, located in 480V 3 phase, 3-wire or 277/480V, 3 phase wye switchgear, distribution boards, panel boards or busway plugs, shall be solid state, 100% rated. Breaker shall have built-in test points for testing load breaker by short of an instantaneous, and ground fault (where shown) functions of the breaker by means of a 120V operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400A and above at the Engineer's request.
 - 3. All non-service-entrance circuit breakers less than 225A shall be molded plastic type, air circuit breakers conforming to UL 489. Provide breakers with thermal magnetic trip units, and a common trip bar for two- or three-pole breakers, connected internally to a pole so tripping of one pole will automatically trip all poles of each breaker. Provide breakers of trip-free and trip-indicating on-type, with quick-make, quick-break contacts. Provide single two- or three-pole breaker interchangeability.
 - 4. Provide positioning device for circuit breakers as shown on the Drawings.
 - 5. Where a Current Limiting Circuit Breaker (CLCB) is indicated on drawings or as required elsewhere in this specification, provide a UL listed current limiting thermal magnetic circuit breaker(s) UON. An independently operating limiter section within a molded case is not allowed. Consider CLCB ratings as required to protect electrical system components on the load side of the CLCB to include, but not limited to, protecting automatic transfer switches, panel boards and lighting control panels.
 - 6. Where a solid state circuit breaker is indicated on drawings or as required elsewhere in this specification, provide a solid state circuit breaker with minimum five function complete with built-in current transformers. The five functions shall be independently adjustable and consist of Overload/Long Time Amp Rating, Long Time Delay, Short Time Delay, Short Circuit/Instantaneous Pick-up, but may also include Shunt Trip and/or Ground Fault if so indicated on the Drawings. Rating plugs shall be interlocked so that they are not interchangeable between frames. Breaker shall have built-in test points for testing long delay and instantaneous, and ground fault (where shown) functions of the breaker by means of a 120V operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400A and above, at the Engineer's request.

- 6. Circuit breakers, 1200A frame or larger, or circuit breakers with sensors or adjustable trip settings, 1200A or larger, shall be equipped with an Energy Reducing Maintenance Switch (ERMS) compliant with NEC, or CEC where adopted, 249.47 (B) (3) unless specified elsewhere with an alternate arc energy reduction method allowed with this same code section.
- 7. Ground Fault Interrupting Breakers: Provide with molded plastic case, air circuit breakers, similar to above with ground fault circuit interrupt capability, conforming to UL Class A, Group 1.
- 8. Arc Fault Interrupting Breakers: Provide with molded plastic case, air circuit breakers, similar to above with arc fault circuit interrupt capability, conforming to UL 1699. Provide all dwelling-unit, single-circuit supplying bedrooms, sleeping quarters, etc., as required to comply with NEC, or CEC where adopted, Article 210.12.
- 9. Tandem or half-sized circuit breakers are not permitted.
- 10. Series-Related Breakers: UL listed series-rated combinations of breakers can be used to obtain panelboard-interrupting ratings shown on Drawings. If series-rated breakers are used, switchboards, distribution boards and panelboards shall be appropriately labeled to indicate the use of series-rated breakers. Breakers shall be submitted shall include chart of UL listed devices which coordinate to provide series rating.
- 11. Circuit breakers shall be standard interrupting construction. Panelboards shall accept standard circuit breakers up to 100A.
- 12. Circuit breaker handle accessories shall provide provisions for locking handle in the on or off position.
- 13. Shunt trip equipped circuit breakers shall be provided on all elevator feeders.
- 14. Temperature compensating circuit breaker(s) shall be provided when located in outdoor enclosure(s) or where subject to enclosure temperature fluctuations. Provide a minimum of two nearby industrial processes, etc.
- 15. Provide 75 degree Celsius-rated conductor sizes/lug kits as required on all circuit breakers to accept conductor quantities and sizes shown on drawings.
- 16. All circuit breaker terminations shall be suitable for use with 75 degree Celsius ampacity conductors. Listed, dual-insulated pin terminals, straight or offset, are acceptable for use in accommodating oversized or parallel conductor terminations.

- 17. Circuit breakers serving Fire Alarm or Central Monitoring panels and power supplies shall be red in color and lockable in the "ON" position.
- J. Disconnect Switches:
 - 1. Non-fusible or fusible, heavy-duty, externally operated horsepower-rated, 600V AC; Provide NEMA 3R, lockable enclosures for all switches located on roof tops, in wet or damp areas, and in any area exposed to the elements.
 - 2. Fusible switches shall be Class "T" when 600A or less, and Class "L" when greater than 600A.
 - 3. Amperage, horsepower, voltage, and number of poles per drawings: All shall be clearly marked on the switch nameplate.
 - 4. Provide the Owner's project manager with one (1) spare set of fuses and two (2) sets of fuse clips/fuses for every set of fuses on the project.
- K. Fuses:
 - 1. Provide fuses at all locations shown on the Drawings and as required for supplemental protection:
 - a. Fuses shall be manufactured by Busmann, Shawmut or equal.
 - b. All fuses shall be the product of a single manufacturer.
 - 2. Main and Feeder Protection:
 - a. Protective devices rated greater than 600A: Provide Busman Hi-Cap fuses, Class L current-limiting, having an interrupting rating of 200,000A RMS.
 - b. Protective devices rated 600A or less: Provide Busman Class R fuses, Class RK series current-limiting fuses, having an interrupting rating of 200,000A RMS.
 - 3. Motor Protection:
 - a. Where rating of protective device is greater than 600A: Provide Busman Hi-Cap fuses, Class L current-limiting, having an interrupting rating of 200,000A RMS.
 - b. Where rating of protective device is 600A or less: Provide Busman Class RK series current-limiting fuses, having an interrupting rating of 200,000A RMS.
 - c. Where fuses feeding motors are indicated, but not sized: It shall be the responsibility of the Contractor to coordinate the fuse size with the motor to provide proper motor running protection.
 - d. When reaction type fuses are specified (Class RK series) the fuse holder of all switches (specified in other Sections) shall be suitable for the fuses provided.
- L. Cable Tray, Flexible Cable Tray and/or Cable Runway:
 - 1. See drawings for Cable Tray, Flexible Cable Tray and/or Cable Runway specifications.
- M. Uninterruptible Power Systems (UPS):
 - 1. See drawings for UPS schedules and specifications.
- N. Power Distribution Units (PDU):
 - 1. See drawings for PDU schedules and specifications.
- O. Generator Systems:
 - 1. See drawings for Generator schedules and specifications.
- P. Transfer Switches:
 - 1. See drawings for Transfer Switch schedules and specifications.
- Q. Lighting Control/Dimming Systems:
 - 1. See drawings for Lighting Control and/or Dimming Systems schedules

- U. Fittings:
- Conduit type fittings shall be smooth inside and out, taper threaded with integral insulating bushings, 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.
 - Metallic conduit 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.
 - Connector, coupling, locknut, bushings and caps used with rigid conduit shall be steel, threaded and thoroughly galvanized. Bushings shall be insulated.
 - UNON 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. RHH/RHW insulation is allowed only to provide an Electrical Circuit Protection System to comply with NEC, or CEC where adopted, Articles 695 and 700.
 - All interior and exterior EMT fittings, connectors and couplings, 2" and smaller, installed in exposed or concealed locations that are considered by the AHJ to be wet or damp locations, shall be rain/light-listed, steel, zinc or cadmium plated, threadless, compression, steel locking ring type with insulated throat. If rain/light-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.
 - Flexible steel conduit connectors shall be a malleable iron clamp or squeeze type or steel twin-line type with insulated throat. The finish shall be zinc or cadmium plating.
 - Conduit unions shall be "Erickson" couplings, or approved equal. The use of running threads will not be permitted.
- V. 600V Conductors – Wire and Cable:
- All conductors shall be copper. Provide stranding conductor for #10 AWG and larger or when making flexible connections to vibrating machinery. Use compression "York" type connectors or transition to solid conductors when connecting to switches, receptacles, etc.
 - Type THHN/THWN-2 thermoplastic, 600V, UL approved, dry and wet locations rated at 90 degree 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 Protection System to comply with NEC, or CEC where adopted, Articles 695 and 700.
 - 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 of regular intervals.
 - 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.
- Systems Conductor Color Coding:
- Power 208/120V, 3PH, 4W:
 - Phase A = Black
 - Phase B = Red
 - Phase C = Blue
 - Neutral = White or White with Phase Color Tracer
 - Switchlegs = Purple (Switchlegs shall also be identified separately by numerical tags)
 - Travelers = Purple with Black stripe or Pink
 - Power 480/277V, 3PH, 4W:
 - Phase A = Brown
 - Phase B = Orange
 - Phase C = Yellow
 - Neutral = Grey or Grey with Phase Color Tracer
 - Switchlegs = Purple (Switchlegs shall also be identified separately by numerical tags)
 - Travelers = Purple with Black stripe or Pink
 - Ground Conductors: Green
 - Isolated Ground Conductors: Green with continuous Yellow stripe
 - Fire Alarm System: As recommended by the manufacturer
- All color-coding for #12 through #6 AWG conductor shall be as identified above. Conductors #4 AWG and larger shall be identified by utilizing phase type at each termination.
- No conductors carrying 120V or more shall be smaller than #12 AWG.
 - Aluminum conductors shall not be used.
 - Wire-pulling compounds used as lubricants in installing conductors in raceways shall only be "Polywater". 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 or block and tackle to install conductors are not acceptable.
- Medium Voltage Conductors (greater than 600V):
- See drawings for Medium Voltage Cable Schedule and Specifications.
- X. Junction and Pullboxes:
- For interior dry locations, boxes shall be NEMA 1 generalized one-piece drawn steel, knockout type, with removable, machine screw secured cover.
 - For outside, damp or surface locations, boxes shall be NEMA 3R heavy cast aluminum or cast iron with removable, gasketed, non-ferrous machine screw secured covers.
 - For in-grade applications, junction and pull boxes shall be pre-cast concrete or molded fiberglass manufactured by Christy, Brooks-Jensen, or Utility Vault Co. Fiberglass boxes shall be used only in landscape planter areas that are not subject to damage from lawnmowers, tractors and other machinery.
 - Not be used in lawn or turf areas.
 - Not exceed 11" W x 17" L in size unless required to be larger to meet code requirements.
- All boxes shall be sized for the number and sizes of conductors and conduits entering the box and equipped with plaster rings where required.
- All boxes located in traffic areas shall be traffic rated.
- Y. Outlet Boxes:
- For fixtures, boxes shall be galvanized, one-piece drawn steel, knockout type equipped with 3/8" fixture studs and plaster rings where required.
 - For convenience outlets, wall switches, or other devices, outlet boxes shall be galvanized one-piece drawn steel, knockout type 4" x 4" x 2-1/8" minimum size with plaster rings as required.
 - For locations where standard boxes are not suitable due to number and size of conduit to be terminated, special boxes shall be designed to fit space or meet other requirements and submitted for approval.
 - For exposure to weather, damp locations, or surface mounting, outlet boxes shall be heavy cast aluminum or cast iron with threaded hubs; covers shall be watertight with gaskets and non-ferrous screws.
 - Outlet boxes used for support of ceiling fans shall be galvanized, one-piece drawn steel, knockout type equipped with bracing bars and plaster rings where required and listed for ceiling fan support use. Such boxes shall be labeled and capable of supporting ceiling fan weights up to 70 pounds.
 - See drawings for floor box installation notes and specifications.
- Z. Plywood Backboards: Where indicated for telephone or communications system terminals or other equipment assemblies, provide backboards of size indicated. Use 3/4" thick x 8" tall (length per plans), Douglas Fir, void-free, kiln-dried, fire-rated plywood finished on one side and prime coat painted on all surfaces with finish coat of enamel paint, color by architect. Leave one (1) fire-rating stamp/sheet exposed for inspection.
- AA. Terminal Cabinets:
- Terminal cabinets shall be fabricated of hot dipped galvanized code gauge sheet metal for flush or surface mounting, complete with barred sections, a door for each vertically barred section, and as indicated on the drawings. Doors shall be hinged and lockable. Locks shall be keyed to match the branch circuit panelboards. Terminal cabinet trims shall match the branch circuit panels.
 - Provide each terminal cabinet with a full size mounting backplate.
 - Terminal cabinets shall be installed complete with full-length skirts of the same construction and finish as the terminal cabinet.
 - Where mounted outdoors, terminal cabinets shall be NEMA 3R, weatherproof complete with gaskets and covered against moisture from entering the terminal cabinet.
 - All terminal cabinets and terminal cabinet barred sections shall be labeled by the cabinet or cabinet section use (i.e. CATV, Security, etc.). Labels shall be Microta type as specified elsewhere in these specifications. Unless otherwise noted, all termination blocks and cables shall be labeled with ANS/ISA 606 standards.
- BB. Painting: Terminal cabinets, panels, junction boxes, pull boxes, etc., and conduit installed in public view shall be painted with colors selected by the Architect to match the subject surface. Refer to painting section of the specifications for additional requirements.

CC. Seismic Design, Certification, and Anchoring of Electrical Equipment:

- Contractor shall include all costs in the base bid for labor, materials, all special inspections and structural engineering design and construction of all electrical equipment. Requirements for Non-structural Components (Chapter 13, ASCE/SEI 7-16 Minimum Design Loads for Buildings and Other Structures) as required by IBC, or CEC where adopted, Section 1617A and related reinforcing and seismic design requirements shall be furnished under this contract. See Specific Project Site Seismic Criteria on architectural and/or structural plans which include Building Occupancy Category, Seismic Design Category, Design Spectral Acceleration (Spa), Height factor ratio (Z/N) and Site Class. Non-structural Component Importance Factor (I_p) for a particular component shall be determined based on the following criteria:
 - k=1.0: Non-life safety, Non-structural Components in an Occupancy Category IV facility not required for continued operation of the facility or for other Occupancy Category Facility where component failure will not impair continued operation of the facility.
 - k=1.5: Designated Seismic Systems are those non-structural components in any Occupancy Category IV facility (except as noted above) that are a part of any code-defined Critical Life Safety, Emergency and Legally Required Standby Electrical System. Additionally, those non-structural components containing hazardous materials shall be classified as Designated Seismic Systems. While Designated Seismic Systems are generally identified on the plans, they may include items such as Generators, Automatic Transfer Switches, UPS units and all associated electrical distribution equipment and components necessary for the designated seismic system to form a complete and operable system. The Contractor shall ultimately be responsible for identifying Designated Seismic Systems. For any electrical component either identified on the plans or determined by the contractor to be a Designated Seismic System, all line and load side electrical distribution systems supporting that Designated Seismic System (including, but not limited to, feeders, panel boards, switchboards, transformers, all related components and equipment) shall be designed and installed as considered a part of the designated seismic system for the purposes of code-compliance and seismic certification.
 - z/h – Height factor ratio: See plans for respective equipment locations.
- Provide a delegated-design submittal for each of the following seismic-restraint systems to be used as required:
 - Restraint Channel Bracings consisting of MFMA-4, shop- or field-fabricated bracing assembly made of galvanized steel channel bracing, end plates, and anchor bolts. Provide a specific component at one end and to building structure at the other end, with other matching components, and with corrosion-resistant coating; rated in tension, compression, and torsion forces.
 - Restraint Cables consisting of ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service, with a minimum of two clamping bolts for cable engagement.
 - Seismic-Restraint Accessories consisting of hanger rod/hanger rod stiffener assemblies, multifunctional steel connectors for attaching hanger to rigid channel bracings and/or restraint cables, bushings for floor and wall-mounted equipment, anchor bolts, and resilient isolation washers and bushings.
 - Mechanical Anchor Bolts consisting of drilled-in and stud-wedge or female-wedge type in zinc-coated steel or interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.
 - Adhesive Anchor Bolts consisting of drilled-in and capsule anchor system containing resin and curing catalyst and used for exterior applications and stainless steel for exterior applications. LEED-compatible, environmentally-friendly resins and adhesives on all LEED projects. Anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.
- Submittal shall include design calculations and details for selecting seismic restraints complying with performance requirements, design criteria, and analysis data signed and sealed by the contractor's structural engineer responsible for their preparation. Calculations shall include, but not be limited to, static and dynamic loading caused by equipment weight, operation, and seismic and, if applicable, wind forces required to select seismic and, if applicable, wind restraints and for designing vibration isolation bases. Provide seismic and wind-restraint detailing to support system selection, arrangement of restraints, attachment locations, methods, and spacings with all components identified to include their strengths, directions and values of forces transmitted to the structure during seismic events and association with vibration isolation devices. Sizes of components shall be selected so strength will be adequate to carry specified static and seismic loads to accommodate 25% spare future capacity within specified loading limits.
- Any pre-approval and evaluation documentation shall have a California Office of Statewide Health Planning and Development (OSHPD) Special Seismic Certification Preapproval (OSPD) demonstrating horizontal load testing and analysis showing maximum seismic restraint ratings, by ICC-ES or another agency acceptable to authorities having jurisdiction. Ratings based on independent testing are preferred to ratings based on calculations. If pre-approval is not available, independent testing or analysis and testing are preferred. Calculations (including combining shear and tensile loads) that support seismic-restraint designs must be signed and sealed by a qualified professional engineer.
- Coordinate the location of embedded connection hardware with supported equipment attachment and mounting points and with requirements for concrete reinforcement and formwork specified elsewhere in the project specifications.
- Install flexible connections in runs of raceways, cables, wireways, cable trays, and busways where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where connection to a structural element that is anchored to a different structural element from the one supporting them as they approach equipment. Flexible connection limitations of the NEC, or CEC where adopted, shall be followed.
- Install seismic-restraint devices using methods approved by OSHPD or an agency acceptable to authorities having jurisdiction providing required submittals for component.
- Multiple Raceways or Cables: Secure raceways and cables to trapeze member with clamps approved for application by OSHPD or an agency acceptable to authorities having jurisdiction.
- The contractor shall engage a qualified testing agency to perform tests and inspections as listed in other Project Specifications, but as a minimum shall include at least four of each type and size of installed anchors and fasteners selected by Architect. Schedule tests with Owner, through Architect, before connecting anchorage device to restrained component (unless post connection testing has been approved), and with at least seven days' advance notice. Obtain Architect's approval before transmitting test loads to structure. Load spreaders shall be used to apply test loads to anchors. Minimum percent of rated proof load of device. Prepare and submit test and inspection reports.

DD. Trenching and Backfilling: Contractor shall be responsible for trenching and backfilling. Refer to applicable trenching and backfilling specifications for complete requirements.

PART 3 – EXECUTION
3.1 PREPARATION AND INSTALLATION

- Installation of Conduit and Outlet Boxes:
 - 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.
 - Galvanized rigid conduit (GRC) or intermediate metal conduit (MC) 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-rain/light fittings, connectors, couplings, etc. are unavailable.
 - When required by NEC or Article 517.13
 - When installed in concrete and masonry. The use of EMT in CMU walls and parking structures may be allowed only as directed in writing by the Engineer. Request for EMT substitution must be made prior to bid and in accordance with pre-bid substitution request requirements of these specifications.
 - Intermediate metal conduit (IMC), is approved for use in all locations as approved for GRC or EMT and in accordance with NEC, or CEC where adopted, Article 342.
 - Flexible steel conduit shall only be permitted to be used at light fixture outlets and connections to vibrating electrical equipment. All flexible steel conduit shall be less than 6"–0". Except when concealed in walls or other structural elements, all outdoor installation shall be made using liquid-tight flex with approved fittings. Include a separate installed green ground conductor sized per NEC in each conduit. Other uses of flexible conduit shall be allowed only as approved in writing by the Engineer.
 - Flexible liquid-tight conduit shall be installed in lieu of the flexible steel where required by NEC, or CEC where adopted, in damp or wet locations, 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 be used to support or suspend equipment. All conduit installed in green ground conductor sized per NEC in each conduit. Other uses of liquid-tight flexible conduit shall be allowed as approved in writing by the Engineer on a case-by-case basis.
 - 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 underground or imbedded in concrete shall be 3/4" minimum trade size.
 - Where required for providing an Electrical Circuit Protective System to comply with NEC, or CEC where adopted, Articles 695 and 700, utilize UL Listed 2-hour fire-rated, MC cable or UL listed 2-hour fire-rated EMT conductors.
 - Conduit shall not be run so as not to interfere with other listed, fixtures or equipment.
 - The ends of all conduits shall be cut square, carefully reamed out to full size and shall be shouldered in fitting.
 - 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.
 - Where conduit is underground, under slabs or grade, exposed to the weather, or in wet locations, make joints liquid tight and gas tight.
 - All metal conduit in masonry and concrete and where concealed under floor slabs shall have joints pointed with thread compound prior to makeup.

- PVC conduit shall not be run in walls except where approved by the Engineer prior to bid or limited instances that may include concrete or CMU walls used in site retaining, parking structures, or exterior equipment yard or enclosure walls, etc.
- 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.
- Where conduit extends through roof to equipment on roof area, the Contractor shall provide flashing material compatible with the roofing system as required by the roofing specifications or as required by the Owner's roof warranty. This flashing shall be determined by the Contractor for installation. The actual location of all such roof penetrations and outlets shall be verified by the Architect/Owner. Contractor to verify type of flashing prior to bid and include all costs.
- 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.
- 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.
- Not-in-conduit supports, one-piece set screw type conduit clamps or perforated iron for supporting conduit shall not be used.
- Seismic Conduit Support:
 - All conduit shall be supported in such a manner that it is securely attached to the 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 3/4"	10'-0"
3/4" to 1"	12'-0"
1" to 1 1/2"	15'-0"
1 1/2" to 2"	20'-0"
 - 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 materials shall not be installed.
 - Open knockouts in outlet boxes only where required for inserting conduit.
 - Locate wall outlet boxes of the same type at each level in all rooms, except where otherwise specified on the drawings.
 - Outlet boxes on metal studs shall be attached to metal hangers, tack welded or screwed to studs; on wood studs attachment shall be with wood screws, nails are not acceptable.
 - Recessed boxes shall not be mounted back-to-back in any wall; minimum offset shall be 24 inches.
 - 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.
 - Surface mounted pull boxes, terminal cabinets, junction boxes, panel boards etc., shall be type in zinc-coated steel or interior applications, 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 all additional requirements imposed by the local Authority-Having-Jurisdiction.
 - 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 UL listed fire stopping system. See fire stopping section of this specification for additional requirements.
 - All boxes shall be covered with outlet box protector, Apilcon SB-CK, or similar device/method to keep dirt/debris from entering box, conduit or panels. If dirt/debris does get in, it shall be removed prior to pulling wires.
 - 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.
 - All conduit entries to outdoor mounted panels, cabinets, boxes, etc., shall be made using Myers "SIR" or "TEC" Hubs Series 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 after 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.
 - All multiple conduit runs within suspended ceilings shall be suspended from building structure by means of unistrut hangers/rocks. Conduit shall not be allowed to lay on ceiling structure. If supported from ceiling structure, wire and other suspension device 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.
 - All exposed conduits and support hardware shall be painted to match the finish of the wall or ceiling to which it is supported.
 - Where conduits or wireways cross seismic joints, provide approved flexible conduit connection or approved expansion/deflection fitting to allow for movement 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 stretched to compensate for incorrect conduit length, and shall be secured to connection(s) 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(s). Install expansion joints complete with ground jumpers.
 - 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.
 - 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 of 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 times conduit diameter, underground and building interconnect conduit shall be installed in 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.
 - 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.
 - The following additional requirements shall apply to underground conduits:
 - Underground conduit shall be Schedule 40 PVC (polyvinyl chloride) unless otherwise indicated elsewhere in these specifications or as required per NEC, or CEC where adopted, Article 517.13.
 - For all communications conduits 2" and larger, and feeders 100A or greater, provide with a minimum 3", (2,000 LB) concrete envelope, 2" 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" minimum separation shall be maintained between power and communication conduits or as required by Utility Companies. Where concrete encasement is not required by serving utilities for a utility-only duct bank, provide fire draining sand bedding suitable to achieve 95% relative compaction based on ASTM D1557 using 6" lifts or directed by Utility Company Standards.
 - 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 extending a minimum of 24" on either side of the foundation. In all cases, where conduit(s) pass through 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 conduit(s) for the entire depth of the footing. The barrier is required to prevent passage of moisture under or through the slab or footing via the trench or sleeve.
 - 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.
 - Underground conduits, which terminate inside buildings/low grade, such as in a basement, crawlspace, or wet location, where exposed to water, shall be installed in a basement level, or which slope so that water will 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 warranties for the installation. Do not cut, notch or otherwise alter structural members without obtaining approval in writing from the Structural Engineer of Record.
 - All conduits that terminate in a building 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 back into the facility, conduits shall be sealed internally at each end of each conduit with a conduit sealing bushing, sized as required for the conductors contained within the conduit (0-2 Gedney #CSB 100spg withstand or equal). In all cases, install plugs in manhole or vault ends of each conduit. Where necessary, install a 1/2" diameter (1) #3000 (or equivalent) IS STRICTLY PROHIBITED.
 - Include a separate insulated green ground conductor sized per NEC, or CEC where adopted, in each underground electrical feeder/branch circuit.
 - All underground conduits with circuits rated at 40A or greater and all underground communications conduits shall be provided with a metallic marker tape installed 12" below the finished grade.

- Where underground conduits sweep into/through slabs, utilize PVC 90 degree sweeps or equal dual rated, insulated splice-reducer connector or multi-tap connector. GRC couplings shall be 1/2" lap taped with 20 mil tape. If the distance of the conduit run between a sweep and the next connecting sweep, pullbox, vault or manhole exceeds 150 ft then the sweep shall be concrete encased. Exceptions:
 - 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.
 - Utility conduit sweeps shall be installed per the requirements of the respective utility company.
- All PVC conduit shall be glued for a water and gas tight installation. The Contractor shall use appropriate sealant on all joints prior to gluing conduit and fittings together.
- All underground conduit work shall conform to the Federal, State and Local Safety Orders or Rules regarding excavations, trenches and related earthwork. For projects in California, refer to the California Code of Regulations, Title 8, Construction Code Sections 1540 and 1541 for additional requirements.
- Installation of Metal Clad (MC) Cable (when use is permitted in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawings):
 - Provide J-box above accessible ceiling prior to running MC cable within partitions or walls. J-box shall be permanently labeled with panel identification and circuit numbers contained within.
 - Overhead MC cable runs shall generally follow building lines to provide a neat and workmanlike installation.
 - Provide code-sized J-boxes to accommodate MC cable splicing in general. For systems furnish poke-through feeds utilizing MC cable, transition from MC cable to conduit and wire near the panelboard in the T accessible ceiling space on the floor below the panel board via code-sized gutters(s). Utilize UL listed, insulated barrier strips with recessed MC cable supports (used #89-87 series or #89-88 series within the gutter(s), terminate MC conductors on one side of the strip(s) and individual conductors in conduit from the panel board(s) on the other side of the strip(s). Label each terminal strip(s) with panel designation. Label each phase conductor with circuit number using wire markers (deal or equal). Wire runs are not an acceptable alternative to the terminal strips in these underfloor transition locations. Provide (1) spare 1/2" conduit from each cable to its respective panelboard.
 - MC cable shall not run directly into panelboards, distribution boards or electrical rooms.
 - MC cabling shall be provided with its own code-approved ceiling support wires, cable hangers, individual spring steel support clips, steel trapeze hangers, threaded rods or dedicated #10 AWG cable supports. Cable supports shall be fastened to concrete slabs, beams, joists or other structural members of the building. In no case shall MC cable rest on ceilings, suspended ceilings or structures. Do not support MC cable ceiling support wires. The use of nylon cable ties to support MC cable is not allowed.
 - Use lock or spring nut MC cable fittings.
 - Cable runs shall be continuous from wiring device to wiring device – no intermediate splicing J-boxes allowed.
 - When terminating or splicing at a junction, outlet, or switch box, cut the cable with an armored cable rotary cutter that 6" of free conductors remain for connecting to a wire screw-in or spring lock connector and ensure a proper bend by firmly lightening the connector to both the box and cable. Insert an anti-short bushing at cable ends to protect conductors from abrasion and use the outside diameter of the cable to determine the size of the bushing.
 - MC Cable bend radius shall not be less than seven (7) times the external diameter of the cable.
 - MC cables passing through fire-rated walls or floors shall be firestopped as required with a UL listed system. See firestopping requirements outlined elsewhere in this specification for additional requirements.
 - Installation shall not exceed code requirements for total current-carrying conductors in multiple MC cable runs banded together into a single MC cable hanger or strap, unless support device is specifically listed for such purpose. Neutrals shall be counted as current-carrying conductors.
 - Maintain MC cable clearance of at least 6" from hot water and any other high temperature piping and electrical equipment. Maintain MC cable clearance to telecommunication conduits and cables. MC cable shall cross telecommunication cables and conduits at right angles.
 - MC cabling shall not be run through exposed ceilings, where open grid conditions exist, exposed to view, or through inaccessible areas. See Power Plan and Lighting Plan General Notes for additional requirements.
 - Use of MC-AP, "MC All Purpose" or MC cabling where the interlocked armor sheath forms all or a portion of the equipment grounding conductor is expressly prohibited.
- Installation of Electrical Nonmetallic Tubing (ENT) Cable (when use is permitted in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawing):
 - When approved for use in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section, generally located on the symbols list drawings, 1/2" and larger trade size ENT shall be allowed for concealed branch circuits, receptacle branch circuits and miscellaneous signal system circuits within concrete floors, walls and columns within parking structures.
 - ENT conduit shall meet the requirements of Underwriters Laboratories Standards 7479 and 1855, NEMA 12C-13, and all other applicable codes and standards.
 - All ENT conduit, ENT fittings, ENT boxes and ENT accessories shall be UL listed and manufactured by the same manufacturer or used as to form a complete ENT system. ENT systems shall only be used if they are listed for use in fire resistance rated concrete floors and ceilings with resistance ratings as indicated elsewhere in the project plans. ENT System shall comply with NEC, or CEC where adopted, Article 362.
 - All ENT fittings and ENT boxes shall be concrete-tight listed without the use of tape. Additionally, ENT fittings shall be constructed of high-impact PVC and able to resist impact of 50 lb. ball falling from a minimum of 175 lbs. ENT fittings with fewer than 6 locking tabs for ENT connection shall utilize manufacturer-approved glue as additional protection from fitting/conduit separation. ENT conduit to rigid conduit transition fittings shall be equipped with set screw fittings on the rigid conduit side of the fitting. ENT to metal box fittings shall be equipped with a threaded end and lock washer.
 - Where tubing enters a box, fitting or other enclosure provide a bushing or adapter to protect conductors from abrasion unless the box, fitting, or enclosure design provides electrical equipment protection.
 - ENT junction boxes shall have brass screw inserts and shall be rated to support lighting fixtures weighing less than 50 lbs.
 - Concrete tight metal boxes shall be used to support pendant hung fixtures or fixtures over 50 lbs.
 - ENT shall be provided in continuous lengths between junction boxes without use of in-line splices or connectors and shall be clearly marked/labeled at least every 100-feet.
 - All ENT equipment containing electrical branch circuits shall contain a code-sized equipment ground conductor.
 - ENT shall transition to EMT, IMC, RMC, or rigid PVC, as appropriate or as called out elsewhere in this specification, for all exposed conduits within/on/under a parking structure.
 - ENT shall transition to appropriately sized PVC expansion joint(s) at all structure expansion or seismic joints.
 - ENT shall be securely fastened and supported every 2 – 3 ft. and within 1 ft. of every junction box and fitting to prevent movement and sag.
 - ENT shall be routed straight without sags, or excessive bending. Where bends are required, comply with Table 362.24 of the NEC for minimum radius of bend in a run. Number of bends shall not exceed quantity allowed by code where used for power and lighting branch circuit and/or feeder conductors. Where utilized for communications system conductors (phones, data cable, etc.) number of bends shall not exceed the equivalent of (2) 90 degree bends with conduit length no more than 100 feet without installation of a TIA 569-compliant pull box.
 - Separation of ENT from fitting(s), excessive sags or deflections in ENT runs that prevent pulling of wire, and other ENT system installation or system installation failures/errors, shall be corrected by saw cutting and patching as necessary at no additional cost to the Owner. Use of surface mounted conduits and junction boxes as a repair method is unacceptable.
 - Empty ENT runs shall be provided with a nylon pull string.
 - Coordinate installation of raceway with structural steel and other structural members. Do not cut, notch or otherwise alter structural members without obtaining approval in writing from the Structural Engineer of Record.
 - No more than (2) 3/4" ENT conduits may cross each other within a horizontal concrete slab without obtaining approval in writing from the Structural Engineer of Record.
- Installation of 600V Conductors:
 - All electrical wire, including signal circuits, shall be installed in conduit.
 - All circuits and feeder wires for all systems shall be continuous from overcurrent protective device to termination point. No splicing or tapping shall be made except in pull, insulated or outlet boxes, or in panel or switchboard gutters.
 - Utilize pre-insulated "wired" spring type connectors, 3M Company "Performance Plus" #0/B or #R/Y or equal and as required for splices and taps in conduits #6 AWG and smaller. When a spring connector is used in an underground environment or when subject to moisture, utilize a 3M Company Scotchcast 3507G epoxy resin conductor sealing pad to seal the spring connector. THE USE OF PUSH-WIRE CONNECTORS (e.g. "MAGO" OR EQUIVALENT) IS STRICTLY PROHIBITED.
 - Wires #4 AWG and larger AWG shall be joined together as follows:
 - 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 cold shrink connector insulator.

- When located in an interior environment, the splice shall be made with an LISCO or equal dual rated, insulated splice-reducer connector or multi-tap connector listed for use with 75/90 degree Celsius rated conductors.
 - 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.
 - Install UL approved fixture wires from all lighting fixture lamp sockets into fixture outlet or junction boxes.
 - For 20A branch circuit wiring, increase #12 conductors to #10 for 120V circuits longer than 100 feet and for 277V circuits longer than 150 feet.
 - 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:
- Provide grounding and bonding for entire electrical installation as shown on plans, as listed herein, or as required by applicable codes. Included, but not limited to, are items that require grounding/bonding:
 - Conduit, raceways and cable trays.
 - Neutral or identified conductors of interior wiring system.
 - Panel boards, distribution boards, Switchgear and Switchboards.
 - Non-current carrying metal parts of fixed equipment.
 - Telephone distribution equipment.
 - Transformers, Inverters, UPS, PDU, RDC, Transfer Switch and Generator Systems.
 - Raised Flooring.
 - Exposed metal in maintenance hoods, hand holes.
 - Lighting Protection Systems and antennas.
 - Metal piping installed in or attached to a building/structure.
 - Metallically isolated structural steel.
 - Metallically isolated underground metal water piping.
 - Elevator hydraulic piston/lift case.
 - 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 NEC, or CEC where adopted, Article 250.104(A)(2) and (3), the bonding conductor shall be sized per Table 250.122 and connected to the switchboard/panelboard serving that occupancy.
 - Use of Ground Rods: Furnish and install required number of 3/4" x 10' copper clad ground rods to meet specified resistance, all required grounding wires, conduit and clamps. The size of the grounding conductors shall be not less than that set forth in the latest edition of the California Code of Regulations, Title 24, State of California and NEC (or CEC where adopted), unless otherwise indicated. Rods shall be installed such that at least 10 feet of bare rod is exposed to earth. Where rock bottom is encountered, the electrode shall be driven at an oblique angle not to exceed 45 degrees from vertical or shall be buried in a trench that is at least 30 inches deep. The upper end of the electrode shall be encased in a concrete or other non-combustible material. The end and the grounding electrode conductor attachments are protected against physical damage. Unless otherwise noted, connection to the grounding electrode conductor may be the outdoor-seal type or exothermic process connector. Mechanical connectors shall not be used.
 - Grounding System Connection:
 - Compression connectors shall be unlapped copper, manufactured by Burndy, or approved equal, designed specifically for the intended connection.
 - Exothermic weld-type connectors shall be "Codelweld" manufactured by Erico Products, or approved equal, designed specifically for the intended connection.
 - Mechanical connectors shall not be used.
 - Isolated Ground Receptacles shall have an insulated ground wire connected between the receptacle and the panelboard isolated ground bus. Unless otherwise noted, this ground wire shall not be grounded at any other point, and shall be distinguished from other ground wires by a continuous yellow stripe.
 - Provide separate green equipment ground conductor in all electrical raceways to effectively ground all fixtures, panels, controls, motors, disconnect switches, exterior lighting exposed to view, and non-current-carrying metal enclosures. Use bonding jumpers, grounding bushings, lugs, buses, 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 NEC or CEC where adopted, Table 250.122 for conductor size with phase conductors #8 and larger, if not shown on the Drawings.
 - Clean the contact surfaces of all ground connections prior to making connections.
 - Ductwork: Provide a flexible ground strap, No. 6 AWG equivalent, at each flexible duct connection at each air handler, exhaust fan, and supply fan, and install to preclude vibration.
 - 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 nuts shall be bronze or corrosion resistant.
 - Building grounding system resistance to ground shall not exceed 25 ohms unless otherwise specified on drawings. All ground conductors shall be tested.
 - Line Voltage and Low Voltage Power Supplies to all Mechanical Equipment including Plumbing, Heating and Air Conditioning Units:
 - An electric power supply, including conduit, any necessary junction and/or outlet boxes and conductors and connection shall be furnished and installed by the Contractor for each item or mechanical equipment.
 - Power supplies to individual items of equipment shall be terminated in a suitable outlet or junction box adjacent to the respective item of equipment, or a junction box provided by the manufacturer or the equipment and directed by the Mechanical Contractor. Allow sufficient lengths of conductor all connection to permit connection to the individual equipment without breaking the wire run.
 - The location of all conduit terminations to the equipment is approximate. The exact location of these conduit terminations shall be located and installed as directed by the Mechanical or Plumbing Contractor.
 - Provide power supplies to all plumbing and mechanical equipment, including, but not limited to equipment furnished and installed by Owner or Contractor, such as heating and air conditioning equipment, pumps, boilers, auto valves and water coolers, etc. The installation shall produce a complete and operable system.
 - Unless otherwise noted, the Contractor shall furnish and install all conduit, boxes, wires, etc., for line voltage wiring and low voltage wiring.
 - It is the Contractor's responsibility to verify with the drawings of other trades regarding the extent of his responsibility for mechanical equipment. The bid must include a sum sufficient to cover the cost of the installation.
 - The location of all power supply connection and/or terminations to the mechanical equipment is approximate. The exact locations of these terminations shall be verified with other trades during construction.
 - 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.
 - Firestopping:
 - The Contractor shall be responsible for furnishing all material, labor, equipment, and services in conjunction with the selection and installation of a complete, fully functioning, code compliant, UL-listed, fire stop assembly/system(s) as required by project conditions.
 - Each fire stop assembly/system shall have an "F" and/or "M" rating as required by each condition requiring fire stopping. Each fire stop assembly/system shall have a current UL listing, as indicated in the latest edition of the UL 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 for each side of the fire stopping systems depicting UL number, etc.
 - Unless otherwise noted above, provide a minimum 1-1/2" high hosekeeping pad above finished floor/finished grade for all interior floor-mounted switchgear, distribution boards, transformers, motor control centers, etc. The face of the equipment, located in mechanical control plant(s), other mechanical spaces, and located outdoors, pads shall be flush with the face of the equipment. Confirm pad dimensions with local inspector prior to forming pad to ensure any local code interpretations/conditions are met regarding hosekeeping pads.
 - Provide a 1-1/2" high hosekeeping pad above finished floor/finished grade for service equipment. Prior to pad rough-in, Contractor shall verify serving utility company's maximum meter height requirements and, if necessary, adjust height of hosekeeping pad to comply with those requirements. In indoor applications, the pad shall be flush with the face of the switchgear. In outdoor applications, the hosekeeping pad shall extend a minimum of 4 feet from the front of switchgear's weatherproof enclosure. Confirm pad dimensions with local inspector prior to forming pad to ensure any local code interpretations/conditions are met regarding hosekeeping pads.
 - All hosekeeping pads located in, or attached to a building shall be seismically braced/connected to the building structure.
- END OF SECTION



Project Leader:
Nicholas Blum
tksc Job #: B2304900.00



FIRE ALARM NOTES

- WALL MOUNTED, AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM ABOVE THE FINISHED FLOOR, AND NO CLOSER THAN 6" TO A HORIZONTAL STRUCTURE. (NFPA 72, SECTION 18.4.8.1). ALL WALL MOUNTED VISUAL APPLIANCES AND COMBINATION AUDIBLE/VISUAL APPLIANCES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM ABOVE FINISHED FLOOR AS MEASURED TO THE LENS. (NFPA 72, SECTION 18.5.5.1)
- ALL EQUIPMENT SHALL BE U.L. AND C.S.F.M. LISTED.
- ALL FIRE ALARM WIRING SHALL BE FLP (FIRE POWER LIMITED) OR FPLP (FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THIN OR THWN.
- PER THE CEC, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6" OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC AND SHALL HAVE THEIR COVERS PAINTED RED WHERE APPLICABLE.
- DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM ELECTRICAL ENGINEER. ALL EXPOSED CONDUIT SHALL BE PROTECTED BY ADDITIONAL PARTS, ENGINEERING, ETC., THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- ALL FAN SHUTDOWN FUNCTIONS, DAMPER CLOSURES AND ASSOCIATED MECHANICAL SYSTEM FIRE ALARM INTERFACE SHALL BE BY MECHANICAL CONTRACTOR, AND SHALL BE COORDINATED WITH FIRE ALARM SYSTEM.
- ALL DUCT SMOKE DETECTORS SHALL BE MOUNTED BY THE MECHANICAL CONTRACTOR. DUCT SMOKE DETECTORS EXPOSED TO THE WEATHER SHALL BE C.S.F.M. LISTED FOR OUTDOOR INSTALLATION, AND WEATHER PROTECTED BY THE MECHANICAL CONTRACTOR. ALL AIR VELOCITY TESTING SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR.
- ALL FIRE ALARM DEVICE BACKBOXES, FIRE ALARM TERMINAL CABINETS, OUTTERS, 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.
- SMOKE DETECTOR TESTING SHALL BE PERFORMED TO ENSURE THAT EACH DETECTOR IS WITHIN ITS LISTED AND MARKED SENSITIVITY RANGE USING THE METHODS RECOMMENDED PER CFC, SECTION 907.8.4 AND NFPA 72, SECTION 14.4.4.3.4.
- 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.
 - INITIATING DEVICE CIRCUITS (DC): CLASS B
 - SIGNALING LINE CIRCUITS (SLC): CLASS B
 - NOTIFICATION APPLIANCE CIRCUITS (NAC): CLASS B

- ALL WIRING SHALL BE CUT FOR IN AND OUT. WIRING SHALL NOT BE LOOPED THROUGH DEVICES.
- POINT AND COMMON ANNUNCIATION AND T-TAPPING ARE PROHIBITED. (T-TAPPING IS ALLOWABLE ON SLC LOOPS).
- PROVIDE 3/4" CONDUIT FROM FIRE ALARM CONTROL PANEL TO TELEPHONE BACKBOARD FOR OWNER PROVIDED CENTRAL STATION MONITORING, WHEN APPLICABLE.

- CONTRACTOR TO FIELD VERIFY AND PROVIDE DECIBEL METER FOR TESTING OF AMBIENT NOISE LEVELS AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR 5 DBA ABOVE THE MAXIMUM SOUND LEVEL BUT NOT MORE THAN 110 DBA AT THE MINIMUM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS. (CFC, SECTION 907.5.2.1.1) THE CONTRACTOR SHALL ADJUST ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS. PROVIDE UPDATED PLANS AND CALCULATIONS THROUGH THE "CHANGE ORDER" PROCESS WHEN INSTALLING ADDITIONAL DEVICES.
- VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15-CANDELLA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.

- ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, APPROVED SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANNER AS INDICATED ON THE DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS. ALL CONDUITS SHALL BE 3/4" MINIMUM. CONTRACTOR TO VERIFY CONDUIT FILL PRIOR TO INSTALLATION.
- ALL FLOW SWITCHES SHALL BE 2 WIRE WITH NON-ELECTRONIC RETARD TYPE SIMILAR TO THE SYSTEM SENSOR MODEL "WFD SERIES" ONLY.
- ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- SYSTEM SHALL BE FURNISHED AND INSTALLED BY AN AUTHORIZED DISTRIBUTOR.
- FIRE ALARM SYSTEM INSTALLATION COMPANY SHALL BE UL LISTED (UUUS).

- FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURER'S SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
- SMOKE DETECTOR SHALL NOT BE ANY CLOSER THAN 1 FOOT FROM FIRE SPRINKLERS OR 3 FEET FROM ANY SUPPLY DIFFUSER. IN THE AREA OF CONSTRUCTION OR WHERE POSSIBLE DAMAGE/CONTAMINATION COULD OCCUR ON NEWLY INSTALLED FIRE ALARM DEVICES, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER. DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO FINAL CLEAN-UP BY ALL TRADES SHALL BE CLEANED OR REPLACED IN ACCORDANCE WITH CFC, SECTION 907. CLEANING OR REPLACEMENT OF DEVICES THAT WERE MOUNTED AT THE REQUEST OF THE CONTRACTOR WILL NOT BE PERFORMED WITHOUT WRITTEN AUTHORIZATION THAT ASSUMES FINANCIAL RESPONSIBILITY FOR COSTS INCURRED. TESTING OF DETECTORS SHALL BE PERFORMED PER NFPA 72, SECTION 14.4.5.3 AND CFC, SECTION 907.8.4.

- PER CBC, SECTION 11B-309 ACTIVATION OF INITIATING DEVICE SHALL NOT REQUIRE MORE THAN 5 LBS. (22.2N) OF FORCE OR REQUIRE TIGHT GRASPING PINCHING, OR TWISTING OF WRIST.
- THE SYSTEM SHALL CONFORM TO CALIFORNIA CODE OF REGULATIONS (CCR) TITLES 19 AND 24 AS APPLICABLE TO THIS PROJECT.

- THE VOICE/ALARM COMMUNICATION SYSTEM VOICE MESSAGE SHALL COMPLY WITH NFPA 72, SECTIONS 18.4 AND 24.4 FOR GENERAL REQUIREMENTS, INTELLIGIBILITY, AUDIBILITY, MESSAGE PRIORITY, TONES, ETC.

- A DEDICATED 120V 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 AND BE LABELED AS FOLLOWS:
 - "FIRE ALARM" FOR FIRE ALARM SYSTEMS
 - "EMERGENCY COMMUNICATIONS" FOR EMERGENCY COMMUNICATION SYSTEMS, OR
 - "FIRE ALARM/ECS" FOR COMBINATION FIRE ALARM AND COMMUNICATIONS SYSTEMS.

- WHERE A DETECTOR IS INSTALLED ABOVE THE CEILING, THE DETECTOR SHALL BE EASILY ACCESSIBLE AND THE LOCATION OF THE DETECTOR SHALL BE CLEARLY MARKED. FOR DUCT SMOKE DETECTORS A REMOTE TEST STATION SHALL BE PROVIDED. ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS THAT REQUIRE SERVICING, TROUBLE SHOOTING, ETC.

- THE "END OF LINE RESISTANCE" OF EACH CIRCUIT SHALL BE TESTED IN THE PRESENCE OF THE I.O.R. AND SHALL NOT EXCEED THE LISTED MANUFACTURER'S MINIMUM OPERATING VOLTAGE.

- UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE LISTED FOR WET LOCATIONS, IN ACCORDANCE WITH CEC, SECTIONS 110.11, 300.5(B), 300.6, 300.9, 310.10, AND 760.3(D).

- FIRE ALARM SYSTEM IS A FULLY AUTOMATIC SYSTEM. CONTRACTOR TO UTILIZE AREA COVERAGE SMOKE DETECTORS AND ADDRESSABLE CONTROL RELAYS FOR THE SHUTDOWN AND/OR CLOSURE OF HVAC UNITS AND COMBINATION SMOKE/FLAME CONTROL RELAYS TO BE LOCATED WITHIN 3FT OF THE CONTROLLED CIRCUIT OR APPLIANCE PER NFPA 72, SECTION 21.2.4.

- PROVIDE (VIA CHANGE ORDER PROCESS) APPROPRIATE MANUFACTURER PRODUCT DATA SHEETS AND APPLICABLE CSM LISTINGS FOR ALL SUBSTITUTED MANUFACTURER'S MATERIAL, EQUIPMENT OR APPLIANCES, TO DSA PRIOR TO START OF INSTALLATION.

- CONTRACTOR SHALL PROVIDE FIRE WATCH FOR ALL OCCUPIED AREAS OF WORK WHERE THE REQUIRED FIRE ALARM SYSTEM IS OUT OF SERVICE FOR THE DURATION OF THE SYSTEM OUTAGE. FIRE WATCH AND SYSTEM/EQUIPMENT SHALL BE PER CFC, SECTION 901.7.

- EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72. THE OPERATION OF ANY AUTOMATIC FIRE DETECTOR, SPRINKLER WATERFLOW DEVICE OR MANUAL FIRE ALARM BOX SHALL AUTOMATICALLY SOUND AN ALERT TONE FOLLOWED BY VOICE INSTRUCTIONS GIVING APPROVED INFORMATION AND DIRECTIONS FOR A GENERAL OR STAGED EVACUATION IN ACCORDANCE WITH THE FIRE SAFETY EVACUATION PLANS REQUIRED BY CFC, SECTION 404 PER CBC/CFC, SECTION 907.5.2.2

- EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL HAVE THE CAPABILITY TO BROADCAST LINE VOICE MESSAGES BY PAGING ZONES ON A SELECTIVE AND ALL-CALL BASIS PER CBC/CFC, SECTION 907.5.2.2.2

- EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS SHALL BE PROVIDED WITH AN APPROVED EMERGENCY POWER SOURCE PER CBC/CFC, SECTION 907.5.2.2

- UPON DETECTION OF CARBON MONOXIDE THE FIRE ALARM SYSTEM SHALL PRODUCE A FOUR-PULSE TEMPORAL PATTERN SIGNAL WITHIN THE BUILDING AND COMPLY WITH NFPA 720, SECTION 5.8.6.5.

- ALL MEMBRANE AND THROUGH-PENETRATIONS OF RATED ASSEMBLIES SHALL BE PROTECTED BY AN APPROVED FIRE STOP SYSTEM AS IDENTIFIED IN CBC, CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE FIRE ALARM SECTION OF THE PROJECT SPECIFICATIONS.

- CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.

MFP EQUIPMENT ANCHORAGE NOTE:

ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16, CHAPTERS 13, 26 AND 30.

- ALL PERMANENT EQUIPMENT AND COMPONENTS.
- TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (EG. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220V RECEPTACLES HAVING A FLEXIBLE CABLE.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY THE 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:

- COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- 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 THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8, AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1616A.1.26

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

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

- MFC MDC PPO PPE OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
 MFC MDC PPO PPE OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) #0052-13 & #0043-13.

PLAN REVIEW REQUIREMENTS AND APPLICABLE CODES AND STANDARDS

- FIRE ALARM PLAN REVIEW
 - FIRE ALARM PLAN REVIEW
 - AS PART OF THE FIRE ALARM PLAN REVIEW, PLANS AND SPECIFICATIONS FOR THE FIRE ALARM SYSTEM HAVE BEEN INCLUDED FOR REVIEW AND COMMENT BY THE DIVISION OF THE STATE ARCHITECT, FIRE & LIFE SAFETY.
 - THE FLOOR PLANS AND SPECIFICATIONS INCLUDE THE FOLLOWING LOCATIONS OF ALL ALARM-INITIATING AND SIGNALING DEVICES, CONTROL AND TROUBLE SIGNALING EQUIPMENT (FIRE ALARM CONTROL PANEL, BUILDING ANNUNCIATION (FIRE ALARM ANNUNCIATOR)).
 - FIRE ALARM COMPONENTS
 - PROVIDE CALIFORNIA STATE FIRE MARSHAL LISTING SHEETS AND U.L. LISTING NUMBERS FOR EACH COMPONENT.
 - EQUIPMENT POWER CONNECTIONS.
 - RISER DIAGRAM SHOWING EACH COMPONENT.
 - VOLTAGE DROP CALCULATIONS.
 - POWER CONNECTIONS TO APPLICABLE COMPONENTS.
 - WIRE AND/OR CABLING TYPES AND SIZES.
 - PROVIDE CATALOG DATA SHEETS FOR ALL FIRE ALARM SYSTEM COMPONENTS.
 - CONTRACTOR TO FURNISH STATEMENT OF COMPLIANCE BEFORE REQUESTING FINAL APPROVAL OF INSTALLATION IN ACCORDANCE WITH CFC, SECTION 901.2.1.
 - A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE PROJECT INSPECTOR AND, IF APPLICABLE, LOCAL FIRE AUTHORITY.
 - THE INSTALLER SHALL SUPPLY THE OWNER WITH A WRITTEN OPERATING, TESTING AND MAINTENANCE INSTRUCTIONS, POINT-TO-POINT AS BUILT DRAWINGS AND EQUIPMENT SPECIFICATIONS. AS BUILT RECORDS SHALL BE MAINTAINED ON PREMISES FOR A MINIMUM OF THREE YEARS PER CFC, SECTION 901.6.3.
 - SCOPE OF WORK
 - INSTALL A FULLY AUTOMATIC, ADDRESSABLE, FIRE ALARM SYSTEM WITH AN EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM WITHIN ALL BUILDINGS IN SCOPE OF PROJECT AS DEFINED PER CFC, SECTION 907.2.3 AND NFPA 72.
 - FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE U.L. LISTED AS UJFX (CENTRAL STATION) PER CFC, SECTION 907.6.6.3.
 - FIRE SPRINKLER SYSTEM UTILIZED FOR HEAT DETECTION IN ALL ABOVE CEILING, ATTIC SPACES AND CONCEALED COMBUSTIBLE AREAS. PROVIDE HEAT DETECTORS WHERE FIRE SPRINKLERS HAVE BEEN OMITTED PER NFPA 72 AND NFPA 13.
- LIST OF FEDERAL CODES AND STANDARDS (if applicable)

For Title II: Uniform Federal Accessibility Standards (UFAS) or ADA Standards for Accessible Design (Appendix A of 28 CFR Part 36.)
 For Title III: ADA Standards for Accessible Design (Appendix A of 28 CFR Part 36.)
 Americans with Disabilities Act Accessibility Guidelines (ADAAG) (with amendments through September 2002)
- PARTIAL LIST OF APPLICABLE NFPA STANDARDS:

NFPA 13—Automatic Sprinkler Systems (CA Amended)	2022 Edition
NFPA 14—Standpipes Systems (CA Amended)	2019 Edition
NFPA 17—Standard for Dry Chemical Extinguishing Systems	2021 Edition
NFPA 17A—Standard for Wet Chemical Systems	2021 Edition
NFPA 20—Installation Stationary Pumps for Fire Protection	2019 Edition
NFPA 24—Installation of Private Fire Service Mains (CA Amended)	2019 Edition
NFPA 72—National Fire Alarm and Signaling Code (CA Amended)	2022 Edition
NFPA 80—Fire Door 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 Standards on Bleachers, Folding and Telescoping Seating and Grandstands	2017 Edition
UL 38—Manual Operating Signal Boxes (with revisions through February 2, 2005 as amended)	1999 Edition
UL 268—Smoke Detectors for Fire Alarm Systems	2016 Edition
UL 268A—Smoke Detectors Duct Applications (with revisions through October 22, 2003 as amended)	2009 Edition
UL 300—Fire Testing of Fire Extinguishing Systems for Protection Of Restaurant Cooking Areas (with revisions through December 2014 as amended)	2005 Edition
UL 464—Audible Signal Appliances (with revisions through October 10, 2003 as amended)	2003 Edition
UL 521—Heat Detectors for Fire Protective Signaling Systems (with revisions through July 20, 2005 as amended)	1999 Edition
UL 864—Control Units for Fire Protective Signaling Systems (with revisions through March 2018)	2014 Edition
- Reference code section for NFPA Standards—2022 CBC (SFM) Chapter 35
 See Chapter 35 for State of California amendments to NFPA Standards.
- See Chapter 35 for State of California amendments to NFPA Standards.

SEQUENCE OF OPERATIONS

ACTION	DEVICE	120 VOLT POWER FAILURE	SYSTEM TROUBLE/WIRING FAULT or OPEN	MANUAL FULL-OPEN	AREA DETECTOR	AREA OF ATTIC HEAT DETECTOR
SOUND CONTROL PANEL TROUBLE BUZZER		YES	YES	NO	NO	NO
SOUND CONTROL PANEL SUPERVISORY BUZZER		NO	NO	NO	NO	NO
SOUND CONTROL PANEL ALARM BUZZER		NO	NO	YES	YES	YES
ACTIVATE RELAY FOR CENTRAL STATION MONITORING		YES	YES	YES	YES	YES
ANNUNCIATE AT FIRE ALARM CONTROL PANEL (ALARM or TROUBLE)		YES	YES	YES	YES	YES
ANNUNCIATE AT REMOTE ANNUNCIATOR PANEL (ALARM or TROUBLE)		YES	YES	YES	YES	YES
ACTIVATE NOTIFICATION (AUDIBLE/VISUAL) ALARM SIGNAL THROUGHOUT BLDG		NO	NO	YES	YES	YES
SHUT DOWN ASSOCIATED AIR HANDLING (HVAC) THROUGHOUT BUILDING		NO	NO	NO	YES	NO
NOTIFY FIRE DEPARTMENT VIA MONITORING STATION		NO	NO	YES	YES	YES

FIRE ALARM SYMBOL LIST

SYMBOL	DESCRIPTION	MODEL	MANUFACTURER	BACKBOX	MOUNTING HEIGHT	C.S.F.M. NUMBER
[VCEP]	EXISTING CONTROL PANEL W/VOICE EVACUATION SYSTEM KIT	#4005	SIMPLEX	EXISTING	EXISTING	EXISTING
[VCEPS]	EXISTING VOICE EVACUATION POWER SUPPLY	#4009-9201	SIMPLEX	EXISTING	EXISTING	EXISTING
[FAPS]	EXISTING VISUAL POWER SUPPLY	#2081-9272	SIMPLEX	EXISTING	EXISTING	EXISTING
[SD]	AREA SMOKE DETECTOR (ADDRESSABLE/PHOTO.)	4098-9714 7098-9792(BASE)	SIMPLEX	4S DEEP BOX W/ 3-0 RING	CEILING	7272-0026:0218
[HD]	AREA HEAT DETECTOR (ADDRESS/FIXED 200FF)	4098-9614 4098-9788(BASE)	SIMPLEX	4S DEEP BOX W/ 3-0 RING	ABOVE ACCESSIBLE CEILING, I.O.R.	7270-0026:0221
[KS] WP	WEATHERPROOF FIRE ALARM SPEAKER	4902-9716	SIMPLEX	PROVIDE WP BACKBOX	90" A.F.F. TO TOP	7320-0026:0242
[SP] cd	FIRE ALARM SPEAKER/STROBE (CEILING)	4906-9154	SIMPLEX	4S DEEP BOX W/ 4S EXTENSION	CEILING	7320-0026:0247
[SYNC]	FIRE ALARM SYNC MODULE	4905-9815	SIMPLEX	4S DEEP BOX	VERIFY IN FIELD	7300-0026:0315
[J]	FIRE ALARM JUNCTION BOX	N/A	BY ELECTRICIAN	4S BOX, U.N.O.	VERIFY IN FIELD	N/A
E.O.L. (E)	END OF LINE RESISTOR EXISTING DEVICE		U.N.O.	UNLESS NOTED OTHERWISE VERIFY LOCATION IN FIELD		
F.B.O. TSP	FURNISHED BY OTHERS TWISTED SHIELDED PAIR		WP cd	WEATHERPROOF DEVICE INDICATED CANDELA RATING OF STROBE DEVICE		

- CONFIRM NOTIFICATION DEVICE COLOR (WHITE OR RED) WITH ARCHITECT PRIOR TO ANY ORDER OR INSTALLATION. COLOR TO BE INDICATED IN SHOP DRAWING SUBMITTAL.
- ALL NOTIFICATION DEVICES ARE TO HAVE "FIRE" MARKINGS ON THE DEVICE PER MANUFACTURER'S LISTED OPTIONS.
- NUMBER ADJACENT TO VISUAL DEVICES INDICATES MINIMUM CANDELLA RATING OF STROBE DEVICE.

WIRING LEGEND

WIRE DESIGNATION	WIRE IN CONDUIT	WIRE IN CONDUIT UNDERGROUND/WET LOC.	UNDERGROUND/WET WIRE DESIGNATION
INITIATING CIRCUITS Z	2 CONDUCTOR #18 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	2 CONDUCTOR #18 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	INITIATING CIRCUITS ZU
POWER CKT. P	2 CONDUCTOR #14 THHN STRANDED	2 CONDUCTOR #12 STRANDED TYPE THWN	POWER CKT. PU
NETWORK CONTROL C	2 CONDUCTOR #12 THHN STRANDED	2 CONDUCTOR #12 STRANDED TYPE THWN	NETWORK CONTROL CU
ANNUNCIATOR D	4 CONDUCTOR #18 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	4 CONDUCTOR #18 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	ANNUNCIATOR DU
AUDIBLE LOOP B	2 CONDUCTOR #18 FPL TWISTED/ SHIELDED W/OVERALL JACKET	2 CONDUCTOR #18 FPL TWISTED/ SHIELDED W/OVERALL JACKET	AUDIBLE LOOP BU
AUDIBLE (SPEAKER) A	2 CONDUCTOR #16 FPL TWISTED/ SHIELDED W/OVERALL JACKET	2 CONDUCTOR #16 FPL TWISTED/ SHIELDED W/OVERALL JACKET	AUDIBLE (SPEAKER) AU
VISUAL (STROBE) V	2 CONDUCTOR #12 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	2 CONDUCTOR #12 FPL TWISTED/ UNSHIELDED W/OVERALL JACKET	VISUAL (STROBE) VU
S-BUS S	4 CONDUCTOR #16 FPLR (2 PAIR)	4 CONDUCTOR #16 FPLR (2 PAIR)	S-BUS SU

- NOTE:
- ALL WIRE TO BE CLASS 'B' PATHWAY SURVIVAL LEVEL 1.
 - ALL CABLING TO BE WEST PENN OR APPROVED EQUAL.
 - COLOR CODE ALL FIRE ALARM CONDUCTORS PER DISTRICT STANDARDS. VERIFY COLOR SCHEMES PRIOR TO ORDERING FIRE ALARM CONDUCTORS.

FIRE ALARM SYSTEM TESTING NOTES:

- INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATIONS, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.
- A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
- DISTRICT SHALL PROVIDE A CERTIFIED IMPARTIAL FIRE ALARM INSPECTOR. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
- 100% OF THE SYSTEM IN CONTRACT WILL BE TESTED AND INSPECTED WITH THE CONTRACTOR OR CONTRACTOR'S SUB AND DISTRICT'S ETS STAFF MEMBER PRESENT. INSPECTION WILL INCLUDE, BUT NOT BE LIMITED TO, REMOVING STROBES/HORNES TO CHECK FOR "T-TAPS", REMOVING J-BOX COVERS TO CHECK WIRE GAGE AND SPLICES.
- FOLLOW ALL REQUIREMENTS AND INSTRUCTIONS PROVIDED BY MANUFACTURER UPON INSTALLATION OF MANUFACTURER'S PRODUCTS AND DEVICES.
- PRIOR TO REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE FIRE CODE OFFICIAL THAT THE SUBJECT FIRE PROTECTION SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND HAS BEEN TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE APPROPRIATE INSTALLATION STANDARD. 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. ANY DEVIATIONS FROM THE DESIGN STANDARDS SHALL BE NOTED AND COPIES OF THE APPROVALS FOR SUCH DEVIATIONS SHALL BE ATTACHED TO THE WRITTEN STATEMENT. (CFC, SECTION 901.2.1)
- UPON COMPLETION OF SYSTEM INSTALLATION, THE SYSTEM SHALL BE TESTED IN THE PRESENCE OF AND IN A MANNER ACCEPTABLE TO DSA/I.O.R. CONTRACTOR SHALL SUPPLY NECESSARY TESTING EQUIPMENT, INCLUDING A "SOUND LEVEL METER" TO CHECK ACCEPTABLE NOISE LEVELS OF AUDIBLE DEVICES. PROVIDE TEST RESULTS PER NFPA 72 TO ARCHITECT, D.S.A., I.O.R. AND TO LOCAL FIRE AUTHORITY, PER CFC, SECTION 907.8.2.
- INSPECTION, TESTING AND MAINTENANCE SHALL BE IN COMPLIANCE WITH NFPA 72, CHAPTER 14. REACCEPTANCE TESTING SHALL BE IN COMPLIANCE WITH NFPA 72, SECTION 14.4.2.
- THE LOCAL FIRE AUTHORITY SHALL BE NOTIFIED FOR TESTING. THE FIRE AUTHORITY SHALL BE PRESENT AND SHALL BEAR WITNESS FOR TESTING PROCEDURES. DOCUMENTATION FOR WHETHER THE FIRE AUTHORITY WAS PRESENT AND WITNESSED TESTING SHALL BE DOCUMENTED AS PART OF TESTING PROCEDURES DOCUMENTATION.
- PRIOR TO COMPLETION OF FIRE ALARM SYSTEM THE TWO WAY COMMUNICATION SYSTEM SHALL BE TESTED AND CERTIFIED VIA NFPA 72 EMERGENCY COMMUNICATION SYSTEM SUPPLEMENTARY RECORD OF INSPECTION AND TESTING FORM.
- THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED RECORD OF COMPLETION PER NFPA 72, FIGURE 7.8.2(A) THROUGH (I) AS APPLICABLE. A COMPLETE RECORD OF THE TESTS AND OPERATIONS OF EACH SYSTEM SHALL BE KEPT UNTIL THE NEXT TEST AND FOR ONE YEAR AFTER PER NFPA 72, SECTION 7.7.1.
- FIRE ALARM SYSTEM DOCUMENTS SHALL BE HOUSED IN THE DOCUMENT CABINET, THE DOCUMENT CABINET SHALL BE INSTALLED AT THE SYSTEM CONTROL UNIT OR AT ANOTHER APPROVED LOCATION AT THE PROTECTED PREMISES AS REQUIRED BY NFPA 72, SECTION 7.7.2.
- THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CFC, SECTION 907.6.6. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING A FIRE ALARM SYSTEM MONITORING CONTRACT.
- THE VOICE/ALARM COMMUNICATION SYSTEM VOICE MESSAGE SHALL COMPLY WITH NFPA 72 SECTIONS 18.4 AND 24.4 FOR GENERAL REQUIREMENTS, INTELLIGIBILITY, AUDIBILITY, MESSAGE PRIORITY, TONES, ETC. REFER TO NFPA 72 ANNEX D, D.1 THROUGH D.6 FOR DETERMINING THE FUNDAMENTALS OF TEST PROTOCOL AND METHOD OF MEASURING INTELLIGIBILITY.

COMPLETE FIRE ALARM SUBMITTAL
 AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM WITH EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM



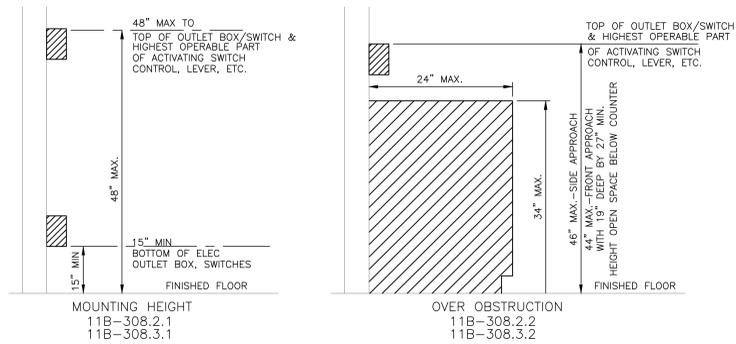
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 Project Leader:
 Nicholas Shum
 tkisc Job #: 82304900.00



RUTH GRIMES ELEMENTARY SCHOOL
 2023 PHASE 1 SITE UPGRADES
 (RESTROOM BUILDING AND SHADE SHELTER)
 COLTON JOINT UNIFIED SCHOOL DISTRICT

FIRE ALARM GENERAL NOTES & SYMBOLS

EFA-0.1

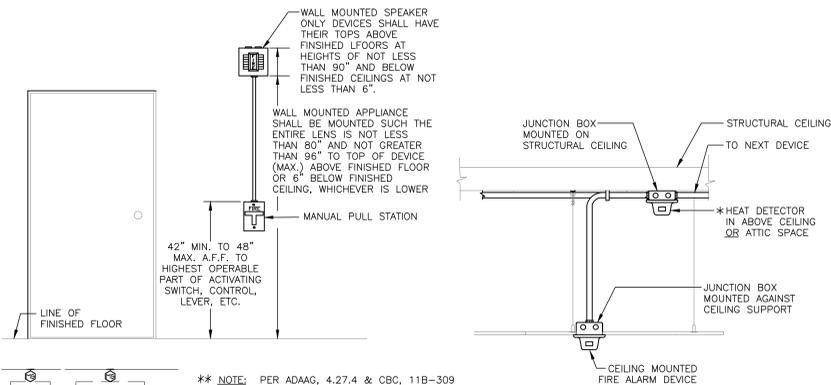


ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN RFI FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER - CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.

MOUNTING HEIGHT OVER OBSTRUCTION DETAIL

SCALE: NTS

6



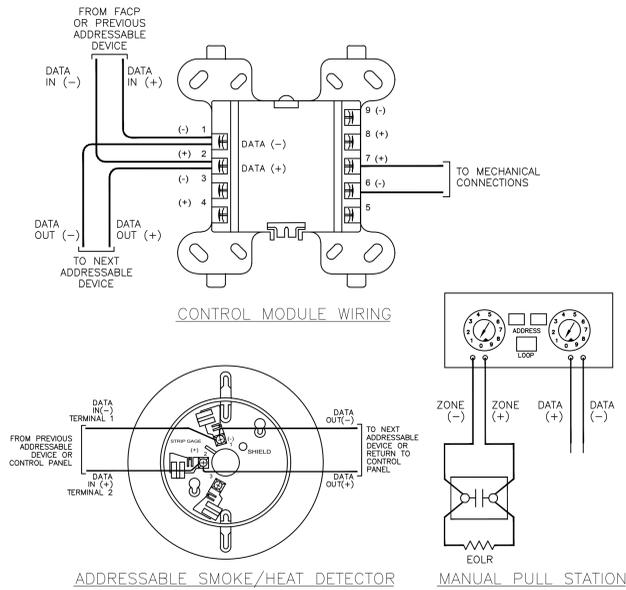
** NOTE: PER ADAAG, 4.27.4 & CBC, 11B-309 CONTROLS AND OPERATING MECHANISMS AT INITIATING DEVICE SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5lbf (22.2N).

* - TEMPERATURE SETTING OF HEAT DETECTOR DEVICE TO BE SET AT MINIMUM OF 20°F. ABOVE THE MAXIMUM EXPECTED TEMPERATURE OF THE SPACE INSTALLED PER NFPA 72, 17.6.2.3.

DEVICE MOUNTING DETAILS

SCALE: N.T.S.

5

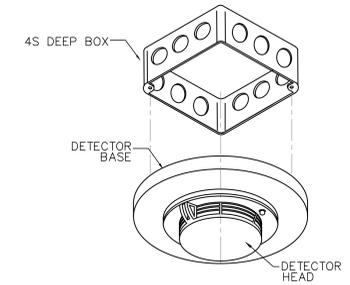


DEVICE WIRING DETAILS

SCALE: N.T.S.

4

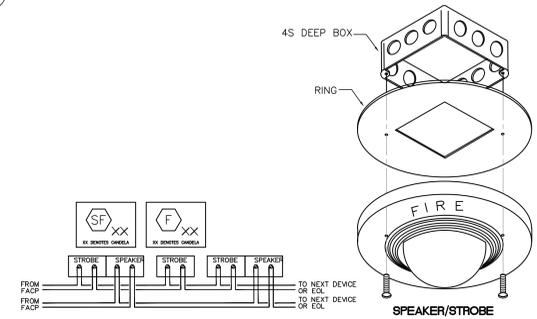
COMPLETE FIRE ALARM SUBMITTAL
AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM
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DETECTOR MOUNTING DETAIL

SCALE: N.T.S.

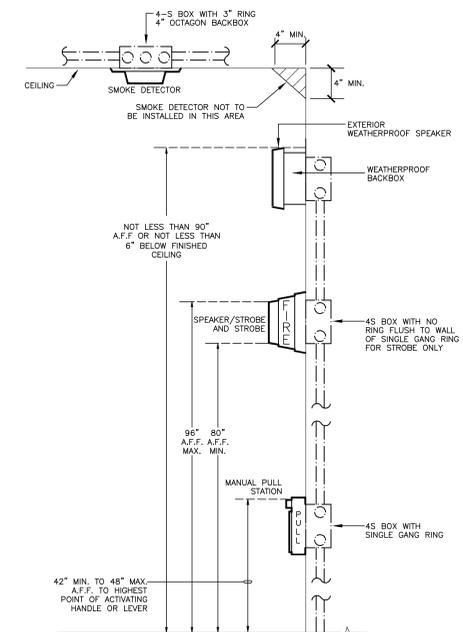
3



CEILING MTD. AUDIBLE/VISUAL

SCALE: N.T.S.

2



GENERAL NOTES:

1. THE ENTIRE LENS OF STROBE LIGHTS MUST BE BETWEEN 80° AND 96° ABOVE FLOOR FINISH. (NFPA 72, 18.5.5)
2. MANUAL FIRE ALARM BOXES SHALL BE INSTALLED IN ACCORDANCE WITH CFC, SECTIONS 907.4 THROUGH 907.5.
3. WHEN APPLICABLE, 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 TRAVEL DISTANCE TO THE NEAREST BOX DOES NOT EXCEED 200 FEET. (CFC, 907.4.2.1)

MOUNTING HEIGHT DETAIL

SCALE: N.T.S.

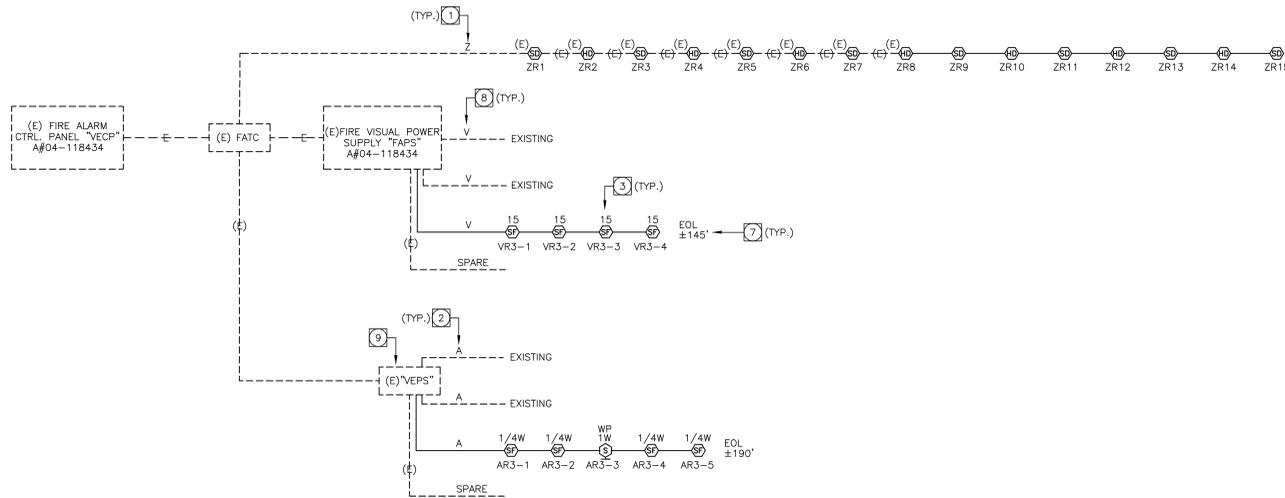
1

RISER DIAGRAM SPECIFIC NOTES:

- 1 "Z" INDICATES ZONABLE/ADDRESSABLE CIRCUIT, PROVIDE 2#16 TWISTED PAIR PER CIRCUIT, SEE WIRE LEGEND FOR ADDITIONAL INFORMATION.
- 2 "A" INDICATES AUDIBLE SPEAKER CIRCUIT, SEE WIRE LEGEND FOR ADDITIONAL INFORMATION.
- 3 NUMBER INDICATES CANDELA RATING OF STROBE DEVICE.
- 4 EXISTING (2) DEDICATED PHONE LINES (LAND LINES) FOR FIRE ALARM SYSTEM MONITORING WITH EXISTING UDACT (UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER).
- 5 EXISTING FIRE ALARM ANNUNCIATOR PANEL (FAMP), VERIFY WITH DISTRICT REPRESENTATIVE, A.H.J. AND ARCHITECT FOR EXACT LOCATION.
- 6 PROVIDE 3/4"Ø, WITH 2#12, 1#12 GRD, TO 120V DEDICATED CIRCUIT FOR POWER, PROVIDE 20AMP, 1-POLE CIRCUIT BREAKER WITH APPROVED LOCK-ON DEVICE, RED INDICATOR AND IDENTIFIED AS "FIRE ALARM CONTROL CIRCUIT" (NFPA 72, 10.5.5.2). CONNECT AS REQUIRED, PROVIDE ALL REQUIRED MOUNTING HARDWARE, MATCH A.I.C. RATING OF DEVICES USED.
- 7 INDICATES LENGTH OF WIRE IN FEET, SEE WIRING DIAGRAM FOR WIRE TYPES, SEE VOLTAGE DROP CALCULATIONS FOR PERCENT DROPPED AND ADDITIONAL INFORMATION.
- 8 "V" INDICATES VISIBLE STROBE CIRCUIT, SEE WIRE LEGEND FOR ADDITIONAL INFORMATION.
- 9 EXISTING FIRE ALARM VOICE EVACUATION POWER SUPPLY, A#04-118434

FIRE ALARM GENERAL NOTES:

1. NOTIFICATION DEVICES IN ROOMS CONTAINING (2) OR MORE AUDIBLE AND/OR (2) OR MORE VISUAL DEVICES SHALL BE SYNCHRONIZED PER N.F.P.A. 72, 2016 EDITION (WITH CALIFORNIA AMENDMENTS) THIS SHALL INCLUDE AUDIBLE AND VISUAL DEVICES LOCATED IN ADJACENT/ADJOINING SPACES.
2. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER / ENGINEER. 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 CONTRACTOR.
3. DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIR-FLOW, NOR CLOSER THAN 3 FEET (915 mm) FROM ANY AIR SUPPLY DIFFUSER.
4. THE AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCURABLE SPACE WITHIN THE BUILDING. (2019 CFC 907.5.2.1.1)
5. THE AUDIBLE ALARM SIGNAL SHALL BE THE STANDARD FIRE ALARM EVACUATION SIGNAL, ANSI S34.1 AUDIBLE EMERGENCY EVACUATION SIGNAL, "THREE PULSE TEMPORAL PATTERN", AS DESCRIBED IN NFPA 72, EXCEPTION: THE USE OF THE EXISTING EVACUATION SIGNALING SCHEME SHALL BE PERMITTED WHERE APPROVED BY THE ENFORCING AGENT. (2019 CFC 907.5.2.1.3)
6. THE EXISTING CAMPUS FIRE ALARM SYSTEM SHALL BE MAINTAINED AND OPERATIONAL AT ALL TIMES DURING ALTERATIONS AND CONSTRUCTION. WHEN PORTIONS OF THE SYSTEM REQUIRE ALTERATIONS, THE REMAINDER OF THE SYSTEM SHALL BE KEPT IN SERVICE. IF NECESSARY TO SHUT DOWN ENTIRE FIRE ALARM SYSTEM, CONTRACTOR SHALL PROVIDE A FIRE WATCH FOR ALL OCCUPIED AREAS OF WORK WHERE THE REQUIRED FIRE ALARM SYSTEM IS OUT OF SERVICE FOR THE DURATION OF THE SYSTEM OUTAGE. FIRE WATCH AND SYSTEM/EQUIPMENT IDENTIFICATIONS SHALL BE PER 2019 CFC 901.7. LOCAL FIRE AUTHORITY SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY SHUT DOWN.



FIRE ALARM RISER DIAGRAM

SCALE: N.T.S.

1

BATTERY SIZING CALCULATION			
PROJECT NAME:		RUTH GRIMES ES	
PANEL LOCATION:		ADMIN BUILDING	
DATE PERFORMED:		June 8, 2023	
VECP			
QTY.	DEVICE NAME	STD-BY (AMPS)	ALARM (AMPS)
EXISTING DEVICES			
-	EXISTING DEVICES	1.30100	14.73200
NEW DEVICES			
4	SMOKE DETECTOR	0.00027	0.00108
4	HEAT DETECTOR	0.00010	0.00040
TOTALS =		1.30248	14.75280
STAND-BY LOAD =		1.30248	ALARM LOAD = 14.75280 AMPS
STAND-BY TIME =		24	ALARM TIME = 15 / 60 HRS
STAND-BY =		31.2595	ALARM = 3.6882 AMP HRS
TOTAL =		STAND-BY +	ALARM
=		31.26	+ 3.69
=			34.95 Ah (AMP HRS)
MULTIPLY BY DERATING FACTOR OF 1.25 =			43.68 Ah (AMP HRS)
MINIMUM BATTERY SIZE = 43.68 AMPERE HOURS			
USE EXISTING (2) 65.00 AH 12VDC BATTERIES AS REQUIRED FOR 24VDC OPERATION			

BATTERY SIZING CALCULATION			
PROJECT NAME:		RUTH GRIMES ES	
PANEL LOCATION:		MODULAR CLASSROOM R1	
DATE PERFORMED:		June 8, 2023	
FAPS-R			
QTY.	DEVICE NAME	STD-BY (AMPS)	ALARM (AMPS)
EXISTING DEVICES			
-	Existing Devices	0.00000	0.03970
NEW DEVICES			
4	15cd STROBE (CEILING)	0.00000	0.07500
0	30cd STROBE (CEILING)	0.00000	0.12500
0	75cd STROBE (CEILING)	0.00000	0.23300
0	110cd STROBE (CEILING)	0.00000	0.36000
1	SYNC MODULE	0.00000	0.03300
TOTALS =		0.00000	0.37270
STAND-BY LOAD =		0.00000	ALARM LOAD = 0.37270 AMPS
STAND-BY TIME =		24	ALARM TIME = 15 / 60 HRS
STAND-BY =		0.0000	ALARM = 0.0932 AMP HRS
TOTAL =		STAND-BY +	ALARM
=		0.00	+ 0.09
=			0.09 Ah (AMP HRS)
MULTIPLY BY DERATING FACTOR OF 1.25 =			0.12 Ah (AMP HRS)
MINIMUM BATTERY SIZE = 0.12 AMPERE HOURS			
USE EXISTING (2) 6.00 AH 12VDC BATTERIES AS REQUIRED FOR 24VDC OPERATION			

BATTERY SIZING CALCULATION			
PROJECT NAME:		RUTH GRIMES ES	
PANEL LOCATION:		MODULAR CLASSROOM R1	
DATE PERFORMED:		June 8, 2023	
VEPS-R			
QTY.	DEVICE NAME	STD-BY (AMPS)	ALARM (AMPS)
EXISTING DEVICES			
-	Existing Devices	0.00000	0.04242
NEW DEVICES			
4	SPEAKER (70.7V, 1/4W)	0.00000	0.00354
0	SPEAKER (70.7V, 1/2W)	0.00000	0.00707
1	WP SPEAKER (70.7V, 1W)	0.00000	0.01414
0	WP SPEAKER (70.7V, 2W)	0.00000	0.02829
1	SYNC MODULE	0.00000	0.03300
TOTALS =		0.00000	0.10372
STAND-BY LOAD =		0.00000	ALARM LOAD = 0.10372 AMPS
STAND-BY TIME =		24	ALARM TIME = 15 / 60 HRS
STAND-BY =		0.0000	ALARM = 0.0259 AMP HRS
TOTAL =		STAND-BY +	ALARM
=		0.00	+ 0.03
=			0.03 Ah (AMP HRS)
MULTIPLY BY DERATING FACTOR OF 1.25 =			0.03 Ah (AMP HRS)
MINIMUM BATTERY SIZE = 0.03 AMPERE HOURS			
USE EXISTING (2) 6.00 AH 12VDC BATTERIES AS REQUIRED FOR 24VDC OPERATION			

VOLTAGE DROP CALCULATIONS - AV DEVICES			
RUTH GRIMES ES			
DEVICE	CURRENT (AMPS)	VISUAL CIRCUIT (V)	VISUAL CIRCUIT (V)
STROBE (CEILING) 15 CD	0.0750	4	0.000
SPEAKER (70.7V, 1/4W)	0.0035	0.000	4
SPEAKER (70.7V, 1/4W)	0.0141	0.000	1
SPEAKER (70.7V, 1W)		0.000	0.000
TOTAL CURRENT ON CIRCUIT		0.300	0.028
TOTAL WIRE LENGTH IN FEET		145	190
% VOLTAGE DROP		0.71	0.09
WIRE SIZE		#12	#16
CIRCUIT LOCATION		FAPS-R	VEPS-R
VOLTS DROPPED		0.14	0.02

VOLTAGE DROP CALCULATIONS GENERAL NOTES:

1. THE LISTED MANUFACTURE OPERATING VOLTAGE RANGE FOR EQUIPMENT AND DEVICES ARE AS FOLLOWS:
DEVICES = 16 - 33 VDC (STROBES), 70.7 VDC (SPEAKERS)
EQUIPMENT = +24VDC FILTERED, REGULATED
BATTERY = 20.4 VDC END OF USEFUL LIFE PER NFPA 72 HANDBOOK AND UL 864.
2. VOLTAGE DROP PERCENT FORMULA:
 $WIRE\ LENGTH \times TOTAL\ CURRENT\ AMPS \times 21.6 \times \frac{100}{CIRCULAR\ MILS \times 20.4}$
21.6 = CONSTANT (RESISTANCE OF CONDUCTOR)

BATTERY CALCULATIONS GENERAL NOTE:

1. BATTERY MANUFACTURER DATE, STAMP OF xx/2015 TO BE UTILIZED. TYPICAL FOR ALL CONTROL PANELS, POWER SUPPLY PANELS AND AUDIO AMPLIFIER PANELS.

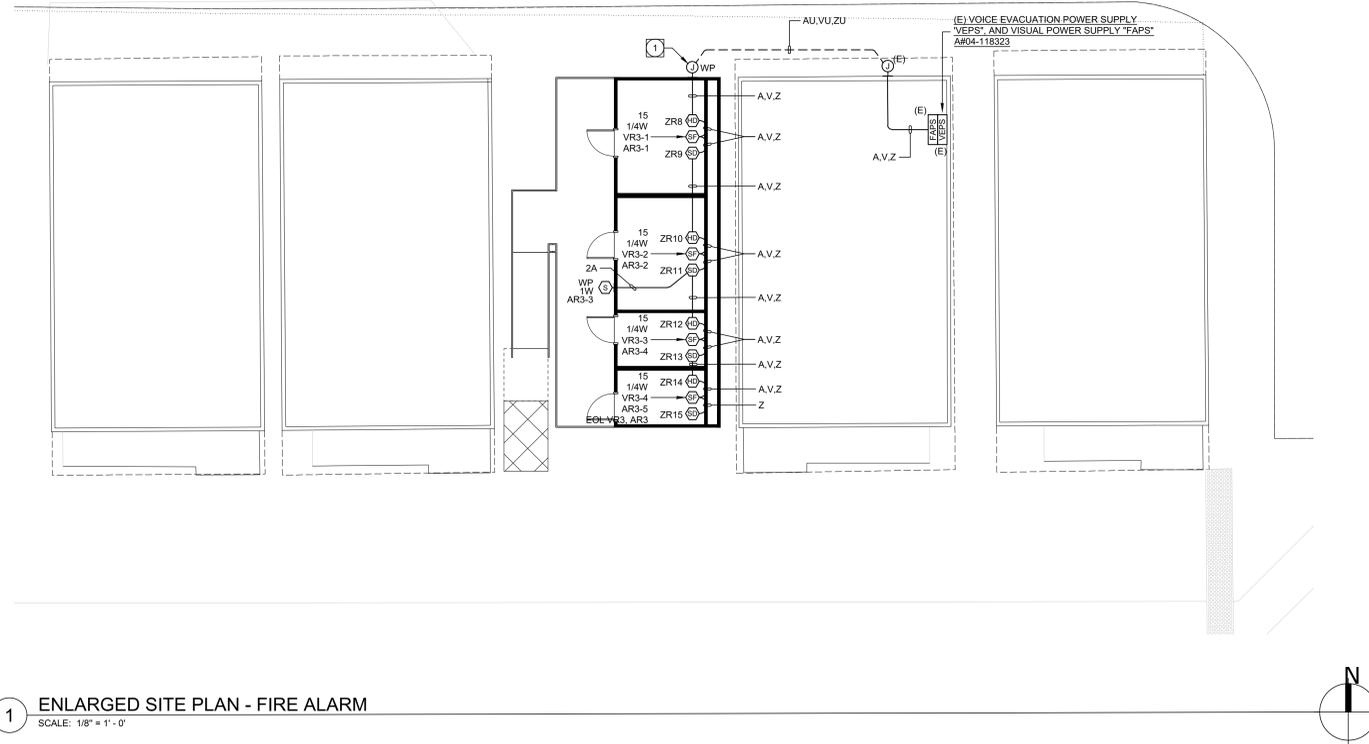
COMPLETE FIRE ALARM SUBMITTAL
AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM WITH EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM

PLAN NOTES:

- PROVIDE ONE 24" X 24" X 8"D. (SIGNAL SYSTEMS), AND ONE 12" X 12" X 8"D. (FIRE ALARM) NEMA-3R TERMINAL BOXES WITH SCREW COVERS. MOUNT BOXES ABOVE LINE OF INTERIOR CEILING GRID. PROVIDE SLEEVES INTO ACCESSIBLE CEILING SPACE PER MOUNTING DETAIL.

FIRE ALARM GENERAL NOTES:

- NOTIFICATION DEVICES IN ROOMS CONTAINING (2) OR MORE AUDIBLE AND/OR (2) OR MORE VISUAL DEVICES SHALL BE SYNCHRONIZED PER N.F.P.A. 72, 2016 EDITION (WITH CALIFORNIA AMENDMENTS). THIS SHALL INCLUDE AUDIBLE AND VISUAL DEVICES LOCATED IN ADJACENT/ADJOINING SPACES.
- DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM SYSTEM SUPPLIER / ENGINEER. 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 CONTRACTOR.
- DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIR-FLOW, NOR CLOSER THAN 3 FEET (915 mm) FROM ANY AIR SUPPLY DIFFUSER.
- THE AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING. (2019 CFC 907.5.2.1.1)
- THE VOICE/ALARM COMMUNICATION SYSTEM VOICE MESSAGE SHALL COMPLY WITH NFPA 72, SECTIONS 18.4 AND 24.4 FOR GENERAL REQUIREMENTS, INTELIGIBILITY, AUDIBILITY, MESSAGE PRIORITY, TONES, ETC.
- REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR PRECISE OUTLET LOCATIONS.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.
- IF SHIELDED WIRE IS USED, THE FOLLOWING MUST BE OBSERVED.
 - METALLIC CONTINUITY OF THE SHIELD MUST BE MAINTAINED AND INSULATED THROUGHOUT THE ENTIRE LENGTH OF THE CABLE.
 - THE ENTIRE LENGTH OF THE CABLE MUST HAVE A RESISTANCE GREATER THAN 1 MEGOHM TO EARTH.
- ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRE STOP SYSTEM EQUAL TO OR GREATER THAN THE FIRE RATING OF THE STRUCTURE / SURFACE BEING PENETRATED.
- A SYSTEM GROUND MUST BE PROVIDED FOR EARTH DETECTION AND LIGHTNING PROTECTION DEVICES. THIS CONNECTION SHALL BE MADE TO AN APPROVED DEDICATED EARTH CONNECTION PER CEC, ARTICLE 250.
- WIRING IN DUCTS, PLENUMS AND OTHER AIR HANDLING SPACES MUST BE INSTALLED IN ACCORDANCE WITH CEC 2022.
- UNDERGROUND WIRING MUST BE FREE OF ALL WATER.
- ALL FIRE ALARM SYSTEM CONDUCTORS SHALL BE RUN IN A DEDICATED FIRE ALARM CONDUIT SYSTEM.
- WHERE A DETECTOR IS INDICATED TO BE INSTALLED ABOVE THE CEILING AND NO ACCESS TO THE CEILING SPACE EXISTS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS. THE DETECTOR SHALL BE EASILY ACCESSIBLE AND THE LOCATION OF THE DETECTOR SHALL BE CLEARLY MARKED.
- FIRE ALARM SYSTEM UTILIZES A COMPLETE COVERAGE, FULLY AUTOMATIC SYSTEM. PROVIDE RELAY MODULE(S) AT FATC/FACP LOCATIONS FOR CONTROL OF HVAC SHUT DOWN, SMOKE/FIRE DAMPER CLOSURE AND DOOR HOLD RELEASES.
- WHERE NEW DEVICES (AND ASSOCIATED CONDUIT) CANNOT PHYSICALLY BE MOUNTED CONCEALED IN WALLS, RUN IN PANDUIT SURFACE RACEWAY/WIREWAY (AND DEVICES SHALL BE MOUNTED ON SURFACE OUTLET BOXES). REFER TO SPECIFICATIONS. PROVIDE SIZE OF RACEWAY TO ACCOMMODATE THE REQUIRED CONDUCTORS. WHERE CONDUIT IS INDICATED, PROVIDE SURFACE RACEWAY WITH AN EQUAL CROSS SECTION TO THE DIAMETER OF THE CONDUIT INDICATED.
- DETECTOR SENSITIVITY SHALL BE TESTED USING MANUFACTURER'S CALIBRATED SENSITIVITY INSTRUMENT OR OTHER CALIBRATED TESTING METHOD. (CFC 907.8.3)



FIRE ALARM SYSTEM SPECIFICATIONS

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The work under this section includes all final design, all labor, material, equipment, supplies, labor, testing, and accessories required to furnish and install a complete Fire Alarm System as indicated on the drawings and as specified herein.
B. All miscellaneous system components including, but not limited to, cables, termination equipment, punch blocks, patch panels, backboards, and any other related items shall be furnished and installed complete under this section, such that the system shall perform all functions listed herein in compliance with all of the specified requirements.
C. The Fire Alarm System shall include, but not limited to, the following subsystems / products:
1. See Products Section.

1.02 RELATED WORK

- A. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and sections of Divisions 1 and 16 of these specifications.
B. All applicable portions of Section 16010 shall apply to this section as though written herein completely.

1.03 GENERAL REQUIREMENTS

- A. The contractor shall hold a valid State of California C-10 Low-Voltage license, shall have completed at least 20 projects of equal scope, shall have been in business of furnishing and installing systems of this scope and magnitude for at least five years, and capable of being bonded to assure the owner of performance and satisfactory service during the guarantee period.
B. The contractor shall hold all other licenses required by the legally constituted authorities having jurisdiction over the work.
C. All work shall be performed under the supervision of a company accredited by the basic equipment manufacturer and such accreditation must be presented.
D. The installing contractor shall be a factory authorized distributor and warrantee station for the brand of equipment offered and shall maintain a fully equipped service organization capable of furnishing adequate repair service to the equipment. The installing contractor shall maintain a spare set of all major parts for the system at all times. All circuit boards, amplifiers and control sub systems shall be 100% backed up with stock at contractors shop.
E. All of the equipment in this specification shall be furnished and installed by the Authorized Factory Distributor of the equipment. The Contractor shall furnish a letter from the manufacturer of all major equipment, which certifies that the installing contractor is the Authorized Distributor and that the equipment has been installed according to factory intended practices. The Contractor shall also furnish a written guarantee from the manufacturer that they will have a service representative assigned to this area for the life of the equipment.
F. The fire alarm contractor shall be UL listed company under the UL classification of (UJUS). The installation company shall UL certify this installation.
G. The fire alarm contractor shall have a NICET Certified and Technicians on staff in their facility directly involved with this project to ensure technical expertise to this project and adherence with these specifications.
H. The fire alarm contractor shall maintain sufficient stock on hand and have a fully equipped service organization capable of guaranteeing response time within 8 hours of service calls, 24 hours a day, 7 days a week to service completed systems.
I. Equipment, wire and materials shall only be installed by the fire alarm contractor / manufacturer's distributor. A Contractor other than the manufacturer's distributor used to install the system is not acceptable.
J. The fire alarm contractor/distributor shall provide, install and test all equipment related to this section.
K. The contractor shall pay all charges (including travel, lodging, meals, etc.) required to provide factory certification, equal to that of a Factory Authorized Distributor of the substituted item, for two (2) selected Owners representatives. This training shall occur at the primary factory of the substituted item in question and shall allow the selected Owners representatives to provide any and all Factory / Manufacturer Approved repairs, software upgrades, etc., without affecting any available or applicable Manufacturer Warranties.

1.04 QUALITY ASSURANCE

- A. The equipment shall be as manufactured by Notifier to match existing equipment on campus. No other manufacturers will be allowed by the District.
B. In order to maintain a high degree of quality assurance, the Contractor shall, without exception, use the parts and supplies as specified on the drawings and in this specification.
C. For any proposed product substitution or when the Contractor intends to include an @or equi@ product in the bid pricing, provide a substitution request submitted to the Owner's Project Manager for review no later than fifteen (15) calendar days prior to Bid submittal. This report shall include:
1. Description of the product(s) will impact meeting the project completion date, indicate item(s) with lead times and expected delivery date(s).
2. Itemized cost comparisons between the proposed product(s) and the listed product(s).
3. Detailed technical analysis of the electrical and mechanical specification differences between the proposed product(s) and the listed product(s).
4. ETL @Verifid@ or UL @Verifid@ test lab documentation for the proposed product(s), component(s) and assemblies.
5. Proposed product identification, manufacturer literature (specifications and cut sheets).
6. Name, address and contact information of several similar projects where the proposed product(s) have been used.
7. Name, address and contact information of the proposed product(s) manufacturer's local representative.
8. Sample proposed product(s) manufacturer's warranty.

- D. The Owner's Design Team/Project Manager must approve any proposed product(s) substitution item in writing. The Owner's Design Team/Project Manager reserves the right to require a complete sample of any proposed product(s) and may request a sample tested by an independent testing consultant to prove equality. This reimbursement shall include all costs required to obtain re-approval from DSA, as the currently specified fire alarm system has been approved in it's entirety by DSA. (This project does not have a deferred approval status in regards to the fire alarm system.) The decision of the Owner's Design Team/Project Manager regarding equality of proposed product(s) items will be final.

- E. If a proposed product(s) is given final acceptance by the Owner's Project Manager, the Contractor shall reimburse the Owner's Design Team/Project Manager for the costs to review the proposed product(s) substitution(s), and for any additional engineering charges, and shall pay all charges of other trades resulting from this product(s) use, at no cost to the Owner.

- F. It is a mandatory requirement that a single Contractor perform the work described in this specification.

- G. All of the equipment in this specification shall be furnished and installed by the Authorized Factory Distributor of the equipment with the most current software package available at the time of installation. At the time of Owner Acceptance of the installation, all equipment shall include any and all updates software revisions in addition when the software is available in disk format, a backup copy of the most up to date revision, in disk format, shall be handed to the Owner at the completion of the project.

- H. Conform to all of the applicable provisions of the latest version of the following standards:

- NFPA 72 – National Fire Alarm Code with California Amendments
Reference UL Standard 1971 for @visual devices@
CBC – California Building Code
CEC – California Electrical Code
CFC – California Fire Code
CPC – California Plumbing Code
CMC – California Mechanical Code
NFPA 13 – Automatic Sprinkler Systems
NFPA 14 – Standpipe Systems
NFPA 17 – Dry Chemical Extinguishing Systems
NFPA 17a – Wet Chemical Systems
NFPA 20 – Sanitary Pumps
NFPA 24 – Private Fire Mains (Included in 2016 NFPA 13)
NFPA 253 – Critical Radiant Flux of Floor Covering Systems
NFPA 2001 – Clean Agent Fire Extinguishing Systems
Reference code section for NFPA Standards – 2022 CBC (SFM) 35

1.05 SUBMITTAL AND MANUAL

- A. Comply with all requirements of the General Conditions, Supplementary Conditions and applicable sections of Divisions 1 and 16 of these specifications.
B. Additional requirements of this section are:
1. Within thirty-five (35) calendar days after the date of award of the Contract, the Contractor shall submit eight copies of the complete submission to the Architect for review.
2. The submission shall consist of five major sections with each section separated with index tabs. Each page in the submission shall be numbered chronologically and shall be summarized in the index.
3. The first section shall be the "Index" which shall include the project title and address, name of the firm submitting the proposal and name of the Architect.
4. The second section shall include the following items:
a. CONTRACTOR'S LICENSE: A copy of the electronics contractor's valid State of California License.
b. PROOF OF EXPERIENCE: Proof that the fire alarm contractor has been regularly engaged in the business of fire alarm contracting consisting of, but not limited to, engineering, fabrication, installation, and servicing of fire alarm systems of the type specified herein for at least the past ten (10) consecutive years. Provide a statement summarizing any pending litigation involving any officer or principal of/or the company, the nature of the litigation and what effect the litigation may carry as it relates to this work in the worst case scenario. Non-disclosure of this item, if later discovered, may result, at the owner's discretion, in the contractor bearing all costs and any cost related to associated delays in the progress of the work.
c. INSURANCE CERTIFICATES: Copy of fire alarm contractor's current liability insurance and state industrial insurance certificates in conformance with the contract documents.
d. PROJECT LIST: A List containing at least ten (10) California installations completed within the last five (5) years by the fire alarm contractor that are comparable in scope and nature to that specified in the contract document.
e. SERVICE CAPABILITY: Documentation indicating in detail that the fire alarm contractor has competent engineering, installation, service personnel and facilities with reasonable stock of service parts within 100 air miles of the job site.
f. AUTHORIZATION LETTERS: Letters from the fire alarm equipment manufacturer stating that the fire alarm contractor is the Factory Authorized Distributor, and is trained and certified for the equipment. he proposes to use on this project, and is licensed to purchase and install that software required to provide the specified functions.

- g. CERTIFICATION:
1) Proof that the fire alarm contractor is Underwriters Laboratories, Inc. (UL) listed under the classification of "PROTECTIVE SIGNALING SERVICES-LOCAL, AUXILIARY, REMOTE STATION AND PROPRIETARY (UJUS).
2) Copy of the following (NICET) Certificates. Proof that the certificate holders are a part of the fire alarm contractor's local facility servicing this project and will be actively involved in this project.
a) Technician Level 2 minimum of (5).
b) Technician Level 4 minimum of (1)
h. PROOF OF TRAINED PERSONNEL:
1) Documentation that the fire alarm contractor has on staff personnel factory-trained and certified for the equipment proposed for this project. Also, a statement that personnel meeting these qualifications are in the local facility, and will be maintained at that facility throughout the project and the warranty period.

- 5. The third section shall contain the comparative specification listing, including a complete listing of the characteristics of the equipment to be furnished next to all of the specified equipment's features and functions as stated in the specifications and data sheets. Include CSFM listing sheet for each component.
6. The fourth section shall contain an original factory data sheet for every component in the specifications.
7. The fifth section shall contain complete 1/8" = 1'-0" scale drawing showing system wiring plans.
a. Riser Diagram.
b. Typical Device Wiring Diagram.
c. Wire Legend.
d. Battery Calculation for each control panel, power supply, field power supply and network annunciator.
e. Worst Case Voltage drop for each circuit type per building.
f. Floor Plans showing all conduits, sizes, quantity of conduits.
g. Mounting Height of each device and back box requirement.
h. Zoning and address description legend.

- C. Failure to comply with all of the requirements listed above will result in the rejection of the entire submittal package.
D. The Contractor shall provide two copies of an "Operating and Servicing Manual" for the system. The manuals shall be bound in flexible binders. All data shall be printed material or typewritten. Each manual shall include the following: instructions necessary for the proper operation and servicing of the system, complete as-built installation drawings of the system; a wiring destination schedule for each circuit leaving for each piece of equipment; a schematic diagram of major components with all transistor and IC complements and replacement number.
1.06 GENERAL SYSTEM PRODUCT, INSTALLATION AND OVERALL SYSTEM WARRANTY
A. Prior to Owner acceptance, the contractor shall provide to Owner, a manufacturers product and performance warranty. This will require a submittal of the required pre-job certification registration forms as well as the required project closing information. The Owner will only acknowledge acceptance upon submittal of a valid manufacturers warranty.
B. The warranty shall commence from the date of final written acceptance by the Owner.
C. All conditions for obtaining the manufacturers warranty shall be the sole responsibility of the contractor.
D. The contractor shall maintain a competent service organization and shall, if requested, submit a service maintenance agreement to the owner after the end of the guarantee period.
E. A typewritten notice shall be posted at the equipment rack that shall indicate the firm, address and telephone number to call when service is necessary. The notice shall be mounted in a neatly finished metal frame with a clear plastic window and securely attached to the inside of the door.

- 1.07 SPECIFIC SYSTEM PRODUCT, INSTALLATION AND OVERALL SYSTEM WARRANTY
A. The entire system shall be warranted free of mechanical or electrical defects for a period of one (1) year after final acceptance of the installation. Any material showing mechanical or electrical defects shall be replaced promptly at no expense to the Owner.

SECTION 2 – SYSTEM EQUIPMENT SPECIFICATION

- 2.01 ACCEPTABLE MANUFACTURERS
A. All equipment listed herein will be Forenhty by Silent Knight to match existing system on campus.
B. Its the responsibility of the bidder to insure that the proposed product meets or exceeds every standard set forth in these specifications and the equipment's technical data sheets.
C. The functions and features specified are vital to the operation of this facility. Therefore, inclusion of a component's manufacturer in the list of acceptable manufacturers does not release the contractor from strict compliance with the requirements of this specification.
D. All basic electronic equipment (not including cable) specified herein shall be produced by a single manufacturer of established reputation and experience who shall have produced similar apparatus for at least three or more years and who shall be able to refer to similar installations rendering satisfactory service.

- 2.02 SYSTEM FUNCTIONS AND CAPABILITIES:
A. Provide a new intelligent reporting, microprocessor controlled fire detection system. It shall be installed in accordance with the specifications and drawings.
B. Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on-site.
C. All required special programming equipment shall be furnished by the fire alarm contractor, turned over to the District and shall remain on site and shall be covered during the warranty period.
D. Basic Performance:

- 1. Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded onto a (Class B) signaling line circuit.
2. Initiation device circuits shall be wired (Class B).
3. Indication appliance circuits shall be wired (Class B).
4. Digitized electronic signals shall employ check digits or multiple polling.
5. A Single ground of open on any system signaling line circuit, initiating device circuit, or indicating appliance circuit shall indicate a trouble condition at the control panel.
6. Alarm signals arriving at the main FACP shall not be lost following a power failure (or outage) until the alarm signal is processed and recorded.

- E. Basic System Functional Operation: When a fire alarm condition is detected and reported by one of the system initiating devices or appliances, the following functions shall immediately occur:
1. The system Alarm LED shall flash.
2. A local piezo electric signal in the control panel shall sound.
3. The 80 character LCD display shall indicate all information associated with the Fire Alarm condition, including the type of alarm point and its location within the protected premises.
4. Printing and history storage equipment shall log the information associated each new Fire alarm Control Panel condition, along with time and date of occurrence.
5. All system output programs assigned via control by event equations to be activated by the particular point in alarm shall be executed, and the associated System Outputs (alarm indicating appliances and/or relays) shall be activated.

- F. Circulating Guidelines:
1. All system smoke detectors shall be of the Addressable Analog type. Although each individual device point number and message shall be displayed on the LCD, the initiating devices shall be zoned as follows to provide the appropriate indication on the LED Annunciator.
2. Provide one alarm initiating zone per device as shown on the plans and annunciator(s).
a. Manual stations per building.
b. Area smoke/heat detectors per building.
c. Duct mounted smoke detectors / HVAC shut down relays per building.

- G. The system shall be capable, via a modem to a remote computer, of off-site programming and diagnostic functions by the Owner, distributor or manufacturer personnel. It shall be also be possible to facilitate remote software changes. Contractor to provide, install, and program a copy of the required software to accomplish this task.

2.03 PRODUCTS:

- A. Fire Alarm Control Panel (FACP)
1. Existing fire alarm control panel to remain protected in place.
2. Control panel shall contain the following features:
a. Addressable signaling line circuit loops Network communications, capable of monitoring, initiation, supervision, annunciation and control devices. One spare addressable signaling line circuit loop.
1 (selectable Local Alarm, Shunt Master box, Reverse Polarity Remote Station Connection (1 min) Form C Alarm Contacts (1 Amp each) (1 min) Form C Trouble Contact (1 Amp each) (1 min) Form C Supervisory Contact (1 Amp each) (1 min) Form C Default Alarm Contacts (1 Amp each)
Default Alarm Mode (Provide fire alarm in event of a CPU failure or provide redundant CPU).
Automatic Battery Charger
1 set Standby Batteries
1 lot Resident non-volatile programmable operating system memory for all operating requirements.
1 Supervised Manual Evacuation Switch with Alphanumeric Display

- B. REMOTE ANNUNCIATOR
1. Existing campus remote annunciator to remain protected in place.
C. POWER SUPPLIES
1. Existing power supplies to remain protected in place.
D. PERIPHERAL DEVICES
1. Manual Stations
a. Station shall be addressable semi-flush, nonbreakable-glass type. Station housing shall be constructed of durable die-cast aluminum with reset lock and key.
2. Smoke Detectors
a. Furnish and install where indicated on Drawings, photoelectric smoke detectors. Provide addressable base.
3. Control Module
a. Use this to connect a conventional indicating appliance to one of SLC loops. Control module shall mount in a standard 4A square, 2-1/8" deep electrical box. Control module may also be wired as a dry contact (form C) relay. Power for relay coil shall be provided by SLC loop to reduce wiring connection requirements. Audio/Visual power shall be provided by a separate loop from main control panel or from supervised remote power supplies.
b. Control module shall provide address-setting means using rotary coded switches and shall also store an internal identifying code which control panel shall use to identify type of device. An LED shall be provided which shall flash under normal conditions, indicating that control module is operational and in regular communication with control panel.
4. Horns: Alarm speakers shall be polarized and operated by 24 VDC. Each horn assembly shall include separate wire lead for in/out wiring for each leg of associated signal circuit. T tapping of signal device conductors to signal circuit conductors will not be accepted. Suitable gaskets shall be provided for weatherproof installation. Speakers shall produce a minimum sound pressure level of 97 db at 10'-0", and provide 15 db above ambient noise levels in all areas.
5. Horn/strobe shall operate on 24 VDC polarized circuit and shall be provided with a semi-flush mounting plate. Entire unit shall be red finish. Strobe light shall be white lexan with word @RREA in red on a 2" sides. Speaker shall have a minimum sound output of 95 db at 10'-0", and provide 15 db above ambient noise levels in all areas. The strobe shall have a minimum light intensity as indicated on drawings and meet or exceed requirements of the American with Disabilities Act (ADA) and UL 1971.

- 6. Strobes indicating appliances shall be wall mounted. @Lexan@ lens shall be clear with word @FIRE@ imprinted in red and shall be rectangular in shape to allow better visibility. The strobes shall meet ADA and UL 1971 requirements.
a. Maximum pulse duration to be 0.20 of a second with a ADAAG 4.28.3(3). Visual alarms maximum duty cycle of 40%. The pulse duration defined as the time interval between initial and final points of 10% max. signal.
b. Capable of providing 75 candela min. intensity (effective strength measured at the source).
c. The flash rate to be a minimum of 1/4 Hz and a maximum of 3 Hz.
d. Mounting height to be 80 inches (2,032mm) @FT or 6 inches (152 mm) below ceiling, whichever is lowest.
7. Door Holder/Release: Electromagnetic door holder/releases shall be 24 VDC and installed on each door as indicated on Drawings and as specified herein. Holder/releases shall consist of a wall-mounted electromagnet and a door mounted armature with an adjustable contact plate. Electromagnets shall have a force of attraction of 35 pounds when energized and less than 3 pounds residual with power disconnected. Armature contact plates shall have a horizontal adjustment of 25 degrees. The holding force of holder/releases shall be totally electromagnetic and without the use of mechanical linkage or other moving parts. All holder/releases shall normally be energized, and a release shall be accomplished by interrupting the circuit.
8. Water Flow Switches:

- a. Vane-type water flow switches shall be installed on system piping as designated on the Drawings and/or as specified herein. Detectors shall mount on any clear pipe span of appropriate nominal size, either a vertical or horizontal run, at least 6" from any fittings or valves which may change water direction, flow rate, or pipe diameter, or no closer than 24" to a valve or drain. Detector shall respond to water in specified direction after a preset time delay, which is field adjustable. Actuation mechanism shall include a polyethylene vane inserted through a hole in the pipe and connected by a mechanical linkage to delay mechanism. Outputs shall consist of 10 A (Dual SPDT Switches/Form-C Contacts). A conduit entrance for standard fittings of commonly used electrical conduit shall be provided on detectors. All detectors shall be listed by Underwriters Laboratories, Inc. for indoor or outdoor use.
b. Supervisory switch shall be installed on each valve as designated on Drawings and/or as specified herein. Switches shall be mounted so as not to interfere with normal valve operation and shall be adjusted to operate within two revolutions of valve control or when stem has moved no more than one-fifth of distance from its normal position. Mechanism shall be contained in a weatherproof die cast metal housing, which shall provide a 3/4" tapped conduit entrance and incorporate necessary facilities for attachment to valve. Switch mechanism shall have a minimum rated capacity of 10 Amp @ 125 VAC and 2.5 Amp @ 24 VAC. Entire installed assembly shall be tamper-resistant. Tamper switches shall be Underwriters Laboratories Inc. listed.

- 9. Fire Control Communicators shall be digital type, UL and Fire Marshal listed, for fire reporting to a central station. It shall provide power and necessary components for 8 supervised detection circuits, (2-class A and 6-class B). It shall have a charger and battery (12V, 6.5 AH), which will provide 24-hour standby power.
a. Control/communicator shall have capability to supervise 2 separate dedicated approved means of communication/transmission services and send alarm signal on one or both communication services without addition of any more equipment. It shall sound a local trouble signal if communication service is interrupted for longer than 45 seconds and shall transmit a signal indicating loss of communication service. A signal shall also be transmitted indicating restoration of communication service. Control/communicator shall be able to report loss of either means of communication without regard to which service failed first. If both services fail, a local signal shall sound.
b. Control/communicator shall have ability to send a test signal to central station every 24 hours. Test signal shall be able to transmitted at a specific time of day or night, by setting a program within panel.
c. Alarm signals transmitted to central station shall indicate which of 8 zones is in alarm and which zones are in trouble. Restoration from alarm or trouble shall also be transmitted by zone. Control/communicator shall be capable of communicating to Silent Knight, Radionics or Ademco central station receivers.

- E. CONDUIT AND SURFACE RACEWAY
1. All conduit, surface raceways, outlet boxes, junction boxes, pull boxes, terminal cabinets, and similar devices required in this section of the work shall be provided under Division 16000 and as shown on drawings.
2. Conduit and surface raceways shall comply with the requirements of Section 16010 BASIC ELECTRICAL MATERIAL.
3. Conduit shall not enter the Fire Alarm Control Panel, or any other remotely mounted Control Panel equipment or backbox, except where conduit entry is specified by the FACP manufacturer.
4. All fire alarm related conduits shall be clearly marked as @Fire Alarm System@ and painted red in color to indicate such system.

- F. WIRE
1. All low voltage wire required in this section shall be furnished and installed by the fire alarm contractor.
2. All wire shall be installed in conduit. Wiring installed in underground conduits shall be approved for wet applications in accordance with the National Electric Code.
3. All fire alarm system wiring shall be new.
4. Wiring shall be in accordance with local stated and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the fire alarm system. Number and size of conductors shall be as recommended by the fire alarm system manufacturer, but not less than 16 AWG for Initiating Device Circuits and Signaling Line Circuits, and 14 AWG for Indicating Appliance Circuits.
5. All wire and cable shall be listed and/or approved by a recognized testing agency for use with a protective signaling system.
6. Wiring used for the multiplex communication loop shall be 18AWG twisted and shielded and installed in conduit unless specifically expected by the fire alarm equipment manufacturer.
7. All field wiring shall be completely supervised. In the event of a primary power failure, disconnected standby battery, removal of any internal modules, or any open circuits in the field wiring; a trouble signal will be activated until the system and its associated field wiring are restored to normal condition.

- G. TERMINAL CABINETS AND JUNCTION BOXES:
1. All boxes and cabinets shall be UL listed for their use and purpose.
2. Terminal cabinets shall comply with the requirements of Section 16010 Terminal Cabinets.
3. Provide terminal blocks for all conductors entering and/or exiting each terminal cabinet.

PART 3 – EXECUTION

- 3.01 GENERAL INSTALLATION REQUIREMENTS
A. The wiring of the system shall be executed in accordance with the drawings and the equipment manufacturer's wiring diagrams. Should any variations in these requirements occur, the contractor shall notify the architect before making any changes. It shall be the responsibility of the factory-authorized distributor of the approved equipment to install the equipment and guarantee the system to operate as per plans and specifications.
B. Furnish all conduit, junction boxes, conductors, equipment plugs, terminal strips, etc., and labor to install a complete and operable system.
C. The cables within the rack or cabinets shall be carefully bundled and laced with no. 12 Cord waxed linen lacing twine or ty_raps. All cables shall be numbered for identification.
D. Splices of conductors in underground pull boxes is not permitted.
E. The labor employed by the contractor shall be regularly employed in the installation and repair of communication systems and shall be acceptable to the owner and architect to engage in the installation and service of the system.
F. The contractor shall thoroughly clean all equipment and materials. All exposed parts of the equipment, cabinets, and other equipment shall be left in a clean condition, unblemished and free of all dirt, dust, smudges, spots, fingerprints, etc.. The contractor shall remove all debris and rubbish occasioned by the electronic systems work from the site. The contractor shall thoroughly clean all buildings of any dirt, debris, rubbish, marks, etc. Caused by the performance of this work.
G. The system must meet all local and other prevailing codes.
H. All cabling installations shall be performed by qualified technicians.

- I. All cabling shall be splice free.
J. In order to ensure the least amount of cable untwisting, it is required that all cables shall be stripped using a special tool.
K. The use of lubricants (i.e. Yellow 77) to facilitate the installation of cables in conduits is highly discouraged. If such a lubricant must be used, the contractor shall verify the acceptability of the lubricant to be used with the cable manufacturer, prior to using such a lubricant.
L. Under no circumstance are "channel locks" or other pliers to be used.
M. All firewalls penetrated by structured cabling shall be sealed by use a non-permanent fire blanket or other method in compliance with the National Fire Protection Association (NFPA) and the California Electric Code (CEC) or other prevailing code. The contractor must not use concrete or other non-removable substance for fire stopping on cable trays, wireways or conduits. Contractors who use this method will be required to replace all cables affected and provide the original specified access to each effected area.

- 3.02 SPECIFIC SYSTEM INSTALLATION REQUIREMENTS
A. The entire system shall be installed in a workmanlike manner in accordance with approved manufacturers manuals and wiring diagrams. The contractor shall furnish all wiring, conduit, outlet boxes, junction boxes, terminal cabinets and similar devices necessary for the completed installation..
B. Installation off conduit, outlet boxes, junction boxes, terminal cabinets, special back boxes and similar devices shall comply with the requirements of Section 16010 Basic Electrical Materials.
C. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas or may be exposed in unfinished areas. Smoke detector heads shall not be installed prior to the system programming and test period. If construction is on going 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 and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas. Verify with the Project Architect prior to any surface mounted installations.
E. All penetrations of floor slabs and fire walls, shall be fire stopped in accordance with the electrical specifications.
F. Duct mounted Smoke Detectors shall be furnished and wired by this Contractor and installed by the Mechanical Contractor. All shutdown and interface wiring shall be performed by the Electrical Contractor. All air pressure differential testing shall be performed by the Mechanical/Air Balance Contractor.
G. The sprinkler flow and tamper switches shall be furnished, installed and adjusted by the Sprinkler Contractor, wired and tested by this Contractor.

- 3.03 GENERAL TESTING REQUIREMENTS
A. Provide all instruments for testing and demonstrating in the presence of the owner's inspector that the frequency response is as stated in the factory data sheets. Check all circuits and wiring to verify they are free of shorts and grounds.
3.04 SPECIFIC SYSTEM TESTING REQUIREMENTS
A. Contractor shall provide all DSA required testing and certification at no cost to the Owner.

PART 4 – FINAL ACCEPTANCE

- A. The Owner or Owner's representative may visit the site during the installation of the system to ensure that correct installation practices are being followed.
B. The Owner or Owner's representative will conduct a final job review once the contractor has finished the job. This review will take place within one week after the contractor notifies the owner.
C. Two copies of all certification data and drawings for all identifications shall be provided to the Owner before the owner's review.
D. The Owner or Owner's representative will review the installation and certification data prior to the system acceptance.
E. The Owner or Owner's representative may test some of the systems features to ensure that the certification data is correct. If a substantial discrepancy is found, the Owner reserves the right to have an independent consultant perform a certification of the entire system. If such a procedure is undertaken, the cost of the testing will be billed back to the contractor.
F. In the event that repairs or adjustments are necessary, the contractor shall make these repairs at his own expense. All repairs shall be completed within 10 days from the time they are discovered.
G. The contractor shall provide not less than eight (8) hours for site instruction of personnel in the operation and maintenance of the installed systems. This instruction time shall be divided as directed by the Owner.
H. The contractor shall hand to the owner a copy of any applicable installation specific software configurations in disk format.
I. Provide the NFPA certificate to the Owner, local fire official, Architect and D.S.A.

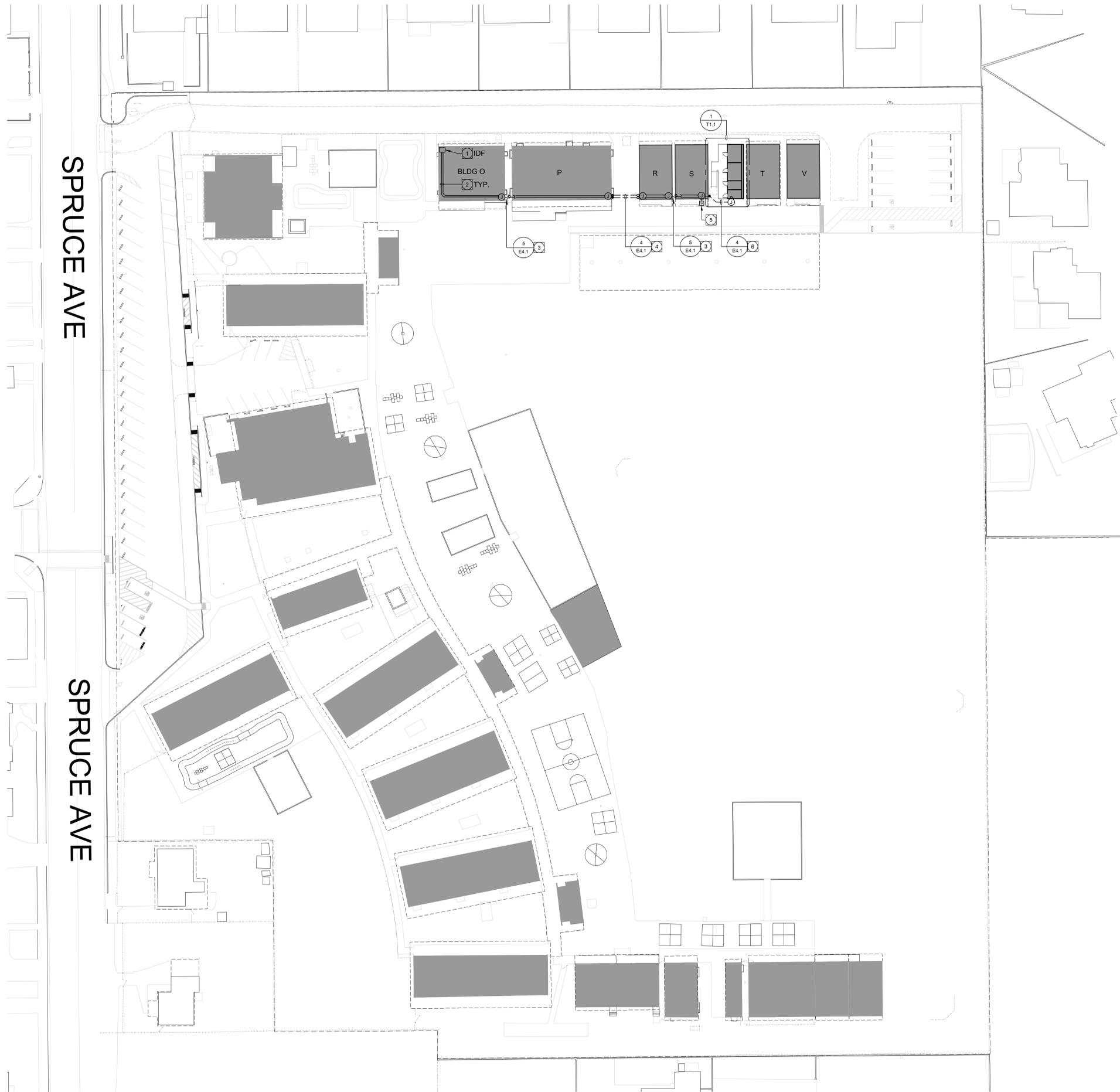
END OF SECTION



RUTH GRIMES ELEMENTARY SCHOOL
2023 PHASE 1 SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)
COLTON JOINT UNIFIED SCHOOL DISTRICT

FIRE ALARM SPECIFICATIONS

EFA-2.1



SPRUCE AVE

SPRUCE AVE

1 SITE PLAN
SCALE: 1" = 30' - 0"

PLAN NOTES:

- 1 LOCATION OF EXISTING IDF CONTAINING BOGEN PUBLIC ADDRESS EQUIPMENT
- 2 PROVIDE (2) - 3/4" CONDUITS IN CEILING SPACE FROM IDF IN BLDG. O TO JUNCTION BOX IN BLDG. P. INSTALL PULL TAPE IN ALL CONDUITS.
- 3 PROVIDE LIQUID TIGHT NON CONDUCTIVE SLEEVE BETWEEN BUILDINGS.
- 4 PROVIDE (2) - 3/4" UNDERGROUND CONDUITS FROM EXTERIOR JUNCTION BOX IN BLDG. P TO EXTERIOR JUNCTION BOX IN BLDG. R
- 5 PROVIDE (1) - BOGEN SPT15A OUTDOOR SPEAKER (70V) ON BUILDING EXTERIOR. CABLE TO BLDG O BOGEN PA EQUIPMENT USING 18 GA., SOLID, SHIELDED, 2 CONDUCTOR WIRE.
- 6 PROVIDE (1) - 3/4" UNDERGROUND CONDUITS FROM JUNCTION BOX IN BLDG. S TO JUNCTION BOX IN BLDG. RR FOR SPARE FUTURE CABLING FROM IDF.

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC., AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" - U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. - U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
9. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.



PLAN NOTES:

- 1 PROVIDE (2) - 3/4" CONDUITS IN CEILING SPACE FROM IDF IN BLDG. O TO JUNCTION BOX IN BLDG. P. INSTALL PULL TAPE IN ALL CONDUITS.
- 2 PROVIDE LIQUID TIGHT NON CONDUCTIVE SLEEVE BETWEEN BUILDINGS.
- 3 PROVIDE (1) - BOGEN SPT15A OUTDOOR SPEAKER (70V) ON BUILDING EXTERIOR. CABLE TO BLDG O BOGEN PA EQUIPMENT USING 18 GA. SOLID, SHIELDED, 2 CONDUCTOR WIRE.
- 4 PROVIDE (1) - 3/4" UNDERGROUND CONDUITS FROM JUNCTION BOX IN BLDG. S TO JUNCTION BOX IN BLDG. RR FOR SPARE FUTURE CABLING FROM IDF.

COMMUNICATIONS PATHWAYS

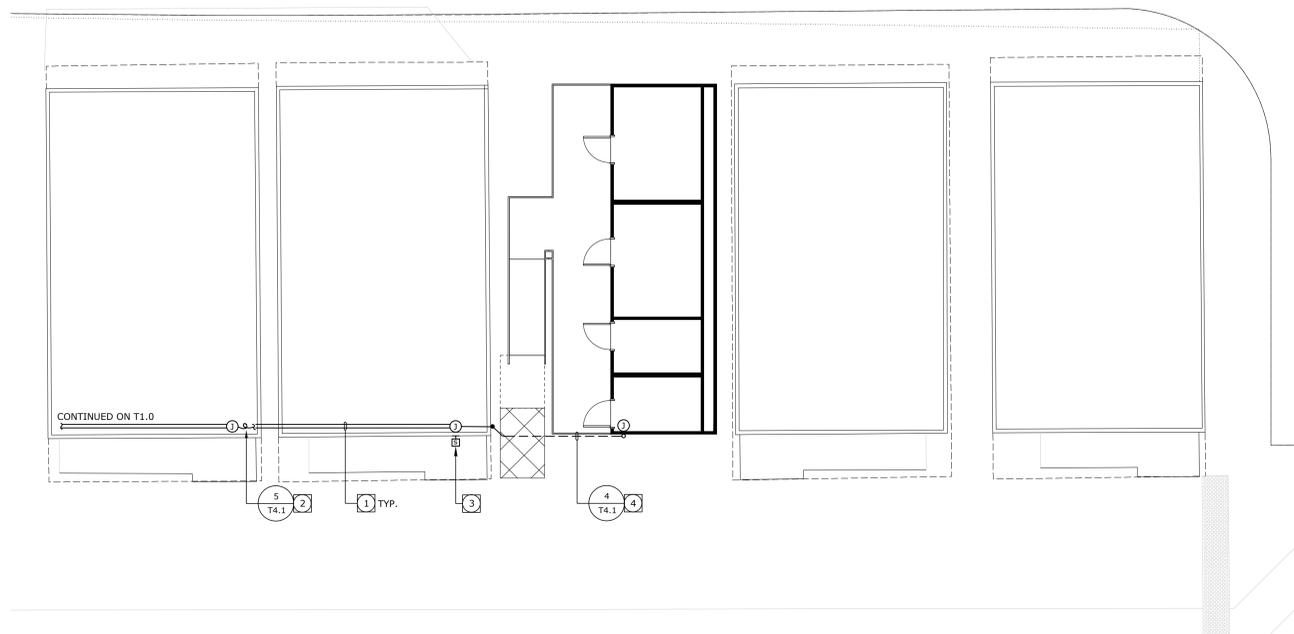
GENERAL NOTES:

1. CONDUITS SHALL (a) CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 30M (98 FT.) AND (b) CONTAIN NO MORE THAN (2) 90° BENDS OR (1) REVERSE BEND WITHOUT INSTALLING A PULL BOX. SPLIT CONDUITS IN PLACE OF PULL BOXES ARE UNACCEPTABLE.
2. CONDUITS SHALL CONTAIN PLASTIC OR NYLON PULL TAPE RATED AT 200 LBS. WITH A MINIMUM OF 5 FEET OF EXTRA PULL TAPE COILED AT EACH END.
3. CONDUIT BEND RADIUS SHALL BE (a) A MINIMUM OF 6 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS 2-INCHES IN DIAMETER OR LESS, AND (b) 10 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS MORE THAN 2-INCHES IN DIAMETER.
4. TERMINATE CONDUIT STUBS AND SLEEVES THAT PROTRUDE THROUGH STRUCTURAL FLOORS 2-INCHES TO 3-INCHES ABOVE THE FLOOR SURFACE.
5. INSTALL BUSHINGS OR BELL ENDS AS REQUIRED ON ALL CONDUITS.
6. FLEX CONDUIT IS UNACCEPTABLE FOR USE AS A COMMUNICATIONS CONDUIT EXCEPT AT SEISMIC JOINTS AND/OR IF APPROVED IN WRITING BY THE ENGINEER.
7. ALL UNDER SLAB OR IN-SLAB CONDUITS SHALL BE INSTALLED IN A MANNER THAT PREVENTS WATER INFILTRATION OF THE CONDUIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROUND WATER, RAIN WATER OR CONSTRUCTION WATER IS PREVENTED FROM ENTERING AND/OR REMOVED FROM THE CONDUITS PRIOR TO PLACEMENT OF COMMUNICATIONS CABLES. SEE ELECTRICAL SPECIFICATIONS, DETAILS AND PLANS FOR ADDITIONAL CONDUIT SEALING REQUIREMENTS.
8. ALL PULL BOXES SHALL BE SIZED AND INSTALLED PER ANSI-TIA-569-C. PULL BOXES FOR IN-UNDER SLAB CONDUIT RUNS ARE NOT PERMITTED UNLESS OTHERWISE NOTED. PULL BOXES FOR OVERHEAD CONDUIT RUNS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS WITHIN THE ACCESSIBLE CEILING SPACE AND SUPPORTED INDEPENDENTLY FROM THE STRUCTURE AND CONDUIT SUPPORTS. PULL BOXES FOR ROOF MOUNTED OR EXTERIOR ABOVE GRADE APPLICATIONS SHALL BE NEMA 3R RATED. PULL BOXES SHALL BE SIZED ACCORDING TO THE FOLLOWING:

CONDUIT SIZE	WIDTH	LENGTH	DEPTH	WIDTH INCREASE PER ADDITIONAL CONDUIT
1"	4"	16"	3"	2"
2"	8"	36"	4"	5"
3"	12"	48"	5"	6"
4"	15"	60"	6"	8"

FOR OTHER CONDUIT SIZES REFER TO ANSI/TIA-569-C TABLE 12. - LATEST PUBLISHED EDITION.

9. CONDUIT(S) SHALL EXIT A PULL BOX ON THE WALL OPPOSITE THE WALL ENTERED.
10. PROVIDE LABELING OF EACH CONDUIT PER GENERAL ELECTRICAL SPECIFICATIONS.
11. PROVIDE INTERNAL/EXTERNAL GAS AND WATER TIGHT MECHANICAL SEALING/PLUGGING OF EACH BUILDING ENTRY CONDUIT AS SPECIFIED ELSEWHERE IN THE DRAWINGS AND SPECIFICATIONS.



1 ENLARGED SITE PLAN - NEW RESTROOM BUILDING
SCALE: 1/8" = 1'-0"



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COLLABORATIVE

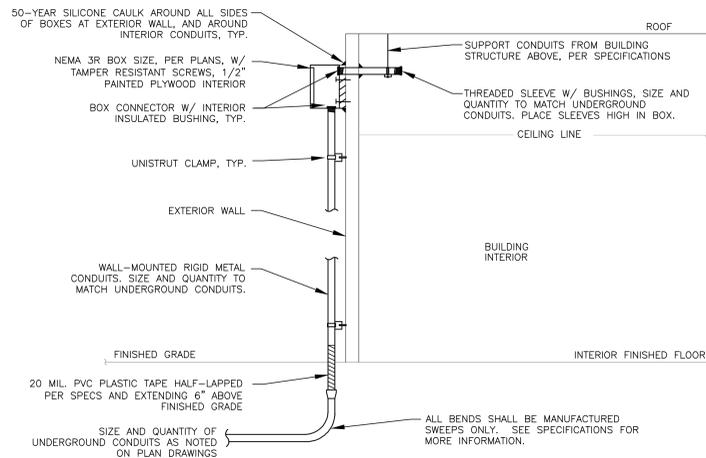
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tk1sc Job #: B2304099.000



RUTH GRIMES ELEMENTARY SCHOOL
2023 PHASE 1 SITE UPGRADES
(RESTROOM BUILDING AND SHADE SHELTER)
COLTON JOINT UNIFIED SCHOOL DISTRICT

ENLARGED RESTROOM
BUILDING TECHNOLOGY
FLOOR PLAN

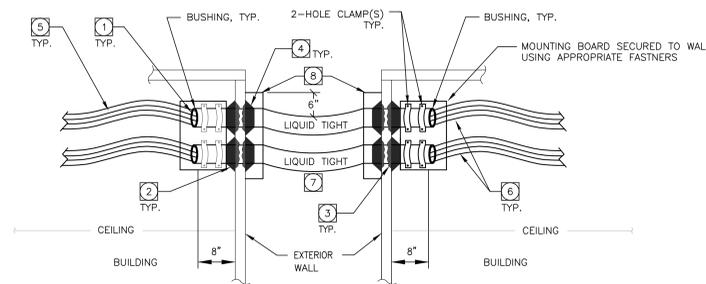


- NOTES:**
1. ALL BOXES/PLYWOOD TO BE SECURED TO BUILDING STRUCTURE USING MIN. 3/8" X 2" WALL ANCHORS/LAG BOLTS.
 2. 50-YEAR SILICONE CAULK AROUND ALL PENETRATIONS, BOXES AND ALL THREADS AS REQUIRED.
 3. SEAL ALL UNDERGROUND CONDUITS PER COMMUNICATION PATHWAY NOTES, GENERAL PROJECT NOTES, AND PROJECT SPECIFICATIONS.
 4. SEE SPECIFICATIONS FOR MORE INFORMATION.

TYPICAL EXTERIOR JUNCTION BOX DETAIL

SCALE: N.T.S.

4

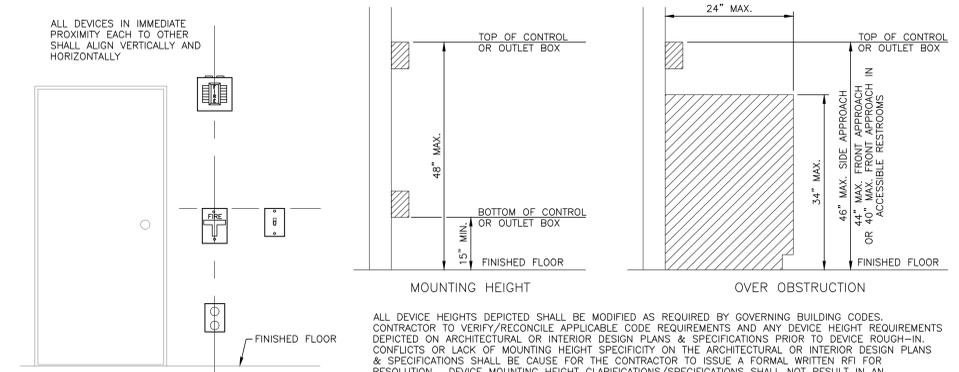


1. FIRESTOP SLEEVES WITH STI'S SPEC SEAL PUTTY (#SSP100) OR EQUAL, IN AND AROUND CABLES AT BOTH ENDS PER MANUFACTURER'S DIRECTIONS.
2. 1/2" BEAD 30-YEAR SILICONE CAULK (CLEAR) INTERIOR WALL TYPICAL.
3. SILICONE CAULK PUSHED INTO BOTH WALL VOIDS FOR A WEATHERTIGHT SEAL.
4. 1/2" BEAD 50-YEAR SILICONE CAULK (CLEAR) EXTERIOR WALL TYPICAL.
5. CABLES TO BE SUPPORTED WITHIN 24" OF BUSHING WITH APPROVED CAT-6 SUPPORT EACH SIDE.
6. MAINTAIN MINIMUM 2" BEND RADIUS FOR CABLES.
7. CONTRACTOR SHALL INSTALL LIQUID TIGHT SIDE BY SIDE W/ MINIMUM 2" SEPARATION. ENVIRONMENT WILL DICTATE BEST APPROACH. CONFIRM WITH AHJ PRIOR TO INSTALLATION. FLEXIBLE CONDUIT TO ALLOW 4 INCHES OF MOVEMENT IN ANY HORIZONTAL DIRECTION.
8. WEATHERPROOF JUNCTION BOX, SIZED AS REQUIRED.

TYPICAL LIQUID TIGHT SLEEVE DETAIL

SCALE: N.T.S.

5

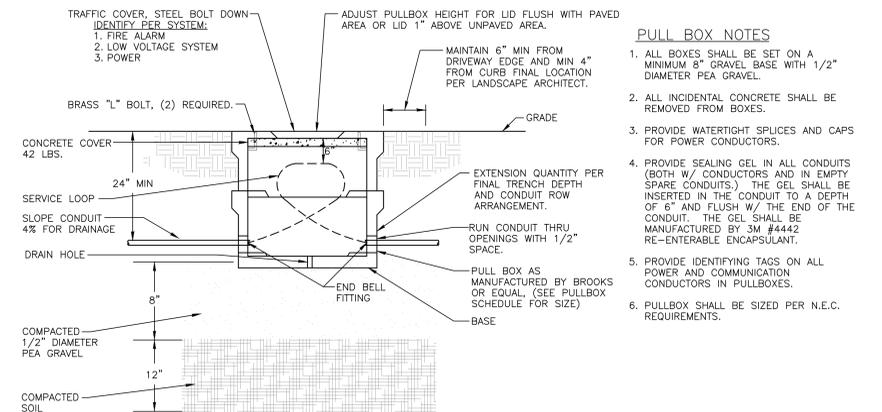


ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN RFI FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER - CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.

DEVICE ALIGNMENT & MOUNTING HEIGHT DETAILS

SCALE: N.T.S.

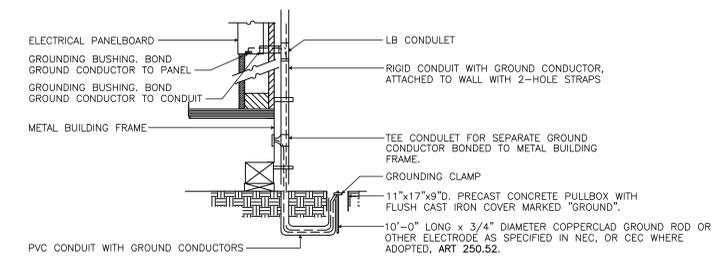
1



PULL BOX DETAIL

SCALE: N.T.S.

2



NOTES:

1. METAL MODULAR BUILDINGS: WHEN METAL BUILDINGS ARE MADE OF COMPONENTS, EACH BUILDING COMPONENT, INCLUDING STEEL RAMPS, MUST BE ELECTRICALLY BONDED TOGETHER IN A MANNER ACCEPTABLE TO DSH/SSS. PAINT ON THE SURFACE WILL INHIBIT PASSAGE OF ELECTRICAL CURRENT; THEREFORE, BOLTED CONNECTIONS OF COMPONENT PARTS ARE NOT AN ACCEPTABLE ELECTRICAL BOND.
2. WOOD MODULAR BUILDINGS: IN WOOD FRAME MODULAR BUILDINGS, THE ELECTRICAL SYSTEM MUST BE GROUNDED AS REQUIRED IN TITLE 24, C.E.C.
3. GROUNDING: THE ELECTRICAL CIRCUITS ARE USUALLY PROPERLY GROUNDED, HOWEVER, IT IS ALSO NECESSARY TO INDEPENDENTLY GROUND THE STEEL FRAMES. THIS IS PARTICULARLY IMPORTANT WHEN THE BUILDING IS SUPPORTED ON A FOUNDATION MADE OF WOOD.
4. INSPECTOR OF RECORD (I.O.R.) SHALL WITNESS GROUND TEST AND SUBMIT A COPY OF THE REPORT TO THE ARCHITECT. ALL BUILDING COMPONENTS MUST BE ELECTRICALLY BONDED TOGETHER AND MUST BE INDEPENDENTLY GROUNDED. ALL GROUNDING SYSTEMS ARE TO BE TESTED WITH A MEGGER UNIT OR IN AN OTHERWISE ACCEPTABLE MANNER. REFER TO C.E.C. SECTIONS 250-52 AND NEC 250-53 FOR SPECIFIC GROUNDING REQUIREMENTS.
5. SIZE OF CONDUCTORS SHALL COMPLY WITH NEC TABLE 250-95.
6. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL BUILDING FRAME (NEC 250-52). IN ADDITION TO THE DETAIL SHOWN ABOVE, BOND THE ELECTRICAL CONDUCTOR GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FEET INTO THE SOIL IF AVAILABLE (N.E.C. 250-52 AND NEC 250-53).
7. ALL MODULES OF METAL FRAME BUILDINGS AND RAMPS SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDING).
8. 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. (NEC 250-53).
9. SEE SPECIFICATIONS FOR TESTING OF GROUNDING REQUIREMENT.
10. ALL ELECTRICAL WORK TO MEET THE REQUIREMENTS OF THE STATE ELECTRICAL CODES, PART 3 OF TITLE 24, CAC, WHICH REQUIRES PROPER GROUNDING OF ALL ELECTRICAL CIRCUITS, EQUIPMENT, ETC. FOR PUBLIC SCHOOL BUILDING(S), REGARDLESS OF THE TYPE OF CONSTRUCTION.

RELOCATABLE BUILDING GROUNDING DETAIL

SCALE: N.T.S.

3

APPROVED A NUMBERS APPLICABLE TO THIS PC PLAN

MANUFACTURER OF MODULAR BUILDING	DSA A NUMBER OF MODULAR BUILDING	BASED ON PC	YEAR OF APPROVAL OF MODULAR BUILDING	MODULAR BUILDING SIZE	DESIGN FLOOR LIVE LOAD
AMERICAN MODULAR SYSTEMS	68570	314	1997	24x40	50
AMERICAN MODULAR SYSTEMS	02-101837	02-101488	2000	24x40	50
AMERICAN MODULAR SYSTEMS	02-102602	02-101835	2000	48x40	50
AMERICAN MODULAR SYSTEMS	02-103013	02-101837	2001	24x40	50
AMERICAN MODULAR SYSTEMS	02-103457	02-101837	2001	24x40	50
AMERICAN MODULAR SYSTEMS	02-105168	02-101837	2003	24x40	70
AMERICAN MODULAR SYSTEMS	02-105877	02-104917	2003	48x40	50
AMERICAN MODULAR SYSTEMS	02-106009	02-104915	2004	24x40	50
AMERICAN MODULAR SYSTEMS	02-106010	02-104917	2006	48x40	50
AMERICAN MODULAR SYSTEMS	02-106049	02-104915	2004	24x40	50
AMERICAN MODULAR SYSTEMS	02-106166	02-104915	2004	24x40	50
AMERICAN MODULAR SYSTEMS	02-106238	02-104915	2004	24x40	50
AMERICAN MODULAR SYSTEMS	02-106373	02-104917	2004	48x40	50
AMERICAN MODULAR SYSTEMS	02-106477	02-104915	2004	24x40	50
AMERICAN MODULAR SYSTEMS	02-106479	02-104925	2004	36x40	70
AMERICAN MODULAR SYSTEMS	02-106597	02-104915	2004	24x40	70
AMERICAN MODULAR SYSTEMS	02-107266	02-104917	2005	48x40	50
AMERICAN MODULAR SYSTEMS	02-107282	02-104925	2005	36x40	50
AMERICAN MODULAR SYSTEMS	02-107316	02-104925	2005	36x40	70
AMERICAN MODULAR SYSTEMS	02-107348	02-104915	2005	24x40	50
AMERICAN MODULAR SYSTEMS	02-107389	02-104925	2005	36x40	50
AMERICAN MODULAR SYSTEMS	02-107434	02-104917	2005	48x40	70
AMERICAN MODULAR SYSTEMS	02-107538	02-104925	2005	36x40	50
AMERICAN MODULAR SYSTEMS	02-107521	02-104915	2005	24x40	50
AMERICAN MODULAR SYSTEMS	02-107583	02-104917	2005	48x40	50
AMERICAN MODULAR SYSTEMS	02-107584	02-104915	2005	24x40	50
AMERICAN MODULAR SYSTEMS	02-107617	02-104915	2005	24x40	50
AMERICAN MODULAR SYSTEMS	02-107655	02-104925	2005	36x40	50
AMERICAN MODULAR SYSTEMS	02-107683	02-104915	2005	24x40	50
AMERICAN MODULAR SYSTEMS	02-107716	02-104915	2005	24x40	50
AMERICAN MODULAR SYSTEMS	02-107829	02-104925	2006	36x40	50
AMERICAN MODULAR SYSTEMS	02-107943	02-104915	2006	24x40	50
AMERICAN MODULAR SYSTEMS	02-108167	02-104917	2005	48x40	70
AMERICAN MODULAR SYSTEMS	02-108220	02-104925	2005	36x40	50
AMERICAN MODULAR SYSTEMS	02-108305	02-104917	2006	48x40	70
AMERICAN MODULAR SYSTEMS	02-108306	02-104915	2006	24x40	50
AMERICAN MODULAR SYSTEMS	02-108398	02-104925	2005	36x40	50
AMERICAN MODULAR SYSTEMS	02-108495	02-104915	2006	24x40	70
AMERICAN MODULAR SYSTEMS	02-108526	02-104917	2006	48x40	70
AMERICAN MODULAR SYSTEMS	02-108543	02-104917	2006	48x40	50
AMERICAN MODULAR SYSTEMS	02-108709	02-104917	2007	48x40	70
AMERICAN MODULAR SYSTEMS	02-108710	02-104925	2007	36x40	70
AMERICAN MODULAR SYSTEMS	02-108865	02-104925	2007	36x40	50
AMERICAN MODULAR SYSTEMS	02-108900	02-104917	2007	48x40	70
AMERICAN MODULAR SYSTEMS	02-109555	02-104925	2008	36x40	50
AURORA	65301	253	1996	24x40	50
AURORA	65601	253	1996	24x40	50
AURORA	65714	253	1996	24x40	50
AURORA	65768	253	1996	24x40	50
AURORA	65807	253	1996	24x40	50
AURORA	65839	253	1996	24x40	50
AURORA	67425	253	1996	48x40	70
AURORA	67426	253	1997	36x40	50
AURORA	68900	348	1997	36x40	70
AURORA	69961	253	1997	36x40	50
AURORA	04-100019	253	1997	24x40	50
AURORA	04-100246	253	1998	24x40	50
AURORA	04-100706	253	1998	36x40	50
AURORA	04-101311	04-100335	1998	24x40	50
AURORA	04-101817	04-101055	2000	24x40	50
AURORA	04-101941	04-101055	2000	24x40	50
AURORA	04-101965	04-101055	2000	24x40	50
AURORA	04-101966	04-101055	2000	24x40	50
AURORA	04-102504	04-101055	2000	36x40	50
AURORA	04-102724	04-101055	2000	24x40	50
AURORA	04-102963	04-101055	2000	36x40	50
AURORA	04-103138	04-101055	2001	24x40	50
AURORA	04-103577	04-101055	2001	24x40	50
AURORA	04-103714	04-101055	2001	48x40	70
AURORA	04-104028	04-101055	2001	24x40	50
AURORA	04-104609	04-101055	2002	24x40	50
AURORA	04-104478	04-101055	2002	24x40	50
AURORA	04-105203	04-101055	2003	24x40	50
AURORA	04-105288	04-101055	2002	36/48x40	50
AURORA	04-105339	04-104816	2003	24x40	50
AURORA	04-105440	04-104816	2003	24x40	50
AURORA	04-105948	04-104816	2003	36x40	50
AURORA	04-106097	04-104816	2004	24x40	70
AURORA	04-109476	04-101055	2008	36x40	50

APPROVED A# NUMBERS APPLICABLE TO THIS PC PLAN

MANUFACTURER OF MODULAR BUILDING	DSA A# NUMBERS OF MODULAR BUILDINGS	BASED ON PC	YEAR OF APPROVAL OF MODULAR BUILDING	MODULAR BUILDING SIZE	DESIGN FLOOR LIVE LOAD
CLASS LEASING	TBD	04-114654	2017	24/36/48X40	50 & 70
MODTECH	54198	121	1990	24X40	50
MODTECH	57433	79	1992	24X40	50 STIFFENED
MODTECH	59629	79	1993	24X40	50
MODTECH	60811	243	1993	24/36X40	70
MODTECH	61172	243	1994	24X40	50
MODTECH	61614	243	1994	24X40	70
MODTECH	65965	243	1996	24X40	50
MODTECH	66341	275	1999	24X40	50
MODTECH	67333	266	1997	24X40	50
MODTECH	69746	266	1997	24X40	50
MODTECH	04-100727	282	1999	36X40	50 & 70
MODTECH	04-101194	270	1999	24X40	50
MODTECH	04-101527	270	1999	24X40	50
MODTECH	04-101550	275	2001	24X40	50 STIFFENED
MODTECH	04-101749	04-101419	2000	24X40	50
MODTECH	04-101984	04-101419	2000	24X40	50
MODTECH	04-103334	04-101268	2001	24X40	50
MODTECH	04-103375	04-101419	2001	24X40	50
MODTECH	04-104244	04-101419	2002	24X40	50
MODTECH	04-104310	04-101419	2002	24/48X40	50
MODTECH	04-104439	04-101268	2002	36X40	70
MODTECH	04-104591	04-101268	2002	36X40	70
MODTECH	04-104496	04-101419	2002	24X40	50
MODTECH	04-105018	04-101268	2003	36X40	50
MODTECH	04-105224	04-101268	2003	48X40	70
MODTECH	04-105225	04-101268	2003	36X40	70
MODTECH	04-105239	04-101449	2003	24X40	70
MODTECH	04-105337	04-101801	2003	24X40	50
MODTECH	04-105400	04-101801	2003	48X40	70
MODTECH	04-105455	04-104796	2003	24X40	50
MODTECH	04-106196	04-104796	2004	24X40	50
MODTECH	04-106445	04-104801	2004	24/36X40	70
MODTECH	04-106821	04-104801	2006	24X40	70
MODTECH	04-107069	04-104801	2005	36X40	70
MODTECH	04-107616	04-104801	2005	36X40	50 & 70

APPROVED A# NUMBERS APPLICABLE TO THIS PC PLAN

MANUFACTURER OF MODULAR BUILDING	DSA A# NUMBERS OF MODULAR BUILDINGS	BASED ON PC	YEAR OF APPROVAL OF MODULAR BUILDING	MODULAR BUILDING SIZE	DESIGN FLOOR LIVE LOAD
MODULAR STRUCTURES INTERNATIONAL	52938	57	1990	24x40	50
MODULAR STRUCTURES INTERNATIONAL	68435	323	1997	24x40	50
MODULAR STRUCTURES INTERNATIONAL	68505	323	1997	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-100118	100073	1998	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-101403	362	1999	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-101905	04-101244	2000	24x40	70
MODULAR STRUCTURES INTERNATIONAL	04-101926	04-101244	2000	36x40	50
MODULAR STRUCTURES INTERNATIONAL	04-102499	04-101244	2000	36x40	70
MODULAR STRUCTURES INTERNATIONAL	04-103266	04-101244	2001	48x40	50
MODULAR STRUCTURES INTERNATIONAL	04-104262	04-101244	2002	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-104575	04-101244	2002	48x40	50
MODULAR STRUCTURES INTERNATIONAL	04-105157	04-101244	2003	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-105451	04-104778	2003	36x40	50
MODULAR STRUCTURES INTERNATIONAL	04-105453	04-104778	2003	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-106168	04-104778	2003	48x40	50
MODULAR STRUCTURES INTERNATIONAL	04-106179	04-104778	2004	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-106292	04-104778	2004	48x40	50
MODULAR STRUCTURES INTERNATIONAL	04-106743	04-104778	2004	24x40	50
MODULAR STRUCTURES INTERNATIONAL	04-107072	04-104778	2005	48x40	70
MODULAR STRUCTURES INTERNATIONAL	04-107176	04-104778	2005	48x40	50
MODULAR STRUCTURES INTERNATIONAL	04-107207	04-104778	2006	36x40	50
MODULAR STRUCTURES INTERNATIONAL	04-107251	04-104778	2006	36x40	50
MODULAR STRUCTURES INTERNATIONAL	04-107310	04-104778	2006	24x40	50
PACESETTER INDUSTRIES, INC.	68794	330	1997	24X40	50
PACESETTER INDUSTRIES, INC.	02-100158	330	1998	24X40	50
PACESETTER INDUSTRIES, INC.	02-100159	374	1998	36X40	50
PACESETTER INDUSTRIES, INC.	02-100391	330	1998	24X40	50
PACESETTER INDUSTRIES, INC.	02-100537	330	1998	24X40	50
PACESETTER INDUSTRIES, INC.	02-100544	374	1998	48X40	70
PACESETTER INDUSTRIES, INC.	02-100729	330	1998	36X40	50
PACESETTER INDUSTRIES, INC.	02-100770	374	1999	48X40	50
PACESETTER INDUSTRIES, INC.	02-100771	374	1999	48X40	50
PACESETTER INDUSTRIES, INC.	02-100871	330	1998	24X40	50
PACESETTER INDUSTRIES, INC.	02-100974	330	1998	24X40	50
PACESETTER INDUSTRIES, INC.	02-100975	374	1999	48X40	50
PACESETTER INDUSTRIES, INC.	02-101417	374	1999	48X40	50
PACESETTER INDUSTRIES, INC.	02-101592	330	1998	24X40	50
PACESETTER INDUSTRIES, INC.	02-101636	02-101190	1999	24X40	50
PACESETTER INDUSTRIES, INC.	02-102152	02-101530	2000	48X40	50 & 70
PACESETTER INDUSTRIES, INC.	02-102211	02-101528	2000	24X40	50
PACESETTER INDUSTRIES, INC.	02-102420	02-101530	2000	48X40	50
SILVER CREEK INDUSTRIES, INC	04-108040	04-107557	2006	48X40	50
SILVER CREEK INDUSTRIES, INC	04-108041	04-107557	2006	36X40	50
SILVER CREEK INDUSTRIES, INC	04-108179	04-107557	2006	24X40	70
SILVER CREEK INDUSTRIES, INC	04-110018	04-107557	2007	36X40	70
SILVER CREEK INDUSTRIES, INC	04-110019	04-107557	2008	48X40	70
SILVER CREEK INDUSTRIES, INC	03-113409	04-109299	2010	36/48X40	50 & 70
SILVER CREEK INDUSTRIES, INC	04-113414	04-109299	2010	24X40	50 & 70
STEELGARD, INC	47743	N/A	1986	24X40	50
STEELGARD, INC	52900	N/A	1990	24X40	50
STEELGARD, INC	54177	N/A	1990	24X40	50



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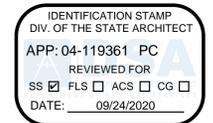
DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
RUTH GRIMES
ELEMENTARY SCHOOL

SHEET TITLE:

APPLICATION NUMBERS

PRE-CHECK (PC) DOCUMENT
CODE: 2019 CBC
A SEPARATE PROJECT APPLICATION FOR
CONSTRUCTION IS REQUIRED



PROFESSIONAL OF RECORD ON PC

APPROVED A# NUMBERS APPLICABLE TO THIS PC PLAN

MANUFACTURER OF MODULAR BUILDING	DSA A# NUMBERS OF MODULAR BUILDINGS	BASED ON PC	YEAR OF APPROVAL OF MODULAR BUILDING	MODULAR BUILDING SIZE	DESIGN FLOOR LIVE LOAD
AMERICAN MODULAR SYSTEMS	02-106598	02-104931	2004	12X40	70
AMERICAN MODULAR SYSTEMS	02-107256	02-104931	2005	12X40	70
AMERICAN MODULAR SYSTEMS	02-107435	02-104931	2005	12X40	70
AMERICAN MODULAR SYSTEMS	02-107511	02-104931	2005	12X40	70
AMERICAN MODULAR SYSTEMS	02-107700	02-104931	2005	12X40	70
AMERICAN MODULAR SYSTEMS	02-107701	02-104931	2005	12X40	70
AMERICAN MODULAR SYSTEMS	02-107908	02-104931	2006	12X40	70
AMERICAN MODULAR SYSTEMS	02-107909	02-104931	2006	12X40	70
AMERICAN MODULAR SYSTEMS	02-107981	02-104931	2006	12X40	70
AMERICAN MODULAR SYSTEMS	02-108494	02-104931	2006	12X40	70
AMERICAN MODULAR SYSTEMS	02-108593	02-104931	2007	12X40	70
AMERICAN MODULAR SYSTEMS	02-109376	02-104931	2007	12X40	70
AURORA MODULAR	69026	272	1997	12X40	70
AURORA MODULAR	80015	272	1997	12X40	70
AURORA MODULAR	04-102745	04-101179	2000	12X40	70
AURORA MODULAR	04-103359	04-101179	2001	12X40	70
AURORA MODULAR	04-103321	04-101179	2001	12X40	70
AURORA MODULAR	04-103534	04-101179	2001	12X40	70
AURORA MODULAR	04-103601	04-101179	2001	12X40	70
AURORA MODULAR	04-103923	04-101179	2002	12X40	70
AURORA MODULAR	04-103924	04-101179	2002	12X40	70
AURORA MODULAR	04-103947	04-101179	2002	12X40	70
AURORA MODULAR	04-105650	04-104822	2003	12X40	70
CLASS LEASING	04-115911	04-114945	2017	12X40	100
MODULAR STRUCTURES INT'L	04-101347	04-100332	1999	12X40	50
MODULAR STRUCTURES INT'L	04-101425	04-100332	1999	12X40	50
MODULAR STRUCTURES INT'L	04-101927	04-101334	2001	12X40	50
MODULAR STRUCTURES INT'L	04-103408	04-101334	2001	12X40	50
MODULAR STRUCTURES INT'L	04-103600	04-101334	2001	12X40	50
MODULAR STRUCTURES INT'L	04-104148	04-101334	2004	12X40	70
MODULAR STRUCTURES INT'L	04-105096	04-101334	2003	12X40	70
MODULAR STRUCTURES INT'L	04-105526	04-104780	2003	12X40	70
MODULAR STRUCTURES INT'L	04-106423	04-104780	2004	12X40	70
MODULAR STRUCTURES INT'L	04-106424	04-104780	2004	12X40	70
MODTECH	52479	N/A	1989	12X40	50
MODTECH	04-101770	284	1999	12X40	50
MODTECH	04-103533	04-101447	2001	12X40	50
MODTECH	01-103972	04-101447	2001	12X40	50
MODTECH	04-103922	04-101447	2001	12X40	50
MODTECH	04-104384	04-101447	2002	12X40	70
MODTECH	04-104442	04-101447	2002	12X40	70
MODTECH	04-105223	04-101447	2003	12X40	70
MODTECH	04-105281	04-104800	2003	12X40	70
MODTECH	04-105484	04-104800	2003	12X40	70
MODTECH	04-105546	04-104800	2003	12X40	70
MODTECH	04-106425	04-104800	2004	12X40	70
MODTECH	04-107068	04-104800	2005	12X40	70
MODTECH	04-107648	04-104800	2005	12X40	70
MODTECH	04-107742	04-104800	2005	12X40	70

APPROVED A# NUMBERS APPLICABLE TO THIS PC PLAN

MANUFACTURER OF MODULAR BUILDING	DSA A# NUMBERS OF MODULAR BUILDINGS	BASED ON PC	YEAR OF APPROVAL OF MODULAR BUILDING	MODULAR BUILDING SIZE	DESIGN FLOOR LIVE LOAD
SKC COMPANY	#04-118301	N/A	2019	12X40	70
SKC COMPANY	#04-118713	N/A	2019	12X40	70
SKC COMPANY	#04-119009	N/A	2020	12X40	70
SKC COMPANY	#04-119160	N/A	2020	12X40	70

STATE AGENCY APPROVAL



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OFFICE: (909) 740-3120, FAX: (909) 726-9470
WEBSITE: WWW.SKCCOMPANY.COM

MANUFACTURER #MF 127996 DEALER # DL 127996
CS 1.0 9/01/18 SBC CERTIFIED

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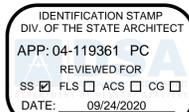
DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
RUTH GRIMES
ELEMENTARY SCHOOL

SHEET TITLE:

APPLICATION NUMBERS

PRE-CHECK (PC) DOCUMENT
CODE: 2019 CBC
A SEPARATE PROJECT APPLICATION FOR
CONSTRUCTION IS REQUIRED



PROFESSIONAL OF RECORD ON PC



Date Signed: September 22, 2020

FIRM: EXL STRUCTURAL ENGINEERING, INC
ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
CITY: CHINO, CA 91710
PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

REVISIONS

- △ -
- △ -
- △ -
- △ -
- △ -

PROJECT NO.: 00-0000
DRAFTER: 00
SCALE: AS NOTED
DATE: 00-00-00

SHEET NUMBER

F-1B

9/21/2020 8:21:26 AM

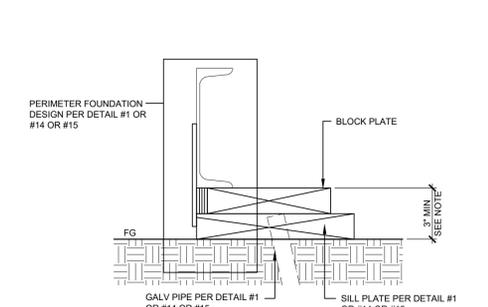
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PERIMETER PAD @ PACESETTER INDUSTRIES

SCALE: 3" = 1'-0"

12

NOTE: SEE GENERAL NOTE #4

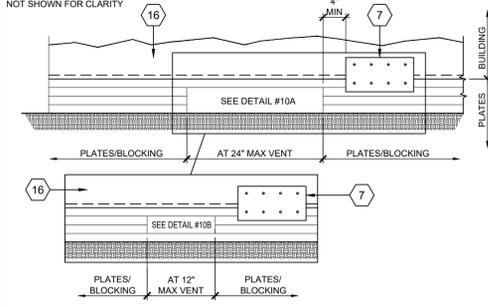


MINIMUM HEIGHT AT SLOPED GRADE

SCALE: 3" = 1'-0"

8

NOTE: SKIRTING OR VENT SCREEN NOT SHOWN FOR CLARITY

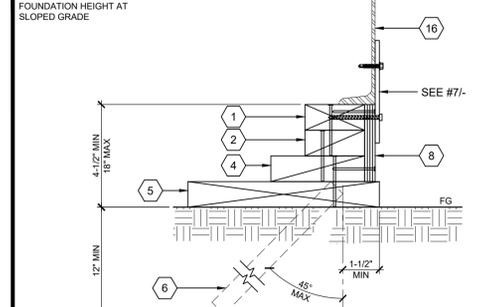


VENTS AT LEVELED GRADE

SCALE: 1" = 1'-0"

4

NOTE: SEE DETAIL #6 FOR MIN FOUNDATION HEIGHT AT SLOPED GRADE



TYPICAL PERIMETER PAD DETAIL

SCALE: 3" = 1'-0"

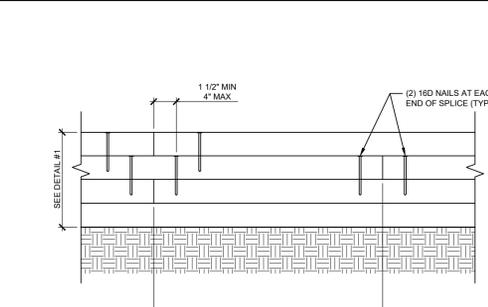
1

NOT USED

PERIMETER PAD @ AMERICAN MODULAR SYSTEM

SCALE: 3" = 1'-0"

13

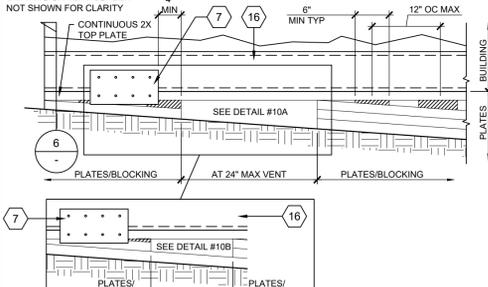


TYPICAL SPLICE DETAIL

SCALE: 3" = 1'-0"

9

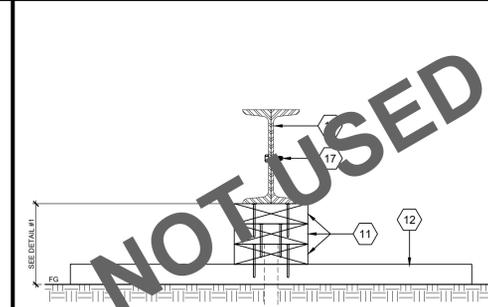
NOTE: SKIRTING OR VENT SCREEN NOT SHOWN FOR CLARITY



VENTS/SHIMS AT SLOPED GRADE

SCALE: 3" = 1'-0"

5



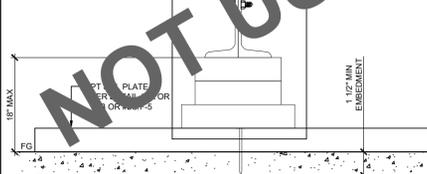
TYPICAL MODLINE DETAIL

SCALE: 3" = 1'-0"

2A

NOTE: SEE DETAIL #6 FOR MIN FOUNDATION HEIGHT AT SLOPED GRADE

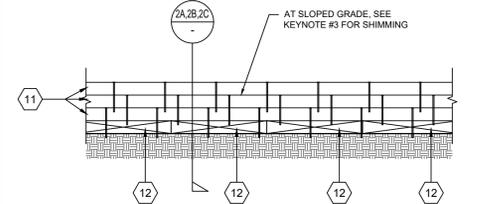
Table with 2 columns: FLOOR LOAD (50, 50-15) and 2 rows: ALL MODLINES, CONT. Includes spacing schedule for shot pins.



24" MAX VENT DETAIL

SCALE: 3" = 1'-0"

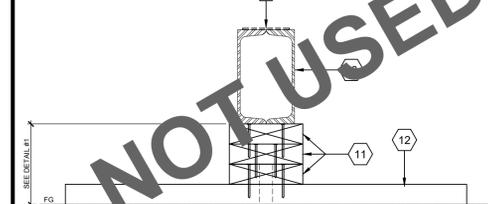
10A



MODLINE DETAIL (SIDE VIEW)

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

6



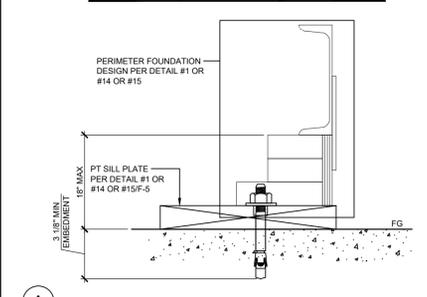
MODLINE @ AMERICAN MODULAR SYSTEM

SCALE: 3" = 1'-0"

2B

NOTE: SEE DETAIL #6 FOR MIN FOUNDATION HEIGHT AT SLOPED GRADE

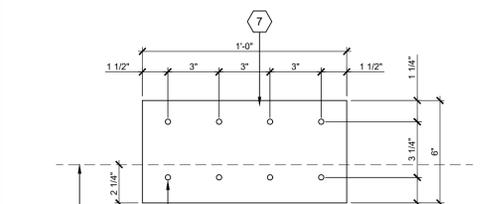
Table with 2 columns: FLOOR LOAD (50, 50-15) and 2 rows: ENDWALL, SIDEWALL. Includes spacing schedule for sill plates.



12" MAX VENT DETAIL

SCALE: 3" = 1'-0"

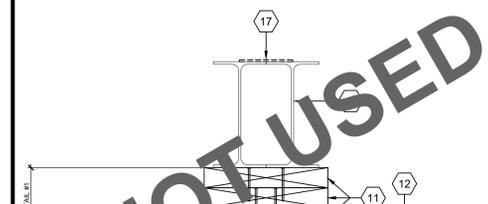
10B



TYPICAL FOUNDATION TIE PLATES

SCALE: 3" = 1'-0"

7A



MODLINE @ PACESETTER INDUSTRIES

SCALE: 3" = 1'-0"

2C

ALT FOUNDATION TO CONC SLAB

SCALE: 6" = 1'-0"

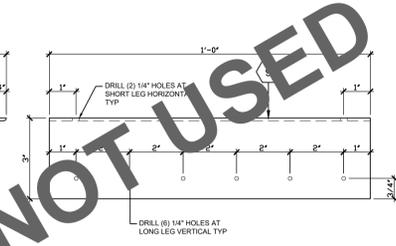
14



SHEAR TRANSFER @ PACESETTER INDUSTRIES

SCALE: 6" = 1'-0"

7B



SHEAR TRANSFER @ PACESETTER INDUSTRIES

SCALE: 6" = 1'-0"

7B

KEY NOTES

- 1. CONTINUOUS 2X4 MIN TOP PLATE. INSTALL NAIL TO EACH PAD WITH .135" X 3" MIN BOX NAILS AT 1" OC STAGGERED & (2) .135" X 3" MIN BOX NAILS AT EACH END OF SPLICE, MIN 1 1/2" PENETRATION
- 2. BLOCK PLATES (2X4 MIN AT 50# FLOOR LOAD OR 2X6 MIN AT 65# FLOOR LOAD) - .135 X 3" MIN BOX NAILS AT 1" OC. (2) .135 X 3" MIN BOX NAILS AT EACH END OF SPLICE, MIN 1 1/2" PENETRATION
- 3. 1 1/2" MAX TAPERED SHIMS NAIL TO FOUNDATION PLATES WITH 8D BOX NAILS AT 12" OC NAIL STAGGERED ALONG EACH TAPERED SHIM (PER SLOPE OF GROUND AT SITE)
- 4. BLOCK PLATE (2X6 AT 50# FLOOR LOAD OR 2X8 AT 65# FLOOR LOAD). SPLICES SHALL OCCUR AT CENTER OF BLOCK PLATE LOCATIONS (SEE GENERAL NOTE #3). REFER TO KEYNOTE #2 FOR NAILING
- 5. CONTINUOUS PRESSURE TREATED SILL PLATE (SEE PLAN). PLATE SPLICES SHALL OCCUR AT CENTER OF BLOCK PLATE LOCATION
- 6. 1"8 X 14" MIN STANDARD WEIGHT HOT DIPPED GALVANIZED PIPE AT 10'-0" OC MAX. 2'-0" MAX FROM EACH CORNER IN BOTH DIRECTIONS AND A MINIMUM OF TWO PIPES PER DISCONTINUE FOUNDATION STRIP PER DSA IR 16-1.13 SECTION 4.8. DRILL SILL PLATE 1 1/2"Ø MAX HOLE PIPE SHOULD PENETRATE INTO SOIL AND/OR PAVING A MIN OF 12" MEASURED VERTICALLY PIPES SHALL BE INSTALLED ON A CONTINUOUS PLATE. PIPE SHALL BE STAMPED WITH ASTM A53 GRADE 'A' OR 'B' AND MEET THE REQUIREMENTS OF ASTM A123
- 7. 12" X 6" X 10 GA STEEL TIE PLATE (PRIME AND PAINTED) WITH (8) 5/16" HOLES AS SHOWN FOR (4) 1/4"x1" LONG SDS INTO CHANNEL & (4) 1/4"x3" LAG SCREW INTO 2X MEMBER TYP LOCATE 4" MIN FROM SPLICES & END OF FOUNDATION PLATES. IF STEEL TIE PLATE IS NOT PRIMED OR PAINTED IT SHALL BE GALV. IF FASTENERS ARE NOT PAINTED, IT SHALL BE GALV
- 8. 5/8" PLYWOOD OR SIDING PERIMETER SKIRTING. NAIL TO FOUNDATION PLATES WITH .135 X 2" MIN BOX NAILS @ 6" OC END NAILING AND 12" OC FIELD NAILING
- 9. 12 GA SHEAR TRANSFER ANGLE AT PACESETTER INDUSTRIES ONLY. SECURE LONG LEG VERTICAL TO FOUNDATION WITH #14 X 2" MIN FLAT HEAD EXTERIOR WOOD SCREWS. SECURE SHORT LEG HORIZONTAL TO BUILDING FLOOR FRAME WITH #14 X 2" MIN FLAT HEAD OR HEX HEAD EXTERIOR WOOD SCREWS (MAX 45°)
- 10. 2X6 NAILER PLATE SECURED WITH 1/4" X 2-1/2" MIN HEX WASHER HEAD TEK SCREWS AT THE FOLLOWING SPACING:
 - 12X40 BUILDING - 4" OC MAX AT ENDWALLS & 12" OC MAX SIDEWALLS
 - 24X40 BUILDING - 5" OC MAX AT ENDWALLS & 8" OC MAX SIDEWALLS
 - 36X40 BUILDING - 5" OC MAX AT ENDWALLS & 5" OC MAX SIDEWALLS
 - 48X40 BUILDING - 5" OC MAX AT ENDWALLS & 4" OC MAX SIDEWALLS
- 11. MODLINE - CONT PLATE (2X10 MIN AT PACESETTER ONLY AND 2X6 MIN ELSEWHERE). NAIL .135 X 3" MIN AT 12" OC AND (2) .135 X 3" MIN NAILS AT EACH END
- 12. MODLINE - SIDE BY SIDE PRESSURE TREATED SILL PADS (SEE PLAN)
- 13. NOT USED
- 14. NOT USED
- 15. NOT USED
- 16. FLOOR CHANNEL (REFER TO DSA APPROVED BUILDING MANUFACTURE PLANS)
- 17. MODLINE CONNECTION (REFER TO DSA APPROVED BUILDING MANUFACTURE PLANS)
- 18. FLOOR JOIST OR BLOCK
- 19. VENT SCREEN ATTACHED TO FOUNDATION W/ #8 SCREWS AT EACH CORNERS. COORDINATE WITH FOUNDATION PLAN TABLE FOR MAX SPACE BETWEEN FOUNDATION BLOCKS & BUILDING VENTILATION TABLE FOR VENTING REQUIREMENTS TO DETERMINE SIZE OF NET OPENING. VENTING SCREEN SHALL BE 2" LARGER THAN THE SIZE OF THE NET OPENING FOR THE SCREEN TO BE FASTENED ON EACH CORNER. VENTILATION SHALL BE PROVIDED AT A NET AREA OF NOT LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER FLOOR AREA
- 20. 0.145"Ø X 3" LONG X-CP T2 P8 S36 "HILT" SHOT PIN PER ICC REPORT #ESR-2379 (SEE SCHEDULE FOR QUANTITY, STAGGER SPACING)
- 21. 2x6 HF #2 AT 16" OC MAX. (2) 16D NAILS TOE OR END NAILS TYP AT TOP & BTM STUDS
- 22. 2x4 HF #2 AT 16" OC MAX. (2) 16D BOX NAILS TOE OR END NAILS TYP AT TOP & BTM STUDS

STATE AGENCY APPROVAL



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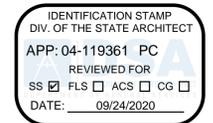
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DISTRICT/CUSTOMER NAME: COLTON JOINT USD

SCHOOL/SITE NAME: RUTH GRIMES ELEMENTARY SCHOOL

SHEET TITLE: DETAILS

PRE-CHECK (PC) DOCUMENT
CODE: 2019 C/C
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED



PROFESSIONAL OF RECORD ON PC



Date Signed: September 22, 2020

FIRM: EXL STRUCTURAL ENGINEERING, INC
ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
CITY: CHINO, CA 91710
PHONE: (909) 613-0204

PROJECT SPECIFIC PROFESSIONAL OF RECORD

FIRM ADDRESS: PHONE:

Table with 2 columns: REVISIONS, and 2 rows for revision entries.

PROJECT NO.: 00-0000
DRAFTER: 00
SCALE: AS NOTED
DATE: 00-00-00

SHEET NUMBER

F-5

GENERAL NOTES:

- 1. CONTINUOUS PLATES, OTHER THAN TOP OR BOTTOM PLATE, CAN BE CUT AS NECESSARY FOR VENTING PURPOSES
- 2. SEE INDIVIDUAL FOUNDATION SHEETS FOR ALL PLATE, BLOCKS AND SILL PLATE SIZES AS REQUIRED FOR FLOOR LIVE LOAD DESIGN
- 3. BLOCKS ABOVE SILL PLATES ARE TO BE CENTERED
- 4. SITE GRADE CONDITIONS VARY PER PROJECT SPECIFIC. DETAIL #6I SHALL ONLY APPLY AT MAX TWO BUILDING CORNERS (WHEN NECESSARY) TO ALLOW VENTILATION AT OTHER SIDES OF THE FOUNDATION. IF APPLICABLE VERIFY PROPER VENTILATION REQUIREMENTS. IF MIN VENTILATION IS NOT MET, SITE GRADE CONDITION MUST BE RE-GRADED (BY DISTRICT)
- 5. ALL NAILS SPECIFIED ON THESE PLANS ARE BOX NAILS. COMMON NAILS IS OPTIONAL. WHEN SECURING FOUNDATION PLATE TO PLATE, THE MIN NAIL SHANK DIAMETER TO BE USED IS 0.131. ALL NAILS SHALL BE HOT-DIPPED GALVANIZED



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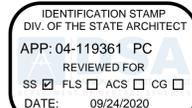
DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
RUTH GRIMES
ELEMENTARY SCHOOL

SHEET TITLE:

12X40 PLAN

PRE-CHECK (PC) DOCUMENT
CODE: 2019 CBC
A SEPARATE PROJECT APPLICATION FOR
CONSTRUCTION IS REQUIRED

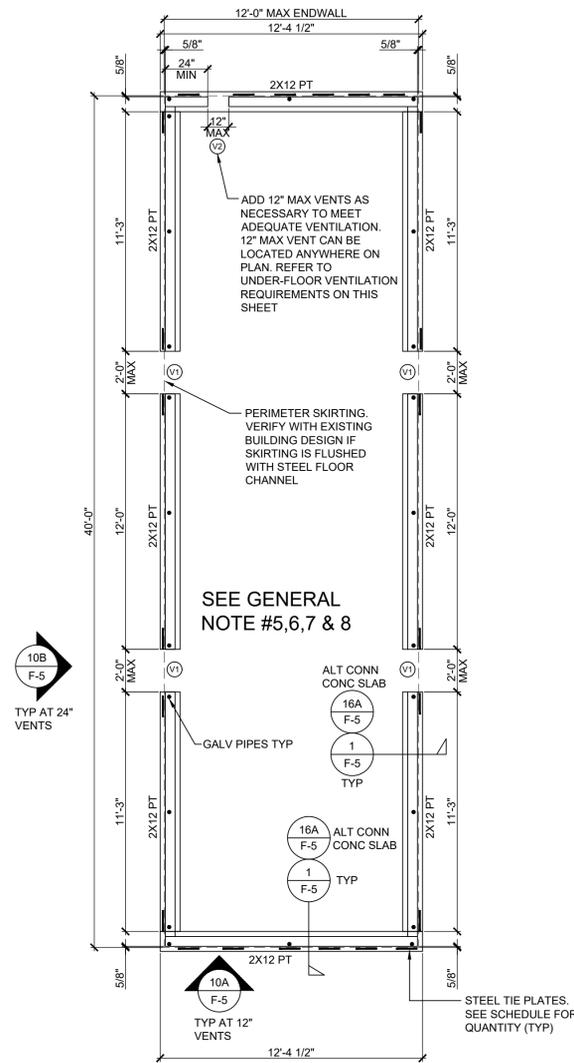


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Date Signed: September 22, 2020

PROJECT SPECIFIC PROFESSIONAL OF RECORD



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

GENERAL NOTES:

- DESIGN ALLOWABLE SOIL BEARING PRESSURE - 1000 PSF
- ALL FOUNDATION LUMBER SHALL BE HF #2 ALL LUMBER IN CONTACT WITH GRADE SHALL BE STAMPED *FOR GROUND CONTACT* ALL FOUNDATION FASTENERS SHALL BE CORROSION RESISTANT PER 2304.9.5
- CONTINUOUS TOP PLATE NOT SHOWN FOR CLARITY
- MAXIMUM 2,160 SQ FT FOR STAND-ALONE WOOD PAD FOUNDATION SYSTEM PER DSA IR 16-1.13
- MINIMUM (3) SIDES FOR CROSS VENTILIZATION
- THE ENDWALL SIDE MUST BE VENTED
- OPTION - PER SECTION 1203.4.2 EXCEPTION 2, THE TOTAL AREA OF VENTILATION OPENINGS IS PERMITTED TO BE REDUCED TO 1/1500 OF THE UNDER-FLOOR AREA WHERE THE GROUND SURFACE IS COVERED WITH A CLASS I VAPOR RETARDER MATERIAL AND THE REQUIRED OPENINGS ARE PLACED SO AS TO PROVIDE CROSS VENTILATION OF THE SPACE. THE INSTALLATION OF OPERABLE LOUVERS SHALL NOT BE PROHIBITED
- THE 24" WIDE MAX VENT OPENING AT THE SIDEWALL IS A FIX LOCATION. REFER TO DETAIL #10B/F-5 FOR BLOCK-OUT REQUIREMENTS. THE 12" WIDE MAX VENT OPENING CAN BE LOCATED ANYWHERE ON THE FOUNDATION ABIDING BY DETAIL #10A/F-5 BLOCK-OUT REQUIREMENTS. WHEN RAMPS, LANDINGS OR STAIRS ARE USED, THE VENT AREAS THAT ARE ACCOUNTED FOR TO MEET THE MIN VENTILATION REQUIREMENTS MUST EITHER BE RELOCATED OR THE RAMP, LANDING OR STAIRS MUST ALSO BE VENTED TO ALLOW VENTILATION

WOOD PAD FOUNDATION (PERIMETER)			
FLOOR LIVE LOAD PSF	50	50+15	
SILL PLATE (END WALL)	2x12 CONT	2x12 CONT	
SILL PLATE (SIDE WALL)	2x12 CONT	2x12 CONT	
BLOCK PLATE (END WALL)	2x6	2x6	
BLOCK PLATE (SIDE WALL)	2x6	2x6	
BLOCKPLATE (END WALL)	2x6	2x6	
BLOCKPLATE (SIDE WALL)	2x6	2x6	
CONT. TOP PLATE	2x4	2x4	

TIE PLATE SCHEDULE				
BUILDING SIZE	FLOOR LOAD PSF	PER EA SIDE ENDWALL	PER EA SIDE SIDEWALL	GRAND TOTAL
12'x40'	50+15	7	7	28

VENTILATION FORMULA (BASED ON 4 1/2" PAD HEIGHT)

BUILDING SQUARE FOOTAGE: 12' X 40' = 480 SF
REQUIRED VENTILATION: 1 SF / 150 SF (ALLOWED BY CODE)
960 SF / 150 SF = 3.2 SF VENTILATION REQUIRED

Ⓧ 24" MAX VENTS TO BE: 4
24" X 3" = 72 / 144 = 0.5 SF
TOTAL VENTILATION: (4) VENTS X 0.5 = 2.0 SF

Ⓧ 12" MAX VENTS TO BE USE: 10
12" X 1.5" = 18 / 144 = 0.125 SF
TOTAL VENTILATION: (10) VENTS X 0.125 = 1.25 SF

OVERALL VENTILATION:
2.0 + 1.25 = 3.25 SF

3.25 SF ≥ 3.2 SF VENTILATION REQUIREMENT = OK

NOTE:
ADDITIONAL 12" MAX VENTS WILL BE REQUIRED WHEN FOUNDATION PAD HEIGHT IS LESS THAN 6" INCLUDING SITE CONDITIONS WHERE THE 24" MAX FIXED VENT IS BLOCKED OR SLOPED GRADES. THE 12" MAX VENT CAN BE INSTALLED ANYWHERE ON THE PLAN ABIDING BY DETAIL #10A/F-5

VENTILATION FORMULA (BASED ON 6" PAD HEIGHT)

BUILDING SQUARE FOOTAGE: 12' X 40' = 480 SF
REQUIRED VENTILATION: 1 SF / 150 SF (ALLOWED BY CODE)
960 SF / 150 SF = 3.2 SF VENTILATION REQUIRED

Ⓧ 24" MAX VENTS TO BE: 4
24" X 4.5" = 108 / 144 = 0.75 SF
TOTAL VENTILATION: (4) VENTS X 0.75 = 3.0 SF

Ⓧ 12" MAX VENTS TO BE USE: 1
12" X 3" = 36 / 144 = 0.25 SF
TOTAL VENTILATION: (1) VENTS X 0.25 = 0.25 SF

OVERALL VENTILATION:
3.0 + 0.25 = 3.25 SF

3.25 SF ≥ 3.2 SF VENTILATION REQUIREMENT = OK

NOTE:
ADDITIONAL 12" MAX VENTS WILL BE REQUIRED WHEN FOUNDATION PAD HEIGHT IS LESS THAN 6" INCLUDING SITE CONDITIONS WHERE THE 24" MAX FIXED VENT IS BLOCKED OR SLOPED GRADES. THE 12" MAX VENT CAN BE INSTALLED ANYWHERE ON THE PLAN ABIDING BY DETAIL #10A/F-5

VENTILATION FORMULA (BASED ON 7 1/2" TO 18" MAX PAD HEIGHT)

BUILDING SQUARE FOOTAGE: 12' X 40' = 480 SF
REQUIRED VENTILATION: 1 SF / 150 SF (ALLOWED BY CODE)
960 SF / 150 SF = 3.2 SF VENTILATION REQUIRED

Ⓧ 24" MAX VENTS TO BE: 4
24" X 6" = 144 / 144 = 1.0 SF
TOTAL VENTILATION: (4) VENTS X 1.0 = 4.0 SF

Ⓧ 12" MAX VENTS TO BE USE: 0
(ONE VENT IS REQUIRED TO BE USE FOR 3RD SIDE CROSS VENTILATION)

OVERALL VENTILATION:
4.0 + 0.0 = 4.0 SF

4.0 SF ≥ 3.2 SF VENTILATION REQUIREMENT = OK

NOTE:
ADDITIONAL 12" MAX VENTS WILL BE REQUIRED WHEN FOUNDATION PAD HEIGHT IS LESS THAN 6" INCLUDING SITE CONDITIONS WHERE THE 24" MAX FIXED VENT IS BLOCKED OR SLOPED GRADES. THE 12" MAX VENT CAN BE INSTALLED ANYWHERE ON THE PLAN ABIDING BY DETAIL #10A/F-5

REVISIONS	
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PROJECT NO.: 00-0000
DRAFTER: 00
SCALE: AS NOTED
DATE: 00-00-00
SHEET NUMBER

GENERAL SPECIFICATIONS

SECTION 1A

1. GENERAL

- A. THE REQUIREMENTS OF THE GENERAL CONDITIONS OF THE AGREEMENT AND THIS GENERAL REQUIREMENTS APPLY TO THE SEVERAL TRADE SECTIONS WITH THE SAME FORCE AS THOUGH FULLY REPEATED IN EACH SECTION.
- B. NAME BRANDS ARE INDICATED TO ESTABLISH A STANDARD OF QUALITY. ITEMS OF EQUAL OR BETTER QUALITY MAY BE SUBSTITUTED FOR THE LISTED BRAND NAMED PRODUCTS.

2. SCOPE OF WORK

- A. THE WORK CONSISTS OF MANUFACTURING OFF-SITE IN A PLANT, AND INSTALLING ON-SITE, MODULAR RELOCATABLE BUILDING AS DEFINED HEREIN AND SHOWN AND DETAILED ON DRAWINGS.
- B. ALL REQUIREMENTS OF TITLE 19 AND 24 OF THE STATE OF CALIFORNIA CODE OF REGULATIONS (CCR) RELATING TO INSPECTIONS AND VERIFIED REPORTS SHALL BE COMPLIED WITH AND SHALL INCLUDE:

- GENERAL RESPONSIBLE CHARGE OF FIELD ADMINISTRATION BY THE PROFESSIONAL OF RECORD.
- INSPECTION DURING THE COURSE OF CONSTRUCTION BY AN INSPECTOR APPROVED BY THE DIVISION OF THE STATE ARCHITECT AND THE DISTRICT ARCHITECT. THE INSPECTOR SHALL BE RESPONSIBLE FOR AND APPROVED TO INSPECT THE GENERAL CONSTRUCTION, WELDING, MECHANICAL AND ELECTRICAL WORK. COST OF THESE INSPECTIONS SHALL BE BORNE BY THE SCHOOL DISTRICT.
- ON SITE INSPECTION OF THE BUILDING INSTALLATION ELECTRICAL AND UTILITY OF THE BUILDING INSTALLATION BY AN INSPECTOR APPROVED BY THE DIVISION OF THE STATE ARCHITECT AND RETAINED BY THE SCHOOL DISTRICT.
- OTHER SPECIAL TESTS OR INSPECTIONS AS MAY BE REQUIRED BY THE DIVISION OF THE STATE ARCHITECT. COST OF THESE INSPECTIONS/TESTS SHALL BE BORNE BY THE SCHOOL DISTRICT.

3. WORK NOT INCLUDED

- A. ALL ON-SITE OR OFF-SITE UTILITIES AND THE CONNECTION OF THEM TO THE BUILDING UNLESS INDICATED ON THE DRAWINGS.
- B. ALL LEVELING, GRADING OR OTHER SITE PREPARATION EXCEPT CONCRETE OR WOOD LEVELING STRIPS, WHERE REQUIRED, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- C. FIRE ALARM SYSTEM, FIRE EXTINGUISHER, PROGRAM BELL, CLOCK, PUBLIC ADDRESS SYSTEM, INTERCOM SYSTEM, TV SYSTEM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

4. WHEELS AND HITCH

SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

5. ACCESSIBILITY OF SITE

THE SCHOOL DISTRICT SHALL PROVIDE ACCESS TO THE SITE FOR THE INSTALLATION OF THE BUILDING, REMOVAL OF TREES, SHRUBS, FENCING, SPRINKLERS, ETC. NECESSARY FOR MOVE-IN AND REMOVAL OF BUILDINGS SHALL BE THE RESPONSIBILITY OF THE SCHOOL DISTRICT.

SECTION 2A SITE ASSEMBLY

1. SCOPE OF WORK

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND SERVICES TO PREPARE THE BUILDING ELEMENTS, TRANSPORT THEM FROM THE PLANT TO THE SITE AND TO COMPLETE THE ASSEMBLY AT THE SITE.

THE CONDITION OF THE SITE, SUCH AS DRAINAGE AND SOIL BEARING CAPACITY, SHALL BE THE RESPONSIBILITY OF THE SCHOOL DISTRICT.

2. ASSEMBLY OF ELEMENTS

- A. THE ELEMENTS SHALL BE BROUGHT TO THE SITE ON WHEEL ASSEMBLY AND TRANSFERRED TO THE PREPARED SITE. GREAT CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ELEMENTS BY RACKING OR BUMPING.
- B. CONNECTION OF THE ELEMENTS TOGETHER SHALL BE DONE ACCORDING TO INSTRUCTIONS ON THE DRAWINGS, FLASHING, TRIM AND OTHER LOOSE ITEMS SHALL BE INSTALLED PER PLANS AND DETAILS OF THE ORIGINAL MANUFACTURER'S DRAWINGS.

SECTION 3A CARPENTRY

1. SCOPE OF WORK

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND SERVICES TO INSTALL CARPENTRY.

2. WORKMANSHIP

- A. FRAMING- SECURELY NAILED, BRIDGED AND LOCKED TO FORM RIGID STRUCTURE. WORK CUT, FITTED AND ASSEMBLED LEVEL, PLUMB AND TRUE TO LINE. TRIM IN AS LONG LENGTHS AS POSSIBLE WITH ALL STANDING TRIM IN ONE PIECE. TRIM SEALED AT ALL EDGES.
- B. NAILING- IN ACCORDANCE WITH TITLE 24 CCR- TABLE 2304.10.1. NAILS SHALL BE CORROSION RESISTANT BOX NAILS.
- C. MACHINE APPLIED NAILING- SHALL HAVE PRIOR DEMONSTRATION AND APPROVAL BY DSA FIELD INSPECTOR AND THE PROFESSIONAL OF RECORD. THE APPROVAL IS SUBJECT TO CONTINUOUS SATISFACTORY PERFORMANCE. PLYWOOD SHALL HAVE A MINIMUM THICKNESS OF 3/8" IF NAILHEADS PENETRATE THE OUTER PLY MORE THAN WOULD BE NORMAL FOR A HAND HAMMER OR IF MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED, THE PERFORMANCE WILL BE DEEMED UNSATISFACTORY.
- D. TRIM SEALED AT ALL EDGES. SEALANT PAINTED TO MATCH TRIM OR SIDING.

STRUCTURAL STEEL

- FABRICATION AND ERECTION OF STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE 14TH EDITION OF THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) (CBC CHAPTER 22A).
- PRIME ALL STEEL SURFACES WITH AN APPROVED PRIMER, EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE AND SURFACES TO RECEIVE FIELD WELDS. ALTERNATE: PROVIDE GALVANIZED PER ASTM A-123.
- MATERIALS:

ROLLED STRUCTURAL STEEL SHAPES	ASTM A-992, GRADE 50
ANGLES, MISC STEEL	ASTM A36
MISCELLANEOUS PLATES	ASTM A-572 GRADE 50
STRUCTURAL STEEL PIPES	ASTM A53 TYPE E OR S, GRADE B
TYPICAL STEEL CONNECTION BOLTS	ASTM A-325
MISCELLANEOUS BOLTS	ASTM A-307
GALVANIZING	ASTM A-123
RUSH-INHIBITING PRIMER	TT-P-845 ASTM
- CONNECTED MEMBERS SHALL BEAR ONLY UPON UNTHREADED PORTIONS OF BOLTS
- BURNING OF HOLES IS NOT ALLOWED
- BOLT HOLES SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLTS USED, UNO

SECTION 4A MATERIAL SPECIFICATIONS

- STRUCTURAL FRAMING SHALL BE HEM FIR - GRADED IN ACCORDANCE WITH THE STANDARD GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION OR STANDARD GRADING RULES NO. 16 OF THE WEST COAST LUMBER INSPECTION BUREAU, LATEST EDITIONS. GRADES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS. (HEM FIR SOUTH IS NOT ALLOWED.) EACH PIECE SHALL BE GRADE MARKED AND NO PIECE MAY FALL BELOW GRADES INDICATED.
 - ALL FRAMING EXCEPT AS NOTED HEM FIR NO. 2.
- PLYWOOD SHALL BE AS SHOWN ON THESE DRAWINGS WITH EXTERIOR GLUE IN ACCORDANCE WITH U.S. PRODUCT STANDARD DOC PS 1-07 OR DOC PS-04. SEE DETAILS FOR PLYWOOD GRADE. ALL PANELS SHALL BE MARKED WITH AN APA GRADE MARK WITH AN IDENTIFICATION INDEX AS SHOWN ON DRAWINGS. USE 4X8 PANELS, MINIMUM, EXCEPT AT BOUNDARIES AND FRAMING CHANGES WHERE MINIMUM PANEL DIMENSION SHALL BE 24" AT ROOFS AND FLOORS AND 12" AT WALLS.
- BOLTS FOR TIMBER CONNECTIONS SHALL CONFORM TO ANSIA/ASME STANDARD B18.2.1-2010 AND 2012 EDITION OF THE NDS. BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF OF THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION BY THE NATIONAL FOREST PRODUCTS ASSOCIATION (NDS). BOLT HOLES SHALL BE 1/32 TO 1/16 INCH LARGER THAN BOLT DIAMETER. RE-TIGHTEN BOLTS BEFORE CLOSING IN WORK. BOLTS SHALL BE FULL BODY STEEL BOLTS WITH MINIMUM YIELD STRENGTH OF 45,000 PSI.
- LAG SCREWS SHALL BE STEEL AND CONFORM TO ANSIA/ASME STANDARD B18.2.1 AND THE REQUIREMENTS OF THE 2012 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS). HOLES FOR LAG SCREW SHANKS SHALL BE BORED THE SAME DEPTH AND DIAMETER AS THE SHANK. THE REMAINING DEPTH OF PENETRATION OF THE SCREW SHALL BE BORED TO 70% OF THE SHANK DIAMETER. ONE QUARTER INCH (1/4") DIAMETER LAG SCREWS NEED NOT HAVE PRE-DRILLED HOLES IF IT CAN BE SHOWN THAT THE WOOD MEMBERS ARE NOT DAMAGED DURING INSTALLATION. PROVIDE FULL DIAMETER BODY LAG SCREWS WITH BENDING YIELD STRENGTHS PER TABLE 11J AND 11K IN NDS.
- PROVIDE MALLEABLE IRON WASHERS OR EQUIVALENT CUT PLATE WASHERS (NOT LESS THAN A STANDARD CUT WASHER) UNDER NUTS AND BOLT OR LAG SCREW HEADS WHICH BEAR ON WOOD.
- WOOD SCREWS SHALL CONFORM TO ANSIA/ASME STANDARD B18.6.1 AND THE REQUIREMENTS OF THE 2005 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION BY THE NATIONAL FOREST PRODUCTS ASSOCIATION (NDS). GALVANIZED OR OTHER CORROSION RESISTANT COATING WHERE EXPOSED TO WEATHER OR USED IN FOUNDATIONS. SCREWS SHALL BE STEEL WITH CUT THREADS AND BENDING YIELD STRENGTHS PER TABLES 11L AND 11M IN NDS.
- WOOD MEMBERS SHALL BE CUT OR NOTCHED ONLY AS SHOWN ON STRUCTURAL DRAWINGS.
- WHEN REQUIRED NAILING TENDS TO SPLIT WOOD MEMBERS, NAIL HOLES SHALL BE PRE-BORED TO 3/4 OF THE NAIL DIAMETER.
- STRUCTURAL NAILING SHALL BE WITH BOX NAILS PER ALL REQUIREMENTS OF 2012 NDS. NAILING NOT SPECIFICALLY INDICATED SHALL COMPLY WITH CCR TITLE 24, PART 2, TABLE 2304.10.1. ALL NAILS SHALL BE GALVANIZED OR OTHER CORROSION RESISTANT COATING WHERE EXPOSED TO WEATHER, IN FOUNDATIONS AND AS NOTED ON PLANS, PER THE REQUIREMENTS OF CCR TITLE 24, PART 2, WITH MINIMUM BENDING YIELDS PER TABLE 11N, 11P, 11Q AND 11R IN NDS. (SEE NAIL EQUIVALENCE BELOW.)
- NAIL EQUIVALENCE: (PROVIDE MINIMUM NAIL LENGTHS AS REQUIRED FOR SPECIFIED PENETRATION, TYP. U.O.N.)
 - 8d COMMON EQUALS .113" DIA. - PROVIDE 1.36" MIN POINT PENETRATION
 - 8d COMMON EQUALS .131" DIA. - PROVIDE 1.57" MIN POINT PENETRATION
 - 10d COMMON EQUALS .148" DIA. - PROVIDE 1.78" MIN POINT PENETRATION
 - 16d COMMON EQUALS .162" DIA. - PROVIDE 1.94" MIN POINT PENETRATION
 - * 1 1/2" AT 2x MEMBERS
- PRESSURE PRESERVATIVE TREATMENT SHALL BE PER SECTION 2303.1.9. CCR TITLE 24, PART 2. PROVIDE QUALITY MARK ON ALL TREATED FOUNDATION MEMBERS. PRESURE TREATED WOOD AND IDENTIFICATION MUST COMPLY WITH CBC 2303.1.9.1. ALL FOUNDATION MEMBERS SHALL BE MARKED AS "FOR GROUND CONTACT (UC4A)" OR "FOR ABOVE GROUND USE (UC3A OR UC3B)" AS APPROPRIATE. TREAT ALL CUT ENDS OF PRESURE TREATED MEMBERS WITH AN APPROVED PRESERVATIVE (WILLARD W/B COPPER GREEN 2% OR AN APPROVED EQUIVALENT). WHERE NOTED, MEMBERS BELOW THE SUB FLOOR THAT ARE NOT A PART OF THE FOUNDATION SHALL BE PRESURE TREATED PER AWPA STANDARD U1.
- ONLY MATERIAL IN CONTACT WITH GROUND NEEDS TO BE PRESURE TREATED. ALL OTHER FOUNDATION LUMBER CAN BE DF OR HF#2 OR EQUAL.
- IF MACHINE NAILING IS UTILIZED FOR THIS PROJECT, CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF CCR TITLE 24, PART 2. MACHINE NAILING IS SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER OR ARCHITECT AND THE DIVISION OF THE STATE ARCHITECT.
- FASTENERS FOR PRESURE-PRESERVATIVE TREATED AND FIRE-RETARDANT TREATED WOOD SHALL COMPLY WITH SEC. 2304.10 OF CBC.
- NAILS AND SPIKES USED IN WET OR EXTERIOR LOCATIONS SHALL COMPLY WITH SEC. 2304.10 OF CBC.
- SHIM MATERIAL SHALL BE PLYWOOD CD EXP 1 OR EQUAL (NOT P.T.).
- USED LUMBER IN GOOD CONDITION IS ACCEPTABLE FOR USE IN FOUNDATION SYSTEM.

SITE INSTALLATION REQUIREMENTS CLAUSE:

SITE INSTALLATION REQUIREMENTS FOR DSA CLASSROOM BUILDINGS IN THE CASE OF EQUIPMENT LOCATED IN THE STATE OF CALIFORNIA, THE LESSEE IS RESPONSIBLE FOR THE SITE BEING CLEARED (FREE OF GRASS, SHRUBS, TREES, ETC.) AND GRADED TO WITHIN 4 1/2" OF LEVEL GRADE FOR EACH BUILDING. IF THE SITE EXCEEDS THE 4 1/2" REQUIREMENT ADDITIONAL COSTS MAY BE CHARGED THAN 9" FROM LEVEL GRADE OR HAVE LESS THAN A 1000 PSF MINIMUM SOIL BEARING PRESSURE. PRIOR TO DELIVERY, THE LESSEE SHALL MARK THE FOUR CORNERS OF THE BUILDING ON THE SITE, INCLUDING THE DOOR LOCATION. SHOULD SPECIAL HANDLING BE REQUIRED TO EITHER PLACE, INSTALL OR REMOVE THE CLASSROOM ON THE LESSEE'S SITE DUE TO SITE OBSTRUCTIONS SUCH AS FENCING, LANDSCAPING, OTHER CLASSROOMS, ETC., ADDITIONAL COSTS WILL BE CHARGED TO LESSEE.

TEST AND INSPECTIONS:

- PROVIDE ELECTRICAL GROUNDING TEST PER DSA IR E-1
- NO OTHER TESTS AND INSPECTIONS ARE REQUIRED.

STATE AGENCY APPROVAL

SK SC COMPANY

15617 12 STREET, SUITE #B, CHINO, CA 91710
OFFICE: (909) 740-3120, FAX: (909) 726-9470
WEBSITE: WWW.SKCCOMPANY.COM

MANUFACTURER RMP 127966 DEALER # DL127966
CC LIC # 910118 SBC CERTIFIED

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DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
RUTH GRIMES
ELEMENTARY SCHOOL

SHEET TITLE:

SPECIFICATIONS

PRE-CHECK (PC) DOCUMENT
CODE: 2019 CBC
A SEPARATE PROJECT APPLICATION FOR
CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-119361 PC
REVIEWED FOR
SS FLS ACS CG
DATE: 09/24/2020

PROFESSIONAL OF RECORD ON PC



Date Signed: September 22, 2020

FIRM: EXL STRUCTURAL ENGINEERING, INC
ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
CITY: CHINO, CA 91710
PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

FIRM: EXL STRUCTURAL ENGINEERING, INC
ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
CITY: CHINO, CA 91710
PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

REVISIONS

- 1. -
- 2. -
- 3. -
- 4. -
- 5. -

PROJECT NO.: 00-0000

DRAFTER: 00

SCALE: AS NOTED

DATE: 00-00-00

SHEET NUMBER

F-9

9/21/2020 8:22:06 AM

OPERATIONS & MAINTENANCE

BUILDING MANUFACTURE SHALL LEAVE FOR THE BUILDING OWNER AT OCCUPANCY OPERATING INFORMATION FOR ALL APPLICABLE MECHANICAL AND ELECTRICAL FEATURES, MATERIALS, COMPONENTS AND DEVICES INSTALLED IN THE BUILDING RELATED TO EFFICIENT ENERGY USE. IN ADDITION, THE BUILDING MANUFACTURER SHALL LEAVE MAINTENANCE INFORMATION FOR ALL FEATURES, MATERIALS, COMPONENTS, AND MANUFACTURED DEVICES THAT REQUIRE ROUTINE MAINTENANCE FOR EFFICIENT OPERATION OF MECHANICAL EQUIPMENT AND LIGHTING SYSTEM

NOTES

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER), AND APPROVED BY THE THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-333 AND 4-342, PART 1, TITLE 24, CCR, CLASS R.B.I.P. FOR IN-PLANT INSPECTIONS.

SITE SPECIFIC:
COMPLY WITH CFC CHAPTERS 5 & 7, CBC CHAPTERS 3, 5, 7, 11B & 14
NOTE: *THIS PC IS NOT APPROVED FOR CHAPTER 7A WILDLAND URBAN AREAS*

CAL GREEN NOTES

OPTION 'E' OF THIS PC WILL NOT BE PLACED IN ANY OF THE FOLLOWING LOCATIONS. ALL OTHER OPTIONS ARE EXEMPT FROM EXCEPTION ON SECTION 5.507.4:

- 1. WITHIN THE 65 CNEL NOISE CONTOUR OF AN AIRPORT
- 2. WITHIN THE 65 CNEL OR LDN NOISE CONTOUR OF A FREEWAY, EXPRESSWAY, RAILROAD OR INDUSTRIAL SOURCE GUIDE WAY
- 3. WHERE EXPOSED TO NOISE LEVEL OF 65 DB LEQ-1HR DURING ANY HOUR OF OPERATIONS

BUILDING CODES AND STANDARDS

2019 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24, CCR
2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, CCR
(2018 INTERNATIONAL BUILDING CODE, VOLUMES 1 & 2 AND 2019 CA AMENDMENTS)
2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24, CCR
(2017 NATIONAL ELECTRICAL CODE AND 2019 CA AMENDMENTS)
2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24, CCR
(2018 IAPMO UNIFORM MECHANICAL CODE AND 2019 CA AMENDMENTS)
2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, CCR
(2018 IAPMO UNIFORM PLUMBING CODE AND 2019 CA AMENDMENTS)
2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24, CCR
2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, CCR
(2018 INTERNATIONAL FIRE CODE AND 2019 CA AMENDMENTS)
2019 CALIFORNIA EXISTING BUILDING STANDARDS CODE (CEBC), PART 10, TITLE 24
(2018 INTERNATIONAL EXISTING BUILDING CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA GREEN BUILDING STANDARD CODE (CALGREEN), PART 11, TITLE 24 CCR
2019 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHALL REGULATIONS
2016 ASME A17.1/CSA B44-13 SAFETY CODE FOR ELEVATORS AND ESCALATORS
(PER 2019 CBC PART 2 CHP 35)

APPLICABLE STANDARDS

2016 NFPA 13, INSTALLATION OF SPRINKLER SYSTEMS (CALIFORNIA AMENDMENTS)
2016 NFPA 14, INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
2017 NFPA 17, DRY CHEMICAL EXTINGUISHING SYSTEMS
2017 NFPA 17A, WET CHEMICAL EXTINGUISHING SYSTEMS
2016 NFPA 20, INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
2013 NFPA 22, WATER TANKS FOR PRIVATE FIRE PROTECTION
2016 NFPA 24, INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES
2016 NFPA 72, NATIONAL FIRE ALARM CODE (CALIFORNIA AMENDMENTS)
2016 NFPA 80, STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVE
2016 NFPA 2001, STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS
2013 NFPA 25, INSPECTION, TESTING, MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS (2013 CA AMENDMENTS)
2003 UL 464, AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES
1999 UL 521, STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
2002 (R2010) UL 1971, STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED

FOR A COMPLETE LIST OF APPLICABLE STANDARDS REFER TO 2016 CBC (SFM) CHAPTER 35 AND CALIFORNIA FIRE CODE CHAPTER 80

ABBREVIATIONS

AC: Air Conditioning, Alternating Current
ADA: Americans with Disabilities Act of 1992
AFF: Above Finished Floor
AFG: Above Finish Grade
AIA: American Institute of Architects
ALT: Alternate
AMP: Ampere
APPROX: Approximate
ARCH: Architect, Architectural
ASCE: American Society of Civil Engineers
ASME: American Society of Mechanical Engineers
ASTM: American Society for Testing and Materials
BLDG: Building
BLK: Block
BLKG: Blocking
BOT: Bottom
BTU: British Thermal Units
BTUH: British Thermal Units per Hour
C/C: Center to Center
CI: Cast Iron
CIR: Circle, Circular, Circuit
CJ: Control Joint
CL: Centerline
CLR: Clear
CO: Cleanout
CONC: Concrete
CONN: Connection
CONST: Construction
CONT: Continuous
DF: Douglas Fir
DIA: Diameter
DIM: Dimension
DISP: Dispenser
DL: Dead Load
DWG: Drawing
(E) Existing
EA: Each
ELEC: Electrical
ELEV: Elevation
EN: End Nail
EPDM: Ethylene Propylene Diene Monomer
EQ: Equal
EXT: Exterior
FE: Fire Extinguisher
FF: Finished Floor
FG: Finished Grade
FLR: Floor
FOF: Face of Finish
FT: Foot
FTG: Footing
GA: Gauge
CAL: Galvan
GALV: Galvanized
GFCi: Ground Fault Circuit Interrupter
GFI: Ground Fault Interrupter
GI: Galvanized Iron
GND: Ground
HDR: Header
HF: Hem Fir
HR: Hour
HT: Height
HVAC: Heating, Ventilating & Air Conditioning
ID: Inside Diameter
IN: Inch
INFO: Information
INT: Interior
J-BOX: Junction Box
JT: Joint
KW: Kilowatt
LB: Pound (weight)
LL: Live Load
MAX: Maximum
MECH: Mechanical
MFG: Manufacturer
MIN: Minimum
MISC: Miscellaneous
MT: Mount, Mounted
(N): None
NEC: National Electrical Code
NTS: Not To Scale
O/O: Outside to Outside
OC: On Center
OD: Outside Diameter
OPP: Opposite
PC: Pre-Checked
PH: Phase
PSF: Pounds per square foot
PSI: Pounds per square inch
PT: Pressure Treated
PVC: Polyvinyl Chloride
QTY: Quantity
RCP: Reflected Ceiling Plan
REBAR: Reinforcing Bar
RECEPT: Receptacle
REF: Refrigerator
REQ: Required
REV: Revise
RF: Roof
RH: Right Hand
RO: Rough Opening
SF: Square Foot
SIM: Similar
SPEC: Specification
SS: Stainless Steel
STD: Standard
STRUCT: Structural
T&G: Tongue & Groove
TEMP: Temporary
THRU: Through
TN: Toe Nail
TPO: Thermo Plastic Olefin
TSTAT: Thermostat
TYP: Typical
UL: Underwriters' Laboratories
UNO: Unless Noted Otherwise
V: Volt
VTR: Vent Through Roof
WD: Wood
WP: Waterproof, Weatherproof
WT: Weight

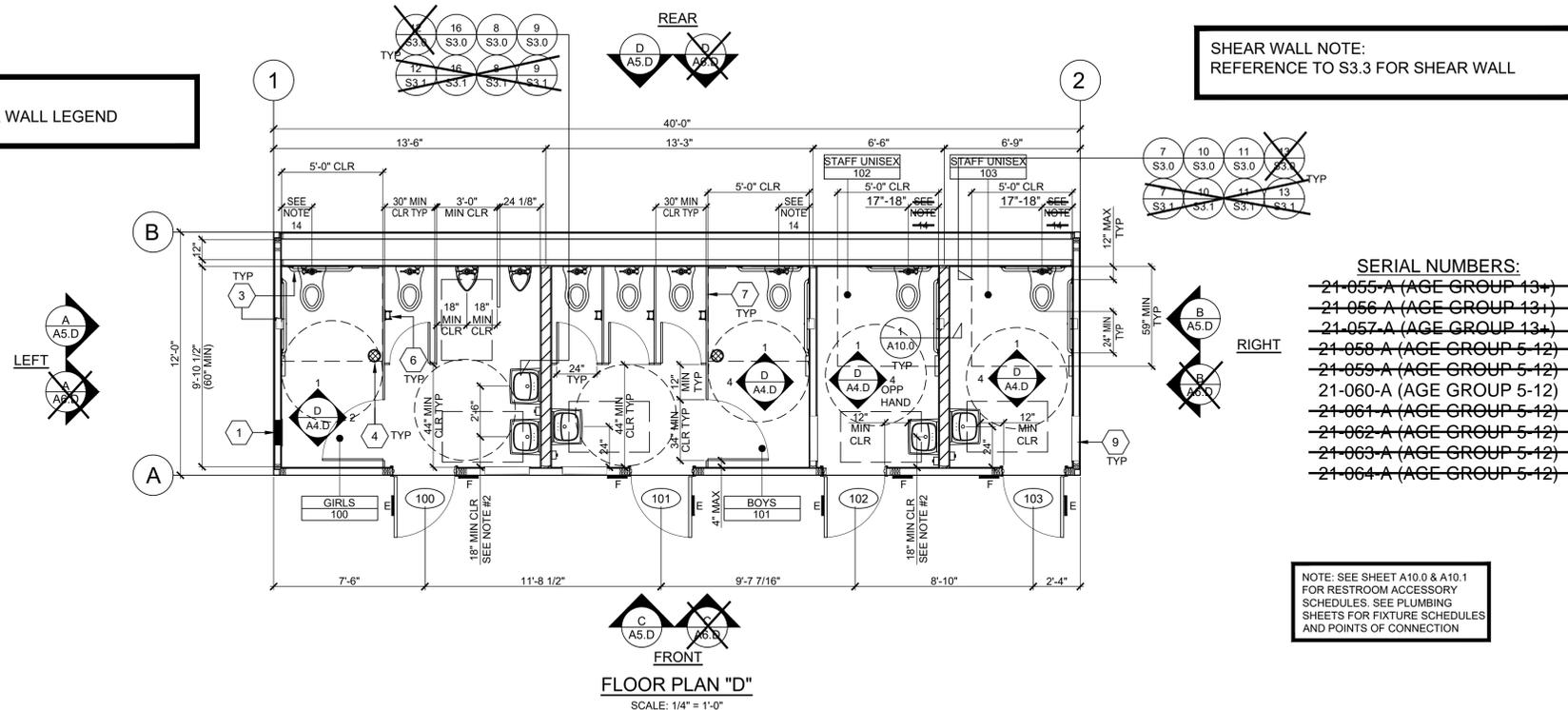
DRAWING SYMBOLS & LEGEND

2"x4" WOOD STUD OR 3.5" STEEL STUD
2"x6" WOOD STUD OR 5.5" STEEL STUD
2"x8" WOOD STUD OR 7.5" STEEL STUD
1 HR RATED (DARK LINE THROUGH SYMBOL)
INDICATES DOOR TYPE
INDICATES WINDOW TYPE
KEY NOTE SYMBOL
INDICATES INTERIOR ELEVATION ORIENTATION
INDICATES DETAIL #
INDICATES SHEET #
INDICATES EXTERIOR ELEVATION #
INDICATES SHEET #
5'-0" CLEAR FLOOR SPACE FOR WHEELCHAIR ACCESSIBLE MANEUVERING WITH 12" MIN. ENCRICHMENT
48"x30" CLEAR FLOOR SPACE FOR WHEELCHAIR ACCESS TO FIXTURE
INDICATES ROOM NAME
INDICATES ROOM NUMBER
60"x60" CLEAR FLOOR SPACE FOR WHEELCHAIR ENTRY ACCESS.
WHEELCHAIR ACCESSIBLE CLEAR FLOOR SPACE AT ACCESSIBLE WATER CLOSET
60"x59" AT FLOOR MOUNTED WATER CLOSET
60"x56" AT WALL MOUNTED WATER CLOSET
GRID LINE NUMBER OR LETTER
INDICATES CUT SECTION DETAIL #
INDICATES SHEET #

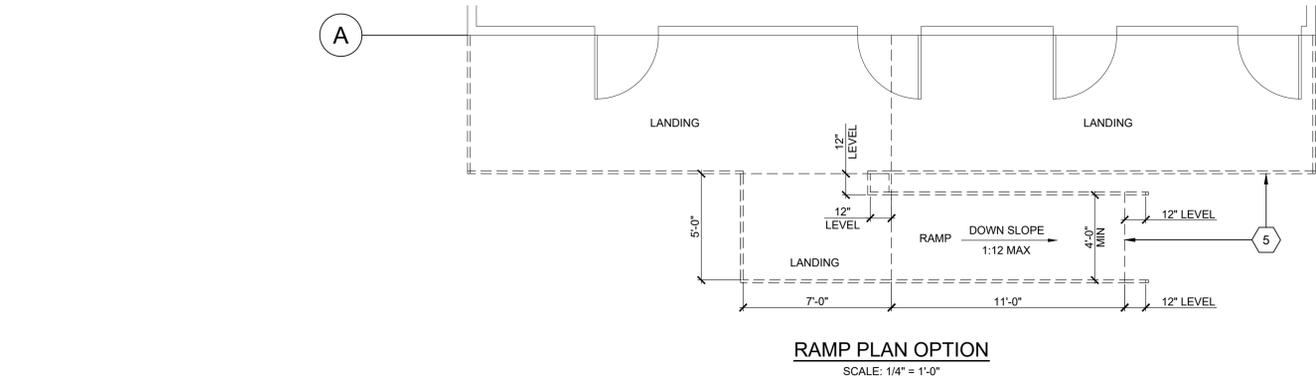
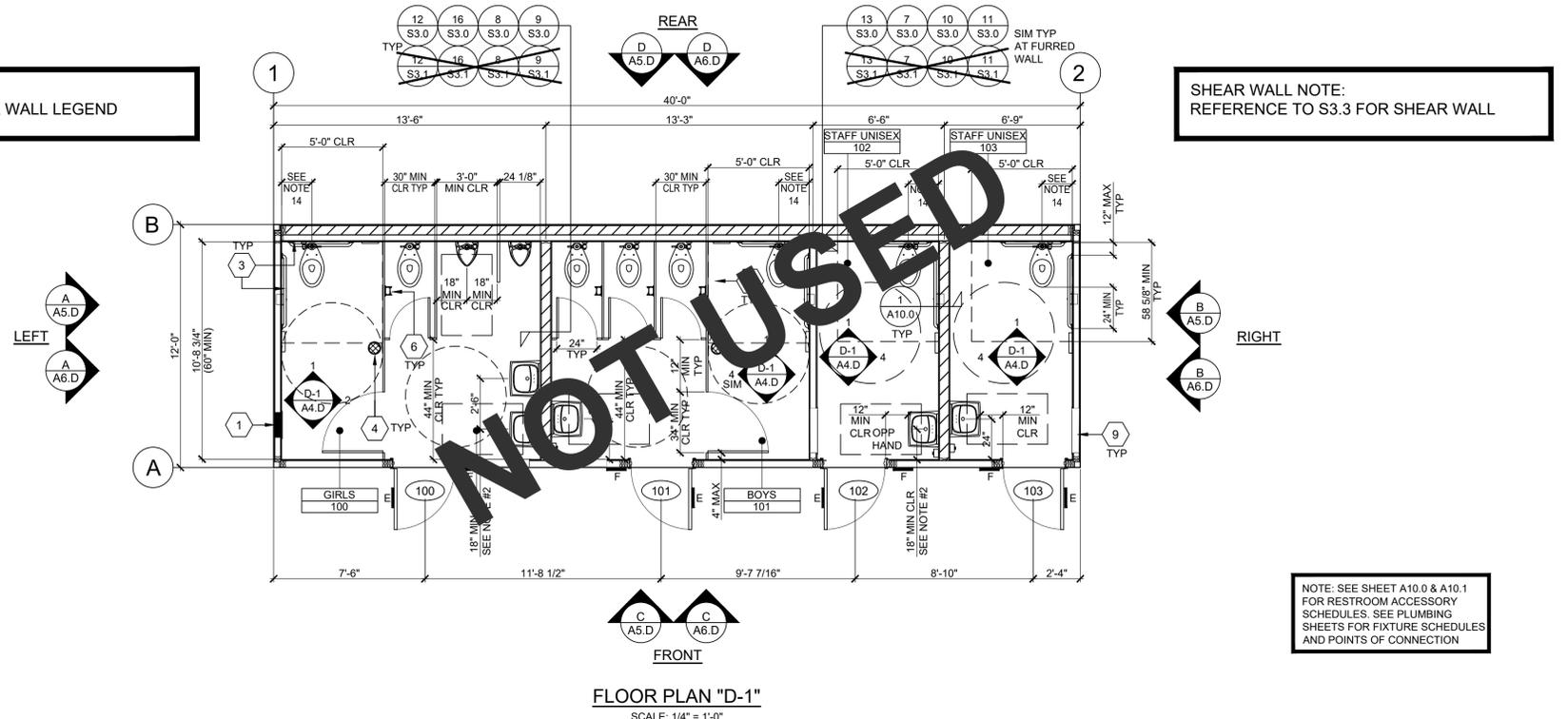
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A0.2	CONSTRUCTION MATERIALS AND SPECIFICATIONS	S0.2	STRUCTURAL BUILDING SECTIONS - CONCRETE FLOOR
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A3.7	REFLECTED CEILING DETAILS	M3.8	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A3.8	REFLECTED CEILING DETAILS	M3.9	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A3.9	REFLECTED CEILING DETAILS	M3.10	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.0	REFLECTED CEILING DETAILS	M3.11	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.1	REFLECTED CEILING DETAILS	M3.12	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.2	REFLECTED CEILING DETAILS	M3.13	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.3	REFLECTED CEILING DETAILS	M3.14	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.4	REFLECTED CEILING DETAILS	M3.15	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.5	REFLECTED CEILING DETAILS	M3.16	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.6	REFLECTED CEILING DETAILS	M3.17	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.7	REFLECTED CEILING DETAILS	M3.18	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.8	REFLECTED CEILING DETAILS	M3.19	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A4.9	REFLECTED CEILING DETAILS	M3.20	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.0	REFLECTED CEILING DETAILS	M3.21	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.1	REFLECTED CEILING DETAILS	M3.22	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.2	REFLECTED CEILING DETAILS	M3.23	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.3	REFLECTED CEILING DETAILS	M3.24	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.4	REFLECTED CEILING DETAILS	M3.25	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.5	REFLECTED CEILING DETAILS	M3.26	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.6	REFLECTED CEILING DETAILS	M3.27	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.7	REFLECTED CEILING DETAILS	M3.28	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.8	REFLECTED CEILING DETAILS	M3.29	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A5.9	REFLECTED CEILING DETAILS	M3.30	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.0	REFLECTED CEILING DETAILS	M3.31	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.1	REFLECTED CEILING DETAILS	M3.32	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.2	REFLECTED CEILING DETAILS	M3.33	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.3	REFLECTED CEILING DETAILS	M3.34	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.4	REFLECTED CEILING DETAILS	M3.35	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.5	REFLECTED CEILING DETAILS	M3.36	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.6	REFLECTED CEILING DETAILS	M3.37	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.7	REFLECTED CEILING DETAILS	M3.38	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.8	REFLECTED CEILING DETAILS	M3.39	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A6.9	REFLECTED CEILING DETAILS	M3.40	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.0	REFLECTED CEILING DETAILS	M3.41	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.1	REFLECTED CEILING DETAILS	M3.42	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.2	REFLECTED CEILING DETAILS	M3.43	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.3	REFLECTED CEILING DETAILS	M3.44	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.4	REFLECTED CEILING DETAILS	M3.45	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.5	REFLECTED CEILING DETAILS	M3.46	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.6	REFLECTED CEILING DETAILS	M3.47	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.7	REFLECTED CEILING DETAILS	M3.48	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.8	REFLECTED CEILING DETAILS	M3.49	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A7.9	REFLECTED CEILING DETAILS	M3.50	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.0	REFLECTED CEILING DETAILS	M3.51	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.1	REFLECTED CEILING DETAILS	M3.52	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.2	REFLECTED CEILING DETAILS	M3.53	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.3	REFLECTED CEILING DETAILS	M3.54	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.4	REFLECTED CEILING DETAILS	M3.55	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.5	REFLECTED CEILING DETAILS	M3.56	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.6	REFLECTED CEILING DETAILS	M3.57	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.7	REFLECTED CEILING DETAILS	M3.58	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.8	REFLECTED CEILING DETAILS	M3.59	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A8.9	REFLECTED CEILING DETAILS	M3.60	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.0	REFLECTED CEILING DETAILS	M3.61	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.1	REFLECTED CEILING DETAILS	M3.62	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.2	REFLECTED CEILING DETAILS	M3.63	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.3	REFLECTED CEILING DETAILS	M3.64	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.4	REFLECTED CEILING DETAILS	M3.65	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.5	REFLECTED CEILING DETAILS	M3.66	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.6	REFLECTED CEILING DETAILS	M3.67	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.7	REFLECTED CEILING DETAILS	M3.68	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.8	REFLECTED CEILING DETAILS	M3.69	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A9.9	REFLECTED CEILING DETAILS	M3.70	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.0	REFLECTED CEILING DETAILS	M3.71	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.1	REFLECTED CEILING DETAILS	M3.72	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.2	REFLECTED CEILING DETAILS	M3.73	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.3	REFLECTED CEILING DETAILS	M3.74	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.4	REFLECTED CEILING DETAILS	M3.75	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.5	REFLECTED CEILING DETAILS	M3.76	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.6	REFLECTED CEILING DETAILS	M3.77	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.7	REFLECTED CEILING DETAILS	M3.78	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.8	REFLECTED CEILING DETAILS	M3.79	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A10.9	REFLECTED CEILING DETAILS	M3.80	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.0	REFLECTED CEILING DETAILS	M3.81	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.1	REFLECTED CEILING DETAILS	M3.82	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.2	REFLECTED CEILING DETAILS	M3.83	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.3	REFLECTED CEILING DETAILS	M3.84	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.4	REFLECTED CEILING DETAILS	M3.85	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.5	REFLECTED CEILING DETAILS	M3.86	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.6	REFLECTED CEILING DETAILS	M3.87	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.7	REFLECTED CEILING DETAILS	M3.88	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.8	REFLECTED CEILING DETAILS	M3.89	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A11.9	REFLECTED CEILING DETAILS	M3.90	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.0	REFLECTED CEILING DETAILS	M3.91	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.1	REFLECTED CEILING DETAILS	M3.92	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.2	REFLECTED CEILING DETAILS	M3.93	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.3	REFLECTED CEILING DETAILS	M3.94	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.4	REFLECTED CEILING DETAILS	M3.95	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.5	REFLECTED CEILING DETAILS	M3.96	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.6	REFLECTED CEILING DETAILS	M3.97	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.7	REFLECTED CEILING DETAILS	M3.98	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.8	REFLECTED CEILING DETAILS	M3.99	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A12.9	REFLECTED CEILING DETAILS	M4.00	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.0	REFLECTED CEILING DETAILS	M4.01	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.1	REFLECTED CEILING DETAILS	M4.02	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.2	REFLECTED CEILING DETAILS	M4.03	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.3	REFLECTED CEILING DETAILS	M4.04	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.4	REFLECTED CEILING DETAILS	M4.05	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.5	REFLECTED CEILING DETAILS	M4.06	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.6	REFLECTED CEILING DETAILS	M4.07	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.7	REFLECTED CEILING DETAILS	M4.08	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.8	REFLECTED CEILING DETAILS	M4.09	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A13.9	REFLECTED CEILING DETAILS	M4.10	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.0	REFLECTED CEILING DETAILS	M4.11	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.1	REFLECTED CEILING DETAILS	M4.12	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.2	REFLECTED CEILING DETAILS	M4.13	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.3	REFLECTED CEILING DETAILS	M4.14	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.4	REFLECTED CEILING DETAILS	M4.15	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.5	REFLECTED CEILING DETAILS	M4.16	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.6	REFLECTED CEILING DETAILS	M4.17	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.7	REFLECTED CEILING DETAILS	M4.18	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.8	REFLECTED CEILING DETAILS	M4.19	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A14.9	REFLECTED CEILING DETAILS	M4.20	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.0	REFLECTED CEILING DETAILS	M4.21	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.1	REFLECTED CEILING DETAILS	M4.22	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.2	REFLECTED CEILING DETAILS	M4.23	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.3	REFLECTED CEILING DETAILS	M4.24	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.4	REFLECTED CEILING DETAILS	M4.25	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.5	REFLECTED CEILING DETAILS	M4.26	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.6	REFLECTED CEILING DETAILS	M4.27	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.7	REFLECTED CEILING DETAILS	M4.28	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.8	REFLECTED CEILING DETAILS	M4.29	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A15.9	REFLECTED CEILING DETAILS	M4.30	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.0	REFLECTED CEILING DETAILS	M4.31	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.1	REFLECTED CEILING DETAILS	M4.32	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.2	REFLECTED CEILING DETAILS	M4.33	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.3	REFLECTED CEILING DETAILS	M4.34	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.4	REFLECTED CEILING DETAILS	M4.35	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.5	REFLECTED CEILING DETAILS	M4.36	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.6	REFLECTED CEILING DETAILS	M4.37	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.7	REFLECTED CEILING DETAILS	M4.38	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.8	REFLECTED CEILING DETAILS	M4.39	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A16.9	REFLECTED CEILING DETAILS	M4.40	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A17.0	REFLECTED CEILING DETAILS	M4.41	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT
A17.1	REFLECTED CEILING DETAILS	M4.42	MODEL "E" PC WORST CASE SCENARIO TITLE 24 BUILDING ANALYSIS REPORT

WALL NOTE:
SEE SHEET A0.0 FOR WALL LEGEND



WALL NOTE:
SEE SHEET A0.0 FOR WALL LEGEND



PROJECT SPECIFIC HEIGHT USE:
TO BE CHECKED OFF WHEN PREPARING PROJECT SPECIFIC DRAWINGS SET.

<input checked="" type="checkbox"/>	A = ADULT - AGES 13 & ABOVE
<input type="checkbox"/>	E = ELEMENTARY - AGES 6 THROUGH 8
<input type="checkbox"/>	E = ELEMENTARY - AGES 9 THROUGH 12
<input type="checkbox"/>	K/E = KINDERGARTEN/ELEMENTARY - AGES 5 THROUGH 8
<input checked="" type="checkbox"/>	K/E = KINDERGARTEN/ELEMENTARY - AGES 5 THROUGH 12
<input type="checkbox"/>	K = KINDERGARTEN - AGES 3 THROUGH 4

KEY NOTES

- ELECTRICAL PANEL (SEE #4 OR #10/A8.1 AND ELECTRICAL SHEETS)
- MIRROR (SEE SHEET A10.0)
- GRAB BARS (SEE SHEET A10.0)
- FLOOR DRAIN, 2% MAX SLOPE TO DRAIN OPENINGS IN THE FLOOR DRAIN SHALL BE LESS THAN 1/4" (SEE PLUMBING SHEETS)
- RAMP AND LANDING ARE NOT PART OF THIS PC APPLICATION. RAMP AND LANDING PLAN (OR PC) MUST MEET MINIMUM DIMENSIONS SET FORTH ON ILLUSTRATION BELOW
- TOILET PAPER DISPENSER (SEE SHEET A10.0)
- 1" THICK TOILET PARTITIONS PROVIDE ADDITIONAL FULL HEIGHT STUD FOR SUPPORT
- ADJUST DOORS TO 90° INHIBITOR
- COMBINATION RECESSED PAPER TOWEL & WASTE DISPENSER (SEE SHEET A10.0)

SIGNAGE LEGEND

- A = ID SIGN - #1G/A0.4
- B = EXIT TACTILE SIGN - #1C/A0.4
- C = ID SIGN WITH ISA IDENTIFICATION - #1G/A0.4
- D = EXIT RAMP DOWN SIGN - #1E/A0.4
- E = RESTROOM DOOR SIGN - #1B/A0.4
- F = RESTROOM WALL SIGN - #1A/A0.4

GENERAL NOTES

- SIGNAGE REQUIRED PER APPLICABLE CODES LISTED ON COVER SHEET PROVIDED AND INSTALLED BY DISTRICT ON SITE. SEE ACCESS SHEET
- USE 18" MIN CLR WHEN THERE ARE NO ADJACENT ACCESSORIES TO THE LAVATORY OR ACCESSORIES MUST BE LESS THAN 3" PROJECTION SO IT DOES NOT ENCR OACH INTO REQUIRED CLEAR SPACE
USE 19" MIN CLR FOR ACCESSORIES UP TO 4" MAX PROJECTION SO IT DOES NOT ENCR OACH INTO REQUIRED CLEAR SPACE
- * = SEE CHART BELOW FOR THE APPROPRIATE AGE GROUP
- ALL DIMENSION ON THIS FLOOR PLAN ARE TO THE FACE OF FINISH UNO
- TOILET STALLS FOR DISABLED PERSONS SHALL HAVE SLIDE BOLTS DOOR LATCH, U-SHAPE OR WIRE PULLS BOTH SIDES OF THE DOOR (IMMEDIATELY BELOW THE LATCH) AND SELF-CLOSING HINGES DOOR HARDWARE SHALL BE MOUNTED AT 30" TO 44" ABOVE FINISHED FLOOR
- DOORS AT FRONT ENTRY STALLS SHALL HAVE 32" MINIMUM CLEAR WIDTH WHEN THE DOOR IS OPEN 90°
- DOORS AT SIDE ENTRY SHALL HAVE 34" MINIMUM CLEAR WIDTH WHEN THE DOOR IS OPEN 90°
- TOILET ACCESSORIES REQUIRED TO BE ACCESSIBLE SHALL BE MOUNTED AT HEIGHTS ACCORDING TO CBC SECTION 11B-603.5
- THE GRAB BAR CAN NOT PROJECT MORE THAN 3" INTO THE 48" MINIMUM CLEAR SPACE IN FRONT OF THE WATER CLOSET 11B-604.5
- CONSIDER TOILET PAPER AND FEMINE NAPKIN DISPENSERS LOCATED ON THE GRAB BAR SIDE OF AN ACCESSIBLE TOILET ROOM OR STALL SHOULD NOT PROJECT MORE THAN THE GRAB BAR THE ACCESSORY SHALL NOT BE LOCATED CLOSER THAN 1-1/2" CLEAR OF THE TANGENT POINT OF THE GRAB BAR ACCESSORIES SURFACE MOUNTED ABOVE GRAB BAR WILL RESTRICT USABILITY
- ACCESSIBLE PLUMBING FIXTURES SHALL COMPLY WITH ALL OF THE REQUIREMENTS OF CBC SECTION 11B-603, 11B-604 & 11B-605
- NOT USED
- FIXTURE CONTROLS SHALL COMPLY WITH CBC SECTION 11B-309
- ADULT AGES 13 YEARS & OLDER USE 17" TO 18" CHILDREN AGES 5-12 YEARS OLD REFER TO TABLE BELOW AGE GROUP TO BE SELECTED FOR PROJECT SPECIFIC PRIOR TO CONSTRUCTION

CHILDREN'S WATER CLOSET HEIGHTS CHART

TABLE 11B-604.9
SUGGESTED DIMENSIONS FOR CHILDREN'S USE

	AGES 3 AND 4	AGES 5 THROUGH 8	AGES 9 THROUGH 12
WATER CLOSET CENTERLINE	12 INCHES	12 INCHES	15 INCHES
TOILET SEAT HEIGHT	11 TO 12 INCHES	11 TO 12 INCHES	15 TO 17 INCHES
GRAB BAR HEIGHT	20 TO 25 INCHES	20 TO 25 INCHES	25 TO 27 INCHES
DISPENSER HEIGHT	14 TO 17 INCHES	14 TO 17 INCHES	17 TO 19 INCHES

	AGES 3 THROUGH 8	AGES 5 THROUGH 12
WATER CLOSET CENTERLINE	12 INCHES	15 INCHES
TOILET SEAT HEIGHT	12 INCHES	15 INCHES
GRAB BAR HEIGHT	20 INCHES	25 INCHES
DISPENSER HEIGHT	14 INCHES	17 INCHES

STATE AGENCY APPROVAL

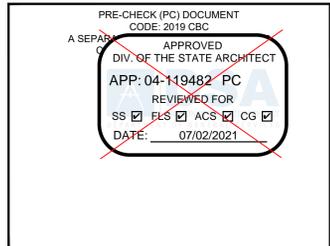


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MANUFACTURER #F127968 DEALER # DL127968
CSL/C# 89018 SKC CERTIFIED

ALL DESIGNS INDICATED ON THESE PLANS/DRAWINGS ARE PROPERTY OF SKC. NO AND ARE FOR THE USE BY SKC IN THE SPECIFIED JOB ONLY. THEY SHALL NOT BE USED AND/OR DUPLICATED OR TRANSMITTED IN ANY FORM, FOR ANY PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF SKC, INC. ANY UNAUTHORIZED USE OF THESE PLANS SHALL SUBJECT THE OWNER OF SAID PROPERTY TO LIQUIDATED DAMAGES OF \$75,000.00. THESE PLANS ARE PROTECTED UNDER THE PROVISIONS OF THE 1976 COPYRIGHT ACT. COPYRIGHT SKC, © ALL RIGHTS RESERVED.

DISTRICT/CUSTOMER NAME:
SK COMPANY
COLTON JOINT USD (SITE ADAPT)
SCHOOL/SITE NAME:
STOCKPILE
RUTH GRIMES ES (SITE ADAPT)

SHEET TITLE:
FLOOR PLAN OPTIONS "D" & "D-1"



PRE-CHECK (PC) DOCUMENT CODE: 2019 CBC
A SEPARATE APPROVED DIV. OF THE STATE ARCHITECT
APP: 04-119482 PC REVIEWED FOR
SS [] FLS [] ACS [] CG []
DATE: 07/02/2021

PROFESSIONAL OF RECORD ON MANUFACTURE DRAWINGS
Date Signed: May 17, 2021
FIRM: EXL STRUCTURAL ENGINEERING, INC
ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
CITY: CHINO, CA 91710
PHONE: (909) 613-0234

PROFESSIONAL OF RECORD ON MANUFACTURE DRAWINGS

REVISIONS

NO.	DESCRIPTION

PROJECT NO.: 00-0000
DRAFTER: 00
SCALE: AS NOTED
DATE: 00-00-00
SHEET NUMBER

A1.D

GENERAL NOTES

- ALL WORK SHALL CONFORM TO 2019 TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISIONS OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-33B, PART 1, TITLE 24, CCR
- A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR
- A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TEST AND INSPECTIONS FOR THE PROJECT
- THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, CCR)
- THIS PC IS NOT APPROVED FOR CHAPTER 7A WILDLAND URBAN AREAS

BUILDING CODES AND STANDARDS

2019 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24, CCR
 2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, CCR
 (2018 INTERNATIONAL BUILDING CODE, VOLUMES 1 & 2 AND 2019 CA AMENDMENTS)
 2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24, CCR
 (2017 NATIONAL ELECTRICAL CODE AND 2019 CA AMENDMENTS)
 2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24, CCR
 (2018 IAPMO UNIFORM MECHANICAL CODE AND 2019 CA AMENDMENTS)
 2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, CCR
 (2018 IAPMO UNIFORM PLUMBING CODE AND 2019 CA AMENDMENTS)
 2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24, CCR
 2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, CCR
 (2018 INTERNATIONAL FIRE CODE AND 2019 CA AMENDMENTS)
 2019 CALIFORNIA EXISTING BUILDING STANDARDS CODE (CEBC), PART 10, TITLE 24
 (2018 INTERNATIONAL EXISTING BUILDING CODE AND 2019 CALIFORNIA AMENDMENTS)
 2019 CALIFORNIA GREEN BUILDING STANDARD CODE (CALGREEN), PART 11, TITLE 24 CCR
 2019 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, CCR
 TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHALL REGULATIONS
 2016 ASME A17.1/CSA B44-13 SAFETY CODE FOR ELEVATORS AND ESCALATORS
 (PER 2019 CBC PART 2 CHP 35)

APPLICABLE STANDARDS

2016 NFPA 13, INSTALLATION OF SPRINKLER SYSTEMS (CALIFORNIA AMENDMENTS)
 2016 NFPA 14, INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
 2017 NFPA 17, DRY CHEMICAL EXTINGUISHING SYSTEMS
 2017 NFPA 17A, WET CHEMICAL EXTINGUISHING SYSTEMS
 2016 NFPA 20, INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
 2013 NFPA 22, WATER TANKS FOR PRIVATE FIRE PROTECTION
 2016 NFPA 24, INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES
 2016 NFPA 72, NATIONAL FIRE ALARM CODE (CALIFORNIA AMENDMENTS)
 2016 NFPA 80, STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVE
 2015 NFPA 2001, STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS
 2003 UL 464, AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES
 1999 UL 521, STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
 2002 (R2010) UL 1971, STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED

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



**STOCKPILE OF 50
RAMP/LANDING/STAIR SETS**

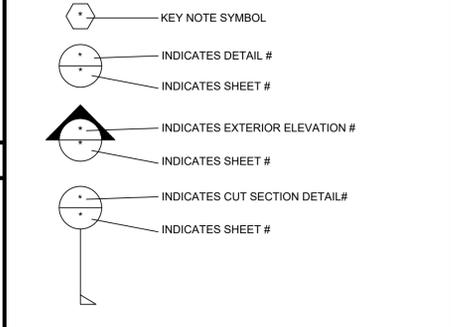
**SERIAL NUMBERS:
R4-21-001 THROUGH R4-21-030 (30 SETS)
R5-21-031 THROUGH R5-21-032 (2 SETS)
R6-21-033 THROUGH R6-21-040 (8 SETS)
R7-21-041 THROUGH R6-21-048 (8 SETS)
R8-21-049 THROUGH R8-21-050 (2 SETS)**

13617 12 STREET, SUITE #B, CHINO, CA 91710
 OFFICE: (909) 740-3120, FAX: (909) 726-9470
 WEBSITE: WWW.SKSCOMPANY.COM

MANUFACTURER #MF1279666 DEALER # DL1279666
 GC LIC # 992118 SBE CERTIFIED

**2019 CBC
ACCESSIBLE RAMP / LANDING / STAIR PC DESIGN
RISK CATEGORY II
PC 04-119471**

DRAWING SYMBOLS & LEGEND



SHEET INDEX

SHEET NO.	ARCHITECTURAL
R-1	COVER SHEET
R-2	DSA 103 TEST & SPECIAL INSPECTIONS SAMPLE
R-3	CONSTRUCTION MATERIALS AND SPECIFICATIONS
R-4	STANDARD RAMP & LANDING (ATTACHED HANDRAIL TO BUILDING)
R-5	OFFSET RAMP & LANDING (FREE STANDING HANDRAILS)
R-6	RAMP & LANDING (COMMON LANDING)
R-7	STAIR AND LANDING PLAN AND DETAILS
R-8	SWITCHBACK RAMP AND LANDING
R-9	RAMP AND LANDING DETAILS

TOTAL SHEET COUNT: 5

DESIGN PARAMETERS

- RAMP LIVE LOAD: 100 PSF
- NO SNOW LOAD
- NO FLOOD LOADING
- WIND:
 - WIND DESIGN PER ASCE 7-16, CHAPTER 29
 - RISK CATEGORY II
 - Kzt=1.0
 - WIND SPEED=130 MPH
 - EXPOSURE=C
- SEISMIC:
 - RISK CATEGORY=II
 - Ie = 1.00
 - Ss=3.73 MAX
 - S1=1.30 MAX
 - SITE CLASS=D (ASSUMED)
 - Sps=2.984 (Sps IS BASED ON CBC 1616A.1.1.2)
 - Cs=0.8952 (ASCE 7-16 EQUATION 15.4-5)
 - R=3.25 (ASCE 7-16 TABLE 15.4-1)
- ALLOWABLE SOIL BEARING = 1000 PSF

PC LIMITATIONS

- THE MAXIMUM DECK HEIGHT DESIGNED ON THIS PC IS 30". VERIFY WITH BUILDING MANUFACTURER MAXIMUM FINISH FLOOR HEIGHT FOR ABOVE GRADE FOUNDATIONS. THE MAXIMUM DECK HEIGHT SHALL BE SET FORTH PER THE BUILDING MANUFACTURER MAXIMUM FINISH FLOOR HEIGHT HOWEVER NOT TO EXCEED 30" MAX
- THE MAXIMUM RAMP HANDRAIL DESIGN ON THIS PC IS 34" AFF
- THIS PC IS NOT DESIGNED FOR DECKS HIGHER THAN 30" OR A GUARDRAIL DESIGN AT 42" MIN WHEN DECK HEIGHT EXCEEDS 30"
- THE MAXIMUM POINT LOAD DESIGNED ON THE HANDRAILS IS 200#
- THE RAMP CLEAR WIDTH SET FORTH ON THIS PC IS DESIGNED FOR OCCUPANCIES LESS THAN 300 (OR NO GREATER THAN 48" CLEAR WIDTH)
- THE STAIRS MAXIMUM CLEAR WIDTH SET FORTH ON THIS PC IS 48" MAX
- THE MAXIMUM RAMP LENGTH SET FORTH ON THIS PC IS 30'-0" MAX
- THE MAXIMUM SINGLE DECK SECTION SET FORTH ON THIS PC IS 6'-6" X 19'-10 1/2". ADDITIONAL DECK SECTIONS CAN BE ADDED TOGETHER (SEE #8/R-9) ON ANY SIDE OF THE DECK. THE MINIMUM DECK SECTION IS SHALL BE NO LESS THAN 4'-0" X 1'-0"



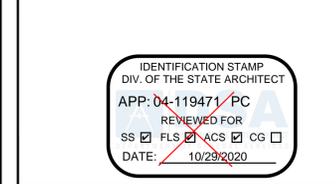
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DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
RUTH GRIMES
ELEMENTARY SCHOOL

SHEET TITLE:
COVER SHEET

PRE-CHECK (PC) DOCUMENT
 CODE: 2019 CBC
 A SEPARATE PROJECT APPLICATION FOR
 CONSTRUCTION IS REQUIRED



PROFESSIONAL OF RECORD ON PC



Date Signed: October 22, 2020

FIRM: EXL STRUCTURAL ENGINEERING, INC
 ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
 CITY: CHINO, CA 91710
 PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

REVISIONS

- △ -
- △ -
- △ -
- △ -
- △ -

PROJECT NO.: 00-0000
 DRAFTER: 00
 SCALE: AS NOTED
 DATE: 00-00-00

SHEET NUMBER

R-1

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

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

2019 CBC

IMPORTANT: This form is only a summary 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 appendices at the bottom of this form identify work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc. per Title 24, Part 2, Chapter 17A (2019 CBC).

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

KEY TO COLUMNS

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

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
 Page 1 of 12

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

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

17. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES

Material Verification and Testing:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/> 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 S100-16 Section A3.1 & A3.2, AISI S240-15 Section A3 & A5, AISI S220-15 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
<input checked="" type="checkbox"/> b. Test unidentified materials	Test	LOR	2202A.1.
<input checked="" type="checkbox"/> c. Examine seam welds of HSS shapes	Periodic	SI	DSR IR 17-3.

Inspection:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/> d. Verify and document steel fabrication per DSA-approved construction documents.	Periodic	SI	Not applicable to cold-formed steel light-frame construction, except for trusses (1705A.2.4).

18. HIGH-STRENGTH BOLTS: RCSC 2014

Material Verification and Testing of High-Strength Bolts, Nuts and Washers:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/> a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	Periodic	SI	Table 1705A.2.1 Items 1a & 1b, 2202A.1; AISI S360-16 Section A3.3, J3.1, and N3.2; RCSC 2014 Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> b. Test high-strength bolts, nuts and washers.	Test	LOR	Table 1705A.2.1 Item 1c, 2213A.1; RCSC 2014 Section 7.2; DSA IR 17-8.

Inspection of High-Strength Bolt Installation:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> c. Bearing-type ("snug tight") connections.	Periodic	SI	Table 1705A.2.1 Item 2b, 1705A.2.6, 2204A.2; AISI S360-16 J3.1, J3.2, M2.5 & N3.6; RCSC 2014 Section 9.1; DSA IR 17-9.
<input type="checkbox"/> d. Pretensioned and slip-critical connections.	*	SI	Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2; AISI S360-16 J3.1, J3.2, M2.5 & N3.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9. * "Continuous" or "Periodic" depends on the tightening method used.

19. WELDING:

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 (See Appendix for exemptions.)

Verification of Materials, Equipment, Welders, etc.:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/> a. Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	Periodic	SI	DSA IR 17-3.
<input checked="" type="checkbox"/> b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	DSA IR 17-3.
<input checked="" type="checkbox"/> c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
 Page 3 of 12

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

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

19.1 SHOP WELDING:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> 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; AISI S360-16 (and AISI 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/> 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 & 5a.6; AISI S360-16 (and AISI 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/> c. Inspect welding of stairs and railing systems.	Periodic	SI	1705A.2.1; AISI S360-16 (and AISI 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.
<input type="checkbox"/> d. Verification of reinforcing steel weldability other than ASTM A706.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input type="checkbox"/> e. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

19.2 FIELD WELDING:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 1/2", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1-4; AISI S360-16 (and AISI 341-16 as applicable); DSA IR 17-3.
<input type="checkbox"/> b. Inspect single-pass fillet welds ≤ 5/16".	Periodic	SI	Table 1705A.2.1 Item 5a.5; AISI S360-16 (and AISI 341-16 as applicable); DSA IR 17-3.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> c. Inspect end-welded studs (ASTM A-108) installation (including bond test).	Periodic	SI	2213A.2; AISI S360-16 (and AISI 341-16 as applicable); AWS D1.1; DSA IR 17-3.
<input type="checkbox"/> d. Inspect floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Item 5a.6; AISI S360-16 (and AISI 341-16 as applicable); AWS D1.3; DSA IR 17-3.
<input type="checkbox"/> e. Inspect welding of structural cold-formed steel.	Periodic	SI*	1705A.2.5; AWS D1.3; DSA IR 17-3. The quality control provisions of AISI S240-15 Chapter D shall also apply. *May be performed by the project inspector when specifically approved by DSA.
<input type="checkbox"/> f. Inspect welding of stairs and railing systems.	Periodic	SI*	1705A.2.1; AISI S360-16 (and AISI 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3. *May be performed by the project inspector when specifically approved by DSA.
<input type="checkbox"/> g. Verification of reinforcing steel weldability.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input type="checkbox"/> h. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 1b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

20. NONDESTRUCTIVE TESTING:

1705A.2.1, Table 1705A.2.1; AISI S303-16, AISI 341-16, AISI 358-16, AISI 360-16, AISI S100-16

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Ultrasonic	Test	LOR	1705A.2.1, 1705A.2.5; AISI 341-16 J6.2; AISI S360-16 N5.5; ANS/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> b. Magnetic Particle	Test	LOR	1705A.2.1, 1705A.2.5; AISI 341-16 J6.2; AISI S360-16 N5.5; ANS/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input type="checkbox"/> c. Steel	Test	LOR	

21. STEEL JOISTS AND TRUSSES: 1705A.2.1, Table 1705A.2.1; AISI S303-16, AISI 341-16, AISI 358-16, AISI 360-16, AISI S100-16

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Verify sizes, type and grade for all chord and web members as well as connectors and weld filler material. Verify joint profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joint.	Continuous	SI	1705A.2.1; Table 1705A.2.3; AWS D1.1; DSA IR 22-3 for steel joists only, 1705A.2.4; AWS D1.3 for cold-formed steel trusses.

22. SPRAY APPLIED FIRE-PROOFING: 1705A.2.1, Table 1705A.2.1; AISI S303-16, AISI 341-16, AISI 358-16, AISI 360-16, AISI S100-16

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA.	Periodic	SI	1705A.14.
<input type="checkbox"/> b. Test bond strength.	Test	LOR	1705A.14.6.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> c. Test density.	Test	LOR	1705A.14.4.

23. ANCHOR BOLTS AND ANCHOR RODS:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Anchor Bolts and Anchor Rods	Test	LOR	Sample and test anchor bolts and anchor rods not readily identifiable per procedures noted in DSA IR 17-11.
<input type="checkbox"/> b. Threaded rod not used for foundation anchorage.	Test	LOR	Sample and test threaded rods not readily identifiable per procedures noted in DSA IR 17-11.

Other Steel

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a.			

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
 Page 7 of 12

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

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

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

SOILS:

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

CONCRETE/MASONRY:

- 1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1817A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."
- 2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.2 subject to the requirements and limitations in that section.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

- 3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
- 4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.
- 5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

Welding:

- 1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
- 2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the "Exception" language in Section 1705A.2.1); fillet welds shall not be ground flush.
- 3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
- 4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected items) for Sections 19, 19.1 and/or 19.2 of listing above).
- 5. Manufactured components (e.g., Tolo, B-Line, Alcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected items) for Sections 19, 19.1 and/or 19.2 of listing above).

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

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

- 6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) connections of such elements to superstructure elements using welding will require special inspection as noted in selected items) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category.
- 7. Any support for exempt non-structural components given in CBC Section 1817A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) of <40# above supporting floor/roof, B) when hung from a wall or floor/roof, <20# discrete units or <5 p# for distributed systems.

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 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SIGNATURE), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

Name of Architect or Engineer in general responsible charge: _____

Name of Structural Engineer (When structural design has been delegated): _____

Signature of Architect or Structural Engineer: _____ Date: _____

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

DSA STAMP

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

- Structural Testing and Inspection: Laboratory Verified Report Form DSA 291
- Shop Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

20. NONDESTRUCTIVE TESTING:

1705A.2.1, Table 1705A.2.1; AISI S303-16, AISI 341-16, AISI 358-16, AISI 360-16, AISI S100-16

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Ultrasonic	Test	LOR	1705A.2.1, 1705A.2.5; AISI 341-16 J6.2; AISI S360-16 N5.5; ANS/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> b. Magnetic Particle	Test	LOR	1705A.2.1, 1705A.2.5; AISI 341-16 J6.2; AISI S360-16 N5.5; ANS/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input type="checkbox"/> c. Steel	Test	LOR	

21. STEEL JOISTS AND TRUSSES: 1705A.2.1, Table 1705A.2.1; AISI S303-16, AISI 341-16, AISI 358-16, AISI 360-16, AISI S100-16

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Verify sizes, type and grade for all chord and web members as well as connectors and weld filler material. Verify joint profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joint.	Continuous	SI	1705A.2.1; Table 1705A.2.3; AWS D1.1; DSA IR 22-3 for steel joists only, 1705A.2.4; AWS D1.3 for cold-formed steel trusses.

22. SPRAY APPLIED FIRE-PROOFING: 1705A.2.1, Table 1705A.2.1; AISI S303-16, AISI 341-16, AISI 358-16, AISI 360-16, AISI S100-16

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA.	Periodic	SI	1705A.14.
<input type="checkbox"/> b. Test bond strength.	Test	LOR	1705A.14.6.

DGS DSA 103-19 (Revised 07/16/2020)
 DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA
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DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum), 2019 CBC

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> c. Test density.	Test	LOR	1705A.14.4.

23. ANCHOR BOLTS AND ANCHOR RODS:

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a. Anchor Bolts and Anchor Rods	Test	LOR	Sample and test anchor bolts and anchor rods not readily identifiable per procedures noted in DSA IR 17-11.
<input type="checkbox"/> b. Threaded rod not used for foundation anchorage.	Test	LOR	Sample and test threaded rods not readily identifiable per procedures noted in DSA IR 17-11.

Other Steel

Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/> a.			

DGS DSA 103-19 (Revised 07/16/2020)
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Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 04-119471
 School Name: Accessible Ramp / Landing / Stair PC
 School District: SKC Company
 Date Created: 2020-07-25 07:42:52
 DSA File Number: PC-116

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

SOILS:

- 1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0"

STRUCTURAL NOTES

MATERIAL SPECIFICATIONS:
STEEL - ALL TUBE STEEL ASTM A-513M-18 GRADE B (Fy=40 KSI)
 ALL STRUCTURAL STEEL SHEET TO BE A1011SS GRADE 33
 ALL STEEL TO BE COATED PER TT-P-645 ASTM
 ALL ANGLES AND MISC STEEL ASTM A36

BOLTS - ASTM A307 COMMON BOLTS WITH WASHER

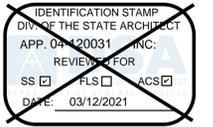
WELDS - ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY D-1.3-2008 FOR SHEET STEEL.
 ELECTRODES SHALL BE E70XX

PLYWOOD DECKING OPTION - APA RATED STRUCT 1 EXTERIOR PLYWOOD

ACCESS NOTES

- RAMPS HAVING SLOPES STEEPER THAN 1 VERTICAL TO 20 HORIZONTAL SHALL HAVE LANDINGS AT TOP AND BOTTOM AND AT LEAST ONE INTERMEDIATE LANDING SHALL BE PROVIDED FOR EACH 30° RISE OF RISE PER CBC 11B-405.7
 - LOCATION OF LANDINGS - LANDINGS SHALL BE PROVIDED AT THE TOP AND BOTTOM OF EACH RAMP. INTERMEDIATE LANDINGS SHALL BE PROVIDED AT INTERVALS NOT EXCEEDING 30° OF VERTICAL RISE AND AT EACH CHANGE OF DIRECTION. LANDINGS ARE NOT CONSIDERED IN DETERMINING THE MAXIMUM HORIZONTAL DISTANCE OF EACH RAMP
- EXAMPLES OF RAMP DIMENSIONS:**
- | SLOPE: | MAX RISE (INCHES): | MAX HORIZONTAL PROJECTION: |
|--------|--------------------|----------------------------|
| 1:12 | 30 | 30'-0" |
| 1:15 | 30 | 37'-6" |
| 1:16 | 30 | 40'-0" |
- SIZE OF LANDINGS SHALL NOT BE LESS THAN 60" WIDE AND SHALL HAVE A LENGTH OF NOT LESS THAN 60" IN THE DIRECTION OF THE RAMP RUN PER CBC 11B-405.7.2 & 11B-405.7.3. AT THE BOTTOM LANDING OR LANDING AT CHANGE OF RAMP DIRECTION, THE LANDING SHALL SLOPE 1:48 MAX AND EXTEND MIN 72" IN THE DIRECTION OF THE RAMP
- DOORS IN ANY POSITION SHALL NOT REDUCE THE MINIMUM DIMENSIONS OF THE LANDING TO LESS THAN 42" AND SHALL NOT REDUCE THE REQUIRED WIDTH BY MORE THAN 3" WHEN FULLY OPENED PER CBC 11B-405.7.5
 - RAMPS SHALL BE CONSTRUCTED AS REQUIRED. ALL REQUIREMENTS SHALL CONFORM TO CBC 11B-405
 - THE SURFACE OF RAMPS, LANDING & STAIRS SHALL BE ROUGHED OR SHALL BE OF SLIP-RESISTANT MATERIAL WITH A COEFFICIENT OF FRICTION OF 0.6 FOR LANDINGS AND 0.8 FOR RAMP AND STAIRS
 - RAMPS AND STAIRWAY USED AS THE EXIT REQUIRED WIDTH SHALL CONFORM TO CBC SECTION 1009, 1010, CHAPTER 11B & 11B-405.5
 - HANDRAILS SHALL CONFORM TO CBC SECTION 11B-405.8 (RAMPS) AND 11B-504.6 (STAIRS)
 - STRIKE EDGE EXTENSION THE WIDTH OF THE LANDING SHALL EXTEND 24" PAST THE STRIKE EDGE OF ANY DOOR OR GATE FOR EXTERIOR RAMPS AND 18" PAST THE STRIKE EDGE FOR INTERIOR RAMPS. FOR DOOR SWINGING INTO LANDING, 42" MIN IS REQUIRED PER 11B-405.7.5
 - CHANGE IN DIRECTION - RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDING SHALL HAVE A CLEAR LANDING 60" MINIMUM BY 72" MINIMUM IN THE DOWNWARD DIRECTION OF TRAVEL PER CBC 11B-405.7.4 AND 72" MIN REQUIRED AT THE BOTTOM LANDING
 - THE WIDTH OF RAMPS SHALL HAVE A MINIMUM WIDTH OF 48" OR AS WIDE AS REQUIRED EXIT WIDTH IF LARGER REQUIRED PER STAIRWAY AND EXITS PER CBC 11B-405.5
 - LANDINGS AND RAMPS SHALL BE SLOPED AT 1:48 MAX TO PREVENT THE ACCUMULATION OF WATER ON WALKING SURFACES PER CBC 11B-405.10. SEE CBC 11B-504.7 FOR STAIRS
 - SITE CONDITION: DUE TO VARIES SITE CONDITIONS, THE MAXIMUM HEIGHT OF FINISH FLOOR FROM GRADE IS 26". THEREFORE IT IS POSSIBLE THAT THE ACCESS RAMP ATTACHED TO THE COMMON LANDING COULD BE 26'-0". AT A SLOPE OF 1:12, THE ARCHITECT MUST TAKE INTO ACCOUNT THAT THE RAMP SUPPLIED BY SKC COMPANY IS 11'-0". AT A SLOPE OF 1:12 THE ARCHITECT WILL HAVE TO DESIGN AND PROVIDE SUFFICIENT DETAILS OF RAMP EXTENSIONS AND BOTTOM LANDING DEPENDING ON PARTICULAR SITE CONDITIONS ICS WILL NOT BE RESPONSIBLE FOR ANY RAMP EXTENSION EXCEEDING ORIGINAL PLAN AS SHOWN ON PLANS

STATE AGENCY APPROVAL



13617 12 STREET, SUITE #B, CHINO, CA 91710
 OFFICE: (909) 740-3120, FAX: (909) 726-9470
 WEBSITE: WWW.SKCCOMPANY.COM

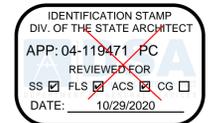
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DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
**RUTH GRIMES
 ELEMENTARY SCHOOL**

SHEET TITLE:
**CONSTRUCTION
 SPECIFICATIONS AND
 NOTES**

PRE-CHECK (PC) DOCUMENT
 CODE: 2019 CBC
 A SEPARATE PROJECT APPLICATION FOR
 CONSTRUCTION IS REQUIRED



PROFESSIONAL OF RECORD ON PC



FIRM: EXL STRUCTURAL ENGINEERING, INC
 ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
 CITY: CHINO, CA 91710
 PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

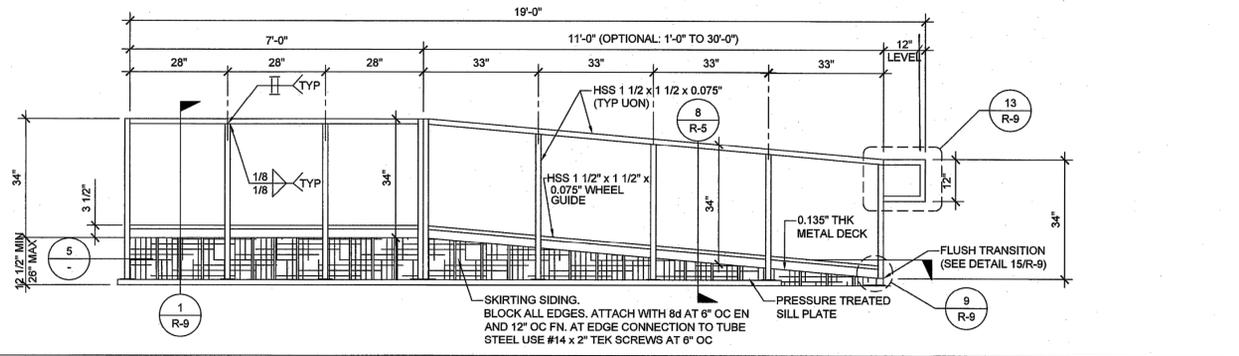
FIRM:
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 CITY:
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REVISIONS	
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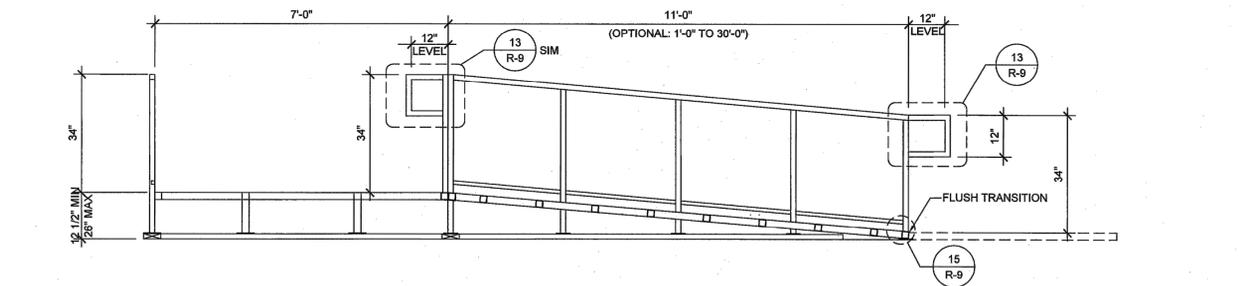
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 DRAFTER: 00
 SCALE: AS NOTED
 DATE: 00-00-00

SHEET NUMBER

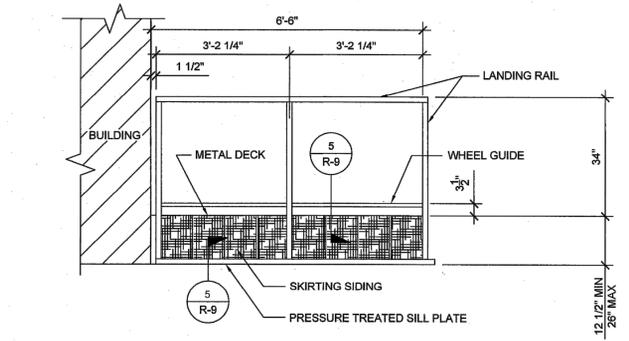
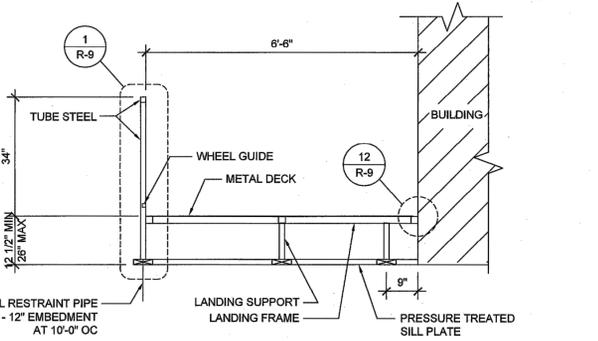
R-3



RAMP AND LANDING ELEVATION SCALE: 1/2" = 1'-0" 4

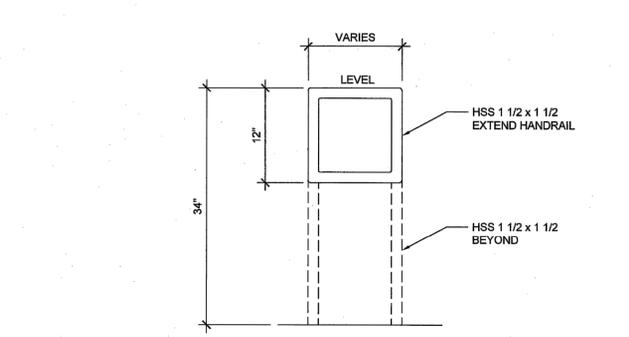
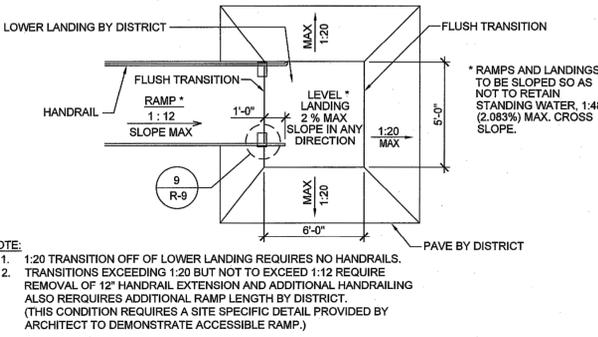


SECTION AT RAMP AND LANDING SCALE: 1/2" = 1'-0" 5



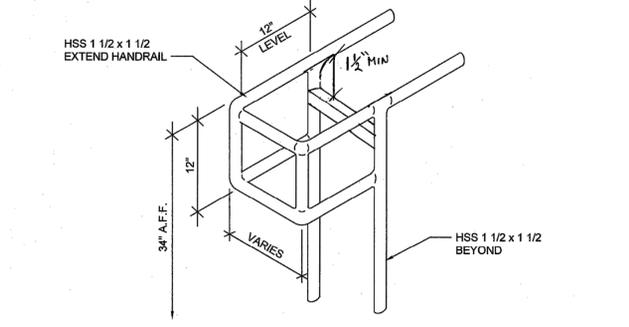
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LANDING ELEVATION SCALE: 1/2" = 1'-0" 6

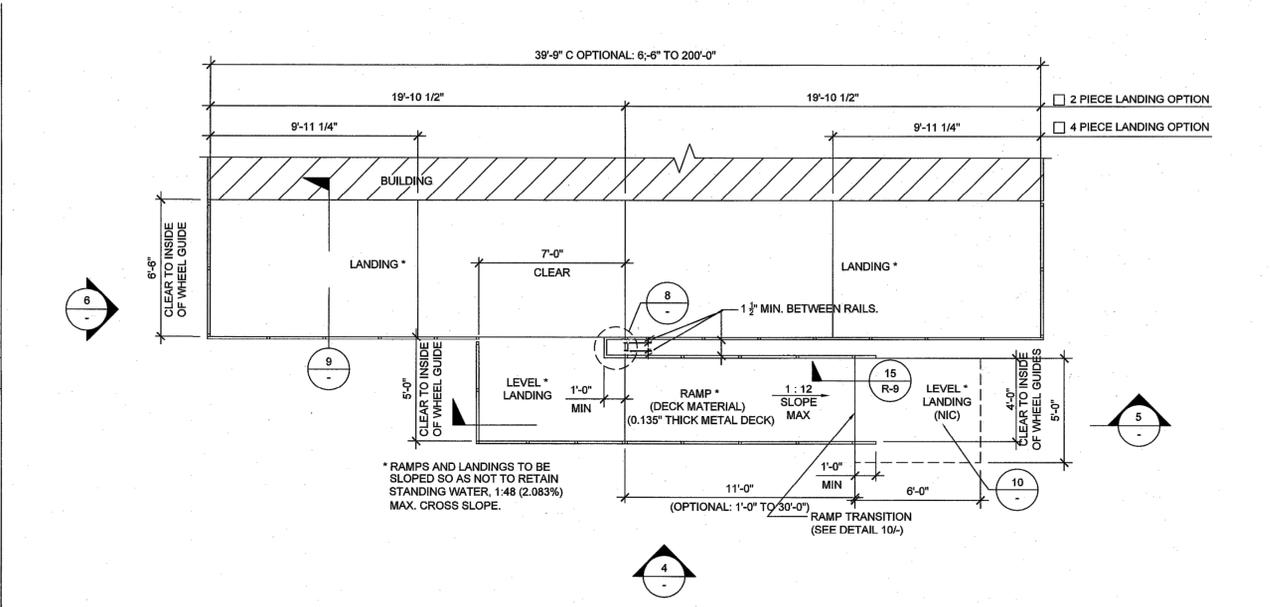


RAMP TRANSITION SCALE: NTS 10

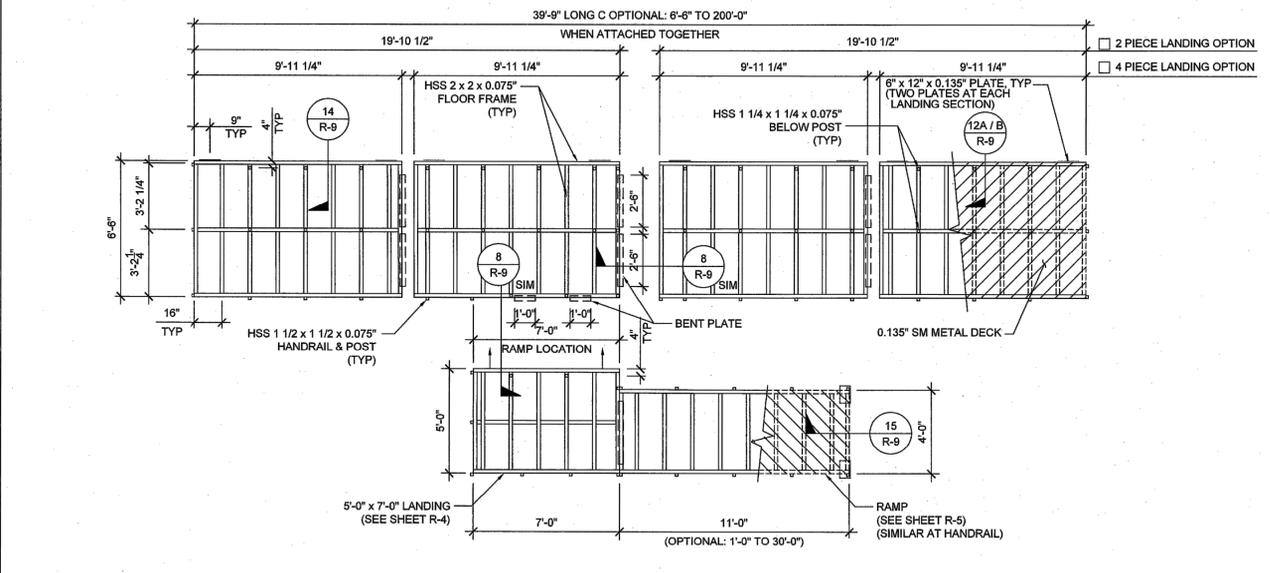
RETURN EXTEND HANDRAIL ELEVATION SCALE: 1" = 1'-0" 7



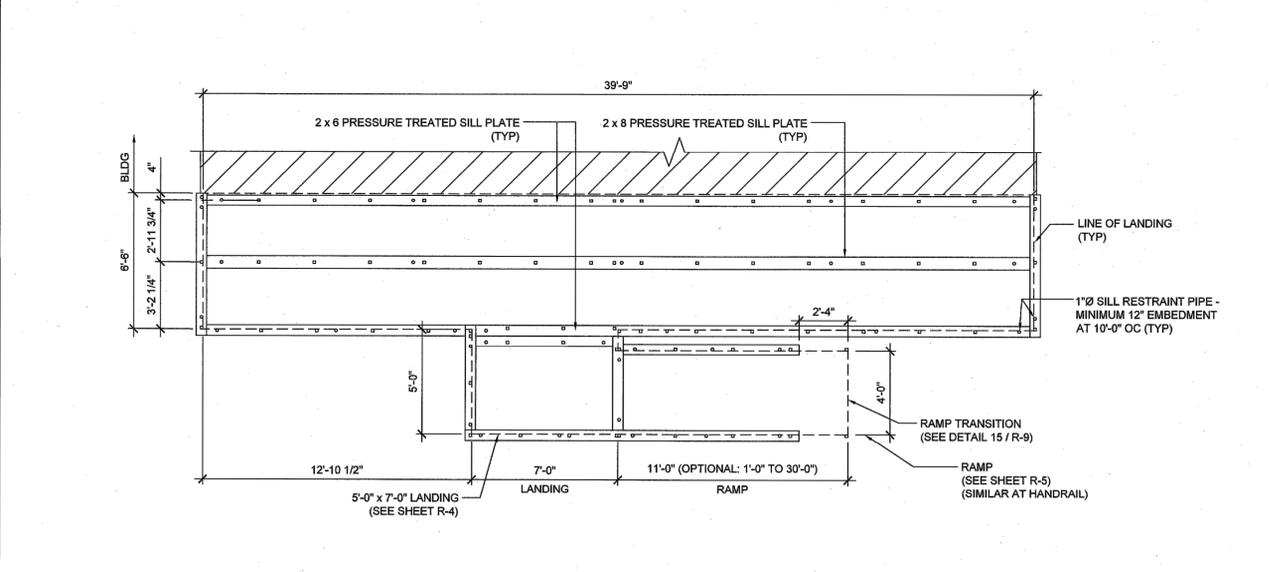
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LANDING PLAN SCALE: 1/4" = 1'-0" 1



COMMON LANDING PLAN SCALE: 1/4" = 1'-0" 2



SILL PLAN FOR RAMP AND LANDING SCALE: 1/4" = 1'-0" 3

STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 04-120031 INC.
REVIEWED FOR
SS FLS ACS
DATE: 03/12/2021



15617 12 STREET, SUITE #B, CHINO, CA 91710
OFFICE: (909) 740-3120, FAX: (909) 726-9470
WEBSITE: WWW.SKCCOMPANY.COM
MANUFACTURER RFP 1279966 DEALER # DL1279966
CS LIC # 89218 SBC CERTIFIED

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DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
RUTH GRIMES
ELEMENTARY SCHOOL

SHEET TITLE:
COMMON LANDING PLAN

PRE-CHECK (PC) DOCUMENT
CODE: 2019 CBC
A SEPARATE PROJECT APPLICATION FOR
CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP. 04-119471 PC
REVIEWED FOR
SS FLS ACS CG
DATE: 10/29/2020

PROFESSIONAL OF RECORD ON PC



Date Signed: October 22, 2020

FIRM: EXL STRUCTURAL ENGINEERING, INC
ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114
CITY: CHINO, CA 91710
PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

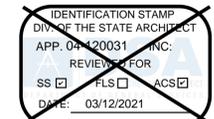
REVISIONS

PROJECT NO.: 00-0000
DRAFTER: 00
SCALE: AS NOTED
DATE: 00-00-00

SHEET NUMBER

R-6

10/22/2020 7:30:13 AM



SKS COMPANY

15617 12 STREET, SUITE #B, CHINO, CA 91710

OFFICE: (909) 740-3120, FAX: (909) 726-9470

WEBSITE: WWW.SKSCOMPANY.COM

MANUFACTURER REF: 1279966 DEALER # DL1279966

CS LIC # 90518 SBC CERTIFIED

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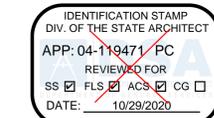
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SCHOOL/SITE NAME: RUILMGRIES ELEMENTARY SCHOOL

SHEET TITLE:

SWITCHBACK RAMP PLAN

PRE-CHECK (PC) DOCUMENT CODE: 2019 CBC A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED



PROFESSIONAL OF RECORD ON PC



Date Signed: October 22, 2020

FIRM: EKL STRUCTURAL ENGINEERING, INC. ADDRESS: 4091 RIVERSIDE DRIVE, SUITE #114 CITY: CHINO, CA 91710 PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

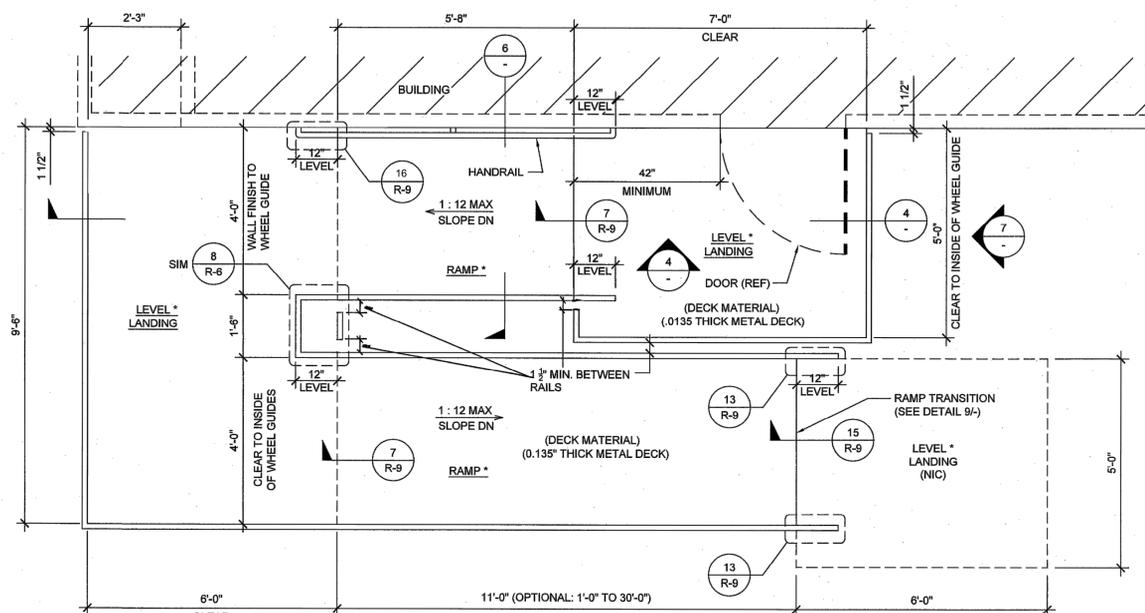
REVISIONS

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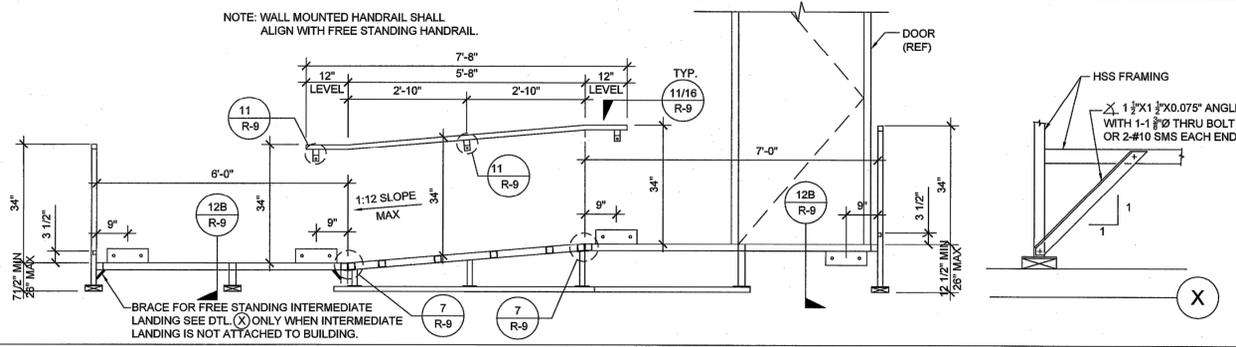
SHEET NUMBER

R-8



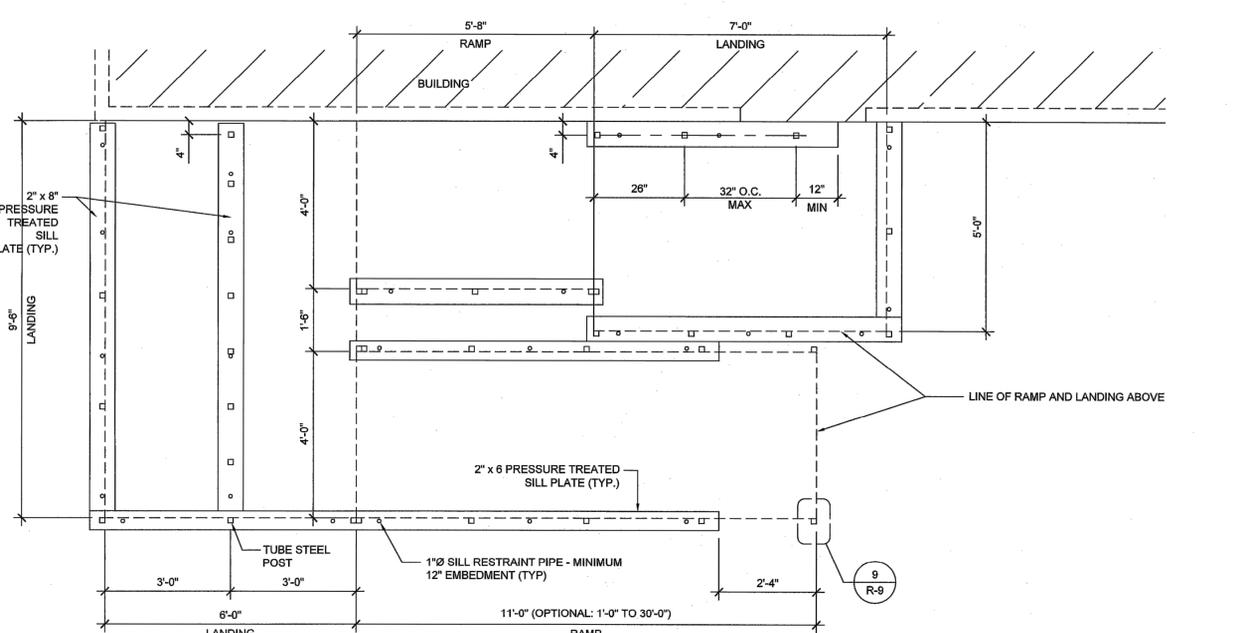
RAMP AND LANDING AT BUILDING

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



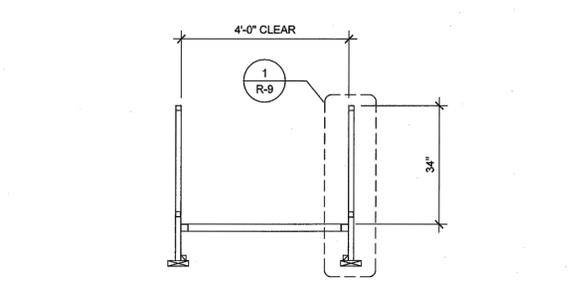
SECTION AT RAMP AND LANDING

SCALE: 1/2" = 1'-0" 4



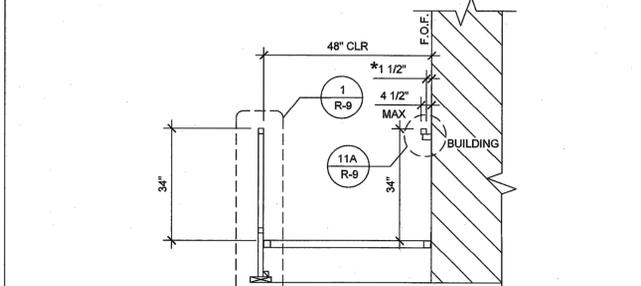
SILL PLAN FOR RAMP AND LANDING

SCALE: 1/2" = 1'-0" 5



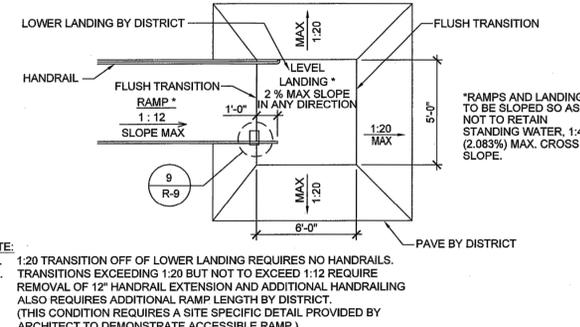
SECTION AT RAMP

SCALE: 1/2" = 1'-0" 8



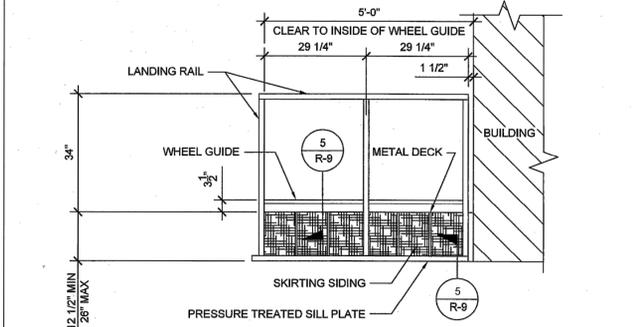
SECTION AT RAMP

SCALE: 1/2" = 1'-0" 6



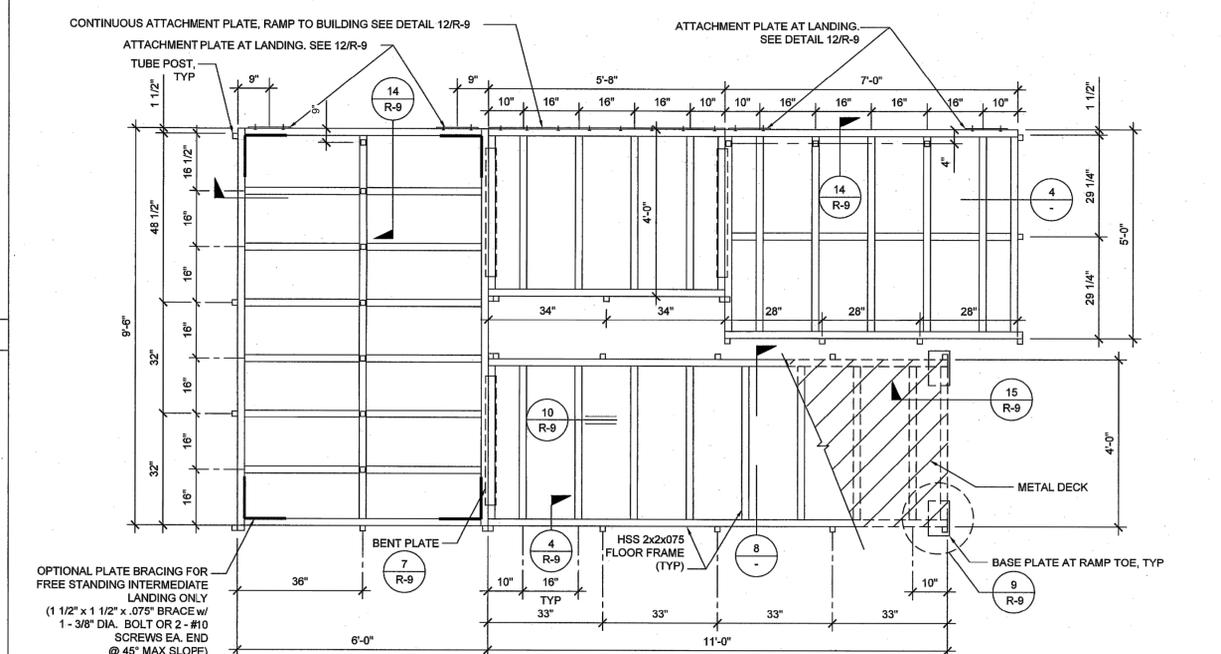
RAMP TRANSITION

SCALE: NTS 9



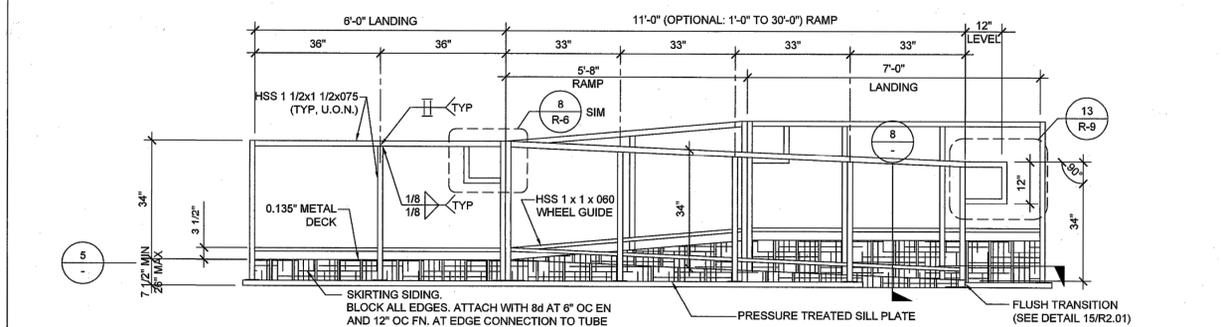
LANDING ELEVATION

SCALE: 1/2" = 1'-0" 7



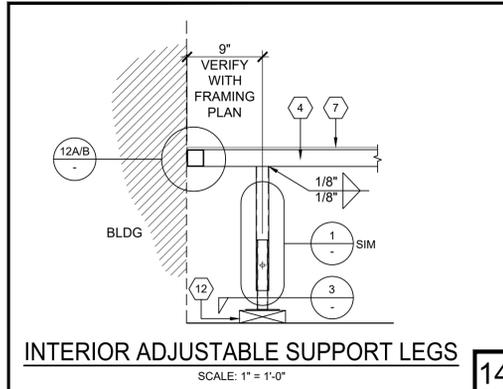
RAMP FRAMING PLAN

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

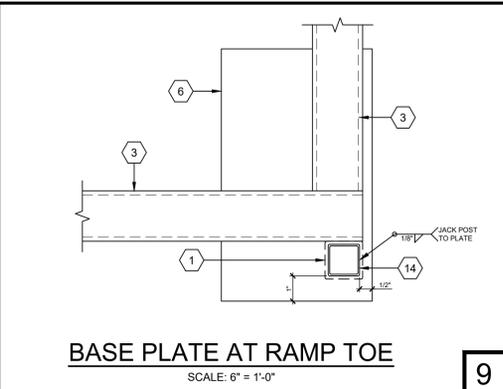


RAMP AND LANDING ELEVATION

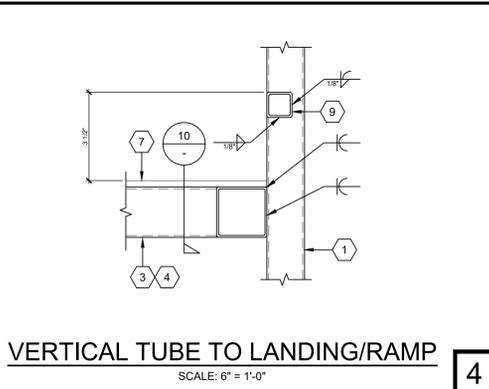
SCALE: 1/2" = 1'-0" 3



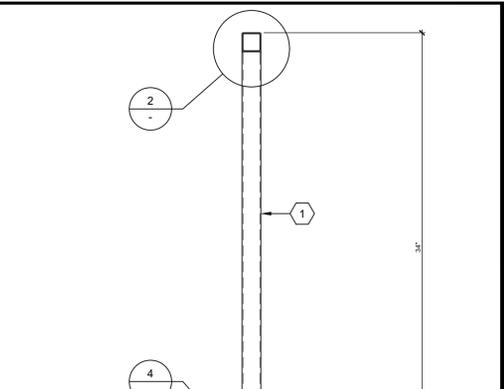
INTERIOR ADJUSTABLE SUPPORT LEGS
SCALE: 1" = 1'-0"



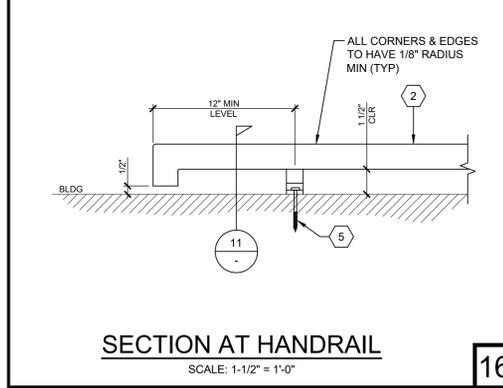
BASE PLATE AT RAMP TOE
SCALE: 6" = 1'-0"



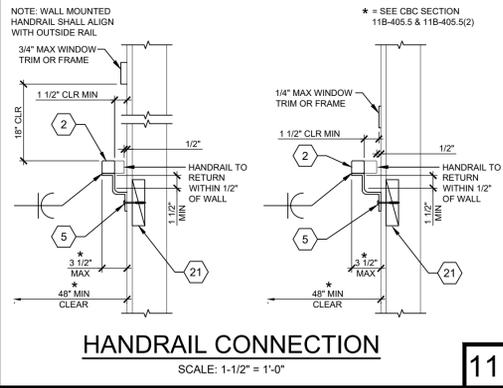
VERTICAL TUBE TO LANDING/RAMP
SCALE: 6" = 1'-0"



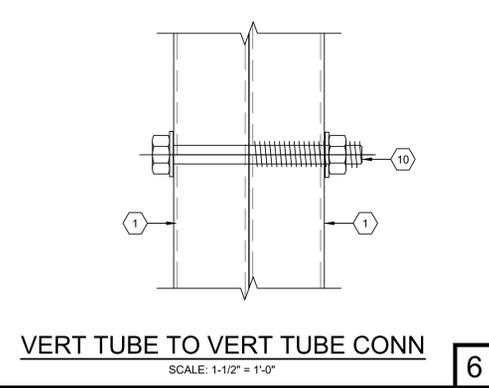
SECTION AT DECK & HANDRAIL
SCALE: 3" = 1'-0"



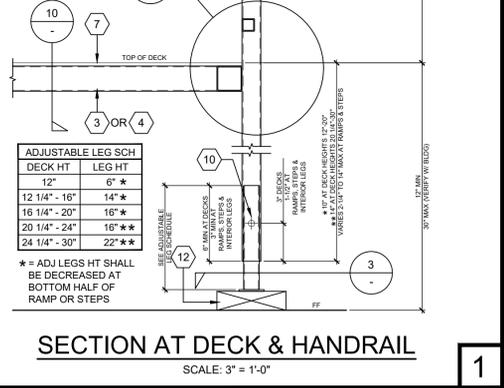
SECTION AT HANDRAIL
SCALE: 1-1/2" = 1'-0"



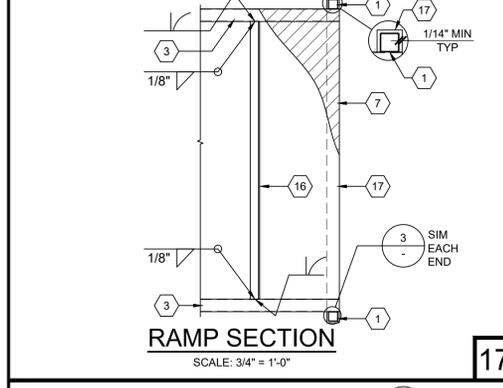
HANDRAIL CONNECTION
SCALE: 1-1/2" = 1'-0"



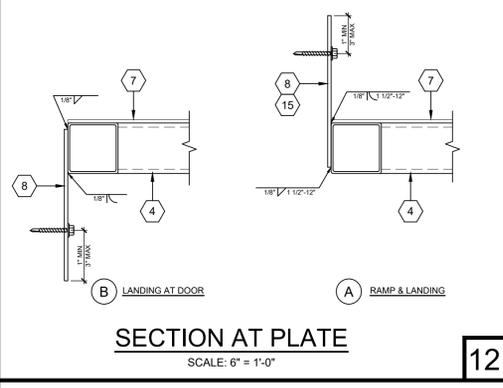
VERT TUBE TO VERT TUBE CONN
SCALE: 1-1/2" = 1'-0"



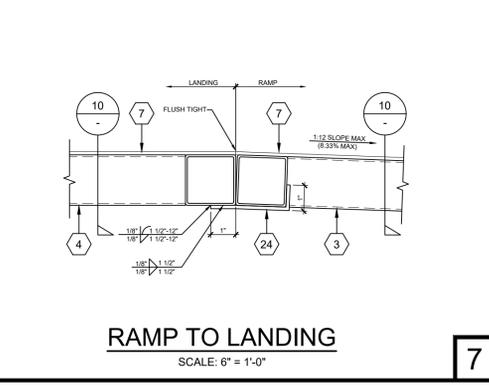
SECTION AT DECK & HANDRAIL
SCALE: 3" = 1'-0"



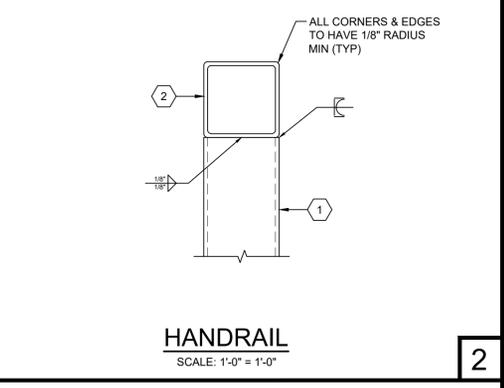
RAMP SECTION
SCALE: 3/4" = 1'-0"



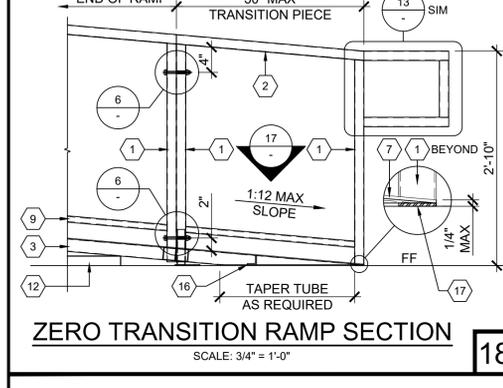
SECTION AT PLATE
SCALE: 6" = 1'-0"



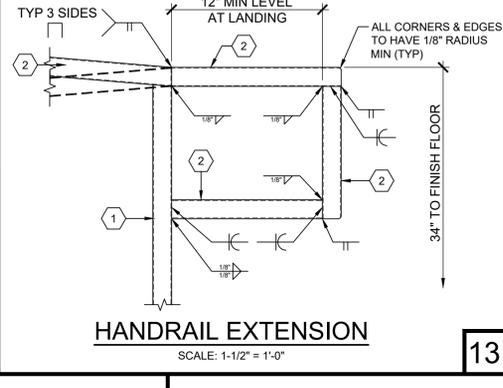
RAMP TO LANDING
SCALE: 6" = 1'-0"



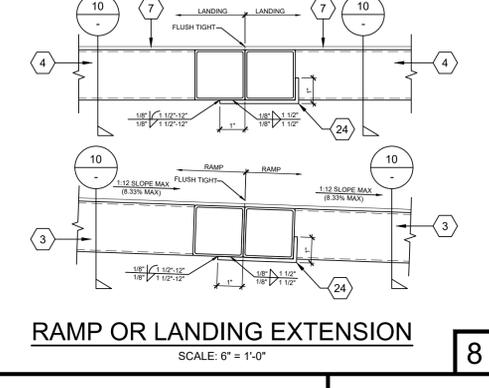
HANDRAIL
SCALE: 1'-0" = 1'-0"



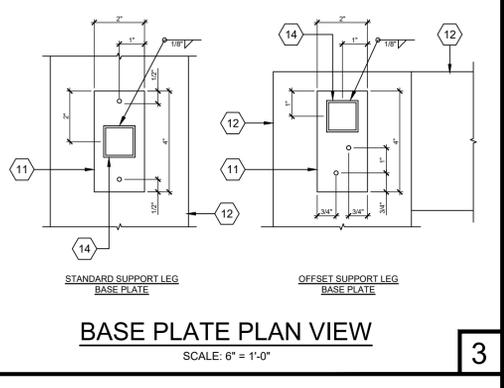
ZERO TRANSITION RAMP SECTION
SCALE: 3/4" = 1'-0"



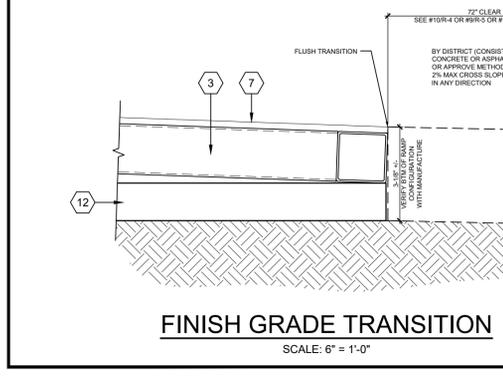
HANDRAIL EXTENSION
SCALE: 1-1/2" = 1'-0"



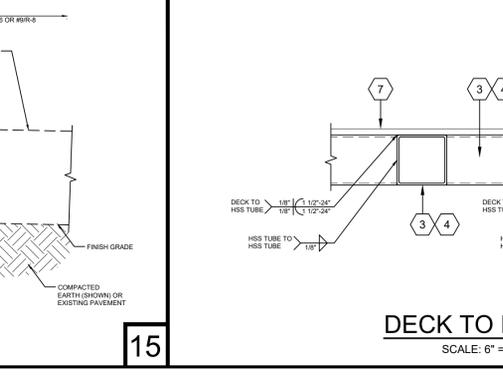
RAMP OR LANDING EXTENSION
SCALE: 6" = 1'-0"



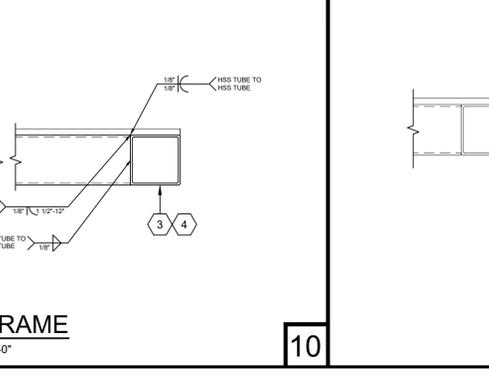
BASE PLATE PLAN VIEW
SCALE: 6" = 1'-0"



FINISH GRADE TRANSITION
SCALE: 6" = 1'-0"



DECK TO FRAME
SCALE: 6" = 1'-0"



SKIRTING INSTALLATION
SCALE: 6" = 1'-0"

- KEY NOTES**
- VERTICAL TUBE: 1 1/2" X 1 1/2" X 14 GA MIN (t = 0.075") SQUARE TUBE
 - HANDRAIL TUBE: 1 1/2" X 1 1/2" X 16 GA MIN (t = 0.065") SQUARE TUBE
 - RAMP TUBE MEMBER: 2" X 2" X 14 GA MIN (t = 0.075") SQUARE TUBE
 - LANDING TUBE MEMBER: 2" X 2" X 14 GA MIN (t = 0.075") SQUARE TUBE
 - HANDRAIL MOUNTING BRACKET: 1/4" X 3" LAG SCREW AT WOOD STUD BUILDING OR #14 X 2" TEK SCREW AT METAL STUD BUILDING
 - 6" X 10" X 0.135" STEEL PLATE
 - 12 GA METAL DECK (0.105"); NON-SLIP SURFACE MAINTAINABLE FOR 1 YEAR. SEE GENERAL NOTES #3 AND DETAIL #4 ON SHEET R-3
 - 6" X 12" X 0.135" STEEL PLATE AT LANDINGS. TO SECURE PLATE TO STRUCTURAL FLOOR FRAME, USE (2) #14 X 1-1/2" TEK SCREWS. TO SECURE PLATE TO BUILDING, USE (2) #14 X 2" TEK SCREWS FOR METAL STUD BUILDING OR (2) 1/4" X 3" LAG SCREWS FOR WOOD STUD BUILDING
 - WHEELCHAIR GUIDE RAILS: 1" X 1" X 14 GA MIN (t = 0.075") SQUARE TUBE
 - 3/8" ZINC COATED MACHINE BOLT WITH NUT
 - 2" X 4" 0.135" THICK BASE PLATE. DRILL (2) 5/16" HOLES FOR (2) 1/4" X 1-1/2" GALV LAG SCREWS
 - 2 X 6 HF #2 MIN PRESSURE TREATED SILL PLATE
 - 1" X 14" STANDARD WEIGHT HOT DIPPED GALVANIZED PIPE AT 10'-0" OC MAX. 2"-0" MAX FROM EACH CORNER IN BOTH DIRECTIONS AND A MINIMUM OF TWO PIPES PER DISCONTINUE FOUNDATION STRIP PER DSA IR 16-1 SECTION 4.8 DRILL SILL PLATE 1 1/2" MAX HOLE PIPE SHOULD PENETRATE INTO SOIL AND/OR PAVING A MIN OF 12" MEASURED VERTICALLY PIPES SHALL BE INSTALLED ON A CONTINUOUS PLATE
 - ADJUSTABLE LEGS: 1-1/4" X 1-1/4" X 0.075" SQUARE TUBE WELDED TO BASE PLATE
 - 6" X LENGTH OF RAMP X 0.135" CONT PLATE. TO SECURE PLATE TO BUILDING, USE 1/4" X 3" LAG SCREWS. TO SECURE PLATE TO STRUCTURAL FLOOR FRAME, USE #14 X 2" TEK SCREWS. TO SECURE PLATE TO WOOD FOUNDATION, USE 1/4" X 3" LAG SCREWS. ALL FASTENER SPACING SHALL BE AT 9" OC MAX
 - L-1 1/2" X 1-1/2" X 3/16" X WIDTH OF RAMP
 - 2" X 1/8" CONTINUOUS PLATE
 - NOT USED
 - NOT USED
 - NOT USED
 - THIS BLOCKING IS PART OF THE BUILDING. WOOD BLOCKING SHOWN, CAN BE METAL
 - PLYWOOD SKIRTING OR SIDING FINISH. ATTACH SIDING TO TUBE STEEL WITH #14 X 1-1/2" FH SCREWS AT 6" OC AND TO 2X NAILER WITH 8D HOT-DIPPED GALVANIZED NAILS AT 6" OC
 - 26 GA MIN "J" FLASHING
 - 3" X 1" X 3'-0" X 10 GA BENT PLATE (0.135")
 - 2X NAILED TO SILL PLATE WITH 16D HOT-DIPPED GALVANIZED NAILS AT 16" OC MAX. ALT: #10 X 3" MIN EXTERIOR WOOD SCREWS

STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-120031
REVIEWED FOR
SS FLS ACS
DATE: 03/12/2021

SKCC COMPANY
15617 12 STREET, SUITE #B, CHINO, CA 91710
OFFICE: (909) 740-3120, FAX: (909) 726-9470
WEBSITE: WWW.SKCCOMPANY.COM
MANUFACTURER RFP 127966 DEALER # DL127966
CS-1-CR-09/18 SBC CERTIFIED

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DISTRICT/CUSTOMER NAME:
COLTON JOINT USD

SCHOOL/SITE NAME:
RUTH GRIMES
ELEMENTARY SCHOOL

SHEET TITLE:
STAIR AND LANDING
PLAN AND DETAILS

PRE-CHECK (PC) DOCUMENT
CODE: 2019 CBC
A SEPARATE PROJECT APPLICATION FOR
CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-119471 PC
REVIEWED FOR
SS FLS ACS CG
DATE: 10/29/2020

PROFESSIONAL OF RECORD ON PC

DATE SIGNED: October 22, 2020

FIRM: EXL STRUCTURAL ENGINEERING, INC
ADDRESS: 4051 RIVERSIDE DRIVE, SUITE #114
CITY: CHINO, CA 91710
PHONE: (909) 613-0234

PROJECT SPECIFIC PROFESSIONAL OF RECORD

REVISIONS

1		
2		
3		
4		
5		

PROJECT NO.: 00-0000
DRAFTER: 00
SCALE: AS NOTED
DATE: 00-00-00
SHEET NUMBER

R-9

EXAMPLE FORM DSA-103: STRUCTURAL TESTS AND SPECIAL INSPECTIONS				
NOTE: THIS EXAMPLE FORM DSA-103 IS FOR ILLUSTRATION PURPOSES ONLY TO ASSIST IN THE COMPLETION OF FUTURE PROJECT SPECIFIC FORM DSA-103's. A FORM DSA-103 IS TO BE COMPLETE FOR EACH APPLICATION THIS PC IS BEING INCORPORATED INTO.				
Geotechnical Reports: Project does NOT have and does NOT require a geotechnical report				
GENERAL: Table 1705A.6				
1. Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Verify that: <ul style="list-style-type: none"> • Shoring has been prepared properly prior to placement of concrete fill and/or excavations for foundations. • Foundation excavations are extended to proper depth and have reached proper material. • Material below footings are adequate to achieve the design bearing capacity. 	See Notes	PI	Refer to specific items identified in the Appendix listing exemptions for limitations. Placement of controlled fill exceeding 12" depth under foundations is not permitted without a geotechnical report.	
2. SOIL COMPACTION AND FILL: Table 1705A.6				
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Verify use of proper materials, densities and inspect lift thickness, placement and compaction during placement of fill.	Continuous	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	
<input checked="" type="checkbox"/> b. Compaction testing.	Test	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	
4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS): Table 1705A.8				
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Inspect drilling operation and maintain complete and accurate records for each pier.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.	
<input checked="" type="checkbox"/> b. Verify pier locations, diameters, plumbness and lengths. Record concrete or grout volumes.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.	
<input checked="" type="checkbox"/> c. Concrete piers.	Provide tests and inspections per CONCRETE section below.			
7. CAST-IN-PLACE CONCRETE				
Test or Special Inspection	Type	Performed By	Code References and Notes	
Material Verification and Testing:				
<input checked="" type="checkbox"/> a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1705A.10.1.	
<input checked="" type="checkbox"/> b. Identify, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.)	
<input checked="" type="checkbox"/> c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-14 Sections 26.5 & 26.12.	
<input checked="" type="checkbox"/> d. Test concrete (f').	Test	LOR	1905A.1.15; ACI 318-14 Section 26.12.	
Inspection:				
<input checked="" type="checkbox"/> e. Batch plant inspection: Eliminated	See Notes	SI	Default of "Continuous" per 1705A.3.3. If approved by DSA, batch plant inspection may be reduced to "Periodic" subject to requirements in Section 1705A.3.3.1, or eliminated per 1705A.3.3.2. (See Appendix for exemptions.)	
<input type="checkbox"/> f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below.			
17. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES				
Material Verification and Testing:				
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Verify identification of all materials and: <ul style="list-style-type: none"> • Mill certificates indicate material properties that comply with requirements. • Material sizes, types and grades comply with requirements. 	Periodic	*	Table 1705A.2.1 Items 3a-3c, 2202A.1; AISI S100-16 Section A3.1 & A3.2; AISI S200-15 Section A3.1 & A3.2; AISI S220-15 Section A4 & A6. *By special inspector or qualified technician when performed off-site.	
<input checked="" type="checkbox"/> b. Test unidentified materials.	Test	LOR	2202A.1.	
<input checked="" type="checkbox"/> c. Examine seam welds of HSS shapes.	Periodic	SI	DSA IR 17-3.	
Inspection:				
<input checked="" type="checkbox"/> d. Verify and document steel fabrication per DSA-approved construction documents.	Periodic	PI	Not applicable to cold-formed steel light-frame construction, except for trusses (1705A.2.4).	
18. HIGH-STRENGTH BOLTS: RCSC 2014				
Material Verification and Testing of High-Strength Bolts, Nuts and Washers:				
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	Periodic	SI	Table 1705A.2.1 Items 1a & 1b, 2202A.1; AISC 360-16 Section A3.3.1, A3.3.2 & A3.3.4; RCSC 2014 Section 1.5 & 1.6; DSA IR 17-8 & DSA IR 17-9.	
<input checked="" type="checkbox"/> b. Test high-strength bolts, nuts and washers.	Test	LOR	Table 1705A.2.1 Item 1c, 2213A.1; RCSC 2014 Section 7.2; DSA IR 17-8.	
Inspection of High-Strength Bolt Installation:				
<input checked="" type="checkbox"/> c. Bearing-type ("snug tight") connections.	Periodic	SI	Table 1705A.2.1 Item 2a, 1705A.2.6, 2204A.3; AISC 360-16 J3.1, J3.2, J3.5 & N5.6; RCSC 2014 Section 9.1; DSA IR 17-9.	
<input type="checkbox"/> d. Pretensioned and slip-critical connections.	*	SI	Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, N2.5 & N5.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9. *"Continuous" or "Periodic" depends on the tightening method used.	
19. WELDING: 1705A.2.5, Table 1705A.2.1 Items 3a-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 (See Appendix for exemptions.)				
Verification of Materials, Equipment, Welders, etc.:				
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Verify weld filler material identification markings and AWS designation listed on the DSA-approved documents and the WPS.	Periodic	SI	DSA IR 17-3.	
<input checked="" type="checkbox"/> b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	DSA IR 17-3.	
<input checked="" type="checkbox"/> c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.	
19.1 SHOP WELDING:				
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16" plus and steel welds.	Continuous	SI	Table 1705A.2.1 Items 3a-4; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.	
<input checked="" type="checkbox"/> b. Inspect single-pass fillet welds < 5/16". Roof and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Items 5a, 5b & 5c; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.	
<input type="checkbox"/> 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.	
<input type="checkbox"/> d. Verification of reinforcing steel weldability other than ASTM A706.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.	
<input type="checkbox"/> e. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.	
23. ANCHOR BOLTS AND ANCHOR RODS:				
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> a. Anchor Bolts and Anchor Rods	Test	LOR	Sample and test anchor bolts and anchor rods not readily identifiable per procedures noted in DSA IR 17-11.	
<input type="checkbox"/> b. Threaded rod not used for foundation anchorage.	Test	LOR	Sample and test threaded rods not readily identifiable per procedures noted in DSA IR 17-11.	
Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.				
SOILS:				
<input type="checkbox"/> 1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles), C) poles supporting open mesh fences, etc.) C) single-story structure with dead load less than 5 psf (e.g., open fabric-shed structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.				
<input type="checkbox"/> 2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1806A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaired landscaping and playground areas, or E) utility trench backfill.				
CONCRETE/MASONRY:				
<input type="checkbox"/> 1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see Item # for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural partitions meeting criteria listed in exempt item #3 for "Welding."				
<input type="checkbox"/> 2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.				

2019 CBC PC STRUCTURAL DESIGN INFORMATION - 30' MERAMEC		
DESCRIPTION	DESIGN VALUES	SITE SPECIFIC VALUES
DEAD AND LIVE LOADS		
ROOF DEAD LOAD (D)	5 PSF	
ROOF LIVE LOAD (L)	20 PSF UNIFORM LOAD, 300 LB CONCENTRATED LOAD	
SNOW LOADS (SITE SPECIFIC SNOW LOAD SHALL CONFORM WITH CBC SECTION 1608A.4)		
GROUND SNOW LOAD (P _g)	<input type="checkbox"/> 22 PSF < P _g ≤ 33 PSF <input checked="" type="checkbox"/> P _g ≤ 22 PSF	SITE SPECIFIC P _g : 0 psf
SLOPED ROOF SNOW LOAD (P _s)	<input type="checkbox"/> 20 PSF < P _s ≤ 30 PSF <input checked="" type="checkbox"/> P _s ≤ 20 PSF	SITE SPECIFIC P _s : 0 psf
SNOW EXPOSURE FACTOR (C _e)	1.1, SHELTERED	
SNOW IMPORTANCE FACTOR (I _s)	1.0	
THERMAL FACTOR (C _t)	1.2, OPEN AIR STRUCTURE	
SEPARATION FROM TALLER, ADJACENT STRUCTURES (IN SNOW REGIONS ONLY) WHERE THE STRUCTURE IS TO BE INSTALLED IN A SNOW REGION, SITE APPLICATION DSA REVIEWER SHALL VERIFY THE STRUCTURE IS TO BE LOCATED AT LEAST 20'-0" FROM ANY ADJACENT STRUCTURE.		
WIND DESIGN		
ULTIMATE DESIGN WIND SPEED (V _{ult})	120 MPH	SITE SPECIFIC V _{ult} : 100 mph
WIND EXPOSURE FACTOR	C	
TOPOGRAPHIC FACTOR (K _z)	1.0	
ASCE 7-16 WIND ANALYSIS METHOD	CHAPTER 27 DIRECTIONAL PROCEDURE	
VELOCITY PRESSURE EXPOSURE COEFFICIENT (K _e)	0.85	
WIND DIRECTIONAL FACTOR (K _d)	0.85	
WIND VELOCITY PRESSURE (q _h)	26.6 PSF	SITE SPECIFIC q _h : 18.5
WIND FLOW	THIS STRUCTURE HAS BEEN DESIGNED FOR BOTH CLEAR AND OBSTRUCTED WIND FLOW CONDITIONS.	
GEOHAZARDS		
SITE CLASS FOR LIQUEFIABLE SOIL HAZARD	THIS STRUCTURE IS NOT ALLOWED IN LOCATIONS DESIGNATED AS SEISMIC SITE CLASS 'F' OR IN AREAS WITH LIQUEFIABLE SOIL.	
FOR SITE SPECIFIC PROJECTS ON EXISTING SITES OUTSIDE OF A MAPPED GEOLOGIC HAZARD ZONE, THESE STRUCTURES ARE EXEMPT FROM THE REQUIREMENT TO PROVIDE A GEOLOGIC HAZARD REPORT PROVIDED THAT THEY ARE SEISMICALLY ISOLATED INTO COVERED AREAS OF 4,000 SF OR LESS AND THAT THEY COMPLY WITH SECTION 3.2 OF DSA IR A-4: GEOHAZARD REPORT REQUIREMENTS.		
SEISMIC DESIGN		
LATERAL FORCE RESISTING SYSTEM	ORDINARY CANTILEVER COLUMN, LONGITUDINAL ORDINARY MOMENT FRAME, TRANSVERSE	
STRENGTH LEVEL DESIGN BASE SHEAR (V)	2016 LBS/COLUMN, LONGITUDINAL 718 LBS/COLUMN, TRANSVERSE	
SEISMIC RESPONSE COEFFICIENT (C _s)	1.60, LONGITUDINAL 0.57, TRANSVERSE	
RESPONSE MODIFICATION FACTOR (R)	1.25, LONGITUDINAL 3.5, TRANSVERSE	
ASCE 7-16 ANALYSIS PROCEDURE	SECTION 12.8 EQUIVALENT LATERAL FORCE PROCEDURE	
SITE CLASS	D	
SEISMIC DESIGN CATEGORY	E	
SEISMIC IMPORTANCE FACTOR (I _s)	1.0	
MAPPED SPECTRAL RESPONSE ACCELERATION AT SHORT PERIOD (S _s)	2.5 MAX.	SITE SPECIFIC S _s : 1.73
SHORT PERIOD SITE COEFFICIENT (F _a)	1.2	SITE SPECIFIC F _a : 1.2
DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIOD (S _{0s})	2.0	SITE SPECIFIC S _{0s} : 1.39
MAPPED SPECTRAL RESPONSE ACCELERATION AT 1 SECOND PERIOD (S ₁)	1.1 MAX.	SITE SPECIFIC S ₁ : 0.68
LONG PERIOD SITE COEFFICIENT (F _v)	2.0	SITE SPECIFIC F _v : 1.7
DESIGN SPECTRAL RESPONSE ACCELERATION AT 1 SECOND PERIOD (S ₀₁)	1.47	SITE SPECIFIC S ₀₁ : 0.77
HORIZONTAL OR VERTICAL IRREGULARITY TYPES	NONE	
REDUNDANCY FACTOR, ρ	1.3	
FLOOD DESIGN REQUIRED FOR SITE SPECIFIC FLOOD ZONE: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
WHEN THE SITE-SPECIFIC PROJECT IS LOCATED IN A FLOOD ZONE OTHER THAN ZONE X, A LETTER STAMPED AND SIGNED BY A SOILS ENGINEER IS NEEDED TO VALIDATE THE ALLOWABLE SOIL VALUES SPECIFIED IN THESE PLANS. UNLESS THE BOTTOMS OF FOUNDATIONS ARE RAISED ABOVE THE DESIGN FLOOD ELEVATION, A VALIDATION LETTER FROM THE GEOTECHNICAL ENGINEER SHALL BE PROVIDED. LOCATION OF ELECTRICAL ELEMENTS SHALL CONFORM TO ASCE 24 SECTION 7.2 AS REQUIRED BY PER 16-41 SECTION 1.2.1		
SOILS		
ALLOWABLE VERTICAL BEARING PRESSURE	1500 PSF, NO 1/3 INCREASE ALLOWED.	
ALLOWABLE LATERAL BEARING PRESSURE	100 PSF/FT WITH FACTOR OF 2 INCREASE (NET 200 PSF/FT) FOR 1/2" OF FOOTING DISPLACEMENT AT GROUND SURFACE FOR SHORT-TERM LOADS.	
PIER FOOTING UPLIFT	ONLY FOOTING DEAD LOAD (0.6D), NOT FRICTIONAL RESISTANCE, IS REQUIRED TO RESIST UPLIFT IN THE DESIGN.	

BUILDING DATA - 30' MERAMEC	
CONSTRUCTION CLASSIFICATION	TYPE II-B
OCCUPANCY CLASSIFICATION	A-3
RISK CATEGORY	II
NUMBER OF STORIES	1
ADJACENT SLOPE MINIMUM SETBACK LIMITS (CBC 1808A.7)	15' MINIMUM FROM FACE OF FOOTING TO TOE OF SLOPE 40' MINIMUM FROM FACE OF FOOTING TO TOP OF SLOPE
AREA	PER SITE OPTIONS
MINIMUM SEISMIC SEPARATION FROM ADJACENT SHELTER	11'
MAXIMUM SEISMIC DEMAND DRIFT	8"

NOTICE OF DISCLAIMER FOR STRUCTURAL ENGINEERING RESPONSIBILITY

- THIS NOTICE SHALL BE GIVEN TO DSA PRIOR TO THE APPROVAL OF PLANS AND SPECIFICATIONS.
- FOR THE SITE SPECIFIC PROJECT, JEREMY WILL IS NOT THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE, UNLESS NOTED OTHERWISE.
- FOR THE SITE SPECIFIC PROJECT, JEREMY WILL'S RESPONSIBILITY IS LIMITED TO THE PREPARATION OF PLANS AND SPECIFICATIONS FOR THE SHELTER(S) ONLY.
- STRUCTURAL OBSERVATION OF CONSTRUCTION IS SPECIFICALLY EXCLUDED FROM JEREMY WILL'S RESPONSIBILITY FOR THE SITE SPECIFIC PROJECT.
- ALL CONSTRUCTION ACTIVITIES RELATED TO STRUCTURAL ENGINEERING SHALL BE DELEGATED TO A QUALIFIED ENGINEER BY THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE. THESE ACTIVITIES INCLUDE, BUT ARE NOT LIMITED TO: APPROVAL OF INSPECTOR QUALIFICATIONS, STRUCTURAL OBSERVATION OF CONSTRUCTION, REVIEW OF INSPECTION REPORTS, REVIEWING SHOP DRAWINGS, AND SIGNING OFF THE VERIFIED REPORT FOR COMPLETED WORK.
- JEREMY WILL WILL BE RESPONSIBLE FOR RESPONDING TO QUESTIONS PERTAINING TO THE SITE SPECIFIC PLANS AND SPECIFICATIONS FOR THE SHELTER(S) WHICH ARISE DURING PLAN CHECK AND CONSTRUCTION.
- IN THE EVENT THAT JEREMY WILL'S SERVICES ARE REQUIRED FOR CONSTRUCTION-RELATED STRUCTURAL ENGINEERING ACTIVITIES, A SEPARATE AGREEMENT WITH THE OWNER WILL NEED TO BE NEGOTIATED. ALSO, HIS ANTICIPATED ADDITIONAL FEES FOR THIS ADDITIONAL WORK SHALL BE PAID IN ADVANCE, PRIOR TO ANY STRUCTURAL ENGINEERING SERVICES BEING PERFORMED.

GENERAL NOTES	
I. SHELTER DESIGN	<p>A. THE STRUCTURAL DESIGN OF THE COMPONENTS AND CONNECTIONS OF THIS SHELTER ARE SUFFICIENT FOR EAWE HEIGHTS RANGING FROM 7' TO 12' TALL.</p> <p>B. REQUIRED EAVE HEIGHT FOR EACH SITE SHALL BE DETERMINED BY OWNER.</p> <p>C. THIS SHELTER HAS BEEN DESIGNED AS AN OPEN STRUCTURE. THE ADDITION OF ANY ENCLOSURE DIRECTLY ATTACHED TO THE SHELTER, SUCH AS WALLS, INSECT MESH, OR SHADE SCREENS, SHALL BE PROHIBITED AS INCREASED WIND FORCES MAY RESULT.</p>
II. DESIGN AND CONSTRUCTION STANDARDS	<p>A. THE DESIGN OF THIS STRUCTURE IS IN CONFORMANCE WITH THE FOLLOWING STANDARDS AND ALL PHASES OF CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING STANDARDS.</p> <ol style="list-style-type: none"> 2019 CALIFORNIA ADMINISTRATIVE CODE (CAC) (PART 1, TITLE 24, CCR) 2019 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1 AND 2 (PART 2, TITLE 24, CCR) 2019 CALIFORNIA MECHANICAL BUILDING CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 4, TITLE 24, CCR) 2019 CALIFORNIA ELECTRICAL CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 3, TITLE 24, CCR) 2019 CALIFORNIA MECHANICAL CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 4, TITLE 24, CCR) 2019 CALIFORNIA PLUMBING CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 5, TITLE 24, CCR) 2019 CALIFORNIA MECHANICAL CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 4, TITLE 24, CCR) 2019 CALIFORNIA ENERGY CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 6, TITLE 24, CCR) 2019 CALIFORNIA FIRE CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 9, TITLE 24, CCR) 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 11, TITLE 24, CCR) 2019 CALIFORNIA REFERENCED STANDARDS CODE WITH 2019 CALIFORNIA AMENDMENTS (PART 12, TITLE 24, CCR) NFPA 13 - 2016 NFPA 72 - 2016 REFERENCE CODE SECTIONS FOR APPLICABLE STANDARDS <ul style="list-style-type: none"> a. 2019 CBC, CHAPTER 9 b. 2019 CFC, CHAPTER 80
III. CONSTRUCTION CHANGES	<p>A. CHANGES TO THE APPROVED PLANS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DSA AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.</p>
IV. FOUNDATION	<p>A. THE FOUNDATION SHALL REST ON SOUND SOIL THAT IS FREE OF ORGANIC AND DELETERIOUS MATERIALS AND CAPABLE OF SUPPORTING 1500 PSF VERTICAL BEARING PRESSURE.</p> <p>B. FOR LATERAL LOADING, THE FOUNDATION HAS BEEN DESIGNED TO THE CLASS 5 LATERAL BEARING VALUE IN CBC TABLE 1806A.2 OF 100 PSF/FT. THIS LATERAL BEARING VALUE HAS BEEN INCREASED BY A FACTOR OF 2 (NET 200 PSF/FT) FOR 1/2" OF FOOTING DISPLACEMENT AT GROUND SURFACE FOR SHORT-TERM LOADS.</p> <p>C. FOUNDATION DESIGN SHOWN IS BASED ON SOIL CONDITIONS GIVEN IN NOTES A AND B. ABOVE. OWNER SHALL VERIFY ACTUAL SOIL CONDITIONS AT EACH JOB SITE AND ANY REQUIRED ADJUSTMENTS TO THE FOOTING SHALL BE DESIGNED BY OTHERS.</p> <p>D. FOUNDATIONS HAVE NOT BEEN DESIGNED FOR LOCATIONS WITH LIQUEFIABLE SOIL.</p> <p>E. NEITHER PIPES, CONDUIT, NOR OTHER UNDERGROUND UTILITIES SHALL BE ROUTED THROUGH OR UNDER FOOTINGS. IT SHALL BE THE OWNER'S RESPONSIBILITY TO COORDINATE LOCATIONS OF NEW AND EXISTING ITEMS TO AVOID CONFLICT WITH THE FOOTINGS.</p>
V. CONCRETE	<p>A. CONCRETE MIX DESIGN SHALL UTILIZE TYPE V CEMENT AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI. CONCRETE EXPOSED TO FREEZE AND THAW CYCLES SHALL BE AIR ENTRAINMENT PER ACI 318 SECTION 19.3.1.</p> <p>B. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO THE REQUIREMENTS OF MINIMUM ASTM A615 GRADE 60 FOR #4 AND SMALLER BARS AND GRADE 60 FOR BARS LARGER THAN #4.</p> <p>C. MINIMUM CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 3".</p> <p>D. A CONCRETE MIX DESIGN IN ACCORDANCE WITH CBC SECTION CHAPTER 19A SHALL BE PERFORMED AND STAMPED BY A CIVIL ENGINEER LICENSED IN THE STATE OF CALIFORNIA. THE CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE INSPECTOR FOR REVIEW PRIOR TO CONSTRUCTION.</p> <p>E. THE MIX DESIGN SHALL MEET THE CRITERIA HEREIN AND SHALL BE PROPER FOR LOCAL CONDITIONS INCLUDING, BUT NOT LIMITED TO: FREEZING AND THAWING EXPOSURE, CHEMICAL AND SALT EXPOSURE, AND SOIL CORROSION WHERE SUCH CONDITIONS ARE PRESENT.</p> <p>F. NON-SHRINK GROUT OR DRY PACK SHALL BE A PREMIXED, NONMETALLIC FORMULA WITH A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS AND HAVING THE FOLLOWING CHARACTERISTICS: NO SHRINKING AFTER PLACEMENT OR EXPANSION AFTER SET (ASTM C109), ONE DAY COMPRESSIVE STRENGTH OF AT LEAST 3000 PSI (ASTM 109) AND INITIAL SET TIME OF NOT LESS THAN 45 MINUTES (ASTM C191). PROVIDE "HI-FLOW GROUT" OR "DRY PACK GROUT" BY EUCLID, OR APPROVED EQUAL.</p>
VI. STRUCTURAL STEEL	<p>A. STEEL PLATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, F_y = 36 ksi.</p> <p>B. HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500, GRADE B, F_y = 46 ksi.</p> <p>C. ALL STRUCTURAL STEEL SHALL BE IDENTIFIED BY MILL CERTIFICATE.</p> <p>D. HIGH STRENGTH BOLTS (HSSB) SHALL BE HOT-DIP GALVANIZED (ASTM A153, CLASS D MINIMUM) AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325-N. HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION PLUS AN ADDITIONAL HALF TURN. THIS ADDITIONAL TIGHTENING IS ONLY REQUIRED TO SEAT THE NUT, NOT TO ACHIEVE PRETENSION. THE DESIGN IS BASED ON A SNUG TIGHT CONDITION.</p> <p>E. ALL HIGH STRENGTH BOLTS SHALL HAVE CERTIFICATION.</p> <p>F. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY'S SPECIFICATION FOR THE MATERIAL BEING WELDED. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.</p> <p>G. WELD ELECTRODES SHALL BE E70XX AND SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.8-6.3 FOR DEMAND CRITICAL WELDS.</p> <p>H. ALL WELDING SHALL BE APPROVED BY AN AWS CERTIFIED INSPECTOR.</p> <p>I. STEEL FRAMING SHALL BE WEATHER PROTECTED WITH AN ANTI-GRAFFITI POLYESTER TGIC POWDER COAT FINISH MEETING AAMA 2604-02 SPECIFICATIONS.</p> <p>J. SHOP DRAWINGS OF ALL STRUCTURAL STEEL SHALL BE SUBMITTED TO WILL ENGINEERING FOR APPROVAL PRIOR TO FABRICATION.</p> <p>K. ALL BOLT HOLE DIAMETERS SHALL BE EQUAL TO THE BOLT DIAMETER PLUS 1/16" U.N.O. BOLT HOLES FOR ANCHOR BOLTS SHALL BE EQUAL TO THE BOLT DIAMETER PLUS 1/8".</p> <p>L. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36 AND SHALL BE HOT-DIP GALVANIZED (ASTM A153, CLASS D MINIMUM OR ASTM F2329).</p>
VII. ALUMINUM	<p>A. INTERLOCKING SEAM ALUMINUM ROOF DECK SHALL BE ROLL FORMED FROM ALUMINUM ALLOY 3004-H36 AND SHALL CONFORM TO THE DECK PROFILE SHOWN ON THE DRAWINGS.</p> <p>B. ALUMINUM ROOF DECK SHALL BE COATED WITH HEAT REFLECTIVE BASF ULTRA-COOL COATING OR APPROVED EQUAL.</p> <p>C. EXTRUDED ALUMINUM RIDGE CAP SHALL BE FABRICATED FROM ALUMINUM ALLOY 6105-T5 AND SHALL CONFORM TO THE REQUIREMENTS SHOWN ON THE DRAWINGS.</p> <p>D. EXTRUDED ALUMINUM FASCIA SHALL BE FABRICATED FROM ALUMINUM ALLOY 6063-T5. EXTRUDED ALUMINUM GUTTER SHALL BE FABRICATED FROM ALUMINUM ALLOY 6105-T5. ALUMINUM COMPONENTS SHALL CONFORM TO THE REQUIREMENTS SHOWN ON THE DRAWINGS.</p> <p>E. EXTRUDED ALUMINUM RIDGE CAP, GUTTER, AND FASCIA SHALL BE COATED WITH ANTI-GRAFFITI POLYESTER TGIC POWDER COAT FINISH MEETING AAMA 2604-02 SPECIFICATIONS.</p>
VIII. SCREWS	<p>A. SCREWS SHALL BE HILTI KWIK-PRO SELF DRILLING SCREWS WITH BOND SEAL WASHERS PER ICC ESR-2196 OR APPROVED EQUAL.</p> <p>B. SCREWS ATTACHING TO THE STEEL SHALL BE 1/2-24 HEX WASHER HEAD (HWH) #5 POINT SCREWS U.N.O. SCREWS ATTACHING TO ALUMINUM SHALL BE 9-18 HEX WASHER HEAD (HWH) #2 POINT SCREWS U.N.O. ALL SCREWS 6" & AND LESS ABOVE GROUND SURFACE SHALL BE ROUNDED HEAD SCREWS.</p> <p>C. ALL SCREWS SHALL BE STAINLESS STEEL, TYPE 304 MINIMUM OR COATED WITH HILTI KWIK-COTE OR APPROVED EQUAL.</p> <p>D. THE MANUFACTURER SHALL PROVIDE A SCREW CERTIFICATION LETTER STATING THAT SCREWS PROVIDED MATCH THE SIZE AND TYPE SPECIFIED HEREIN. THE CERTIFICATION LETTER SHALL BE SUBMITTED TO THE INSPECTOR FOR RECORD PRIOR TO INSTALLATION.</p>
IX. SHOP FABRICATION AND FIELD ASSEMBLY	<p>A. ALL STRUCTURAL STEEL AND ALUMINUM COMPONENTS SHALL BE SHOP FABRICATED SO THAT FIELD ASSEMBLY OF CONNECTIONS CAN BE PERFORMED USING ONLY BOLTING AND SCREW PLACEMENT.</p>
X. INSPECTION	<p>A. THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR TO PERFORM INSPECTION OF THE CONSTRUCTION OF THIS STRUCTURE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 17A OF THE 2019 CALIFORNIA BUILDING CODE (PART 2, TITLE 24, C.C.R.) AND THE DIVISION OF THE STATE ARCHITECT.</p> <p>B. THE OWNER SHALL EMPLOY A CLASS 2 (MINIMUM) PROJECT INSPECTOR APPROVED BY DSA, FOR THE INSPECTION OF THE CONSTRUCTION OF THESE SHELTERS.</p> <p>C. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.</p>
XI. FIRE LIFE SAFETY	<p>A. AN AUTOMATIC FIRE PROTECTION SYSTEM MAY BE REQUIRED FOR THIS BUILDING DEPENDING ON SITE SPECIFIC REQUIREMENTS, WHERE REQUIRED, THE AUTOMATIC FIRE PROTECTION SYSTEM SHALL BE DESIGNED BY OTHERS.</p> <p>B. THE DESIGN OF THIS SHELTER IS CAPABLE OF SUPPORTING THE WEIGHT OF A FIRE SPRINKLER SYSTEM (1.5 PSF).</p> <p>C. THE METAL ROOFING COMPLIES WITH FIRE CLASSIFICATION A. ALL MATERIALS USED IN THE CONSTRUCTION OF THIS SHELTER ARE NON-COMBUSTIBLE AND IGNITION RESISTANT. THIS SHELTER IS DESIGNED FOR PLACEMENT IN A HIGH FIRE-HAZARD SEVERITY ZONE.</p>
XII. PENETRATIONS	<p>A. NEITHER HOLES, CUTS, NOR OTHER PENETRATIONS ARE ALLOWED IN FOUNDATIONS, BASEPLATES, OR OTHER STRUCTURAL COMPONENTS.</p>

SITE SPECIFIC OPTIONS	
TO BE COMPLETED PRIOR TO PLAN CHECK SUBMITTAL	
QUANTITY OF SHELTERS AT THIS SITE	1
SHELTER SIZE	<input checked="" type="checkbox"/> 30'x42' <input type="checkbox"/> 30'x54'
SHELTER EAVE HEIGHT (7' MIN., 12' MAX.)	10'-0"
BUILDING AREA	<input checked="" type="checkbox"/> 1260 SF <input type="checkbox"/> 1620 SF
ROOF DOWNSPOUTS?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
ALUMINUM "V" PLUGS IN ROOF VOIDS FOR BIRD CONTROL?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

SHEET INDEX	
MT30.0	30' MERAMEC DESIGN NOTES, EXAMPLE FORM DSA 103
MT30.1	30' MERAMEC SHELTER PLANS, SECTIONS AND DETAILS
Grand total:	2

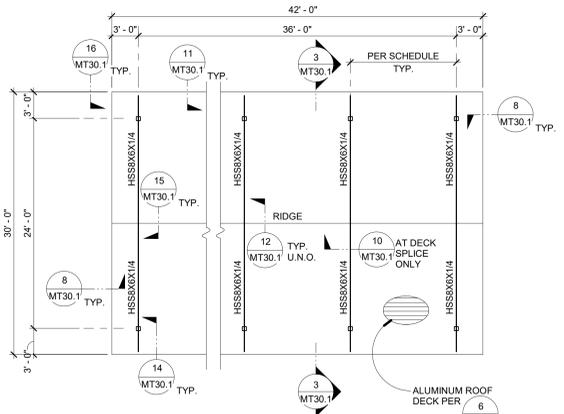


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 748 S. Meadows Parkway Ste A-7
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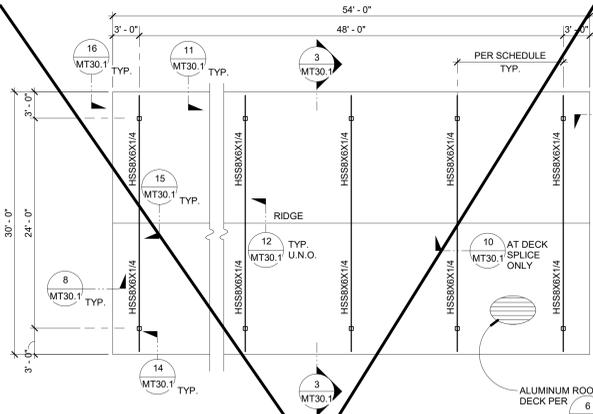


FRAME SPACING SCHEDULE		
SNOW REGION	NO. OF FRAMES	FRAME SPACING
$P_s \leq 22$ PSF	4	12' - 0"
$22 \text{ PSF} < P_s \leq 33$ PSF	5	9' - 0"

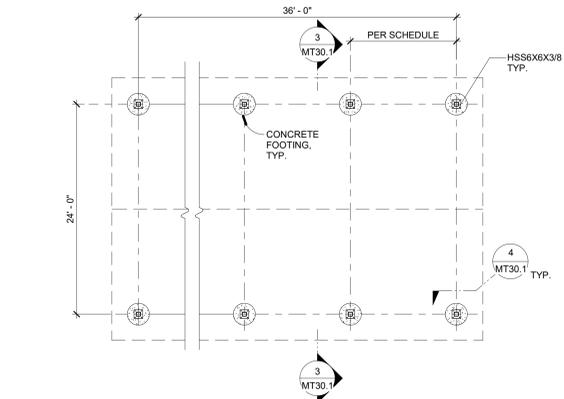
FRAME SPACING SCHEDULE		
SNOW REGION	NO. OF FRAMES	FRAME SPACING
$P_s \leq 22$ PSF	5	12' - 0"
$22 \text{ PSF} < P_s \leq 33$ PSF	6	9' - 7 13/16"



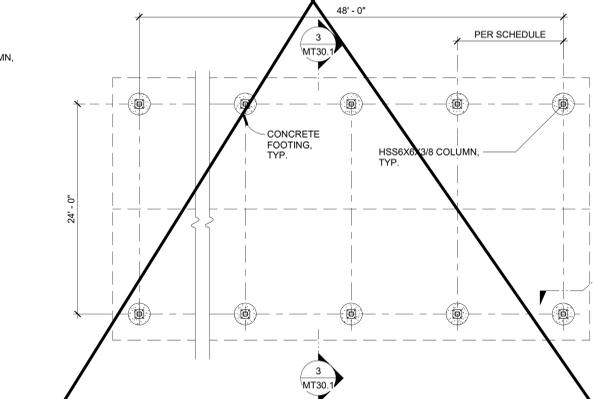
1 ROOF PLAN



2 ROOF PLAN



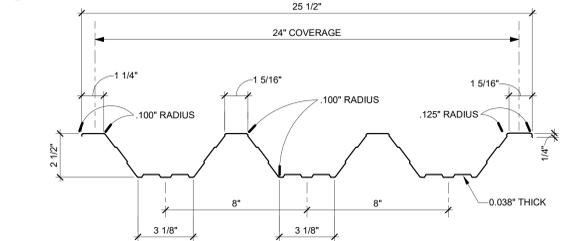
3 FOUNDATION PLAN



4 FOUNDATION PLAN

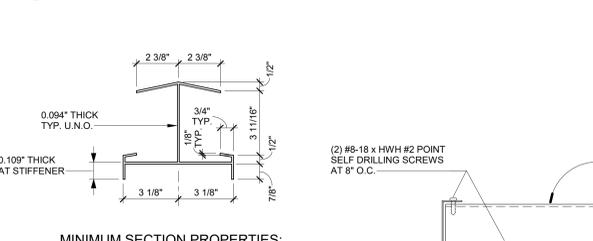
1 30' x 42' SHELTER PLANS
1/8" = 1'-0"

2 30' x 54' SHELTER PLANS
1/8" = 1'-0"



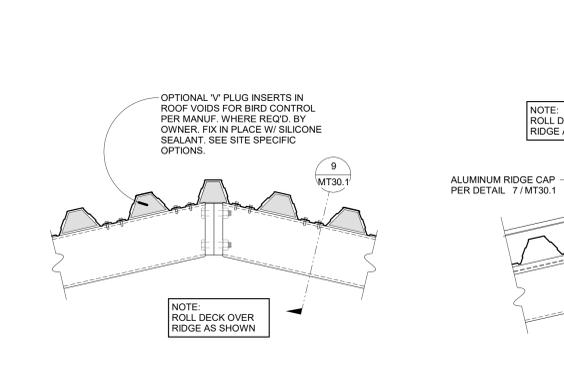
MINIMUM SECTION PROPERTIES:
 A = 1.27 in²
 S_{top} = 0.84 in³
 S_{bottom} = 1.08 in³
 I = 1.18 in⁴

6 INTERLOCKING DECK PROFILE
3" = 1'-0"

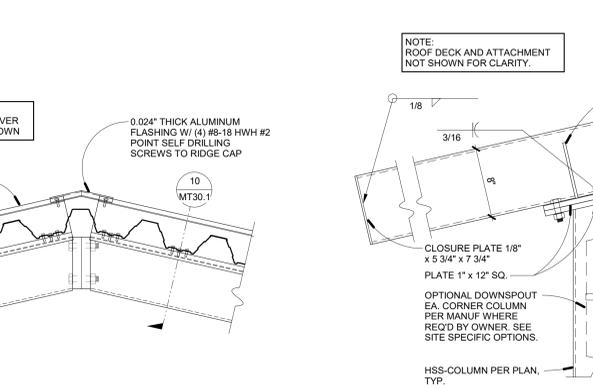


MINIMUM SECTION PROPERTIES:
 A = 1.85 in²
 S_{top} = 2.17 in³
 S_{bottom} = 2.78 in³
 I = 6.78 in⁴

7 RIDGE CAP PROFILE
3" = 1'-0"



12 ROOF DECK AT RIDGE
1 1/2" = 1'-0"

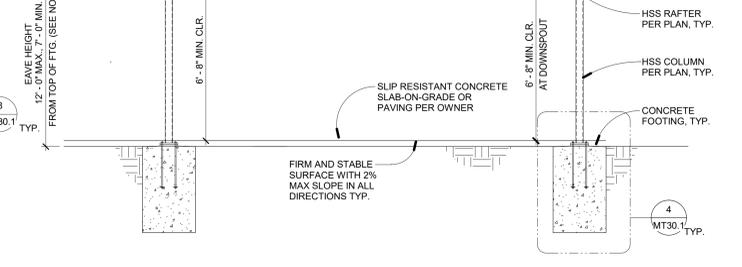


13 ROOF DECK AT RIDGE CAP
1 1/2" = 1'-0"

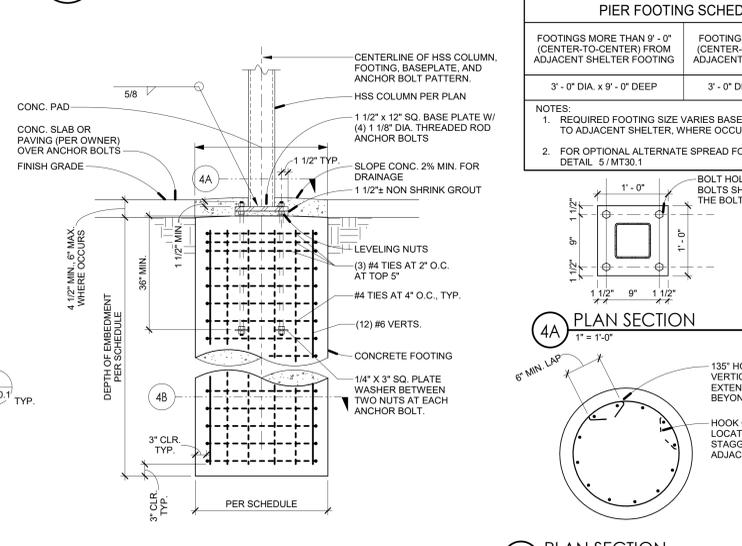
14 RAFTER TO COLUMN CONNECTION
1 1/2" = 1'-0"

15 RAFTER TO RAFTER CONNECTION
1 1/2" = 1'-0"

16 GUTTER DRAIN HOLES
3" = 1'-0"



3 BUILDING SECTION
1/4" = 1'-0"

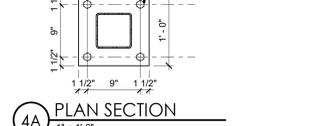


4 FOUNDATION SECTION
3/4" = 1'-0"

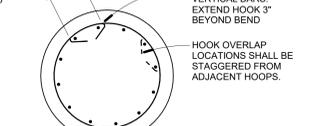
5 ALTERNATE FOUNDATION SECTION
3/4" = 1'-0"

PIER FOOTING SCHEDULE	
FOOTINGS MORE THAN 9' - 0" (CENTER-TO-CENTER) FROM ADJACENT SHELTER FOOTING	FOOTINGS LESS THAN 9' - 0" (CENTER-TO-CENTER) FROM ADJACENT SHELTER FOOTING
3' - 0" DIA. x 9' - 0" DEEP	3' - 0" DIA. x 11' - 9" DEEP

NOTES:
 1. REQUIRED FOOTING SIZE VARIES BASED ON PROXIMITY TO ADJACENT SHELTER, WHERE OCCURS.
 2. FOR OPTIONAL ALTERNATE SPREAD FOOTING SEE DETAIL 5 / MT30.1



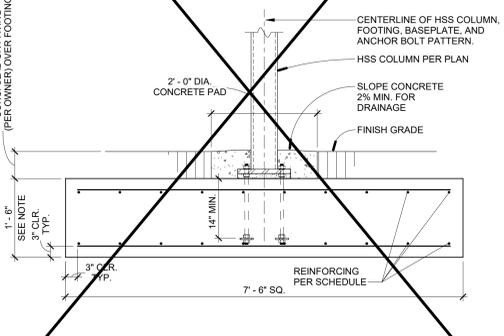
4A PLAN SECTION
1" = 1'-0"



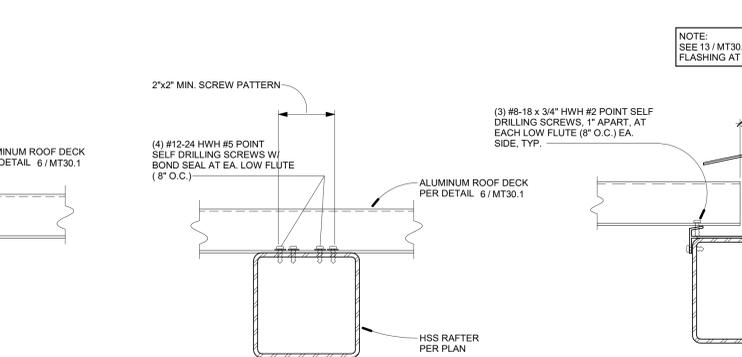
4B PLAN SECTION
3/4" = 1'-0"

REINFORCING SCHEDULE	
FOOTING THICKNESS	TOP AND BOTTOM REINFORCEMENT
1' - 6"	(10) #5 EACH WAY
≤ 2' - 0"	(10) #6 EACH WAY
≤ 2' - 6"	(10) #7 EACH WAY

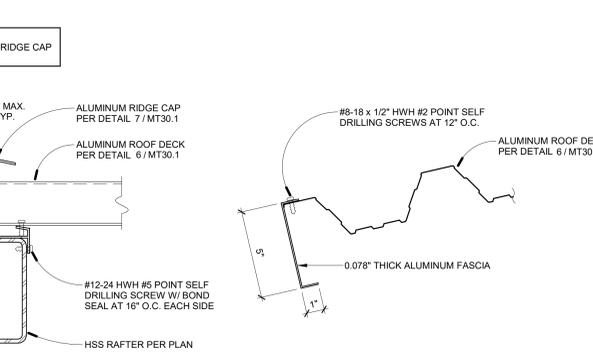
NOTES:
 1. AT CONTRACTOR'S OPTION, WITH THE OWNER'S APPROVAL, THIS DETAIL MAY BE USED IN LIEU OF DETAIL 4 / MT30.1
 2. FOR COLUMN CONNECTION TO BASE PLATE, BASE PLATE, ANCHOR BOLTS, AND NON SHRINK GROUT, SEE DETAIL 4 / MT30.1
 3. FOOTING THICKNESS SHOWN IS A MINIMUM. USE THICKER FOOTING WHERE REQUIRED TO MEET LOCAL FROST DEPTH REQUIREMENTS. REINFORCE FOOTING PER REINFORCING SCHEDULE.



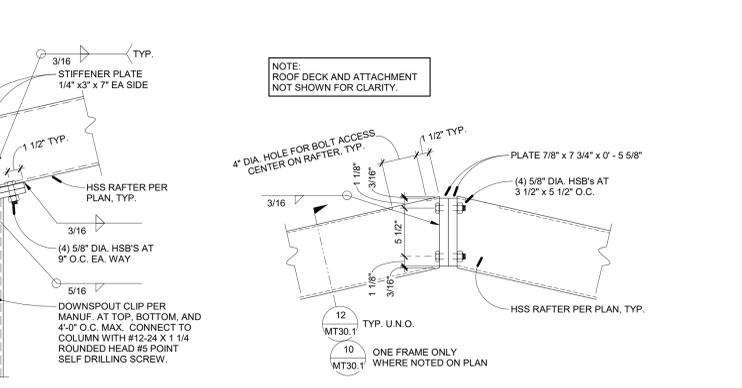
5 ALTERNATE FOUNDATION SECTION
3/4" = 1'-0"



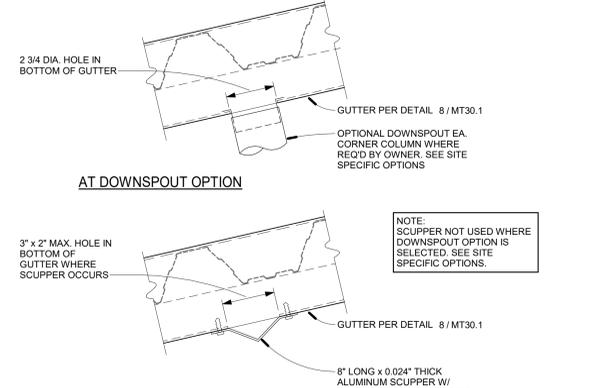
8 GUTTER TO ROOF DECK CONN.
3" = 1'-0"



9 ROOF DECK TO RAFTER CONN.
3" = 1'-0"



10 ROOF DECK SPLICE
3" = 1'-0"



11 EAVE TO ROOF DECK CONN.
3" = 1'-0"

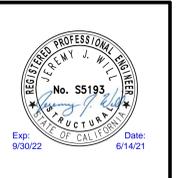
12 ROOF DECK AT RIDGE
1 1/2" = 1'-0"

13 ROOF DECK AT RIDGE CAP
1 1/2" = 1'-0"

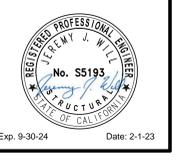
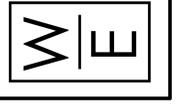
14 RAFTER TO COLUMN CONNECTION
1 1/2" = 1'-0"

15 RAFTER TO RAFTER CONNECTION
1 1/2" = 1'-0"

16 GUTTER DRAIN HOLES
3" = 1'-0"



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 (800) 851-0865 www.americana.com

PROJECT: 30' MARAMEC SHELTER PLANS, SECTIONS AND DETAILS
 SHEET TITLE: 30' MARAMEC SHELTER PLANS, SECTIONS AND DETAILS
 SHEET NO.: 21-016
 DATE: 06/15/2021

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