DRAWINGS FOR THE CONSTRUCTION
OF

HAYWARD FIRE STATION #6 &
FIRE TRAINING CENTER

PROJECT NOS. 07481 & 07482

VOLUME 7 OF 8
CITY-OWNED BUILDINGS

APRIL 2020

RossDrulisCusenbery
ARCHITECTURE

KITCHELL

TO DOWNLOAD PLANS AND SPECIFICATIONS
AND TO CHECK BID RESULTS
Contact Engineering & Transportation at (510) 583-4730

FOR INFORMATION REGARDING THIS PROJECT
Contact Dave Hung at (510) 583-4752

FOR CONTRACT COMPLIANCE
Contact Rita Perez at (510) 583-4801

CITY OF HAYWARD
HEART OF THE BAY

CONSTRUCTION DOCUMENTS

FOR THE CONSTRUCTION OF

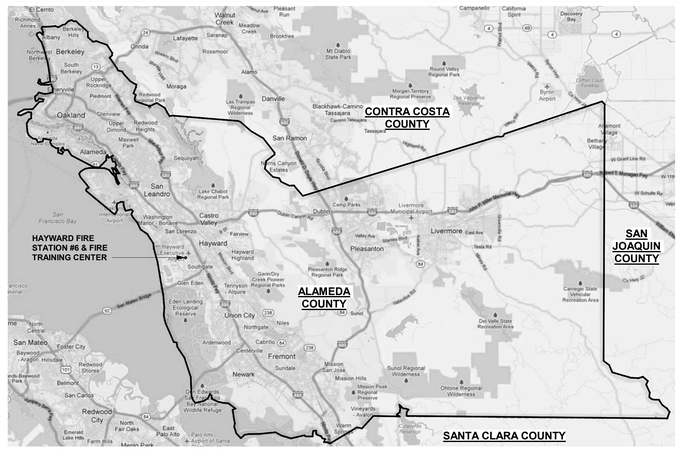
HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

VOLUME 7

OCTOBER 4, 2019

AT THE TIMES THIS CONTRACT IS AWARDED, THE CONTRACTOR SHALL POSSESS A CLASS 'B' LICENSE

PERMIT SUBMITTAL



ALAMEDA COUNTY MAP

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, DIR. OF PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

TITLE SHEET

Drawn By: EW
Checked By: EW

Scale:

Date:
October 4, 2019

Project No. 2016039

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Drawing No.

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SHEET INDEXES - CITY-OWNED BUILDINGS

LPG SYSTEM

NUMBER	NAME
LPG SYSTEM	
0-LP1.0	LPG SYSTEM SITE PLAN
0-LP1.1	LPG SLAB PLAN & DETAILS
0-LP2.0	LPG SYSTEM PLAN
0-LP3.0	LPG SYSTEM ELEVATIONS
0-LP4.0	LPG SYSTEM ENLARGED DETAILS
0-LP5.0	LPG SYSTEM DETAILS
0-LP5.1	LPG SYSTEM DETAILS
0-LP 5.2	LPG SYSTEM DETAILS
0-LP 6.0	LPG SYSTEM DIAGRAM

BUILDING 4

NUMBER	NAME
ARCHITECTURAL	
4-A0.10	BUILDING 4 SHEET INDEX, PROJECT INFORMATION
4-A0.11	BUILDING 4 CODE ANALYSIS, AXONOMETRIC VIEWS
4-A2.10	BUILDING 4 FLOOR PLAN, ROOF PLAN, SCHEDULES
4-A3.10	BUILDING 4 EXTERIOR ELEVATIONS
4-A3.40	BUILDING 4 BUILDING CROSS SECTIONS, WALL SECTIONS
4-A6.10	BUILDING 4 REFLECTED CEILING PLAN
4-A8.30	BUILDING 4 ARCHITECTURAL DETAILS
STRUCTURAL	
4-S0.10	BUILDING 4 GENERAL NOTES AND SPECIFICATIONS
4-S1.10	BUILDING 4 TYPICAL CONCRETE DETAILS
4-S1.40	BUILDING 4 TYPICAL CMU DETAILS
4-S1.50	BUILDING 4 TYPICAL METAL DECKING DETAILS
4-S2.10	BUILDING 4 FLOOR AND ROOF PLANS
4-S3.10	BUILDING 4 ELEVATIONS AND SECTIONS
4-S4.10	BUILDING 4 DETAILS AND SECTIONS
PLUMBING	
4-P0.01	BUILDING 4 PLUMBING LEGEND AND ABBREVIATIONS, DRAWING LIST AND SCHEDULES
4-P2.01	BUILDING 4 PLUMBING STORAGE BUILDING FLOOR PLAN, DIAGRAM AND DETAIL
ELECTRICAL	
4-E0.01	BUILDING 4 ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST
4-E0.02	BUILDING 4 ELECTRICAL SCHEDULES
4-E0.20	BUILDING 4 ELECRTICAL TITLE 24
4-E0.21	BUILDING 4 ELECTRICAL TITLE 24
4-E0.22	BUILDING 4 ELECRTICAL TITLE 24
4-E2.01	BUILDING 4 ELECTRICAL STORAGE BUILDING FLOOR PLAN
4-E5.01	BUILDING 4 ELECTRICAL SINGLE LINE DIAGRAM
4-E5.02	BUILDING 4 ELECTRICAL GROUNDING DIAGRAM
4-E6.01	BUILDING 4 ELECTRICAL DETAILS
TECHNOLOGY	
4-T0.01	BUILDING 4 TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST
4-T2.01	BUILDING 4 TECHNOLOGY STORAGE BUILDING FLOOR PLAN
4-T7.01	BUILDING 4 TECHNOLOGY DETAILS
4-T7.02	BUILDING 4 TECHNOLOGY DETAILS
4-T7.03	BUILDING 4 TECHNOLOGY DETAILS
4-T7.04	BUILDING 4 SECURITY DETAILS

BUILDING 5

NUMBER	NAME
ARCHITECTURAL	
5-A0.10	BUILDING 5 SHEET INDEX, PROJECT INFORMATION
5-A0.11	BUILDING 5 EXTERIOR AXOMETRIC VIEW
5-A2.00	BUILDING 5 BASEMENT LEVEL FLOOR PLAN
5-A2.01	BUILDING 5 BASEMENT LEVEL DRAINAGE PLAN
5-A2.10	BUILDING 5 FIRST LEVEL FLOOR PLAN
5-A2.11	BUILDING 5 FIRST LEVEL FLOOR DRAINAGE PLAN
5-A2.20	BUILDING 5 SECOND LEVEL FLOOR PLAN
5-A2.21	BUILDING 5 SECOND LEVEL FLOOR DRAINAGE PLAN
5-A2.30	BUILDING 5 ATTIC PLAN
5-A2.31	BUILDING 5 ATTIC DRAINAGE PLAN
5-A2.60	BUILDING 5 ROOF PLAN
5-A2.70	BUILDING 5 DOOR, WINDOW, & ROOM FINISH SCHEDULES
5-A3.10	BUILDING 5 EXTERIOR ELEVATIONS
5-A3.11	BUILDING 5 EXTERIOR ELEVATIONS
5-A3.40	BUILDING 5 BUILDING CROSS SECTIONS
5-A3.41	BUILDING 5 BUILDING CROSS SECTIONS
5-A3.42	BUILDING 5 WALL SECTIONS
5-A3.43	BUILDING 5 WALL SECTIONS
5-A5.10	BUILDING 5 INTERIOR ELEVATIONS
5-A5.11	BUILDING 5 INTERIOR ELEVATIONS
5-A6.00	BUILDING 5 BASEMENT REFLECTED CEILING PLAN
5-A6.10	BUILDING 5 FIRST LEVEL REFLECTED CEILING PLAN
5-A6.20	BUILDING 5 SECOND LEVEL REFLECTED CEILING PLAN
5-A7.10	BUILDING 5 STAIR PLANS AND DETAILS
5-A7.11	BUILDING 5 STAIR PLANS AND DETAILS
5-A8.30	BUILDING 5 ARCHITECTURAL DETAILS
5-A8.31	BUILDING 5 ARCHITECTURAL DETAILS
5-A8.32	BUILDING 5 ARCHITECTURAL DETAILS
5-A8.33	BUILDING 5 ARCHITECTURAL DETAILS
STRUCTURAL	
5-S0.10	BUILDING 5 GENERAL NOTES AND SPECIFICATIONS
5-S1.10	BUILDING 5 TYPICAL CONCRETE DETAILS
5-S1.40	BUILDING 5 TYPICAL CMU DETAILS
5-S1.41	BUILDING 5 TYPICAL CMU DETAILS
5-S1.50	BUILDING 5 TYPICAL METAL DECKING DETAILS
5-S2.10	BUILDING 5 FOUNDATION PLAN
5-S2.20	BUILDING 5 FIRST FLOOR FRAMING PLAN
5-S2.30	BUILDING 5 SECOND FLOOR FRAMING PLAN
5-S2.40	BUILDING 5 ATTIC FRAMING PLAN
5-S2.50	BUILDING 5 ROOF FRAMING PLAN
5-S3.10	BUILDING 5 ELEVATIONS
5-S3.20	BUILDING 5 ELEVATIONS
5-S4.10	BUILDING 5 FOUNDATION DETAILS
5-S4.11	BUILDING 5 CONCRETE WALL DETAILS
5-S4.12	BUILDING 5 CONCRETE COLUMN DETAILS
5-S4.13	BUILDING 5 CONCRETE BEAM DETAILS
5-S4.14	BUILDING 5 CONCRETE SLAB DETAILS
5-S4.15	BUILDING 5 CMU WALL DETAILS
5-S4.16	BUILDING 5 CMU WALL DETAILS
5-S4.17	BUILDING 5 TURRET FRAMING PLAN AND DETAILS

BUILDING 7

NUMBER	NAME
ARCHITECTURAL	
7-A0.10	BUILDING 7 SHEET INDEX, PROJECT INFORMATION
7-A0.11	BUILDING 7 EXTERIOR AXOMETRIC VIEWS
7-A2.10	BUILDING 7 FIRST LEVEL FLOOR SLAB DRAINAGE PLAN
7-A2.11	BUILDING 7 FIRST LEVEL FLOOR PLAN
7-A2.20	BUILDING 7 SECOND LEVEL FLOOR PLAN
7-A2.30	BUILDING 7 THIRD LEVEL FLOOR PLAN
7-A3.10	BUILDING 7 EXTERIOR ELEVATIONS
7-A3.11	BUILDING 7 EXTERIOR ELEVATIONS
7-A3.40	BUILDING 7 BUILDING CROSS SECTIONS
7-A3.41	BUILDING 7 BUILDING CROSS SECTIONS
7-A3.50	BUILDING 7 WALL SECTIONS
7-A4.10	BUILDING 7 ENLARGED PLANS AND ELEVATIONS
7-A5.11	BUILDING 7 INTERIOR ELEVATIONS
7-A8.10	BUILDING 7 ARCHITECTURAL DETAILS
7-A8.11	BUILDING 7 ARCHITECTURAL DETAILS
STRUCTURAL	
7-S0.10	BUILDING 7 GENERAL NOTES AND
7-S1.10	BUILDING 7 TYPICAL CONCRETE DETAILS
7-S1.40	BUILDING 7 TYPICAL CMU DETAILS
7-S1.41	BUILDING 7 TYPICAL CMU DETAILS
7-S2.10	BUILDING 7 FOUNDATION PLAN
7-S2.20	BUILDING 7 SECOND FLOOR PLAN
7-S2.30	BUILDING 7 THIRD LEVEL PLAN
7-S3.10	BUILDING 7 ELEVATIONS
7-S3.20	BUILDING 7 ELEVATIONS AND SECTIONS
7-S3.30	BUILDING 7 WALL ELEVATIONS
7-S4.10	BUILDING 7 DETAILS AND SECTIONS
7-S4.11	BUILDING 7 FOUNDATION DETAILS
7-S4.12	BUILDING 7 CONCRETE WALL DETAILS
7-S4.13	BUILDING 7 CONCRETE COLUMN DETAILS
7-S4.14	BUILDING 7 CONCRETE BEAM DETAILS
7-S4.15	BUILDING 7 CONCRETE SLAB DETAILS
PLUMBING	
7-P0.01	BUILDING 7 PLUMBING LEGEND AND ABBREVIATION, DRAWING LIST
7-P2.01	BUILDING 7 PLUMBING USAR-BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN
ELECTRICAL	
7-E0.01	BUILDING 7 ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST
7-E0.02	BUILDING 7 ELECTRICAL SCHEDULES
7-E2.01	BUILDING 7 ELECTRICAL USAR-BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN
7-E2.02	BUILDING 7 ELECTRICAL USAR-BART TRAINING STRUCTURE SECOND LEVEL FLOOR PLAN
7-E5.01	BUILDING 7 ELECTRICAL RISER DIAGRAM
TECHNOLOGY	
7-T0.01	BUILDING 7 TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST
7-T2.01	BUILDING 7 TECHNOLOGY USAR-BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN
7-T2.02	BUILDING 7 TECHNOLOGY USAR-BART TRAINING STRUCTURE SECOND LEVEL FLOOR PLAN
7-T7.01	BUILDING 7 TECHNOLOGY DETAILS
7-T7.02	BUILDING 7 TECHNOLOGY DETAILS

BUILDING 8

NUMBER	NAME
ARCHITECTURAL	
8-A0.10	BUILDING 8 SHEET INDEX, PROJECT INFORMATION
8-A0.11	BUILDING 8 EXTERIOR AXOMETRIC VIEWS
8-A2.10	BUILDING 8 FIRST LEVEL FLOOR PLAN
8-A2.11	BUILDING 8 FIRST LEVEL SLAB DRAINAGE PLAN
8-A2.20	BUILDING 8 SECOND LEVEL FLOOR PLAN
8-A2.21	BUILDING 8 SECOND LEVEL SLAB DRAINAGE PLAN
8-A2.30	BUILDING 8 THIRD LEVEL FLOOR PLAN
8-A2.31	BUILDING 8 THIRD LEVEL SLAB DRAINAGE PLAN
8-A2.40	BUILDING 8 FOURTH LEVEL FLOOR PLAN
8-A2.41	BUILDING 8 FOURTH LEVEL SLAB DRAINAGE PLAN
8-A2.60	BUILDING 8 ROOF PLAN
8-A2.70	BUILDING 8 DOOR, WINDOW & ROOM FINISH SCHEDULES
8-A3.10	BUILDING 8 EXTERIOR ELEVATIONS
8-A3.40	BUILDING 8 BUILDING CROSS SECTIONS
8-A3.50	BUILDING 8 WALL SECTIONS
8-A5.10	BUILDING 8 INTERIOR ELEVATIONS
8-A5.11	BUILDING 8 INTERIOR ELEVATIONS
8-A6.10	BUILDING 8 FIRST LEVEL REFLECTED CEILING PLAN
8-A6.20	BUILDING 8 SECOND LEVEL REFLECTED CEILING PLAN
8-A6.30	BUILDING 8 THIRD LEVEL REFLECTED CEILING PLAN
8-A8.30	BUILDING 8 ARCHITECTURAL DETAILS
8-A8.31	BUILDING 8 ARCHITECTURAL DETAILS
8-A8.32	BUILDING 8 ARCHITECTURAL DETAILS
8-A8.33	BUILDING 8 ARCHITECTURAL DETAILS
8-A8.34	BUILDING 8 ARCHITECTURAL DETAILS
8-A8.35	BUILDING 8 ARCHITECTURAL DETAILS
8-A8.36	BUILDING 8 ARCHITECTURAL DETAILS
STRUCTURAL	
8-S0.10	BUILDING 8 GENERAL NOTES AND SPECIFICATIONS
8-S1.10	BUILDING 8 TYPICAL CONCRETE DETAILS
8-S1.20	BUILDING 8 STEEL FRAMING DETAILS
8-S1.30	BUILDING 8 TYPICAL METAL STUD ELEVATION AND CONNECTION DETAILS
8-S1.40	BUILDING 8 TYPICAL CMU DETAILS
8-S1.41	BUILDING 8 TYPICAL CMU DETAILS
8-S1.50	BUILDING 8 TYPICAL METAL DECKING DETAILS
8-S2.10	BUILDING 8 FOUNDATION PLAN
8-S2.20	BUILDING 8 SECOND FLOOR PLAN
8-S2.30	BUILDING 8 THIRD FLOOR PLAN
8-S2.40	BUILDING 8 ROOF PLAN
8-S2.50	BUILDING 8 STAIR TOWER ROOF PLAN
8-S3.10	BUILDING 8 ELEVATIONS
8-S3.20	BUILDING 8 ELEVATIONS
8-S3.30	BUILDING 8 ELEVATIONS
8-S4.10	BUILDING 8 DETAILS AND SECTIONS
8-S4.11	BUILDING 8 FOUNDATION DETAILS
8-S4.12	BUILDING 8 TYPICAL CONCRETE WALL DETAILS
8-S4.13	BUILDING 8 CONCRETE WALL DETAILS
8-S4.14	BUILDING 8 CONCRETE COLUMN DETAILS
8-S4.15	BUILDING 8 CONCRETE BEAM DETAILS
8-S4.16	BUILDING 8 CONCRETE SLAB DETAILS
PLUMBING	
8-P0.01	BUILDING 8 PLUMBING AND FIRE PROTECTION LEGEND AND ABBREVATION, DRAWING LIST
8-P2.01	BUILDING 8 PLUMBING TRAINING TOWER BUILDING FIRST FLOOR PLAN
8-P2.02	BUILDING 8 PLUMBING TRAINING TOWER BUILDING SECOND FLOOR PLAN
8-P2.03	BUILDING 8 PLUMBING TRAINING TOWER BUILDING THIRD FLOOR PLAN
8-P2.04	BUILDING 8 PLUMBING TRAINING TOWER BUILDING ROOF PLAN
8-P3.01	BUILDING 8 PLUMBING BUILDING AND FIRE RISER DIAGRAM
8-P5.01	BUILDING 8 PLUMBING DETAILS
MECHANICAL	
8-M0.01	BUILDING 8 MECHANICAL LEGEND, ABBREVIATIONS, DRAWING LIST, AND SCHEDULES
8-M2.01	BUILDING 8 MECHANICAL TRAINING TOWER BUILDING FIRST, SECOND, THIRD, AND ROOF LEVEL FLOOR PLANS
ELECTRICAL	
8-E0.01	BUILDING 8 ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST
8-E0.02	BUILDING 8 ELECTRICAL SCHEDULES
8-E2.01	BUILDING 8 ELECTRICAL TRAINING TOWER BUILDING FIRST LEVEL FLOOR PLANS
8-E2.02	BUILDING 8 ELECTRICAL TRAINING TOWER BUILDING FOURTH LEVEL PLANS
8-E2.03	BUILDING 8 ELECTRICAL TRANING TOWER BUILDING THIRD LEVEL FLOOR PLAN
8-E2.04	BUILDING 8 ELECTRICAL TRANING TOWER BUILDING FOURTH LEVEL FLOOR PLAN
8-E2.05	BUILDING 8 ELECTRICAL TRAINING TOWER BUILDING ROOF PLAN
8-E5.01	BUILDING 8 ELECTRICAL RISER DIAGRAM
TECHNOLOGY	
8-T0.01	BUILDING 8 TECHNOLOGY LEGEND, ABBREVATIONS, AND DRAWING LIST
8-T2.01	BUILDING 8 TECHNOLOGY TOWER BUILDING FIRST, SECOND AND THIRD LEVEL FLOOR PLANS
8-T2.02	BUILDING 8 TECHNOLOGY TRAINING TOWER BUILDING FOURTH LEVEL AND ROOF PLANS
8-T7.01	BUILDING 8 TECHNOLOGY DETAILS
8-T7.02	BUILDING 8 TECHNOLOGY DETAILS

BUILDING 9

NUMBER	NAME
ARCHITECTURAL	
9-A0.10	BUILDING 9 SHEET INDEX, PROJECT INFORMATION
9-A0.11	BUILDING 9 CODE ANALYSIS, EXTERIOR AXONOMETRIC VIEWS
9-A2.10	BUILDING 9 FLOOR PLAN, ROOF PLAN
9-A3.10	BUILDING 9 EXTERIOR ELEVATIONS
9-A3.40	BUILDING 9 BUILDING CROSS SECTION, ARCHITECTURAL DETAILS
9-A6.10	BUILDING 9 REFLECTED CEILING PLAN
9-A8.20	BUILDING 9 ARCHITECTURAL DETAILS
STRUCTURAL	
9-S0.10	BUILDING 9 GENERAL NOTES AND SPECIFICATIONS
9-S1.10	BUILDING 9 TYPICAL CONCRETE DETAILS
9-S1.20	BUILDING 9 STEEL FRAMING DETAILS
9-S1.50	BUILDING 9 TYPICAL METAL DECKING DETAILS
9-S2.10	BUILDING 9 FLOOR PLAN, ROOF PLAN
9-S3.10	BUILDING 9 ELEVATIONS
9-S4.10	BUILDING 9 DETAILS AND SECTIONS
9-SS2.30	BUILDING 9 SOLAR ROOF PLAN, NOTES & DETAILS
9-SS2.31	BUILDING 9 SOLAR NOTES AND DETAILS
ELECTRICAL	
9-E0.01	BUILDING 9 ELECTRICAL LEGEND, ABBREVIATIONS, AND DRAWING LIST
9-E0.02	BUILDING 9 ELECTRICAL SCHEDULES
9-E0.03	BUILDING 9 ELECTRICAL SCHEDULES
9-E0.10	BUILDING 9 ELECTRICAL LIGHT FIXTURE SCHEDULE
9-E0.20	BUILDING 9 ELECTRICAL TITLE 24
9-E0.21	BUILDING 9 ELECTRICAL TITLE 24
9-E2.01	BUILDING 9 ELECTRICAL ENTRY CANOPY PLAN AND LIGHTING
9-E5.01	BUILDING 9 ELECTRICAL RISER DIAGRAM
9-E5.02	BUILDING 9 ELECTRICAL GROUNDING DIAGRAM
9-E6.01	BUILDING 9 ELECTRICAL DETAILS
PHOTOVOLTAIC	
9-PV0.01	BUILDING 9 PHOTOVOLTAIC SYSTEM LEGEND, ABBREVIATIONS AND DRAWING LIST
9-PV0.02	BUILDING 9 PHOTOVOLTAIC SYSTEM SCHEDULES AND LABELS
9-PV1.01	BUILDING 9 PHOTOVOLTAIC SYSTEM SITE PLAN
9-PV2.01	BUILDING 9 PHOTOVOLTAIC SYSTEM ENTRY CANOPY PLAN
9-PV5.01	BUILDING 9 PHOTOVOLTAIC SINGLE LINE DIAGRAM
9-PV6.01	BUILDING 9 PHOTOVOLTAIC SYSTEM DETAILS AND DIAGRAMS

NOTE:
ALL SITE DEVELOPMENT AND BUILDING DRAWINGS LISTED ON THIS SHEET ARE SUBJECT TO REVIEW AND APPROVAL BY THE CITY OF HAYWARD BUILDING DIVISION.

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** DIR. OF PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3 - INCREMENT #1

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

SHEET INDEXES CITY-OWNED BUILDINGS

Drawn By: AV
Checked By: EW

Scale:

Date:
October 4, 2019

Project No. 2016039

G-A0.03
Drawing No.

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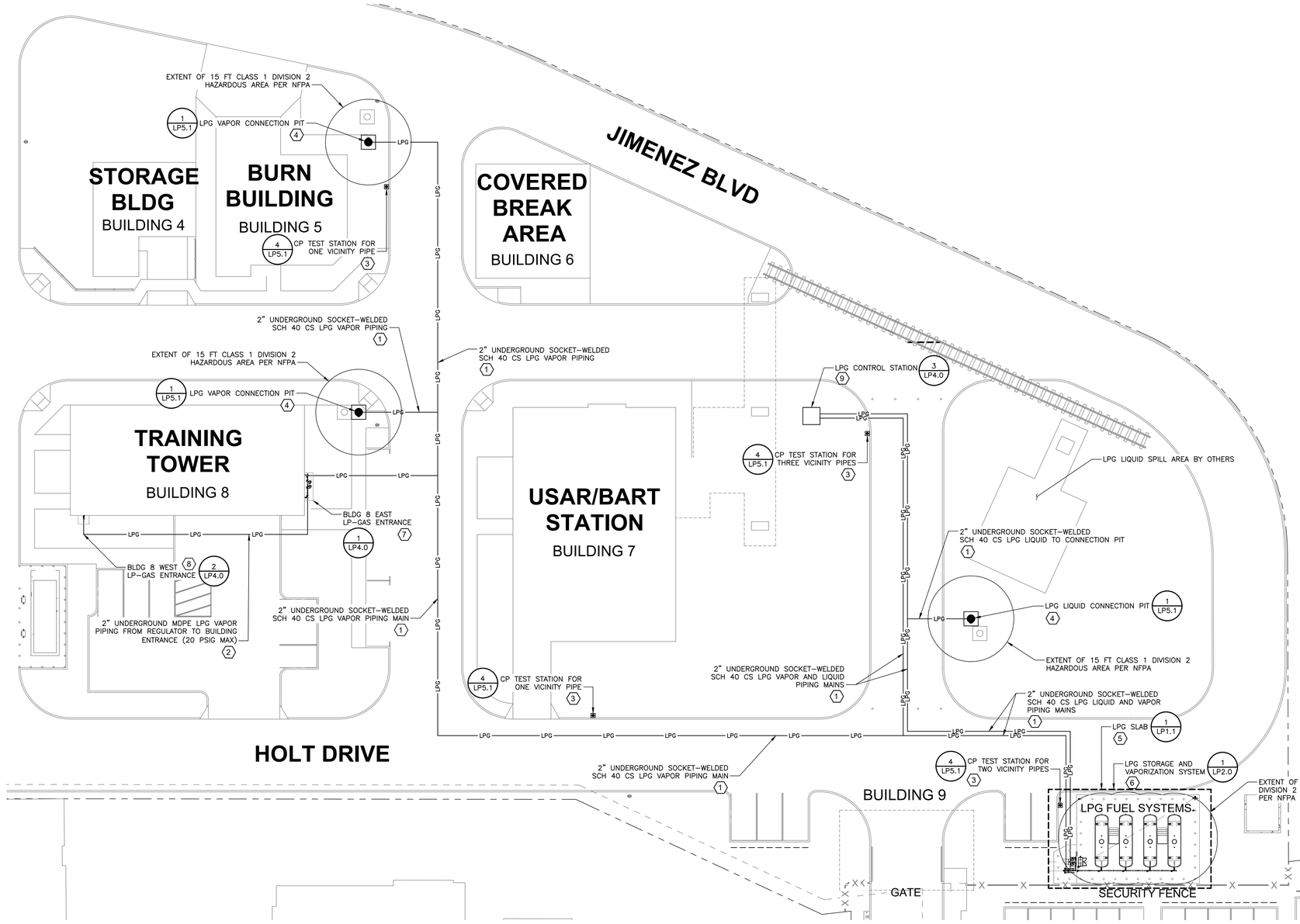

1 LPG SYSTEM PLAN
SCALE: 1":200"

LPG SYSTEM PLAN KEY NOTES:

1. PROVIDE 2" SCH 40 CS SOCKET-WELDED UNDERGROUND LPG PIPING WITH FACTORY-APPLIED FUSION BONDED EPOXY COATING SYSTEM. JOINTS SHALL BE PREPARED AND COATED ONSITE. LIQUID PIPING SHALL BE SLOPED CONTINUOUSLY AWAY FROM LPG TANK AREA AT MINIMUM 1/100 SLOPE. COORDINATE ROUTING WITH TRENCHING FOR OTHER UTILITIES. REFER TO CIVIL SITE PLANS.
2. PROVIDE 2" POLYETHYLENE PIPING FROM REGULATOR TO BUILDING 8 ENTRANCE FOR 20 PSIG LPG VAPOR.
3. PROVIDE SOIL RESISTIVITY TESTING AND PROVIDE A COMPLETE GALVANIC CATHODIC PROTECTION (CP) SYSTEM FOR UNDERGROUND CS LPG LIQUID AND VAPOR PIPING. CP SYSTEM SHALL BE DESIGNED FOR A 30-YEAR LIFE EXPECTANCY. FOR BIDDING PURPOSES, IT HAS BEEN ASSUMED THAT FOUR (4) CP TEST STATIONS WILL BE REQUIRED. TEST STATIONS SHALL BE FLUSH-MOUNTED AT GRADE AND SHALL INCLUDE A PERMANENT REFERENCE ELECTRODE, TWO MAGNESIUM ANODES AND TWO EXOTHERMICALLY WELDED LEAD WIRES FOR EACH VICINITY PIPE. TWO OF THE CP TEST STATIONS ARE EACH IN THE VICINITY OF ONE 2" LPG PIPE, AND THE OTHER TWO CP TEST STATIONS ARE IN THE VICINITY OF TWO AND THREE 2" LPG PIPES, RESPECTIVELY.
4. PROVIDE THREE (3) LPG CONNECTION PITS FOR FIRE PROP HOSE CONNECTIONS, INCLUDING ONE (1) PIT FOR A LIQUID HOSE CONNECTION AND TWO (2) PITS FOR VAPOR HOSE CONNECTIONS. CONNECTION PITS SHALL BE FLUSH-MOUNTED AT GRADE AND SHALL INCLUDE AN INSULATING FLANGE, SHUTOFF VALVE, EXCESS FLOW VALVE AND ACME CONNECTOR.
5. PROVIDE REINFORCED CONCRETE LPG SLAB WITH PERIMETER BOLLARDS.
6. PROVIDE LPG STORAGE AND VAPORIZATION SYSTEM. STORAGE SYSTEM INCLUDES FOUR (4) 2,000-GALLON ASME ABOVEGROUND LPG TANKS WITH CUSTOM SADDLES AND ANCHORAGE. VAPORIZATION SYSTEM INCLUDE ONE (1) 25MMBTUH ELECTRIC VAPORIZER WITH 2" SCH 80 THREADED CS PIPING, VALVES, SUPPORTS, PRESSURE REGULATOR AND NITROGEN SAFETY SHUTDOWN SYSTEM.
7. PROVIDE LP-GAS WORKER/MONITOR REGULATORS FOR PRESSURE REDUCTION AND OVER-PRESSURE PROTECTION AT BLDG 8 EAST LP-GAS ENTRANCE.
8. PROVIDE BLDG 8 WEST LP-GAS ENTRANCE.
9. PROVIDE THROUGH-SLAB PENETRATIONS FOR LPG LIQUID AND VAPOR PIPING AT CONTROL STATION. COORDINATE SLAB SIZE FOR PIPING PENETRATIONS AND CONNECTIVITY TO CONTROL STATION PIPING.

ABBREVIATIONS

AG	ABOVEGROUND
AST	ABOVEGROUND STORAGE TANK
ATG	AUTOMATIC TANK GAUGE
AWK	ACKNOWLEDGEMENT
BLK	BLACK
CONT	CONTINUATION
DESI	DISPENSER EMERGENCY STOP INTERRUPT
DIA.	DIAMETER
DW	DOUBLE WALL
EMT	ELECTRICAL METALLIC TUBING
ESB	E-STOP BUTTON
E-STOP	EMERGENCY STOP
FRP	FIBERGLASS REINFORCED PLASTIC
GAP	GASOLINE ADVERTISING PRODUCTS
GLV	GALVANIZED
HLA	HIGH LEVEL ALARM
I.S.	INTRINSICALLY SAFE
MFR	MANUFACTURER
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
PL	PROPERTY LINE
RC	RIGID CONDUIT
RMC	RIGID METAL CONDUIT
SCH	SCHEDULE
SS	STAINLESS STEEL
STP	SUBMERSIBLE TURBINE PUMP
SW	SINGLE WALL
TBD	TO BE DETERMINED
TYP	TYPICAL
UG	UNDERGROUND
UST	UNDERGROUND STORAGE TANK
VR	VAPOR RECOVERY

CALL OUT LEGEND

XX / XXXX — DETAIL # / SHEET #

ENLARGED PLAN DETAIL BOX LEGEND

GENERAL NOTES

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE LPG SYSTEMS AS INDICATED ON THE CONTRACT DOCUMENTS AND AS REQUIRED BY CODE.
2. INSTALL AND TEST ALL LPG SYSTEM EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS, THE CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
3. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND REFER TO CIVIL ENGINEERING PLANS (BY BKF ENGINEERS) FOR THE LOCATION OF ALL EXISTING AND PROPOSED UTILITIES. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
4. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
5. THE CONTRACTOR SHALL OBTAIN ALL STATE AND LOCAL TANK HANDLING LICENSES AND CERTIFICATIONS GOVERNING THE TYPE OF WORK TO BE PERFORMED. PROOF OF NECESSARY LICENSES AND CERTIFICATIONS SHALL BE FURNISHED TO THE OWNER PRIOR TO THE START OF SITE WORK.
6. THE CONTRACTOR SHALL OBTAIN AND MAINTAIN INSTALLER CERTIFICATIONS AS REQUIRED BY THE EQUIPMENT MANUFACTURERS OUTLINED IN THIS PROJECT, INCLUDING CERTIFICATIONS FOR INSTALLATION OF REGULATORS, VAPORIZERS AND OTHER SPECIALTY LPG SYSTEM EQUIPMENT.
7. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FROM ALL GOVERNING FEDERAL, STATE, AND LOCAL JURISDICTIONS AND MAKE ARRANGEMENTS FOR INSPECTIONS AND APPROVALS FOR THE WORK. WHERE APPLICABLE, THIS INCLUDES ALL PERMITS/APPROVALS FROM THE LOCAL MUNICIPALITY AND AIRPORT AUTHORITIES, AS APPLICABLE. ALL INCURRED COSTS ARE TO BE BORNE BY THE CONTRACTOR. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL DELIVER TO THE OWNER ALL NECESSARY CERTIFICATES OF APPROVAL FROM ALL GOVERNING JURISDICTIONS AS PART OF THE PROJECT CLOSEOUT DOCUMENTATION. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND COORDINATE PERMITTING WITH ENGINEER.
8. THE CONSTRUCTION DRAWINGS COVER THE DESIGN AND INSTALLATION ELEMENTS OF THE PROJECT. ANY DEVIATION FROM THE DRAWINGS SHALL BE APPROVED BY THE OWNER OR ENGINEER PRIOR TO THE CONTRACTOR MAKING ANY SUBSTITUTIONS, CHANGES, OR MODIFICATIONS.
9. THE OWNER SHALL, AT ALL TIMES, HAVE ACCESS TO THE WORK, AND THE CONTRACTOR SHALL PROVIDE FOR SUCH ACCESS AND FOR INSPECTION. IF CERTAIN WORK IS FOUND TO BE NOT IN ACCORDANCE WITH THE CONTRACTUAL DOCUMENTS, THE DEFICIENT WORK SHALL BE IMMEDIATELY REMOVED AND REPLACED TO THE OWNER'S SATISFACTION.
10. ALL TESTS REQUIRED SHALL BE DOCUMENTED ON A TEST REPORT SIGNED BY THE CONTRACTOR. ALL TEST REPORTS SHALL BE SUBMITTED TO THE OWNER WITHIN 3 DAYS OF THE TEST AND INCLUDED IN THE CLOSEOUT DOCUMENTS.
11. SHOP DRAWINGS FOR ALL LPG SYSTEM EQUIPMENT OUTLINED ON THE SPECIFICATIONS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL. REALIZING THE LONG LEAD TIME ASSOCIATED WITH CERTAIN EQUIPMENT, E.G., LPG TANKS, THE CONTRACTOR SHALL MAKE EVERY EFFORT TO SUBMIT THESE SHOP DRAWINGS AS SOON AS POSSIBLE AFTER THE CONTRACT AWARD DATE. IF THE CONTRACTOR DOES NOT SUBMIT SHOP DRAWINGS IN THE ALLOTTED TIME, NO CONSIDERATION WILL BE GIVEN ON THE PROJECT SCHEDULE FOR SUPPLY DELAYS.
12. THE CONTRACTOR SHALL PROVIDE CLOSEOUT DOCUMENTATION IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
13. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN TWO (2) YEARS FROM DATE OF ACCEPTANCE, UNLESS INDICATED OR SPECIFIED OTHERWISE.
14. IN CASE OF DISCREPANCY BETWEEN THESE CONTRACT DOCUMENTS, NUMERICAL DIMENSIONS, UNLESS OBVIOUSLY INCORRECT, WILL GOVERN OVER SCALED DIMENSIONS.
15. THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY APPARENT ERROR OR OMISSION IN THE CONTRACT. IF AN ERROR OR OMISSION IS DISCOVERED, THE ENGINEER SHALL BE PROMPTLY NOTIFIED SO CORRECTIONS AND INTERPRETATIONS NECESSARY TO FULFILL THE INTENT OF THE CONTRACT CAN BE MADE.
16. ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS AS APPLICABLE.
17. PERFORM TESTING OF PIPING IN ACCORDANCE WITH ASME B31.3 AND NFPA 58, TO INCLUDE HYDROSTATIC TESTING AND NON-DESTRUCTIVE EXAMINATION (NDE) OF WELDS.
18. TANKS SHALL BE TESTED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. ALL TESTING SHALL BE WITNESSED PRIOR TO PLACING THE TANKS IN SERVICE.
19. PRIOR TO OPERATIONS, SYSTEM SHALL BE TESTED IN PRESENCE OF THE INSPECTOR, IF REQUIRED.
20. SYSTEM SHALL BE INSTALLED IN COMPLIANCE WITH NFPA 58, NFPA70, STATE OF CALIFORNIA REGULATIONS, AND LOCAL REGULATIONS.

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3 -

REGISTERED PROFESSIONAL ENGINEER RONALD B. LAURENCE JR. 34127 MECHANICAL STATE OF CALIFORNIA

11/20/19

Ronald B. Laurence Jr., PE
California PE #34127
Stantec Consulting Services, Inc.

Sheet Title

LPG SYSTEM SITE PLAN

Author MAS Checker RBL

Scale: **AS INDICATED**

Date: **October 4, 2019**

Project No. 2016039

0-LP1.0

Drawing No.

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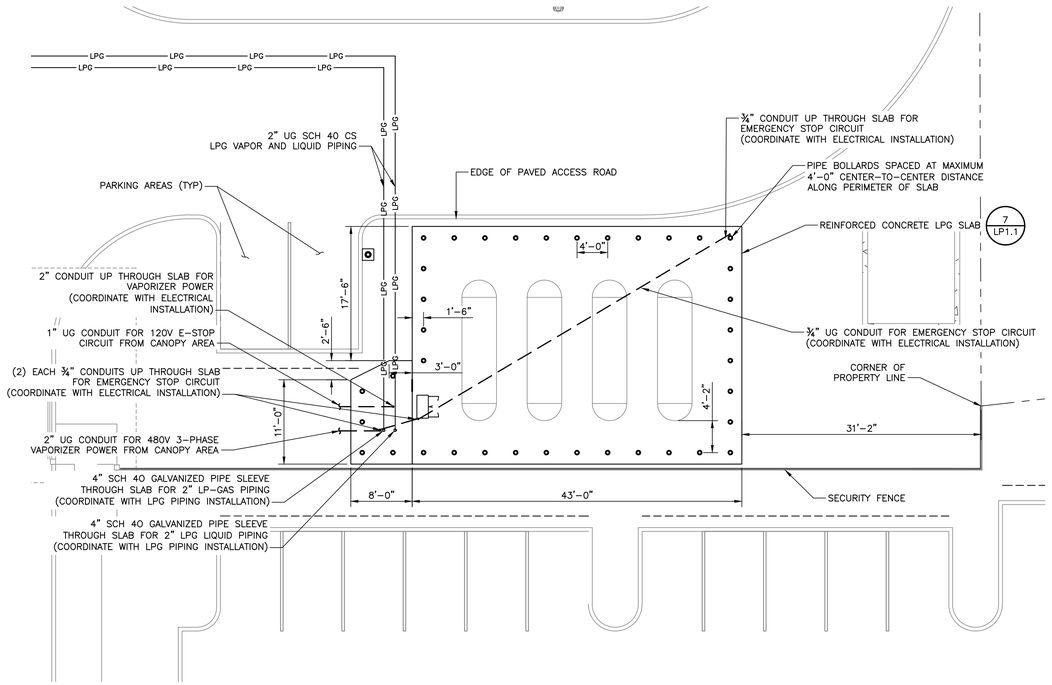
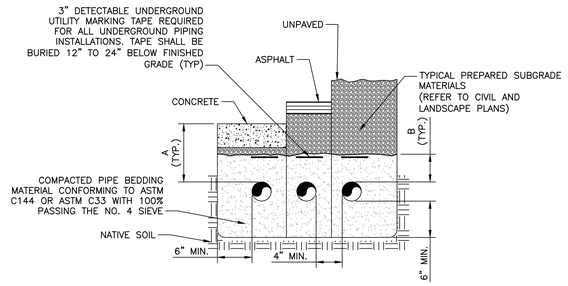


1 LPG SLAB PLAN
SCALE: 1/8" = 1'-0"

N

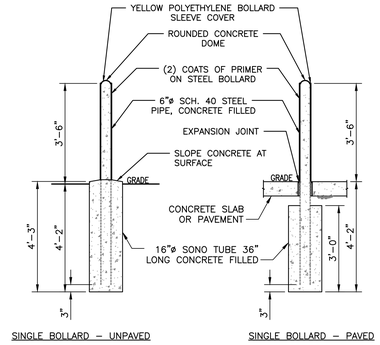
0 4' 8' 16'



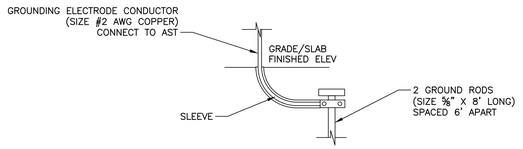
UNDERGROUND LPG PIPING TRENCH REQUIREMENTS

POLYETHYLENE AND STEEL PIPE			
PIPE SIZE (IN.)	SURFACE CONDITION	MIN. BURIAL DEPTH 'A' (IN.)	MIN. SELECT BACKFILL 'B' (IN.)
2	UNPAVED	24	12
	PAVED, MIN. 4" ASPHALT	22	12
	PAVED, MIN. 4" CONCRETE	20	12
	PAVED, MIN 6" CONCRETE	18	12

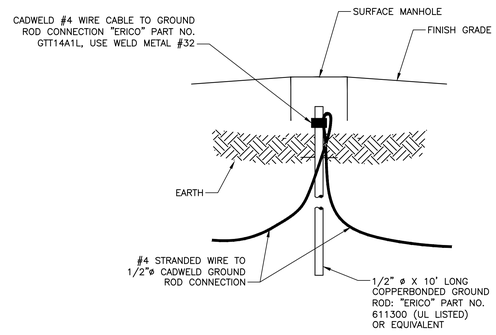
2 LPG TRENCH SECTION
SCALE: NONE



3 LPG SYSTEM BOLLARDS
SCALE: NONE



4 LPG TANK GROUNDING DETAIL
SCALE: NONE



5 GROUND ROD DETAIL
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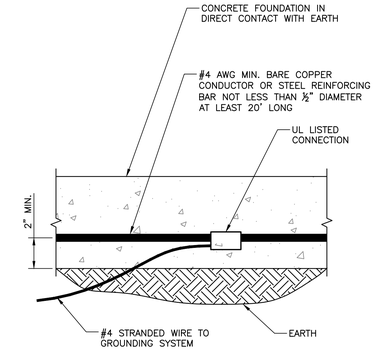
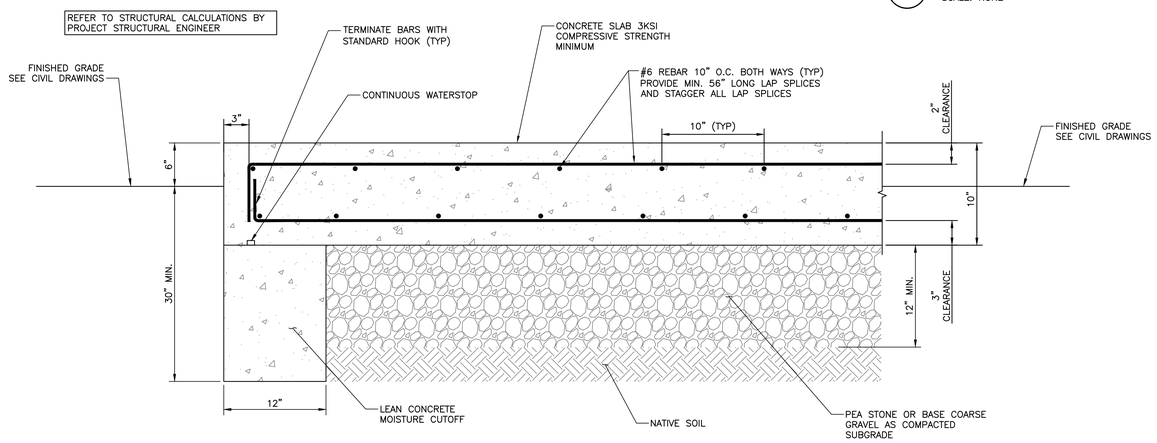


6 CONCRETE ENCASED ELECTRODE DETAIL
SCALE: NONE



7 LPG SLAB AND HOUSEKEEPING SLAB CONSTRUCTION
SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER
RONALD B. LAURENCE JR.
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MECHANICAL
STATE OF CALIFORNIA

11/20/19

Ronald B. Laurence Jr., PE
California PE #34127
Stantec Consulting Services, Inc.

Sheet Title

LPG SLAB PLAN & DETAILS

Author MAS Checker RBL

Scale:
AS INDICATED

Date:
October 4, 2019

Project No. 2016039

0-LP1.1
Drawing No.

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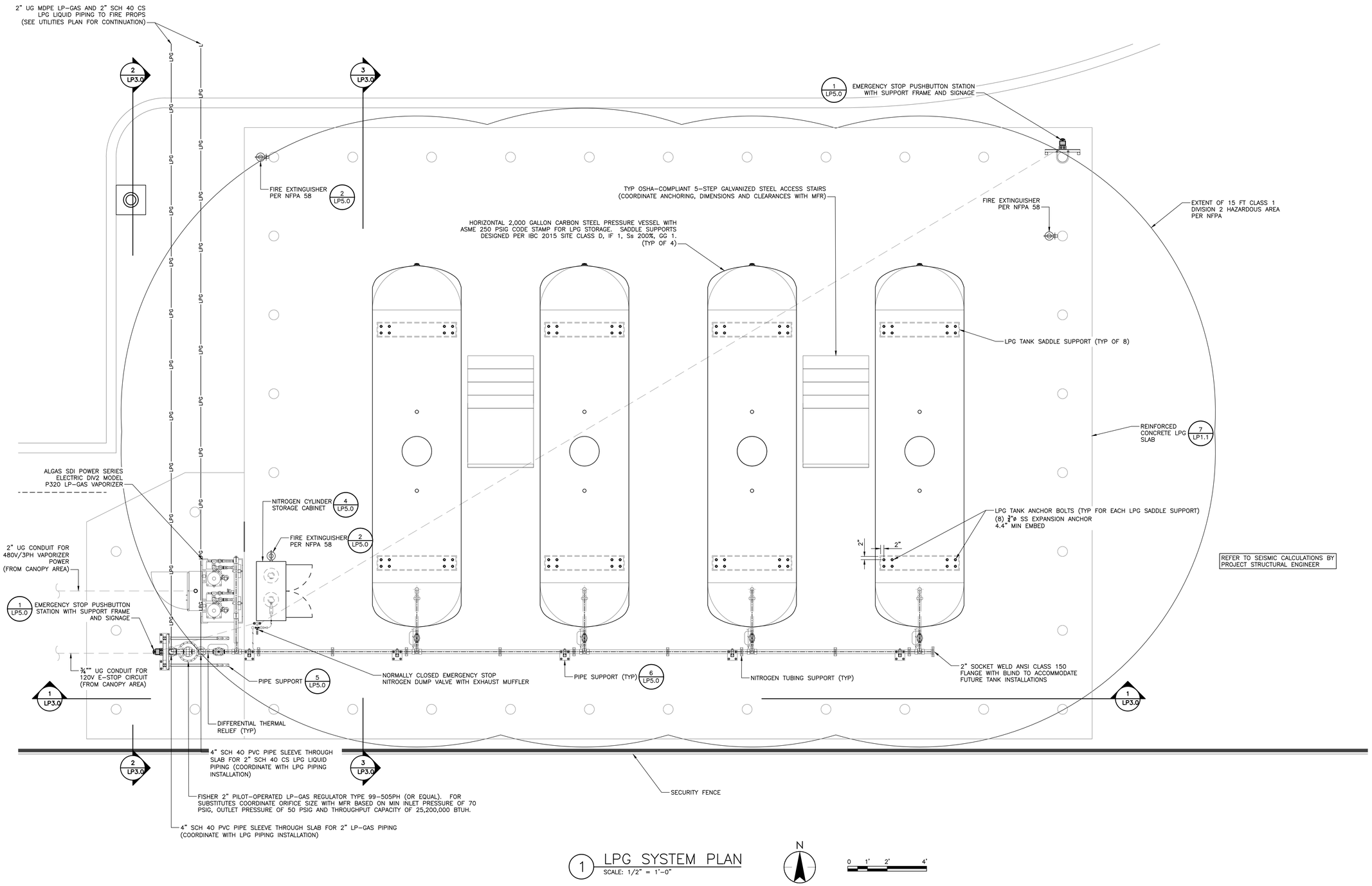

1 LPG SYSTEM PLAN
SCALE: 1/2" = 1'-0"

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11/20/19
Ronald B. Laurence Jr., PE
California PE #34127
Stantec Consulting Services, Inc.

Sheet Title

LPG SYSTEM PLAN

Author MAS Checker RBL

Scale:
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Date:
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Project No. 2016039

0-LP2.0
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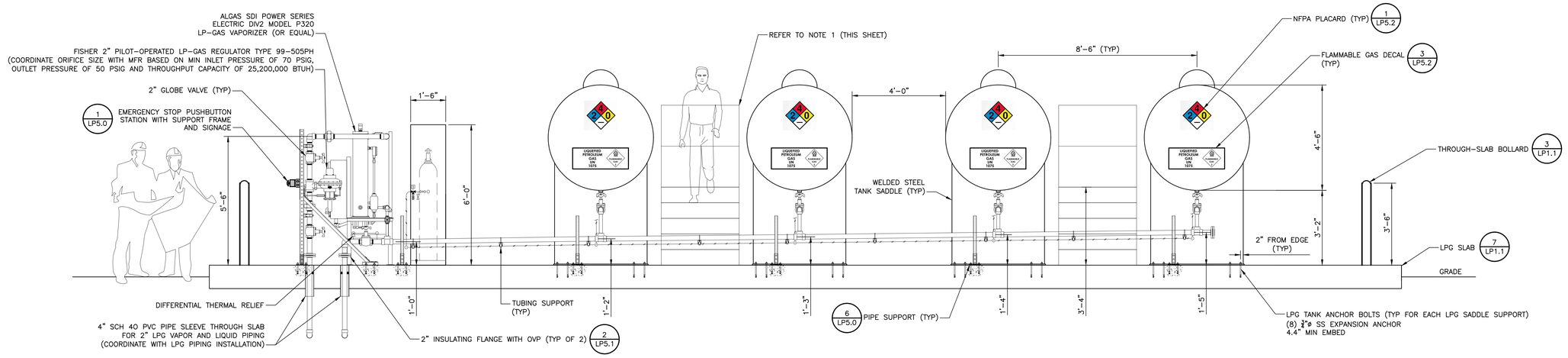
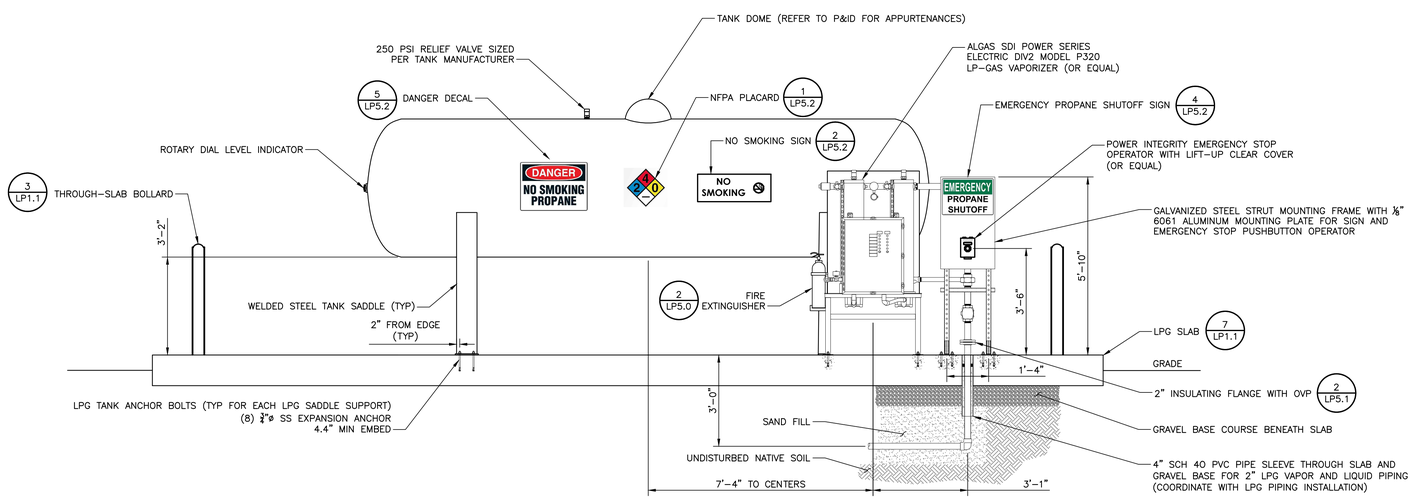


1 LPG SYSTEM ELEVATION
SCALE: 1/2" = 1'-0"

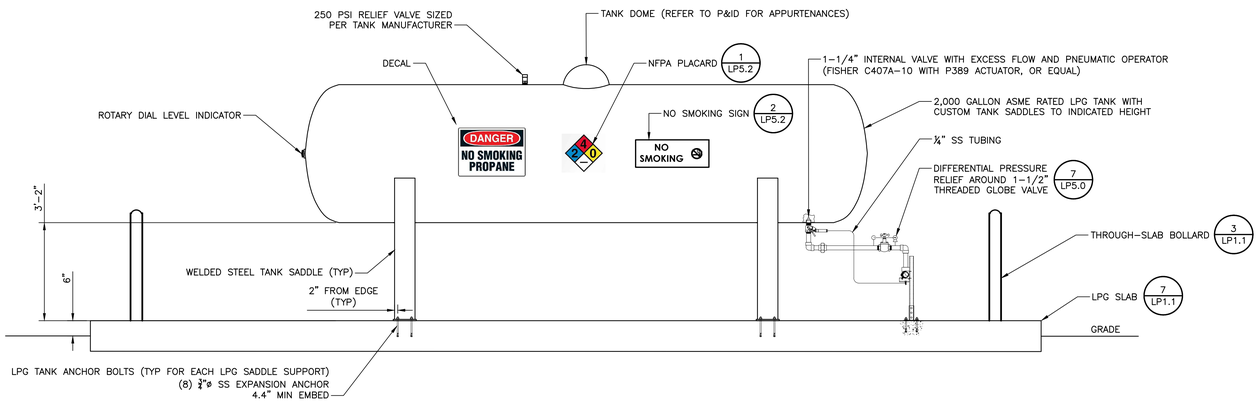
0 1' 2' 4'

REFER TO SEISMIC CALCULATIONS BY PROJECT STRUCTURAL ENGINEER



2 LPG SYSTEM ELEVATION
SCALE: 1/2" = 1'-0"

0 1' 2' 4'



3 LPG SYSTEM ELEVATION
SCALE: 1/2" = 1'-0"

0 1' 2' 4'

NOTES:

1. TANK ACCESS STAIRS SHALL BE PROVIDED BY TANK MANUFACTURER UNLESS OTHERWISE APPROVED. PROVIDE GALVANIZED STEEL AND OSHA-COMPLIANT ACCESS STAIRS COMPLETE WITH NON-SLIP TREADS, HANDRAILS AND KICKPLATES. PROVIDE MINIMUM ½" STAINLESS STEEL ANCHORS TO SECURE STAIRS TO LPG SLAB.

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California PE #34127
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Sheet Title

LPG SYSTEM ELEVATIONS

Author MAS Checker RBL

Scale:
AS NOTED

Date:
October 4, 2019

Project No. 2016039

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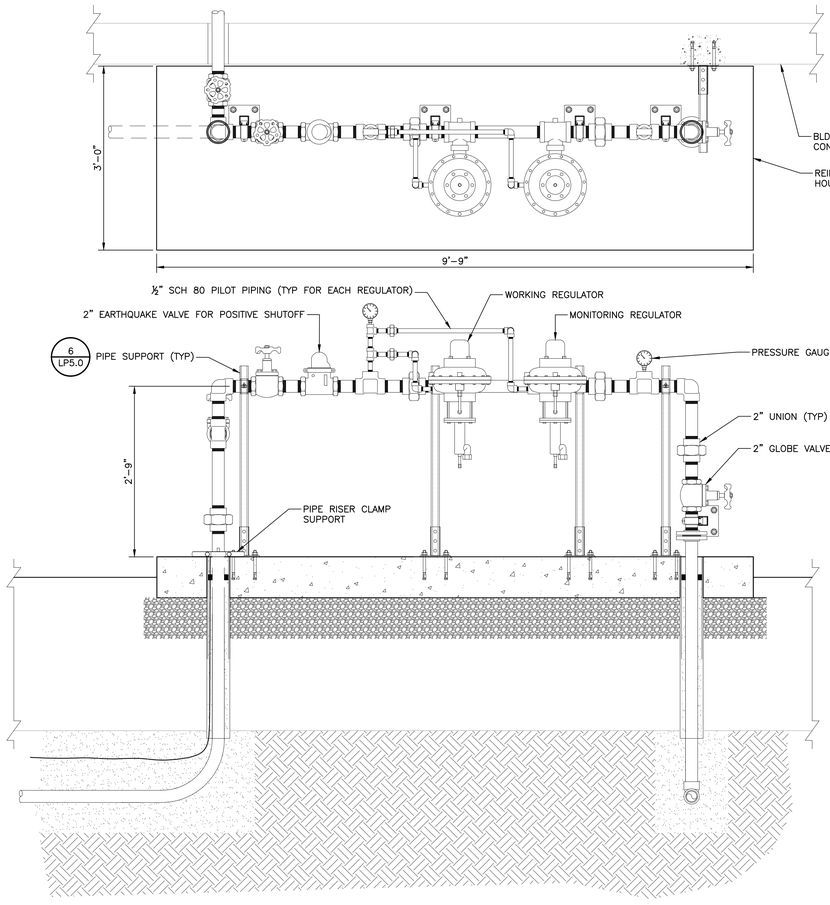
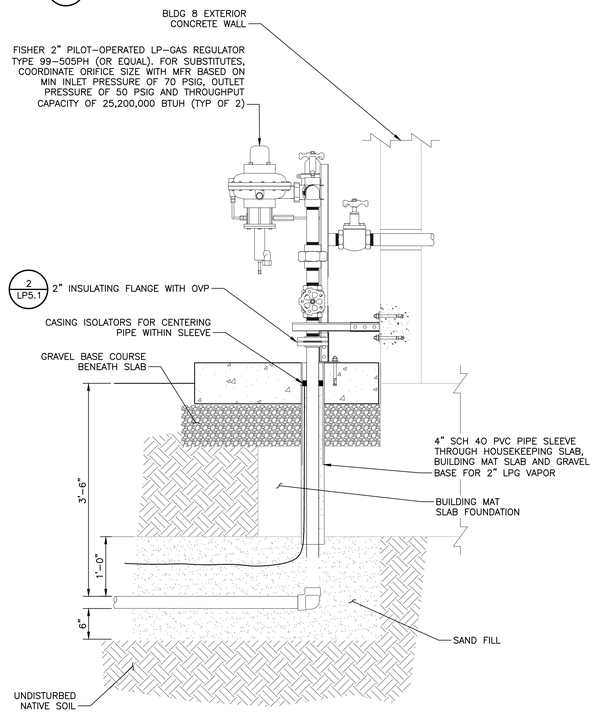
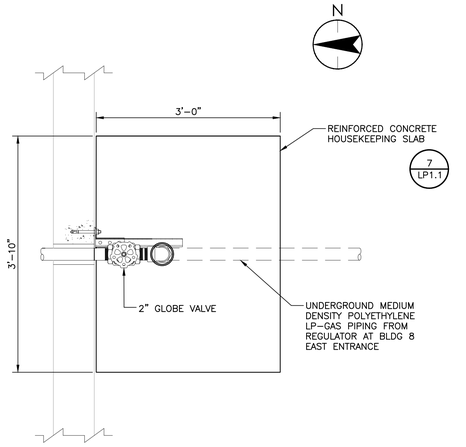
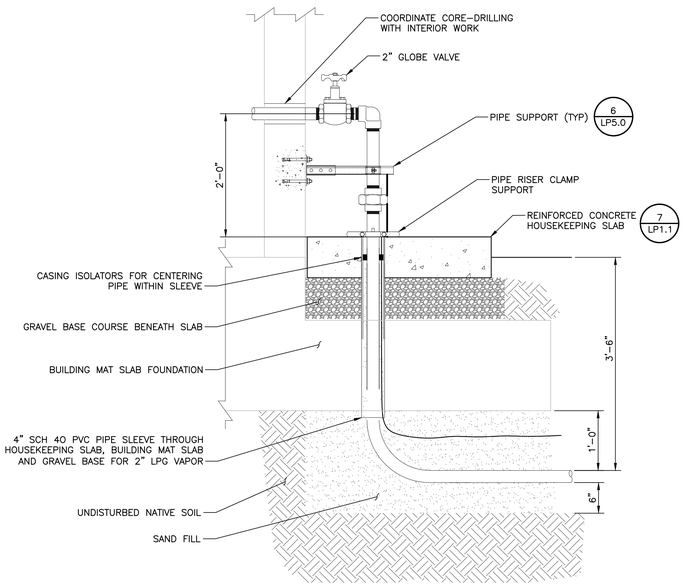








1 BLDG 8 EAST LP-GAS ENTRANCE

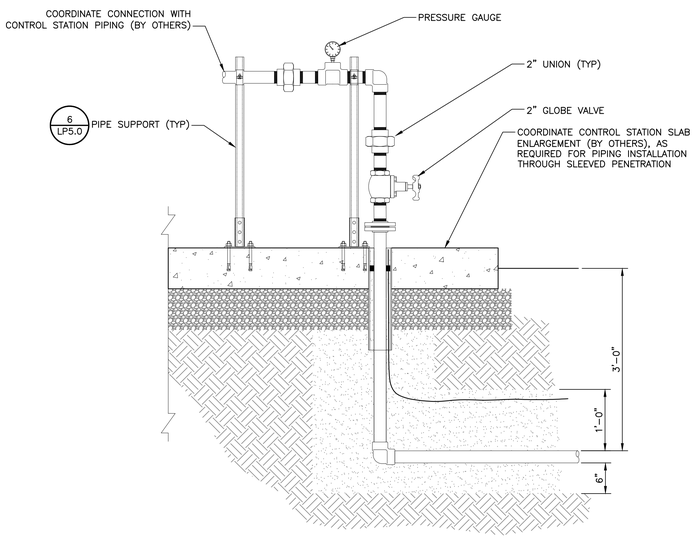
SCALE: 1" = 1'-0"

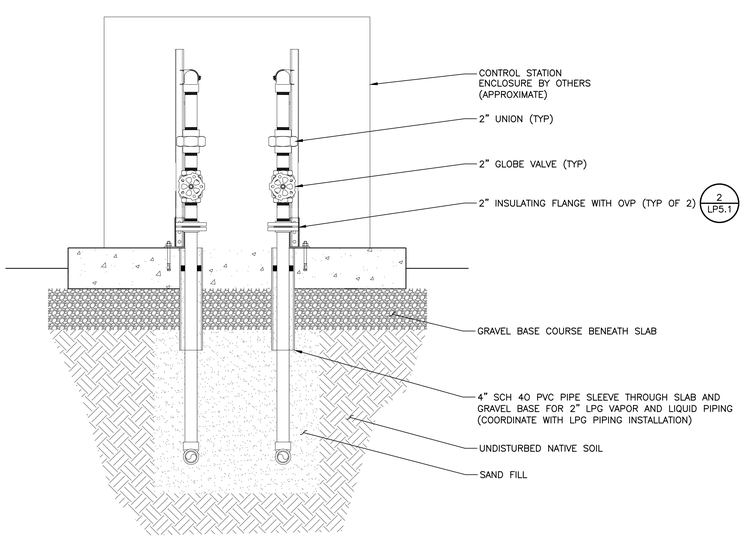
0 1/2' 1' 2'

2 BLDG 8 WEST LP-GAS ENTRANCE

SCALE: 1" = 1'-0"

0 1/2' 1' 2'





3 CONTROL STATION SUPPLY

SCALE: 1" = 1'-0"

0 1/2' 1' 2'

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No.	Description	Date

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STATE OF CALIFORNIA

10/20/19

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Sheet Title

LPG SYSTEM ENLARGED DETAILS

Author MAS Checker RBL

Scale:
AS NOTED

Date:
October 4, 2019

Project No. 2016039

0-LP4.0
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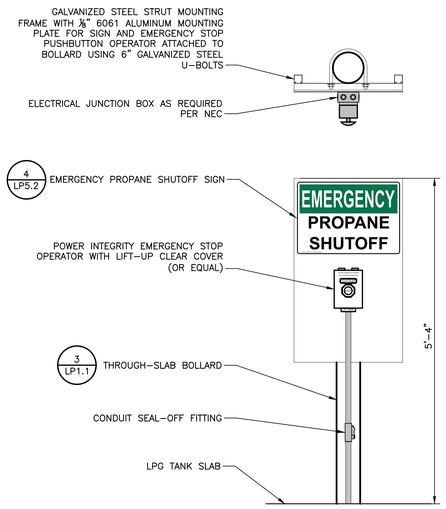

1 EMERGENCY STOP
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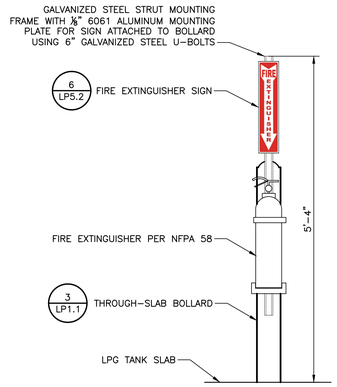
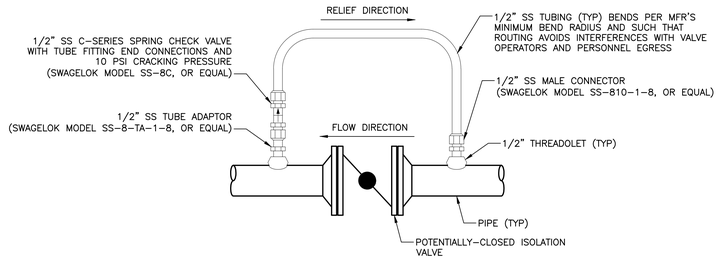
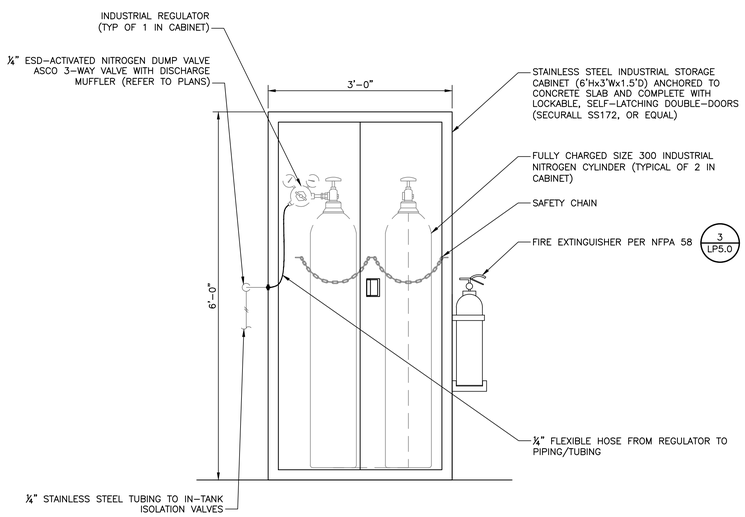


2 FIRE EXTINGUISHER
SCALE: 1" = 1'-0"



3 DIFFERENTIAL PRESSURE RELIEF
SCALE: NONE



4 NITROGEN SUPPLY CABINET
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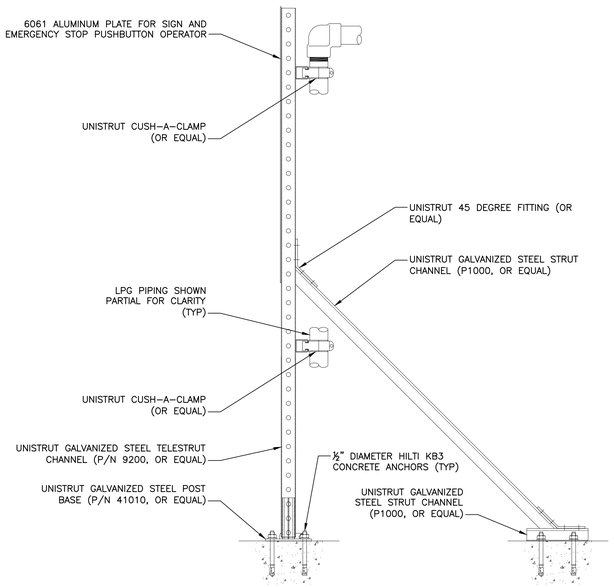
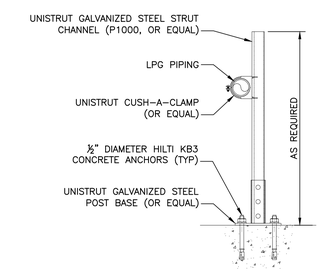


5 PIPE SUPPORT
SCALE: NONE



6 PIPE SUPPORT
SCALE: NONE

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Sheet Title

LPG SYSTEM DETAILS

Author MAS Checker RBL

Scale:
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Date:
October 4, 2019

Project No. 2016039

0-LP5.0
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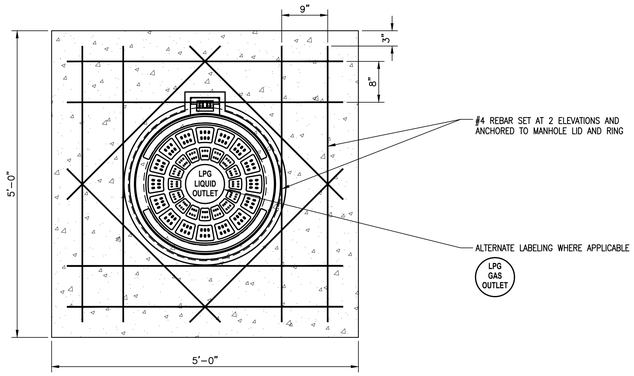
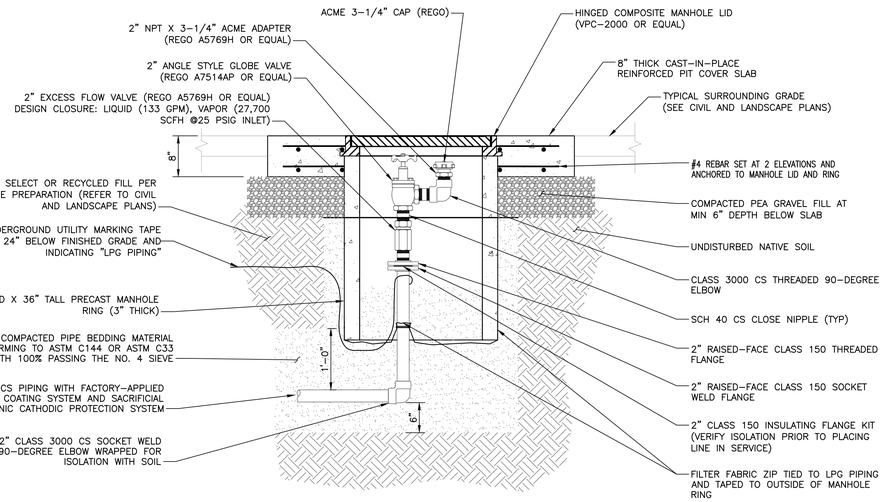
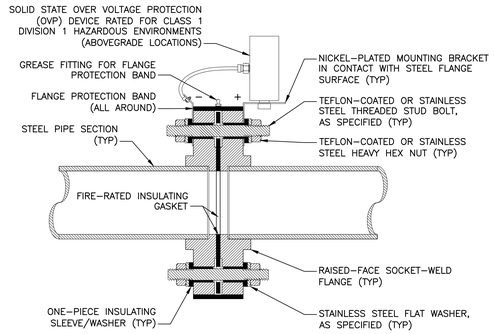
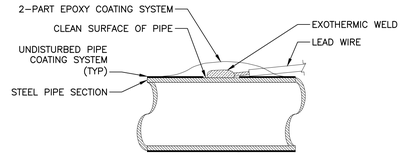




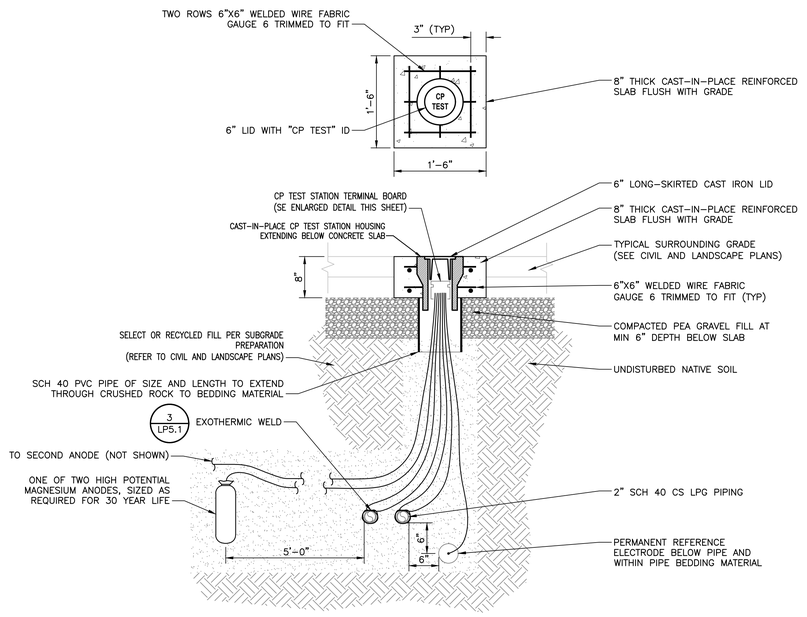
1 LPG LIQUID/VAPOR CONNECTION PIT
SCALE: 1" = 1'-0"
0 1/2' 1' 2'



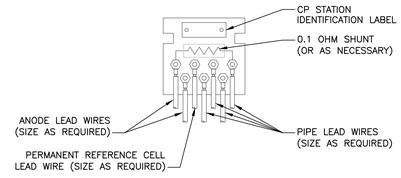
2 INSULATING FLANGE
SCALE: NONE



3 EXOTHERMIC WELD
SCALE: NONE



4 CP TEST STATION
SCALE: 1" = 1'-0"
0 1/2' 1' 2'



DETAIL NOTES

1. TERMINAL BOARD ORIENTATION AND CONNECTIVITY FOR REFERENCE ONLY.
2. CP SPECIALIST SHALL BE RESPONSIBLE FOR SIZING AND SELECTING LEAD WIRES PER INSTALLATION REQUIREMENTS.
3. LABELS SHALL BE AFFIXED TO EACH SEPARATE LEAD WIRE FOR IDENTIFICATION (NOT SHOWN). LABELS SHALL BE NYLON WITH CLEAR HEAT SHRINK COVERING.

5 CP TEST STATION TERMINAL BOARD
SCALE: NTS

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3 -

REGISTERED PROFESSIONAL ENGINEER RONALD B. LAURENCE JR. 34127 MECHANICAL STATE OF CALIFORNIA

11/20/19

Ronald B. Laurence Jr., PE
California PE #34127
Stantec Consulting Services, Inc.

Sheet Title

LPG SYSTEM DETAILS

Author MAS Checker RBL

Scale:
AS INDICATED

Date:
October 4, 2019

Project No. 2016039

0-LP5.1
Drawing No.

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SIGN TO BE DURABLY PRINTED ON MINIMUM 16 GAUGE ALUMINUM

EXAMPLE OF GRAPHICS FOR THIS SIGN IS AVAILABLE AT HTTP://WWW.MYSAFETYSIGN.COM PART NO. NFPA 0009

1 NFPA 704 PLACARD
SCALE: NONE

2 NO SMOKING SIGN/DECAL
SCALE: NONE

3 FLAMMABLE GAS DECAL
SCALE: NONE

ALUMINUM SIGN: OSHA PROPANE SHUTOFF SIGN

EXAMPLE OF GRAPHICS FOR THIS SIGN IS AVAILABLE AT HTTP://WWW.COMPLIANCE SIGNS.COM PART NO. OEE-29053

4 EMERGENCY PROPANE SHUT-OFF SIGN
SCALE: NONE

ALUMINUM SIGN: OSHA DANGER PROPANE

EXAMPLE OF GRAPHICS FOR THIS SIGN IS AVAILABLE AT HTTP://WWW.COMPLIANCE SIGNS.COM PART NO. ODE-27884

5 DANGER PROPANE SIGN/DECAL
SCALE: NONE

NOTES:
FIRE EXTINGUISHER AND SIGN TO BE MOUNTED NEAR TANK FILL AREA VIEWABLE BY TANK FILLING PERSONNEL.

6 FIRE EXTINGUISHER DECAL
SCALE: NONE

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3 -

Ronald B. Laurence Jr., PE
California PE #34127
Stantec Consulting Services, Inc.

Sheet Title

LPG SYSTEM DETAILS

Author MAS Checker RBL

Scale:
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Date:
October 4, 2019

Project No. 2016039

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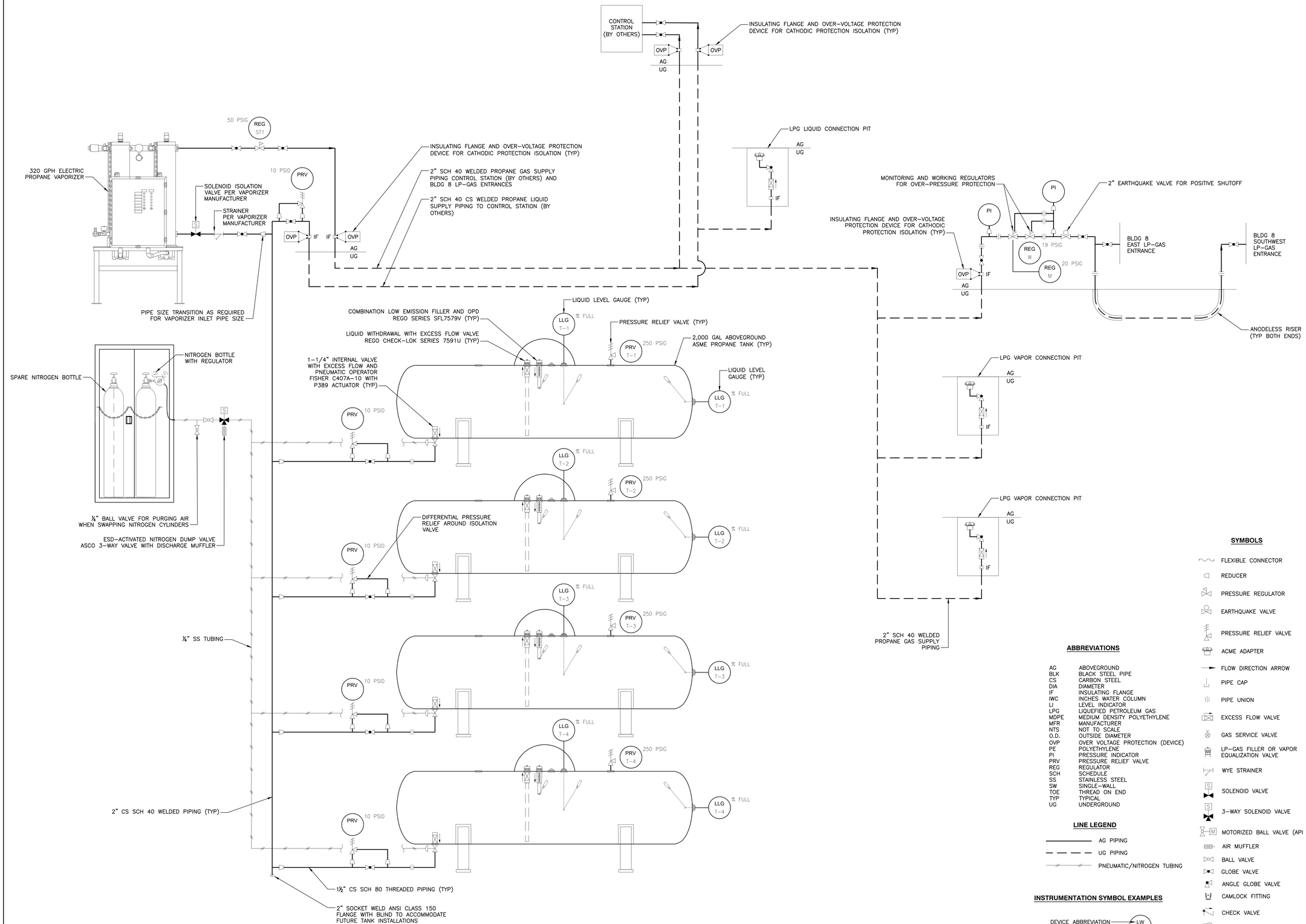

ABBREVIATIONS

AG	ABOVEGROUND
BLK	BLACK STEEL PIPE
CS	CARBON STEEL
DIA	DIAMETER
IF	INSULATING FLANGE
IWC	INCHES WATER COLUMN
LI	LEVEL INDICATOR
LPG	LIQUEFIED PETROLEUM GAS
MDPE	MEDIUM DENSITY POLYETHYLENE
MFR	MANUFACTURER
NTS	NOT TO SCALE
O.D.	OUTSIDE DIAMETER
OVP	OVER VOLTAGE PROTECTION (DEVICE)
PE	POLYETHYLENE
PI	PRESSURE INDICATOR
PRV	PRESSURE RELIEF VALVE
REG	REGULATOR
SCH	SCHEDULE
SS	STAINLESS STEEL
SW	SINGLE-WALL
TOE	THREAD ON END
TYP	TYPICAL
UG	UNDERGROUND

LINE LEGEND

- AG PIPING
- UG PIPING
- PNEUMATIC/NITROGEN TUBING

INSTRUMENTATION SYMBOL EXAMPLES

DEVICE ABBREVIATION — LW
DESIGNATION NUMBER — #

PSIG SETTING — 50
DESIGNATION NUMBER — PRV #

PSI RANGE — 0-150
DESIGNATION NUMBER — PI #

SYMBOLS

- FLEXIBLE CONNECTOR
- REDUCER
- PRESSURE REGULATOR
- EARTHQUAKE VALVE
- PRESSURE RELIEF VALVE
- ACME ADAPTER
- FLOW DIRECTION ARROW
- PIPE CAP
- PIPE UNION
- EXCESS FLOW VALVE
- GAS SERVICE VALVE
- LP-GAS FILLER OR VAPOR EQUALIZATION VALVE
- WYE STRAINER
- SOLENOID VALVE
- 3-WAY SOLENOID VALVE
- MOTORIZED BALL VALVE (API 607)
- AIR MUFFLER
- BALL VALVE
- GLOBE VALVE
- ANGLE GLOBE VALVE
- CAMLOCK FITTING
- CHECK VALVE
- PRESSURE REGULATOR (ALT)
- PNEUMATICALLY ACTUATED VALVE
- IF INSULATING FLANGE
- FLANGE SET
- OVP OVER-VOLTAGE PROTECTION DEVICE

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

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REGISTERED PROFESSIONAL ENGINEER RONALD B. LAURENCE JR. 34127 MECHANICAL STATE OF CALIFORNIA

11/20/19

Ronald B. Laurence Jr., PE
California PE #34127
Stantec Consulting Services, Inc.

Sheet Title

LPG SYSTEM DIAGRAM

Author MAS Checker RBL

Scale: NONE

Date: October 4, 2019

Project No. 2016039

0-LP6.0

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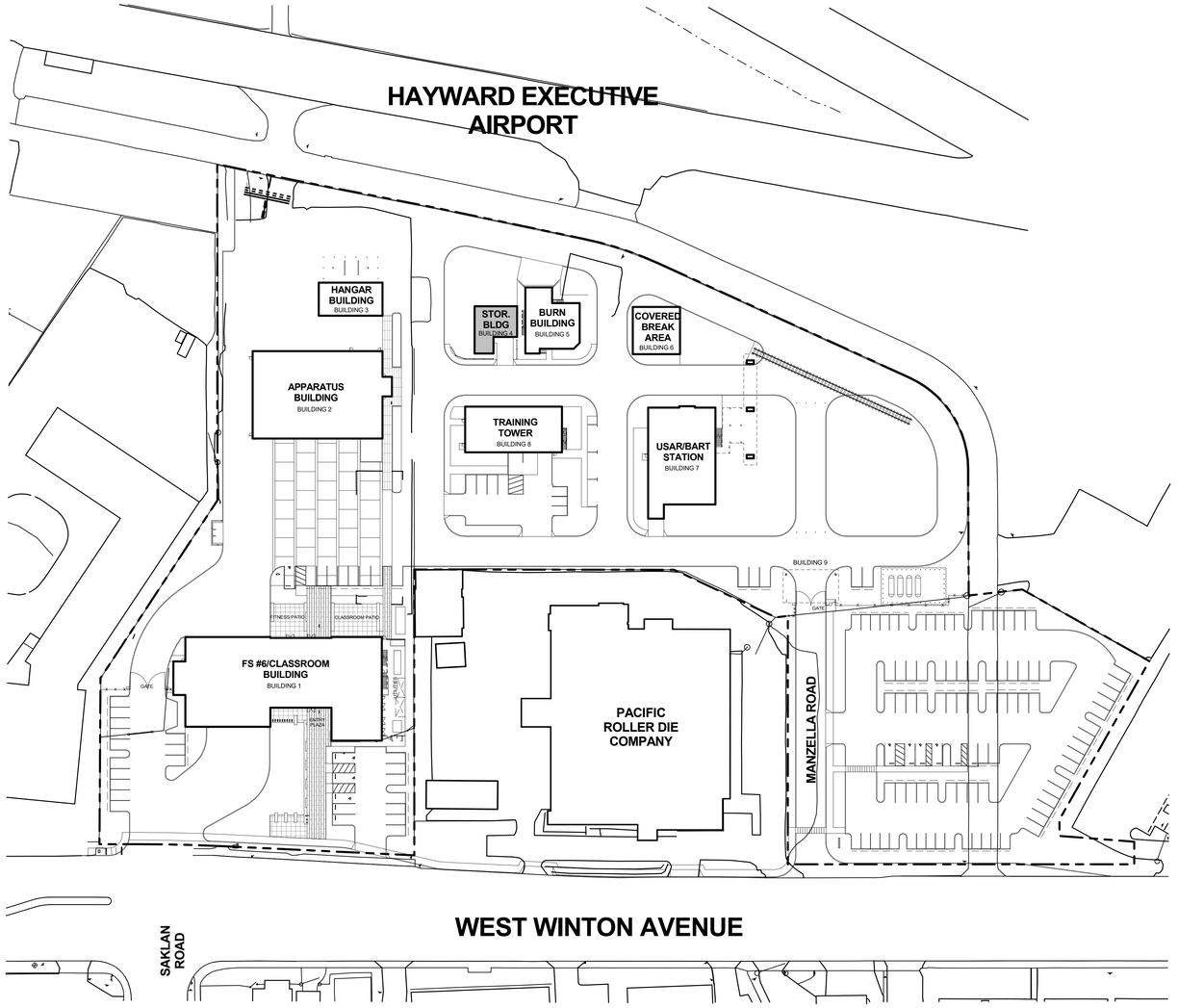
HAYWARD FIRE STATION #6
& FIRE TRAINING CENTER

BUILDING 4

PERMIT SUBMITTAL



1 SITE LOCATION PLAN
1" = 50'-0"

PROJECT INFORMATION

APN:	432-124-1-4 (PORTION)
PROJECT:	HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER BUILDING 4 1401 WEST WINTON AVENUE, HAYWARD, CA 94545
DESCRIPTION:	STORAGE (BUILDING 4)
BUILDING AREAS:	39,156 SF SITE COVERAGE 66,278 SF GROSS FLOOR AREA
TOTAL BUILDING AREA FOR THIS PERMIT:	1,160 SF BUILDING IS UNCONDITIONED
SITE:	293,364 SF (6.73 ACRES) SITE DEVELOPMENT AREA 13% LOT COVERAGE (TOTAL DEVELOPMENT)
BUILDING FLOOR AREA RATIO:	23% (TOTAL DEVELOPMENT)
FIRE SPRINKLERED:	NO (BUILDING 4)
BUILDING USE/OCCUPANCY:	S-2 (STORAGE)
CONSTRUCTION TYPE:	II-B
ZONING:	AT/AC
TOTAL BUILDING STORIES:	1
DEFERRED SUBMITTALS:	None

BUILDING 4 SCOPE OF WORK

The general scope of work covered under this contract includes but is not limited to:

Structure
- New concrete slab, CMU walls, structural steel framing.
- New concrete tile roof over metal roof deck and metal trusses.
- New storage room with fixed windows, man-door, and overhead coiling door.
- Required signage.

Plumbing
- New compressed air piping.

Electrical
- New power, data, and lighting systems.

SHEET INDEX

NUMBER	NAME
ARCHITECTURAL	
4-A0.10	BUILDING 4 SHEET INDEX, PROJECT INFORMATION
4-A0.11	BUILDING 4 CODE ANALYSIS, AXONOMETRIC VIEWS
4-A2.10	BUILDING 4 FLOOR PLAN, ROOF PLAN, SCHEDULES
4-A3.10	BUILDING 4 EXTERIOR ELEVATIONS
4-A3.40	BUILDING 4 BUILDING CROSS SECTIONS, WALL SECTIONS
4-A6.10	BUILDING 4 REFLECTED CEILING PLAN
4-A8.30	BUILDING 4 ARCHITECTURAL DETAILS
STRUCTURAL	
4-S0.10	BUILDING 4 GENERAL NOTES AND SPECIFICATIONS
4-S1.10	BUILDING 4 TYPICAL CONCRETE DETAILS
4-S1.40	BUILDING 4 TYPICAL CMU DETAILS
4-S1.50	BUILDING 4 TYPICAL METAL DECKING DETAILS
4-S2.10	BUILDING 4 FLOOR AND ROOF PLANS
4-S3.10	BUILDING 4 ELEVATIONS AND SECTIONS
4-S4.10	BUILDING 4 DETAILS AND SECTIONS
PLUMBING	
4-P0.01	BUILDING 4 PLUMBING LEGEND AND ABBREVIATIONS, DRAWING LIST AND SCHEDULES
4-P2.01	BUILDING 4 PLUMBING STORAGE BUILDING FLOOR PLAN, DIAGRAM AND DETAIL
ELECTRICAL	
4-E0.01	BUILDING 4 ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST
4-E0.02	BUILDING 4 ELECTRICAL SCHEDULES
4-E0.20	BUILDING 4 ELECRTICAL TITLE 24
4-E0.21	BUILDING 4 ELECTRICAL TITLE 24
4-E0.22	BUILDING 4 ELECRTICAL TITLE 24
4-E2.01	BUILDING 4 ELECTRICAL STORAGE BUILDING FLOOR PLAN
4-E5.01	BUILDING 4 ELECTRICAL SINGLE LINE DIAGRAM
4-E5.02	BUILDING 4 ELECTRICAL GROUNDING DIAGRAM
4-E6.01	BUILDING 4 ELECTRICAL DETAILS
TECHNOLOGY	
4-T0.01	BUILDING 4 TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST
4-T2.01	BUILDING 4 TECHNOLOGY STORAGE BUILDING FLOOR PLAN
4-T7.01	BUILDING 4 TECHNOLOGY DETAILS
4-T7.02	BUILDING 4 TECHNOLOGY DETAILS
4-T7.03	BUILDING 4 TECHNOLOGY DETAILS
4-T7.04	BUILDING 4 SECURITY DETAILS

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
8/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 4
SHEET INDEX, PROJECT INFORMATION

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

4-A0.10
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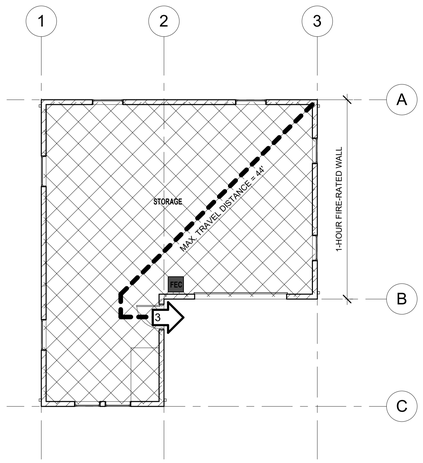


1 FLOOR PLAN - OCCUPANCY & EGRESS
1/8" = 1'-0"

OCCUPANCY ANALYSIS					
RM. NO.	NAME	OCCUPANCY	AREA	O.L.F.	O.L.
000	STORAGE	S-2	1065 SF	500 SF	3
Grand total: 1			1065 SF		3

OCCUPANCY LOAD FACTORS

(REFERENCE: TABLE 1004.1.2)

WAREHOUSE (STORAGE)	500

LEGEND- EGRESS PLAN

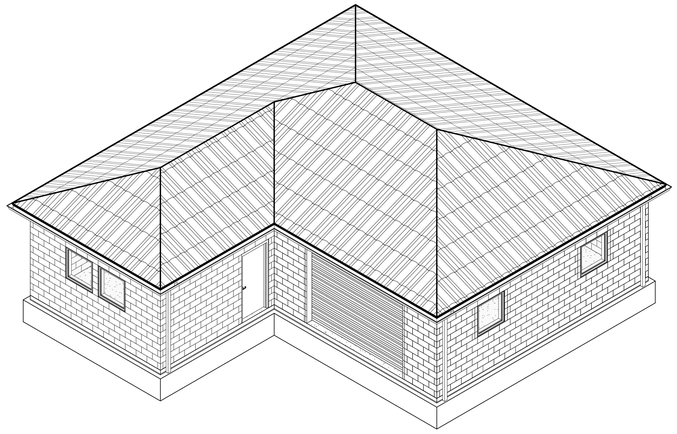
EXIT OCCUPANT LOAD

0 MEANS OF EGRESS OCCUPANT LOAD

PATH OF TRAVEL

LEGEND- FIRE PROTECTION

FEC FIRE EXTINGUISHER CABINET



2 SOUTHEAST AXONOMETRIC VIEW

RossDrulisCusenbery

Code Analysis - Hayward Fire Station #6/Fire Training Center Building 4

Project Location: 1401 West Winton Avenue, Hayward, CA 94545

Date: 09/21/2018

SUMMARY:

APPLICABLE REGULATIONS

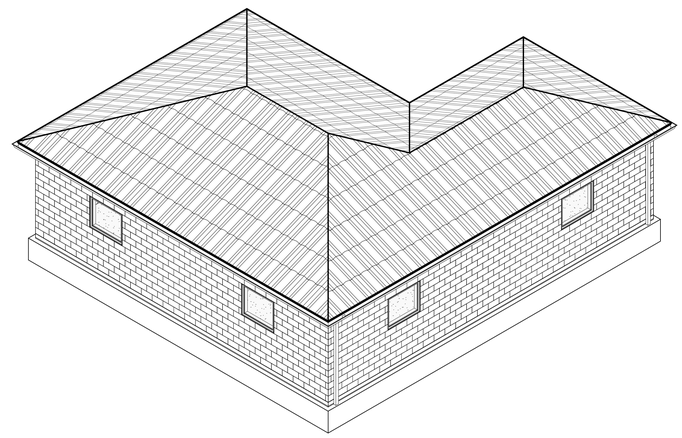
2016 California Building Standards Code (Title 24, California Code of Regulations)
2016 California Building Standards Administrative Code (Title 24, California Code of Regulations, Part 1)
2016 California Building Code (Title 24, California Code of Regulations, Part 2)
2016 California Electrical Code (Title 24, California Code of Regulations, Part 3)
2016 California Mechanical Code (Title 24, California Code of Regulations, Part 4)
2016 California Plumbing Code (Title 24, California Code of Regulations, Part 5)
2016 California Energy Code (Title 24, California Code of Regulations, Part 6)
2016 California Fire Code (Title 24, California Code of Regulations, Part 9)
2016 California Existing Building Code (Title 24, California Code of Regulations, Part 10)
2016 California Green Building Standards Code (Title 24, California Code of Regulations, Part 11)
2016 California Reference Standards Code (Title 24, California Code of Regulations, Part 12)
Uniform Fire Code With Approved California Amendments
Title 19 - Public Safety, State Fire Marshal California Code Of Regulations
Title 24 - California Code Of Regulations, Americans With Disabilities Act Accessibility Guidelines (ADAAG) Uniform Accessibility Standards
NFPA 101, Life Safety Code, 2015 Edition - Chapters 5 And 13
NFPA 13-2015 Edition

APPLICABLE STANDARDS

UL - Underwriters Laboratories Fire Resistive Directory, 2016 Edition
UL - Underwriters Laboratory Building Materials Directory, 2006 Edition
SMACNA - Fire, Smoke & Radiation Damper Installation Guide For Hvac Systems, 5th Edition, 2002

BUILDING CODE ANALYSIS

BUILDING 4: COVERED BREAK AREA	NOTES
TYPE OF CONSTRUCTION: Type II-B	
FIRE PROTECTION Non-sprinklered	
PRIMARY STRUCTURE Non-rated	Table 601
BEARING WALLS, EXTERIOR AND INTERIOR Non-Rated	Table 601
EXTERIOR WALLS (based on fire separation distance)	
1-hour fire-rated / II-B / S-2 Occ / Separation < 10'	Table 602
Non-rated / II-B / S-2 Occ / Separation > 10' but < 30'	Table 602
Non-rated / II-B / S-2 Occ / Separation > 30'	Table 602
NONBEARING INTERIOR WALLS AND PARTITIONS Non-rated	Table 601
FLOOR CONSTRUCTION & SECONDARY FRAMING Non-rated	Table 601
ROOF CONSTRUCTION & SECONDARY FRAMING Non-rated	Table 601
EXTERIOR WALLS - ALLOWABLE OPENINGS	
Distance for 5' < Separation > 10' = 10% allowable opening area for unprotected opening (UP) in nonsprinklered building (NS)	Table 705.8
Separation distance = 7'	
Rated wall area = 26' x 9.33' = 242.6 SF x 10% = 24.3 SF opening area allowed	
Opening area = 3.33' x 3.33' x 2 = 22.18 SF < 24.3 SF **Complies**	
MECHANICAL SHAFTS Not Applicable	Single story building
ELEVATOR SHAFT AND OPENINGS Not Applicable	Single story building
ATRIUM Not Applicable	Single story building
EXIT STAIRS Not Applicable	Single story building
EXIT STAIR INTERIOR DOORS Not Applicable	Single story building
BUILDING OCCUPANCY **Single** use, S-2	
TOTAL OCCUPANT LOAD **3 Total Building Occupants**	
MAXIMUM BUILDING AREA PER STORY [Allowable] Ground Floor: 1,160 sq ft [26,000 sq ft]	CBC Table 506.2, NS
BUILDING HEIGHT [Allowable] 1 story, 16.17' [3 stories, 55']	CBC Tables 504.3 & 504.4 NS
MIN. NUMBER OF EXITS [Required] S-2 Occupancy = 1 [1 from S-2 Occupancy]	CBC 1006.2.1 & Table 1006.2.1: Exits per story; 2 required if the design occ. load exceeds the values listed in Table 1006.2.1.
MIN. EXIT SEPARATON [Required] Not Applicable - only 1 exit required	CBC 1007.1.1: Greater than 1/2 the diagonal distance of the area to be served for non-sprinklered building
MAXIMUM TRAVEL DISTANCE [Allowable] 44.0' < [300']	CBC Table 1017.2: 300' is the allowable travel distance for a building without a sprinkler system for S-2 Occupancy.
EXIT ACCESS S-2 Occupancy exits directly to the building exterior	No Exit Access Hallways in building.
Corridors: Not Applicable	No cooridors in building.



3 NORTHWEST AXONOMETRIC VIEW

GRAPHIC FOR REFERENCE ONLY

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA DEP. DIR. PUBLIC WORKS	ALEX AMERI INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 4 CODE ANALYSIS, EXTERIOR AXONOMETRIC VIEWS

Drawn By: EW Checked By: EW

Scale: As indicated

Date: October 4, 2019

Project No. 2016039

4-A0.11
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WINDOW SCHEDULE

MARK	SIZE WIDTH	SIZE HEIGHT	FRAME MATERIAL	FRAME FINISH	GLASS THK	GLASS COLOR	GLASS TYPE	OPERATION	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	FIRE RATING LABEL	ACCESSORIES INSECT SCREEN	ACCESSORIES GRID	ACCESSORIES WINDOW COVERING	NOTES
A	4' - 0"	3' - 4"	STL	FF	1"	CLR	LOW-E	FIX	4/4-A8.30	4/4-A8.30	4/4-A8.30					
B	3' - 4"	3' - 4"	STL	FF	1"	CLR	LOW-E	FIX	4/4-A8.30	4/4-A8.30	4/4-A8.30	45 MIN				

DOOR AND FRAME SCHEDULE

TYPE	MARK	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICKNESS	ROOM NAME	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	FIRE RATING	HARDWARE GROUP	REMARKS
A	101	3' - 0"	7' - 0"	1 3/4"	STORAGE	HM	FP	HM	FP	2/4-A8.30	3/4-A8.30	1/4-A8.30		4-01	
B	102	12' - 0"	8' - 0"	2"	STORAGE	MTL	FF	MTL	FF	5/4-A8.30	7/4-A8.30	9/4-A8.30		4-02	

DOOR AND FRAME TYPES

PAINTED HOLLOW METAL DOOR & FRAME

PAINTED METAL OVERHEAD SECTIONAL DOOR

DOOR SCHEDULE LEGEND

DOOR CONSTRUCTION:
AL = ALUMINUM
FAB = FABRIC
GL = TEMPERED GLASS
HC = HOLLOW CORE
SC = SOLID CORE
HM = HOLLOW METAL
MTL = METAL

DOOR FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

FRAME MATERIAL:
AL = ALUMINUM
HM = HOLLOW METAL
MTL = METAL
WD = WOOD

FRAME FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

WINDOW SCHEDULE LEGEND

FRAME MATERIAL:
AL = ALUMINUM
MTL = METAL
WD = WOOD
STL = STEEL
VIN = VINYL

FRAME FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN
CLAD = MANUF. CLADDING

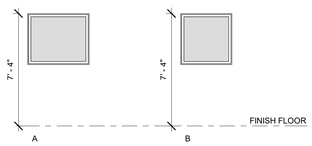
GLASS COLOR:
CLR = CLEAR
GRY = GREY
BRZ = BRONZE

GLASS TYPE:
GRID = TRUE DIVIDED LITE
LOW-E = LOW-E
MESH = G.I. MESH
OBS = OBSURE LOW-E
TEMP = TEMPERED
TRAN = TRANSLUCENT PANEL
WIRE = WIRE GLASS

WINDOW SCHEDULE GENERAL NOTES

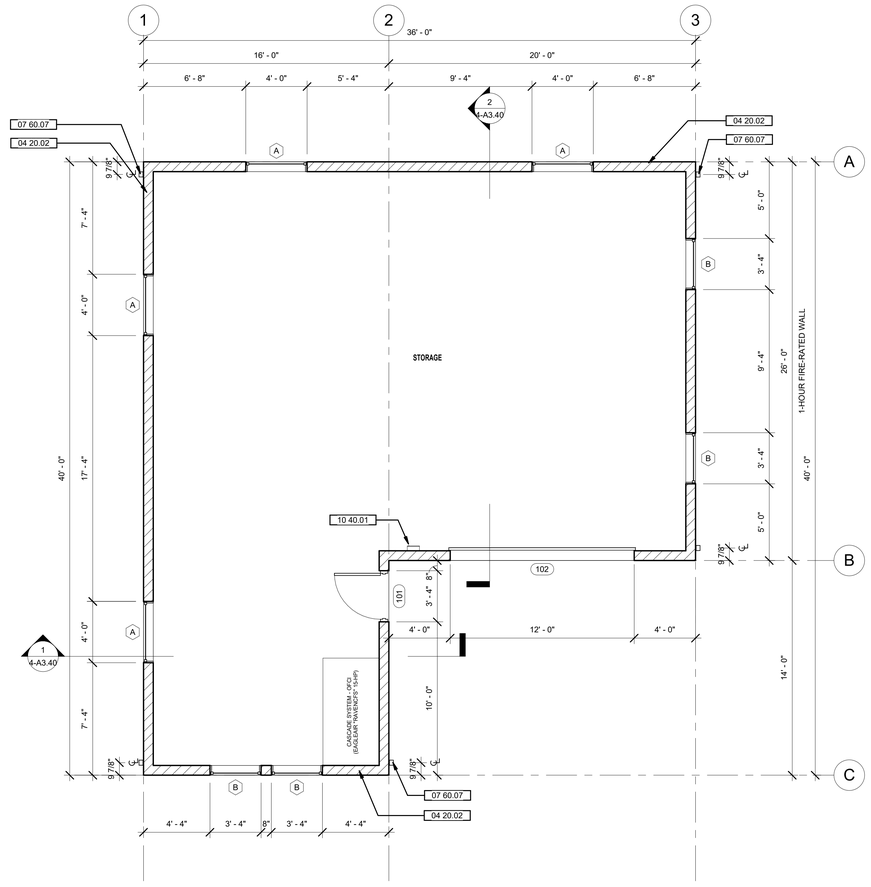
1. REFER TO SHEET 5-A10.01 FOR TYPES & LOCATIONS OF WINDOW SHADES.

WINDOW TYPE



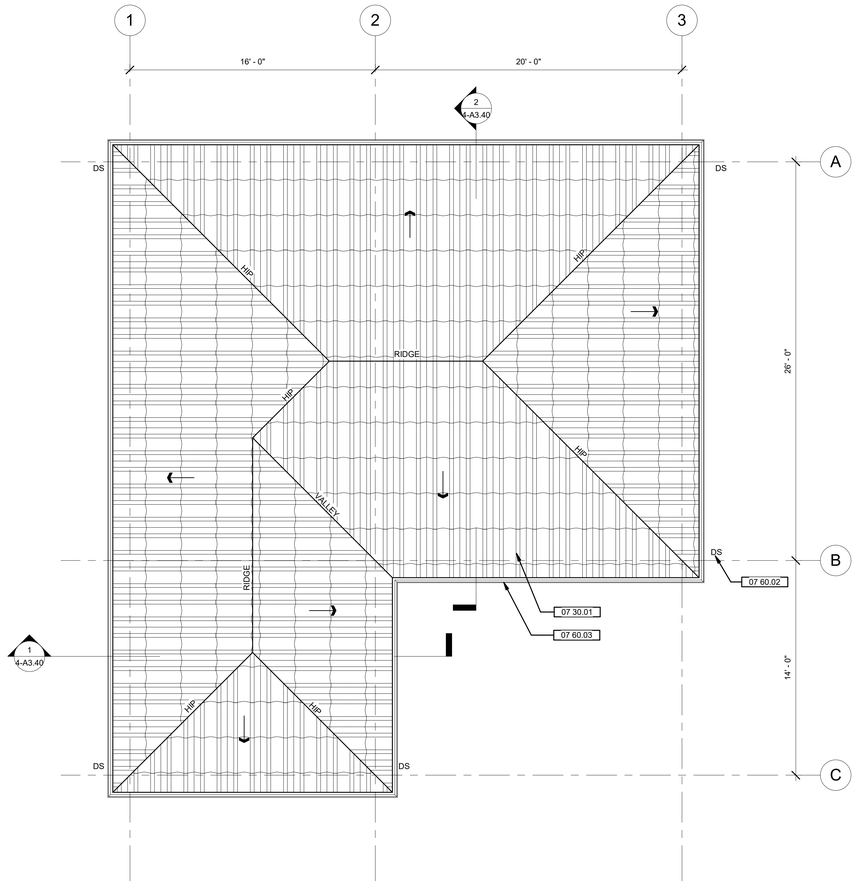
STEEL FIXED FRAME WINDOW WITH CLEAR GLAZING, TYPICAL

STEEL FIXED FRAME WINDOW WITH CLEAR GLAZING, TYPICAL



1 FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'



2 ROOF PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. CMU WALL DIMENSIONS MEASURED TO FACE OF BLOCK, U.O.N.
2. FOR DETAIL CALLOUTS, SEE FLOOR PLANS, WALL SECTIONS, AND EXTERIOR ELEVATIONS REFERENCED IN THE 4-A SERIES
3. FOR LOCATION AND DETAILED INFORMATION ON SIGNAGE, REFER TO "VOLUME 5 CONSTRUCTION DOCUMENT DRAWINGS (SIGNAGE)"
4. "ALIGN" ANNOTATIONS AT WALLS REFER TO FACE OF FINISH, U.O.N.

WALL LEGEND

CONCRETE WALL, S.S.D. FOR THICKNESS & REINFORCING

ALUMINUM CURTAIN WALL or STOREFRONT

SHEET KEYNOTE LEGEND

04 20.02	SPLIT-FACE CMU WALLS, S.S.D.
07 30.01	CONCRETE TILE ROOFING, TYPICAL
07 60.02	INDICATES DOWNSPOUT LOCATION, TYPICAL
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
10 40.01	SURFACE-MOUNTED FIRE EXTINGUISHER CABINET

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 4
FLOOR PLAN, ROOF PLAN, SCHEDULES

Drawn By: NM Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

4-A2.10
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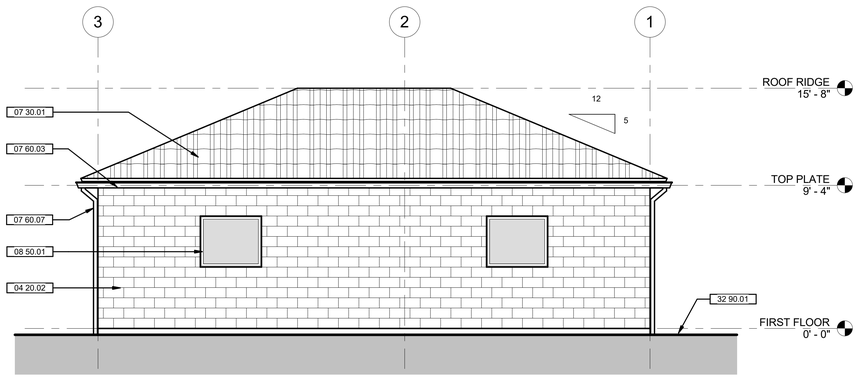
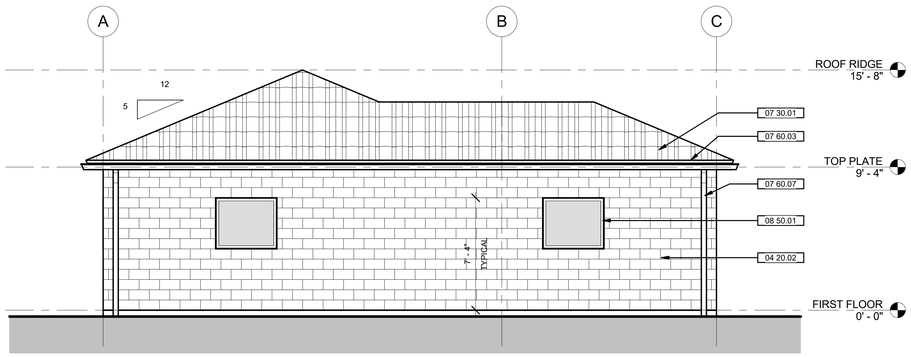


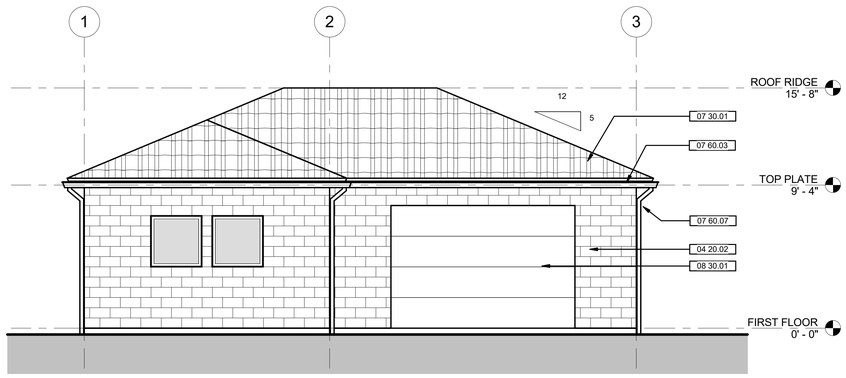
1 NORTH EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'



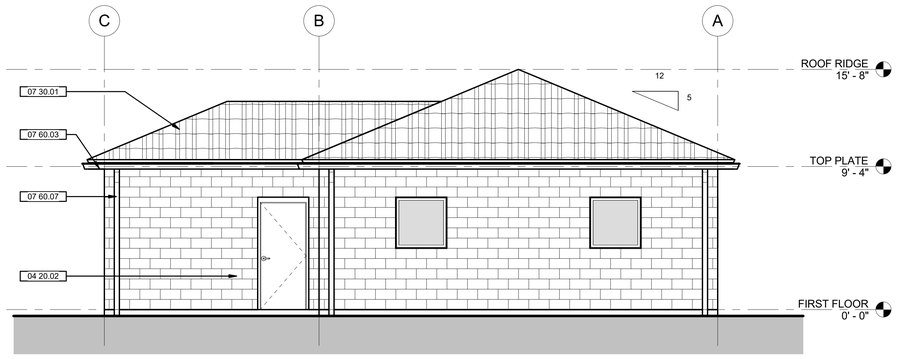
2 WEST EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'



3 SOUTH EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'



4 EAST EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. WINDOWS FOR ILLUSTRATIVE PURPOSE ONLY. SEE 4-A2.10 FOR SCHEDULES AND GLAZING TYPE.
2. ROOF SLOPE IS TYPICAL ON ALL ROOF PLANES.

SHEET KEYNOTE LEGEND

04 20.02	SPLIT-FACE CMU WALLS, S.S.D.
07 30.01	CONCRETE TILE ROOFING, TYPICAL
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
08 30.01	PAINTED METAL OVERHEAD SECTIONAL DOOR
08 50.01	STEEL FIXED FRAME WINDOW WITH CLEAR GLAZING, TYPICAL
32 90.01	LANDSCAPE AREA, SEE CIVIL AND LANDSCAPE DRAWINGS

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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 4 EXTERIOR ELEVATIONS

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

4-A3.10
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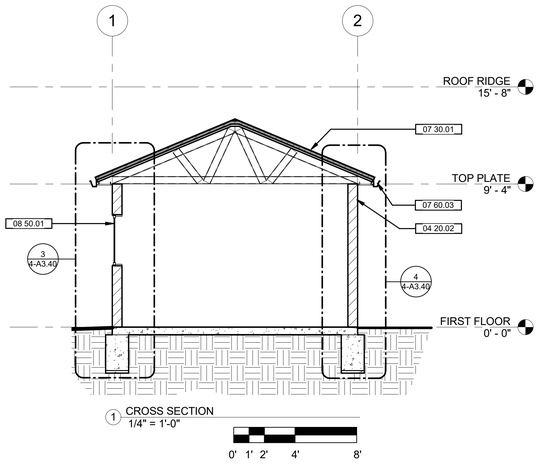
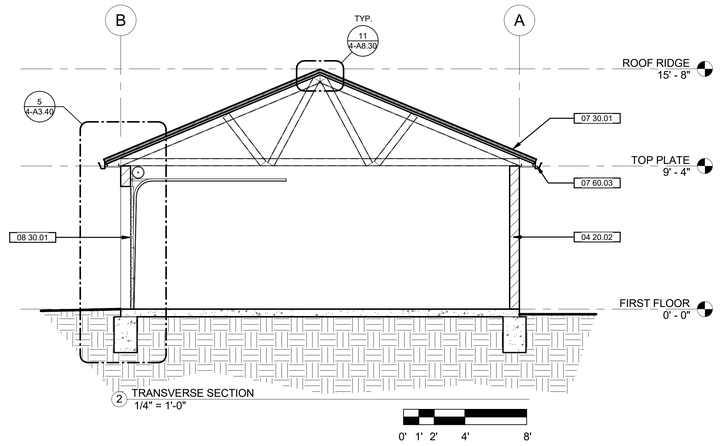


1 CROSS SECTION
1/4" = 1'-0"



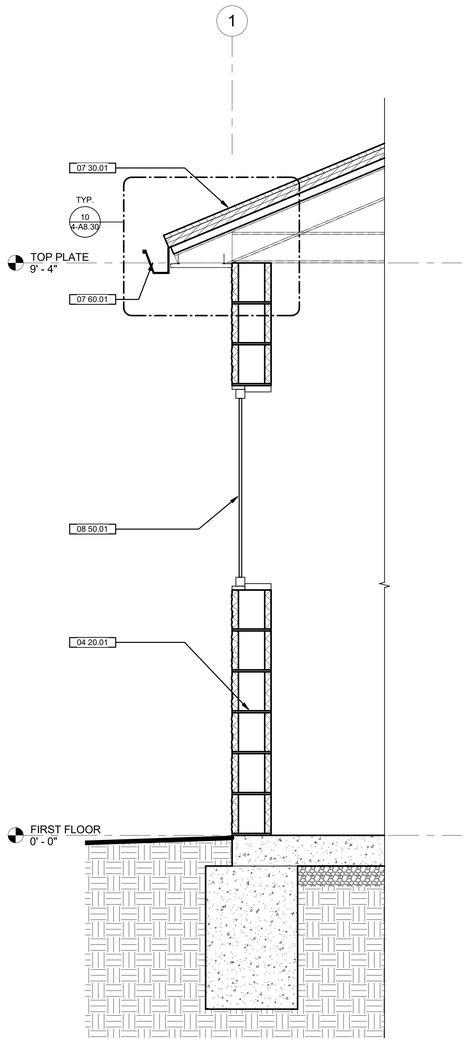
2 TRANSVERSE SECTION
1/4" = 1'-0"

GENERAL SHEET NOTES

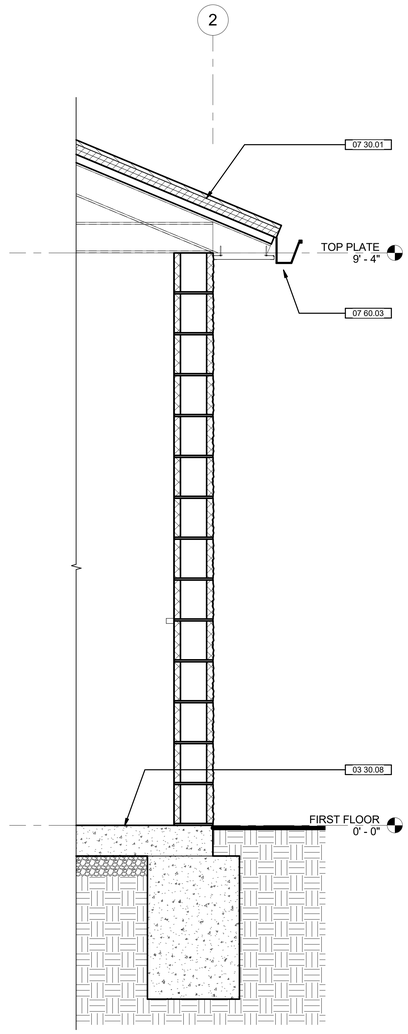
1. WALL SECTIONS TO BE USED FOR LOCATION PURPOSES ONLY. REFER TO SPECIFIC DETAIL CALLOUTS FOR WALL COMPONENT ASSEMBLY AND INSTALLED DIMENSIONS

SHEET KEYNOTE LEGEND

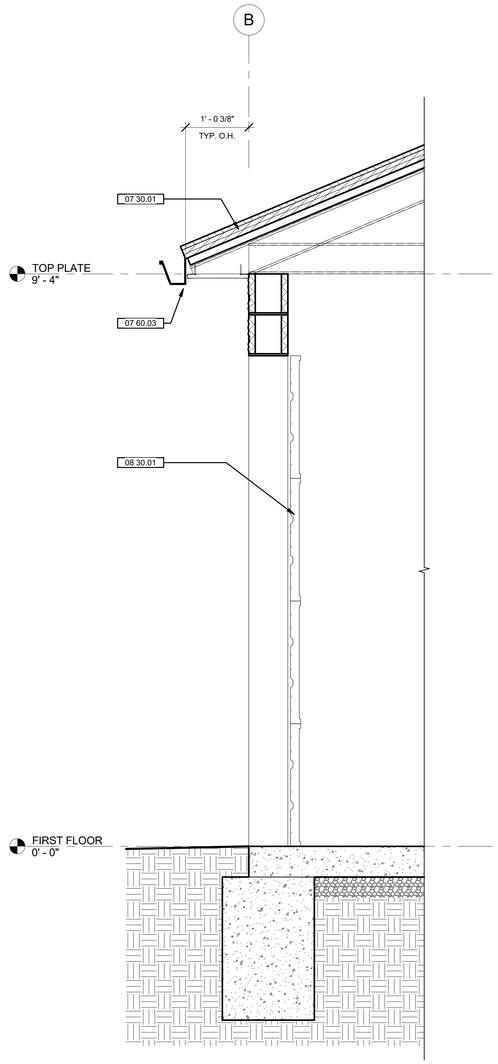
03 30.08	CAST-IN-PLACE (CIP) CONCRETE SLAB WITH PENETRATING SEALER
04 20.01	SMOOTH CMU WALLS, S.S.D.
04 20.02	SPLIT-FACE CMU WALLS, S.S.D.
07 30.01	CONCRETE TILE ROOFING, TYPICAL
07 60.01	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE, SECURED TO STEEL COLUMN
07 60.03	PAINTED ALUMINUM EAVE GUTTER
08 30.01	PAINTED METAL OVERHEAD SECTIONAL DOOR
08 50.01	STEEL FIXED FRAME WINDOW WITH CLEAR GLAZING, TYPICAL



3 WALL SECTION @ WINDOW
1" = 1'-0"



4 WALL SECTION @ HM DOOR
1" = 1'-0"



5 WALL SECTION @ SECTIONAL DOOR
1" = 1'-0"

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No.	Description	Date

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MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 4
BUILDING CROSS SECTIONS, WALL SECTIONS

Drawn By: EW Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

4-A3.40
Drawing No.

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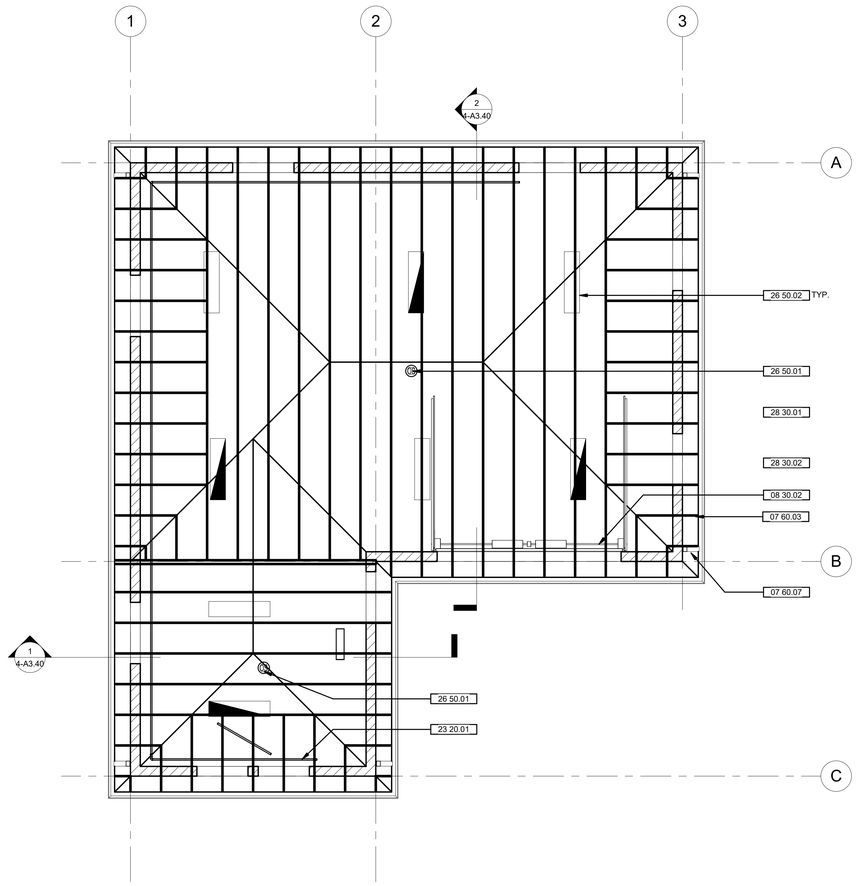
GENERAL SHEET NOTES

1. DEVICES ARE SHOWN FOR LOCATION CRITERIA ONLY, SEE ASSOCIATED CONSULTANT DRAWINGS FOR COUNT AND ADDITIONAL INFORMATION.
2. EXIT SIGNS TO BE CENTERED ON DOOR, U.O.N.
3. PROVIDE LAYOUT OF DEVICES FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALLATION.
4. REPORT ANY DISCREPANCIES BETWEEN CONSULTANT DRAWINGS AND ARCHITECTURAL DRAWINGS TO ARCHITECT UPON DISCOVERY.
5. DETAL REFERENCES LISTED ARE PROVIDED FOR CONVENIENCE. ADDITIONAL DETAILS MAY NEED TO BE REFERENCED, TYPICAL.
6. PROVIDE REQUIRED SEISMIC BRACING.

SHEET KEYNOTE LEGEND

07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
08 30.02	PAINTED METAL OVERHEAD COILING DOOR
23 20.01	3/4" COMPRESSED AIR LINE, S.M.D.
26 50.01	OCCUPANCY SENSOR, S.E.D.
26 50.02	1X4 PENDANT LIGHTING, S.E.D.



1 REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

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MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 9/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 4
REFLECTED CEILING PLAN

Drawn By: EW Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

4-A6.10
Drawing No.

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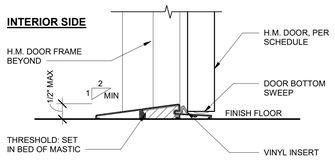
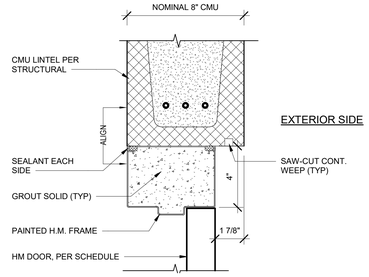
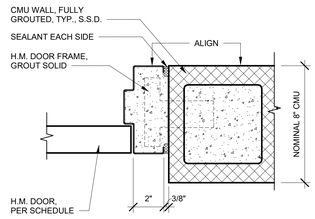


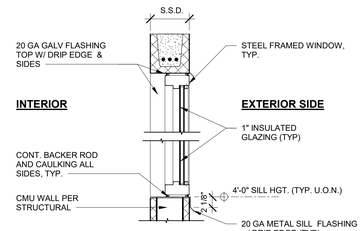
1 DOOR THRESHOLD
3" = 1'-0"



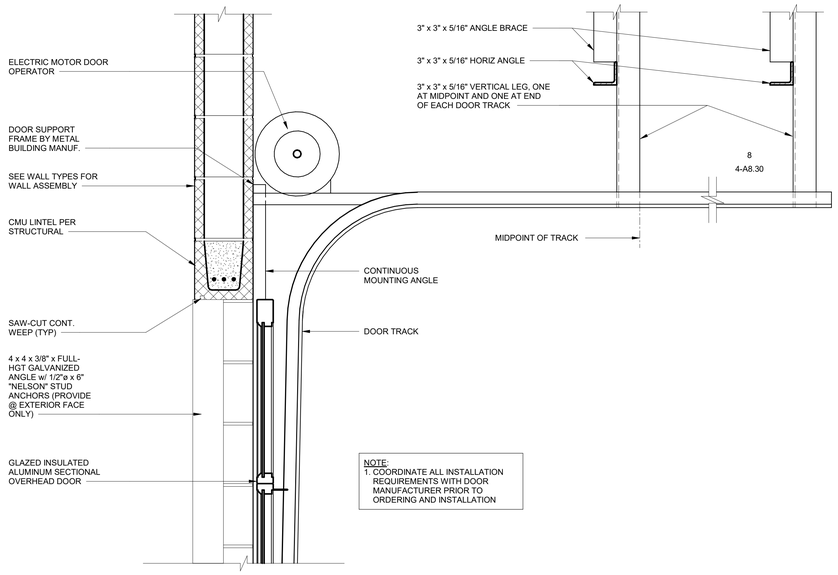
2 H.M. DOOR HEAD AT CMU
3" = 1'-0"



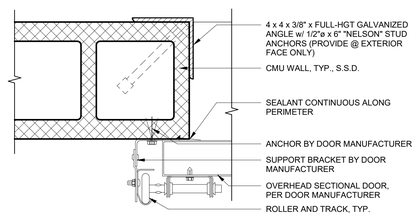
3 H.M. DOOR JAMB AT CMU
3" = 1'-0"



4 WINDOW HEAD AND SILL (JAMB SIM.)
1" = 1'-0"

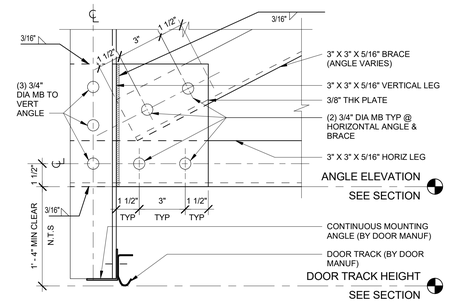


5 SECTIONAL DOOR HEAD
1 1/2" = 1'-0"

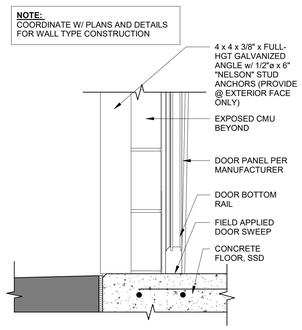


NOTE: DOOR TRACK, FRAME AND HARDWARE BY OVERHEAD SECTIONAL DOOR MANUFACTURER

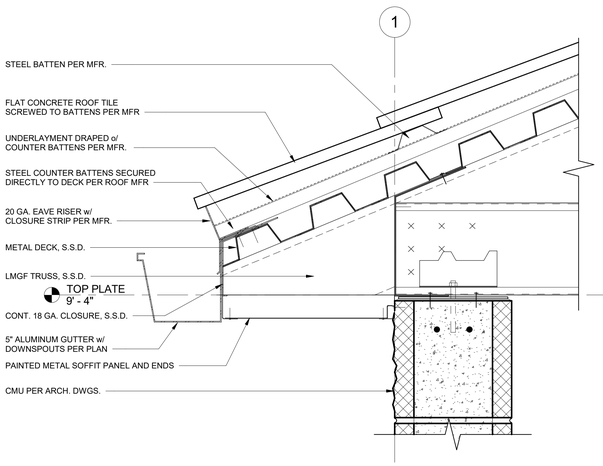
7 OVERHEAD SECTIONAL DOOR JAMB
3" = 1'-0"



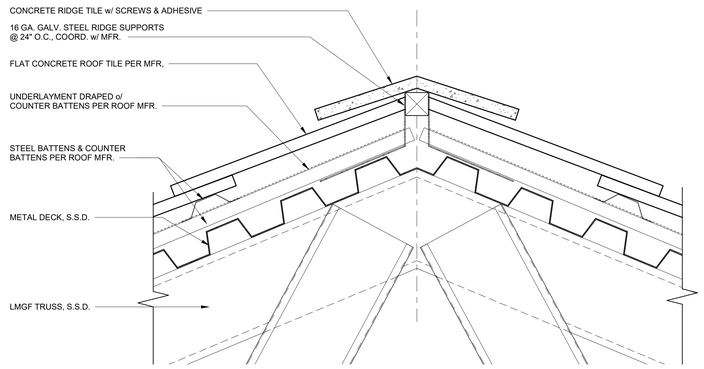
8 OVERHEAD SECTIONAL DOOR TRACK FRAME
3" = 1'-0"



9 SECTIONAL DOOR THRESHOLD
1 1/2" = 1'-0"



10 TYP. EAVE SECTION
3" = 1'-0"



11 TYP. RIDGE SECTION (HIP SIMILAR)
3" = 1'-0"

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MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 4 ARCHITECTURAL DETAILS

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

4-A8.30
Drawing No.

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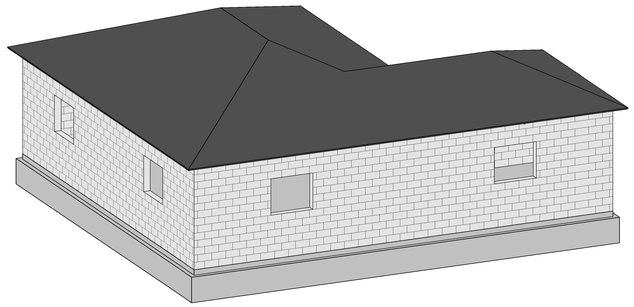
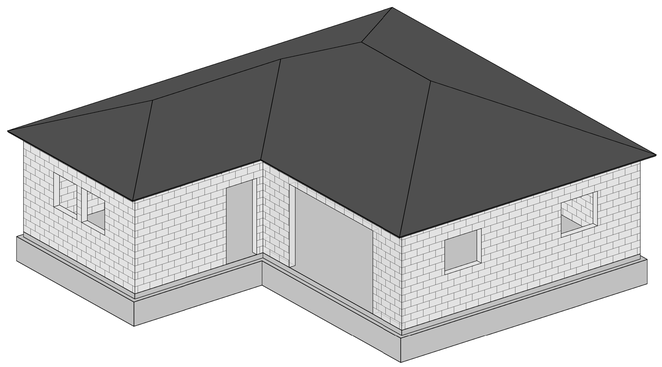
ABBREVIATIONS

AB	ANCHOR BOLT	GB	GRADE BEAM	PTDF	PRESSURE TREATED
ABV	ABOVE	GLB	GLUE LAMINATED BEAM		DOUGLAS FIR
AC	AIR CONDITIONING	GR	GRADE	PT	POINT
ADJ	ADJACENT	HD	HOLD DOWN	R	RADIUS
ADDL	ADDITIONAL	HDG	HOT-DIP GALVANIZED	RBS	REDUCED BEAM SECTION
ALT	ALTERNATE	HDR	HEADER	RFTR	RAFTER
ALUM	ALUMINUM	HGR	HANGER	REF	REFERENCE
ARCH	ARCHITECT	HK	HOOK	REINF	REINFORCING
@	AT	HORIZ	HORIZONTAL	REQD	REQUIRED
BLDG	BUILDING	HS	HIGH STRENGTH	RET	RETAINING
BLK/BLKG	BLOCK/BLOCKING	HSB	HIGH STRENGTH BOLT	REV	REVISION
BLW	BELOW	HSFB	HIGH STRENGTH	RF	ROOF
BM	BEAM		FRICTION BOLT	RWD	REDWOOD
BN	BOUNDARY NAIL	HSG	HIGH STRENGTH GROUT	S	AMERICAN STANDARD BEAM
BOT	BOTTOM	HSH	HORIZONTAL SLOTTED	SAD	SEE ARCHITECTURAL
BRG	BEARING		HOLE		DRAWINGS
BTWN	BETWEEN	HSS	HOLLOW STRUCTURAL	SB	SOLID BLOCK
BW	BUILT WELD		SECTION	SC	SOLID COLUMN
BYND	BEYOND	HT	HEIGHT	SCBF	SPECIAL CONCENTRIC
C	AMERICAN STANDARD	ID	INSIDE DIAMETER		BRACED FRAME
	CHANNEL	IJ	I SHAPED WOOD BUILT	SCD	SEE CIVIL DRAWINGS
CANT	CANTILEVER		UP TRUSS	SCHED	SCHEDULE
CB	CARRIAGE BOLT	INT	INTERIOR	SED	SEE ELECTRICAL DRAWINGS
CIP	CAST IN PLACE	JST	JOIST	SEOR	STRUCTURAL ENGINEER OF
CGL	CERTIFIED GLUED LUMBER	JT	JOINT		RECORD
CJ	CONTROL JOINT	KP	KING POST	SFRS	SEISMIC FORCE RESISTING
ℓ	CENTERLINE		STRUCTURAL ANGLE		SYSTEM
CLIP	CONNECTION JOINT	Lb or #	POUND(S)	SHTG	SHEATHING
	PENETRATION	LGMF	LIGHT GAGE METAL	SIM	SIMILAR
CLG	CEILING		FRAMING	SKYLT	SKYLIGHT
CLR	CLEAR	LGMFC	LIGHT GAGE METAL	SMF	SPECIAL MOMENT FRAME
COL	COLUMN		FRAMING CONTRACTOR	SMS	SHEET METAL SCREW
COLL	COLLECTOR	LL	LIVE LOAD	SMD	SEE MECHANICAL DRAWINGS
CONC	CONCRETE	LLH	LONG LEG HORIZONTAL	SOG	SLAB ON GRADE
CONN	CONNECTION	LLV	LONG LEG VERTICAL	SPCG	SPACING
CONT	CONTINUOUS	LOC	LOCATION	SPD	SEE PLUMBING DRAWINGS
COORD	COORDINATE,	LP	LOW POINT	SPEC	SPECIFICATION
	COORDINATION	LSL	LAMINATED STRAND LUMBER	SQ	SQUARE
CMU	CONCRETE MASONRY UNIT	LVL	LAMINATED VENEER LUMBER	SS	SELECT STRUCTURAL
CSK	COUNTERSINK	MAX	MAXIMUM		or STAINLESS STEEL
CW	CUT WASHER	MB	MACHINE BOLT	STGR	STAGGERED
DBL	DOUBLE	MBM	METAL BUILDING	STD	STANDARD
DCW	DEMAND CRITICAL WELD		MANUFACTURER	STIFF	STIFFENER
DF	DOUGLAS FIR	MC	MISCELLANEOUS CHANNEL	STL	STEEL
DIA or Ø	DIAMETER	MECH	MECHANICAL	STRUCT	STRUCTURAL
DIAG	DIAGONAL	MEZZ	MEZZANINE	SW	SHEAR WALL
DIM	DIMENSION	MF	MOMENT FRAME	SYM	SYMMETRICAL
DJ	DOWEL JOINT	MFR	MANUFACTURER	T&B	TOP AND BOTTOM
DL	DEAD LOAD	MIN	MINIMUM	T&G	TONGUE AND GROOVE
DN	DOWN	MISC	MISCELLANEOUS	THK	THICK
DO	DITTO	MW	MALLEABLE IRON WASHER	THRD	THREADED
DWG	DRAWING	MTL	METAL	THRU	THROUGH
DWL	DOWEL	(N)	NEW	TL	TOTAL LOAD
EA	EACH	NIC	NOT IN CONTRACT	TN	TOE NAIL
EN	EACH END	No or #	NUMBER	TNC	TOE NAIL OF CONCRETE
EF	EACH FACE	NS	NEAR SIDE	TOF	TOP OF FRAMING
ELEC	ELECTRICAL	NSG	NON-SHRINK GROUT	TOM	TOP OF MASONRY
ELEV	ELEVATOR/ELEVATION	NTS	NOT TO SCALE	TOP	TOP OF PLYWOOD
EMBED	EMBEDMENT	O/	OVER	TOS	TOP OF STEEL
EQ	EQUAL	oc	ON CENTER	TOT	TOTAL
EQUIP	EQUIPMENT	OD	OUTSIDE DIAMETER	TU	TILT UP
ES	EACH SIDE	OH	OPPOSITE HAND	TYP	TYPICAL
EW	EACH WAY	OPNG	OPENING	UNO	UNLESS NOTED OTHERWISE
EXIST or (E)	EXISTING	OPP	OPPOSITE	VERT	VERTICAL
EXP	EXPANSION	OW	OTHERWISE	VIF	VERIFY IN FIELD
EXT	EXTERIOR	OWT	OPEN WEB TRUSS	VSH	VERTICAL SLOTTED HOLE
FDN	FOUNDATION	℄	PLATE or PROPERTY LINE	W	WIDE FLANGE STEEL BEAM
FIN	FINISH	PA	POST ABOVE	W/	WITH
FG	FINISH GRADE	PDP	POWDER DRIVEN PINS	WO	WITHOUT
FLI	FERRULE LOOP INSERT	PEN	PANEL EDGE NAIL	WD	WOOD
FLR	FLOOR	PERP	PERPENDICULAR	WHS	WELDED HEADED STUD
FN	FACE NAIL	PES	PANEL EDGE SCREWS	WLD	WELDED
FNC	FACE NAIL CONCRETE	PJP	PARTIAL JOINT PENETRATION	WP	WORK POINT/WATERPROOF
FOM	FACE OF MASONRY	PLF	POUNDS PER LINEAR FOOT	WS	WOOD SCREW
FOS	FACE OF STUD	PNL	PANEL	WT	WEIGHT
FRMG	FRAMING	PSF	POUNDS PER SQUARE FOOT	WTS	WELDED THREADED STUD
FS	FAR SIDE	PSI	POUNDS PER SQUARE INCH	WWR	WELDED WIRE
FTG	FOOTING	PSL	PARALLEL STRAND LUMBER		REINFORCEMENT
GA	GAGE or GAUGE	PTB	PANEL TIE BAR		
GALV	GALVANIZED				



THREE-DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREE-DIMENSIONAL VIEWS.

1 3D REFERENCE VIEW



THREE-DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREE-DIMENSIONAL VIEWS.

2 3D REFERENCE VIEW

F MANUFACTURED ROOF TRUSS NOTES

1. MANUFACTURED ROOF TRUSSES ARE AT 24"oc UNO.
2. REFER TO PLAN FOR ROOF TRUSS TYPE. REFER TO ARCHITECTURAL DRAWINGS FOR SHAPE, OVERHANG, DIMENSIONS, SLOPES, SPAN, DRAINAGE, ETC. LOCATION OF BEARING POINTS ARE AS INDICATED ON THE DRAWINGS.
3. MANUFACTURER SHALL PROVIDE THE FOLLOWING: TRUSS CALCULATIONS AND TRUSS DESIGN DRAWINGS (INCLUDING TRUSS LAYOUT PLAN), BOTH PREPARED AND SIGNED BY A CIVIL OR STRUCTURAL ENGINEER (STATE OF CALIFORNIA). TRUSS CALCULATIONS AND TRUSS DESIGN DRAWINGS SHALL BE PROVIDED FOR EACH TRUSS PROFILE TYPE PER CBC SECTION 2303.4. THE TRUSS LAYOUT PLAN SHALL SHOW ALL TRUSS TYPES, TRUSS PLACEMENT LOCATIONS, PERMANENT AND TEMPORARY BRACING LOCATIONS, ALL TRUSS TO TRUSS CONNECTIONS, ALL LIVE AND DEAD LOAD CONDITIONS, AND TRUSS HANGERS. TRUSS CALCULATIONS SHALL BE BASED UPON LOADS, BEARING POINTS, AND CONDITIONS SPECIFIED HEREIN. TRUSS LAYOUT, TRUSS PROFILES, LOCATIONS OF GIRDER TRUSSES AND BEARING LOCATIONS SHALL BE AS SHOWN ON THE STRUCTURAL PLANS.
4. NO UPLIFT REACTIONS AT SUPPORT POINTS DUE TO APPLICATION OF VERTICAL LIVE OR DEAD LOADS ARE ALLOWED.
5. THE CONTRACTOR SHALL VERIFY TRUSS DIMENSIONS, MECHANICAL LOADS AND LOCATIONS. ETC., AND AFFIX A REVIEW STAMP PRIOR TO SUBMITTAL TO ARCHITECT/ENGINEER.
6. CHANGES MADE IN TRUSS LAYOUT CONFIGURATION REQUIRING ADDITIONAL ENGINEERING REVIEW AND/OR DETAILING WILL BE CONSIDERED A SUBSTITUTION AND EXTRA SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COST OF INVESTIGATING AND REVIEWING THE ADEQUACY AND/OR ACCEPTABILITY OF SUCH SUBSTITUTIONS.
7. THE CONTRACTOR SHALL SUBMIT TRUSS SUBMITTAL PACKAGE TO THE ARCHITECT/ENGINEER FOR REVIEW AND COMMENT. FOLLOWING ARCHITECT/ENGINEER REVIEW, CONTRACTOR SHALL THEN SUBMIT REVIEWED TRUSS SUBMITTAL TO THE BUILDING DEPARTMENT FOR REVIEW. TRUSS FABRICATION SHALL NOT COMMENCE UNTIL APPROVAL IS RECEIVED FROM THE BUILDING DEPARTMENT AND SEOR.
8. TRUSS MANUFACTURER SHALL PROVIDE HANGERS AND CONNECTORS ADEQUATE FOR LOADS FOR ALL TRUSS-TO-TRUSS, TRUSS-TO-BEAM, AND BEAM-TO-TRUSS CONNECTIONS.
9. TRUSS MANUFACTURER TO PROVIDE VERTICAL WEB MEMBERS AT TRUSS SUPPORTS, BRIDGING, AND BLOCKING AS REQUIRED.
10. THE POSITIONS, WEIGHTS, AND METHODS OF ATTACHMENT OF ALL MECHANICAL UNITS, ELECTRICAL FIXTURES, PLUMBING, FIRE SPRINKLERS, ETC. SHALL BE INCLUDED IN THE DESIGN OF THE TRUSSES BY THE TRUSS MANUFACTURER AND SHALL BE VERIFIED BY THE ARCHITECT. SAD FOR ATTIC ACCESS SIZE AND LOCATIONS. ADDITIONAL TRUSSES OR SPECIAL DESIGNED TRUSSES MAY BE REQUIRED. ALL "GABLE END TRUSSES" TO HAVE CLEAR SPACE BETWEEN WEBS FOR WALL VENT. SIZE TO MATCH ARCHITECTURAL DRAWINGS.
11. SUPERIMPOSED LOADS FROM THE JACK TRUSSES OR SECONDARY FRAMING (I.E. CALIFORNIA FRAMING, FURRED CEILINGS, ETC.) SHALL BE INCLUDED IN THE DESIGN OF SUPPORTING TRUSSES.
12. BRACING SHALL BE PROVIDED TO BRACE THE TOP CHORD OF TRUSSES WHERE "PIGGY BACK" TRUSSES ARE USED.
13. BOTTOM CHORD TRUSS MEMBERS HAVING A GYPSUM BOARD CEILING ATTACHED SHALL PROVIDE A LEVEL SURFACE WITH A MAXIMUM VARIATION OF ¼" IN 10'-0" IN ANY DIRECTION.
14. TRUSS MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED, OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN CONCURRENCE AND APPROVAL OF AN ENGINEER.
15. MANUFACTURED ROOF TRUSS DESIGN LOADS:
    - A. TOP CHORD — DEAD LOAD = 19 PSF — LIVE LOAD = 20 PSF
    - B. BOTTOM CHORD — DEAD LOAD = 8 PSF — LIVE LOAD = 10 PSF (BOTTOM CHORD LIVE LOAD DOES NOT ACT SIMULTANEOUSLY WITH OTHER IMPOSED LIVE LOADS)
    - C. SPECIAL LOADS AND CONCENTRATED LOADS ARE AS NOTED ON THE DRAWINGS.
    - D. ATTICS WITH 2 OR MORE ADJACENT TRUSSES WITH THE SAME WEB CONFIGURATION CAPABLE OF CONTAINING A RECTANGLE 42 INCHES HIGH BY 24 INCHES WIDE OR GREATER SHALL HAVE A BOTTOM CHORD LIVE LOAD OF 20 PSF AT THESE LOCATIONS.

G MATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY ULTIMATE COMPRESSIVE STRENGTH:
- F'_c = 5,000 PSI FOUNDATIONS
- F'_c = 3,000 PSI INTERIOR SLAB ON GRADE (4,000 PSI AT 56 DAYS)

REINFORCING STEEL YIELD STRENGTH:
ALL SPECIAL CONCRETE SHEARWALL REINFORCING SHALL BE A706 GR. 60.
- F_y = 40,000 PSI AT #3 AND SMALLER
- F_y = 60,000 PSI AT #4 AND LARGER

STEEL YIELD STRENGTH (UNO):
- F_y = 36,000 PSI ANGLES, CHANNELS, AND PLATES

FASTENERS:
MACHINE BOLTS SHALL BE ASTM A307
HIGH STRENGTH BOLTS SHALL BE ASTM F3125 GRADE A325 OR F1852 UNO
ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNO
ARC-WELDING ELECTRODES SHALL BE E70

COLD FORMED METAL FRAMING YIELD STRENGTH:
- F_y = 33,000 PSI 33 & 43 MILS (20 & 18 GAUGE)
- F_y = 50,000 PSI 54, 68, & 97 MILS (16, 14, & 12 GAUGE)

MASONRY COMPRESSIVE STRENGTH:
- F'_m = 2,000 PSI

FOR METAL CONNECTOR DESIGNATION REFER TO SIMPSON STRONG-TIE PER SPECIFICATIONS.

C FOUNDATION NOTES

1. FOUNDATION DESIGN PRESSURES ARE:

   SHALLOW FOOTINGS:
   DEAD LOAD + LIVE LOAD = 3,000 PSF
   DEAD LOAD + LIVE LOAD + LATERAL = 4,000 PSF
2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW, AND CHAPTER 18 OF THE CBC. ALL FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED, NATIVE SOILS OR ENGINEERED FILL AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. ENGINEERED FILL TO BE COMPACTED PER GEOTECHNICAL REPORT. INCREASE FILL AND OR FOOTING DEPTH AS REQUIRED BY GEOTECHNICAL ENGINEER. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. MAXIMUM OVER EXCAVATION IN WIDTH SHALL BE LESS THAN 12 INCHES OR 25% OF FOOTING WIDTH, WHICH EVER IS LESS. 6 INCHES MAXIMUM PER SIDE. LARGER OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH ADDITIONAL REINFORCED CONCRETE AS DIRECTED BY THE ENGINEER, OR FORMWORK SHALL BE PROVIDED. OVER-EXCAVATIONS IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE. GEOTECHNICAL REPORT BY:

   ROCKRIDGE GEOTECHNICAL
   REPORT NO. 15-9198
   DATED: July 14, 2017
3. TYPICAL SLAB: 5" CONCRETE REINFORCED WITH #3 @ 12"oc EACH WAY 1½" FROM TOP OF SLAB OVER VAPOR RETARDER AND 6" MINIMUM FREE DRAINING COMPACTED ROUNDED ROCK ON SUBGRADE PER GEOTECHNICAL RECOMMENDATIONS AS APPROVED BY THE GEOTECHNICAL ENGINEER. DO NOT DRIVE CONCRETE TRUCKS OR LARGE SCREED MACHINES ON VAPOR BARRIER WITHOUT ADDITIONAL BUFFER MATERIAL AND APPROVAL FROM THE STRUCTURAL ENGINEER.
4. TYPICAL SLAB AT APRONS: 8" CONCRETE REINFORCED WITH #4 @ 12"oc EACH WAY AT 2½" CLEAR FROM TOP OVER 12" MINIMUM CALTRANS CLASS 2 AGGREGATE BASE COMPACTED ON SUBGRADE PER GEOTECHNICAL REPORT.
5. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DEPRESSED SLABS FOR LOADS FOR ALL FLOORING OR INSERTS, SLOPED SLABS TO DRAIN AND PIPES OR CONDUITS AT SLAB. SEE **8/4-S1.10** AT DEPRESSED SLAB & **7/4-S1.10** FOR PIPES AND CONDUITS.
6. PROVIDE CONTROL JOINTS PER **6/4-S1.10** (OR CONSTRUCTION/DOWEL JOINTS AT CONTRACTOR'S OPTION) AS SHOWN ON PLAN AND AS REQUIRED TO MEET A MAXIMUM SPACING IN FEET OF 3 TIMES THE SLAB DEPTH IN INCHES (FOR EXAMPLE 3x4" = 12'-0" MAX). INSTALL JOINTS TO DIVIDE SLAB INTO RECTANGULAR AREAS WITH LONG DIMENSION LESS THAN 1.5 x SHORT DIMENSION. INSTALL JOINTS AT FACE OF STUDS OF WALL WHERE POSSIBLE. SUBMIT JOINT LAYOUT PLAN FOR REVIEW PRIOR TO PLACEMENT.
7. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, ETC.

D SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH CBC CHAPTER 17 AND THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY CBC SECTIONS 1704.2.3 AND 1704.3 FOR BUILDING STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. **SHOP FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES** PER CBC SECTION 1704.2.5 OR ALTERNATIVELY, APPROVED FABRICATORS SHALL SUBMIT A CERTIFICATE OF COMPLIANCE PER CBC SECTION 1704.2.5.1 INCLUDING GLULAM BEAM INSPECTION CERTIFICATES.
2. **STRUCTURAL STEEL CONSTRUCTION** PER CBC SECTIONS 1705.2, 1705.12.1, 1705.13.1, AND TABLE 1705.2.3 INCLUDING MATERIAL IDENTIFICATION, SHOP AND FIELD WELDING, AND INSTALLATION OF HIGH-STRENGTH BOLTS.
3. **CONCRETE CONSTRUCTION** PER CBC SECTIONS 1705.3, AND TABLE 1705.3 INCLUDING FORMWORK, REINFORCING STEEL, CAST-IN-PLACE BOLTS, MIX DESIGNS, CONCRETE SAMPLES, AND PLACEMENT FOR ALL CONCRETE. REINFORCING DOWELS FROM FOOTINGS TO RETAINING WALLS SHALL BE INSPECTED PRIOR TO PLACEMENT OF FOOTING CONCRETE AND WALL GROUT OR CONCRETE. CONTINUOUS OR ISOLATED SPREAD FOOTINGS WITH DESIGN STRENGTH NO GREATER THAN 2500 PSI, NON-STRUCTURAL SLABS ON GRADE, AND EXTERIOR FLATWORK DO NOT REQUIRE SPECIAL INSPECTION PER CBC SECTION 1705.3.
4. **MASONRY CONSTRUCTION** PER CBC SECTION 1705.4 INCLUDING COMPRESSIVE STRENGTH, BLOCK LAYING PROCEDURES, MORTAR PREPARATION, REINFORCEMENT SIZE AND GRADE, REINFORCEMENT PLACEMENT, GROUT PREPARATION AND GROUT PLACEMENT, AND ANCHOR BOLT TYPE, SIZE AND PLACEMENT.
5. **SOILS** PER CBC SECTION 1705.6, TABLE 1705.6, AND THE APPROVED SOILS REPORT INCLUDING SUBGRADE PREPARATION, FOUNDATION BEARING MATERIALS AND DEPTH OF EXCAVATIONS, AND VERIFICATION, PLACEMENT AND TESTING OF CONTROLLED FILL.
6. **SPECIAL CASES** PER CBC SECTION 1705.1.1 AND PRODUCT ICC REPORTS FOR ALL STRUCTURAL MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE CBC OR REFERENCED STANDARDS INCLUDING POST-INSTALLED ANCHOR BOLTS IN CONCRETE AND CMU, AND PRE-MANUFACTURED SHEAR PANELS AND BRACED FRAMES.

E CONCRETE MASONRY UNIT NOTES

1. CONCRETE MASONRY UNIT CONSTRUCTION SHALL BE PER **4-S1.40** UNO. USE DOUBLE OPEN END WHERE POSSIBLE AND SINGLE OPEN END OTHERWISE. ALL CELLS TO BE GROUTED SOLID. ALL CMU TO BE LAID IN RUNNING BOND.
2. PROVIDE INVERTED BOND BEAM UNITS AT FOUNDATION LEVEL. SEE SPECIFICATIONS FOR CLEANOUT AND GROUTING REQUIREMENTS.
3. DOWELS FROM FOUNDATION ARE TO MATCH SIZE AND ALIGNMENT WITH THE WALL VERTICAL REINFORCEMENT. EXTEND DOWELS FROM FOUNDATION INTO WALL TO PROVIDE MINIMUM LAP WITH WALL VERTICAL REINFORCEMENT. INSTALL DOWEL BARS PER PLAN AND **2/4-S1.40** . ALL DOWELS TO EXTEND TO THE LOWEST FOUNDATION REINFORCEMENT AND END WITH A STANDARD HOOK.
4. WALL REINFORCING SHALL BE PER SCHEDULE, SEE **1/4-S1.40** .
5. PROVIDE (2) #5 IN BOND BEAM UNITS AT THE TOPS OF ALL WALLS AND AT EACH FLOOR AND ROOF ELEVATION, UNO.
6. PROVIDE SASH UNITS AT ALL OPENINGS TYPICAL UNO.
7. SET ALL LEDGER AND CONNECTOR BOLTS PER **12/4-S1.40** . 1" GROUT AROUND BOLT REQUIRED.
8. SAD FOR TYPE OF FINISH, LOCATION, COLOR, ETC. SEE SPECIFICATIONS OTHERWISE.
9. VERTICAL CONTROL JOINTS SHALL BE SPACED NO GREATER THAN 1.5x THE WALL HEIGHT BUT NOT GREATER THAN 25'-0"oc. SEE **15/4-S1.40** .

A DESIGN CRITERIA

DESIGN CRITERIA: 2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
FLOOR LIVE LOAD: LIGHT STORAGE 125 PSF (NON-REDUCIBLE)
ROOF LIVE LOAD: 20 PSF (REDUCIBLE)
FUTURE SOLAR: 4 PSF
RISK CATEGORY: II
WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110
WIND EXPOSURE: C
INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18
COMPONENTS AND CLADDING DESIGN PRESSURES FOR SYSTEMS DESIGNED BY OWNERS SHALL COMPLY WITH THE "ASCE 7" DESIGN STANDARD

EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_E: 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_S = 1.923; S_1 = 0.777
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 1.282; S_{D1} = 0.777
SEISMIC DESIGN CATEGORY: E
SEISMIC FORCE RESISTING SYSTEM(S): SPECIAL REINFORCED CONCRETE MASONRY WALLS
RESPONSE MODIFICATION FACTOR(S): R = 5
DESIGN BASE SHEAR: 17 KIPS (LRFD)
SEISMIC RESPONSE COEFFICIENT(S), C_S = 0.256 (LRFD)
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

MAXIMUM ANTICIPATED STORY DRIFT = 0.025 X HEIGHT
PROVIDE DEFORMATION COMPATIBILITY PER ASCE 7 SECTION 12.12.5 FOR NON-STRUCTURAL ITEMS, INCLUDING CLADDING, STAIRS, GLAZING, ETC.

NARRATIVE: BUILDING #4: STORAGE

GENERAL DESCRIPTION: STAND ALONE RESIDENTIAL STYLE SINGLE STORY BUILDING, STRUCTURE DESIGNED FOR STORAGE OF CLASS A BURN MATERIALS AND MISC ITEMS FOR THE TRAINING FACILITY. THE BUILDING IS NOT INTENDED TO BE DESIGNED AS ESSENTIAL SERVICE FACILITY AND WILL NOT BE USED FOR THAT PURPOSE.
- CMU BLOCK WALLS FOR GRAVITY AND LATERAL SUPPORT
- APPROX. 1,160 SF
- LIGHT FRAME STEEL ROOF TRUSS FRAMING SUPPORTING TILE ROOFING

B GENERAL NOTES

1. REFER TO SHEETS **4-S1.10** THROUGH **4-S1.50** FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.
2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.
6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
7. VERIFY WEIGHTS AND LOCATIONS OF MECHANICAL UNITS WITH MECHANICAL ENGINEER PRIOR TO PLACEMENT. UNITS VARYING OVER 10% IN WEIGHT SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION (MECHANICAL WEIGHTS SHOWN ARE MAXIMUM). CONTRACTOR TO VERIFY MECHANICAL UNIT SIZES AND WEIGHTS AS INSTALLED PRIOR TO INSTALLATION OF SPECIAL FRAMING TO ENSURE CORRECT PLACEMENT UNDER CURBS, ETC.
8. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL ENGAGE A LICENSED CIVIL OR STRUCTURAL ENGINEER TO PROVIDE SHORING.
9. SPECIAL INSPECTIONS ARE REQUIRED PER **D/4-S0.10** AND THE TESTING AND INSPECTION FORM.
10. STRUCTURAL OBSERVATION PER CBC SECTION 1704.6 IS NOT REQUIRED.NOTIFY ZFA FOR GENERAL REVIEW OF:
    - MINIMUM FOOTING SIZE AND REINFORCING STEEL.

    NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE.
11. SUBMIT ENGINEERING FOR DEFERRED APPROVAL ITEMS TO ARCHITECT/ENGINEER FOR REVIEW AND SUBMITTAL TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO FABRICATION. DEFERRED APPROVAL ITEMS SHALL BE DESIGNED AND DETAILED BY MANUFACTURER TO ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS AS NOTED IN STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL REVIEW AND APPROVE DIMENSIONS AND DETAILS SHOWN ON THE SHOP DRAWINGS PRIOR TO SUBMITTAL. MANUFACTURER TO PROVIDE DRAWINGS AND CALCULATIONS DESIGNED IN ACCORDANCE WITH THE CBC AND SPECIFICATIONS, PREPARED AND SIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER FOR THE FOLLOWING ITEMS, UNLESS NOTED OTHERWISE:
    - A. MANUFACTURED FLOOR/ROOF JOISTS OR TRUSSES.
    - B. ROLL-UP DOOR: INCLUDE ATTACHMENTS TO STRUCTURE.

STRUCTURAL SHEET INDEX

4-S0.10	BUILDING 4	GENERAL NOTES
4-S1.10	BUILDING 4	TYPICAL CONCRETE DETAILS
4-S1.40	BUILDING 4	TYPICAL CMU DETAILS
4-S1.50	BUILDING 4	TYPICAL METAL DECKING DETAILS
4-S2.10	BUILDING 4	FOUNDATION & ROOF PLANS
4-S3.10	BUILDING 4	ELEVATIONS & SECTIONS
4-S4.10	BUILDING 4	DETAILS AND SECTIONS

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 WEST WINTON AVE. HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

ZFA STRUCTURAL ENGINEERS
1390 el camino real | suite 100 zfa.com
san carlos ca 94070 650.394.8869
zfa job no.17143

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 4 GENERAL NOTES

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

4-S0.10
Drawing No.

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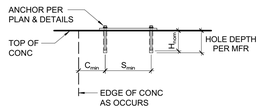
SCREW ANCHOR IN 2500 PSI MIN CONCRETE

ANCHOR TYPE	ANCHOR AND PILOT HOLE DIA	MINIMUM EMBEDMENT H_{nom}	MINIMUM EDGE DIST C_{min}	MINIMUM SPCG S_{min}	MINIMUM CONCRETE DEPTH H_{min}	INSTALL TORQUE (FT-LB)	MAX INSTALL TORQUE (FT-LB)
SIMPSON TITEN HD (ICC-ESR 2713)	⅜"	2½"	1¾"	3"	4"	10	50
	½"	3¼"	1¾"	3"	5"	10	65
	⅝"	4"	1¾"	3"	6"	10	100
	¾"	5½"	1¾"	3"	8½"	20	150
HILTI KH-EZ (ICC-ESR 3027)	⅜"	2½"	1½"	3"	4"	10	40
	½"	3"	1¾"	3"	4½"	10	45
	⅝"	3¼"	1¾"	4"	5"	10	85
	¾"	4"	1¾"	4"	6"	20	115



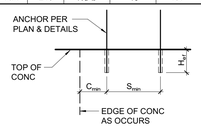
NOTES:

1. INSTALL SCREW ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 OF THE CBC AND THE REQUIREMENTS OF THE ICC REPORTS. INSTALLED ANCHORS SHALL BRING CONNECTED PLIES INTO FIRM CONTACT, MEETING THE INSTALL TORQUE BUT NOT EXCEEDING THE MAXIMUM INSTALL TORQUE.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.
5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 .

13 SCREW ANCHOR IN CONCRETE
3/4" = 1'-0"

ADHESIVE ANCHOR IN 2500 PSI MIN CONCRETE

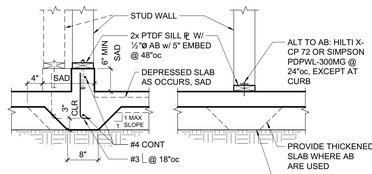
ADHESIVE TYPE	ANCHOR THRD ROD	ANCHOR REBAR	PILOT HOLE	MIN EMBED UNO H_{nd}	MIN EDGE DISTANCE C_{min}	MIN SPCG S_{min}	MIN CONC DEPTH H_{min}
SIMPSON SET-XP (ICC-ESR 2508)	⅜"ø	#3	½"ø	3"	1¾"	3"	5"
	½"ø	#4	⅝"ø	4"	1¾"	3"	6½"
	⅝"ø	#5	¾"ø	5"	1¾"	3"	8¼"
	¾"ø	#6	⅞"ø	6"	1¾"	3"	9¼"
	⅞"ø	#7	1"ø	7"	1¾"	3"	11½"
	1"ø	#8	1⅛"ø	8"	1¾"	3"	13"
	1¼"ø	#10	1⅜"ø	10"	2½"	6"	16½"
HILTI HIT-HY 200R (ICC-ESR 3187)	⅜"ø	N/A	½"ø	3"	1¾"	1¼"	4¼"
	N/A	#3	½"ø	3"	1¾"	1¼"	4¼"
	½"ø	N/A	⅝"ø	4"	1¾"	2½"	5¼"
	N/A	#4	⅝"ø	4"	1¾"	2½"	5¼"
	⅝"ø	#5	¾"ø	5"	1¾"	3¼"	6½"
	¾"ø	#6	⅞"ø	6"	1¾"	3¾"	7¾"
	⅞"ø	#7	1"ø	7"	1¾"	4⅜"	9"
	1"ø	#8	1⅛"ø	8"	1¾"	5"	10¼"
	N/A	#9	1⅜"ø	9"	1¾"	5⅝"	11⅜"
	1¼"ø	N/A	1⅜"ø	10"	1¾"	6¼"	12⅜"
	N/A	#10	1½"ø	10"	1¾"	6¼"	13"

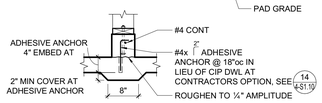


NOTES:

1. INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING, AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORTS. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND ADHESIVE INJECTION. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 . SEE DRAWINGS FOR SPECIFIC TENSION TEST LOADS FOR ANCHORS.

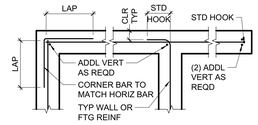
14 ADHESIVE ANCHOR IN CONCRETE
3/4" = 1'-0"



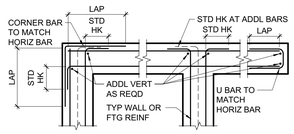


ALT CURB OPTION

9 NON-BEARING STUD WALL AT SLAB
3/4" = 1'-0"



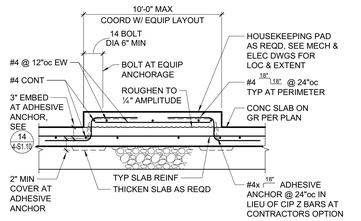
PLAN VIEW - SINGLE LAYER



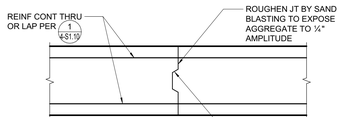
PLAN VIEW - 2 OR MORE LAYERS

NOTE:
FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

10 TYPICAL CORNER, INTERSECTION AND END REINFORCING
3/4" = 1'-0"

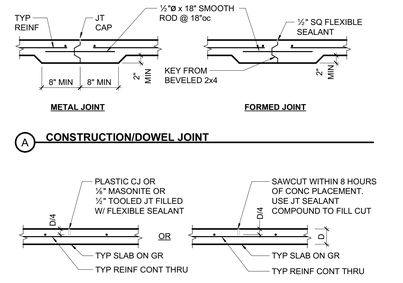


11 TYPICAL HOUSEKEEPING PAD AT SLAB ON GRADE
3/4" = 1'-0"

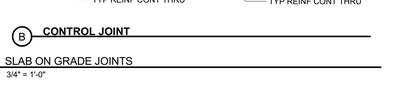


NOTE:
LOCATION OF JOINTS TO BE SUBMITTED TO ARCHITECT/ ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE

12 FOOTING CONSTRUCTION JOINT
3/4" = 1'-0"



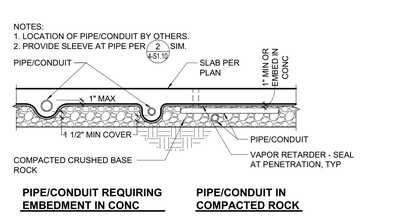
A CONSTRUCTION/DOWEL JOINT



B CONTROL JOINT

5 TYPICAL SLAB ON GRADE
1" = 1'-0"

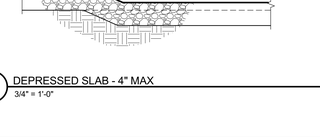
6 SLAB ON GRADE JOINTS
3/4" = 1'-0"



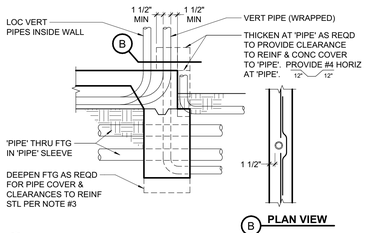
PIPE/CONDUIT REQUIRING EMBEDMENT IN CONC

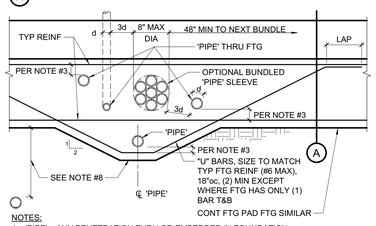
PIPE/CONDUIT IN COMPACTED ROCK

7 CONDUIT & PIPE AT SLAB ON GRADE
3/4" = 1'-0"



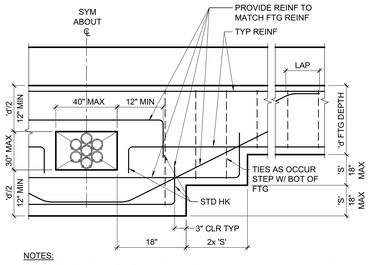
8 DEPRESSED SLAB - 4" MAX
3/4" = 1'-0"





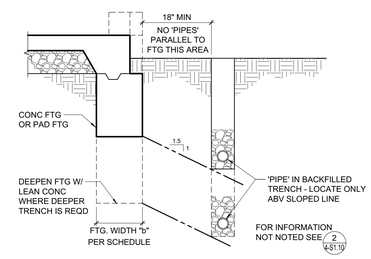
NOTES:
1. 'PIPE' = ANY PENETRATION THRU OR EMBEDDED IN FOUNDATION.
2. ALL PIPES THROUGH FOOTINGS TO BE WRAPPED OR SLEEVED AS FOLLOWS:
   a. SLEEVES: PROVIDE 1" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE, UNO. SEAL SLEEVE ENDS W/ MASTIC OR PLASTIC BITUMINOUS CEMENT.
   b. WRAPPED VERTICAL PIPES: PROVIDE ⅛" NOMINAL SHEET FOAM W/ (3) WRAPS MINIMUM, UNO.
   c. WRAPPED HORIZONTAL PIPES: PROVIDE ⅛" NOMINAL SHEET FOAM W/ (8) WRAPS MINIMUM, UNO.
   d. UNDERGROUND FIRE LINES 4" AND LARGER;
      1. SLEEVES: PROVIDE 2" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE. SEAL ENDS PER ABOVE.
      2. WRAPPED: PROVIDE ½" NOMINAL SHEET FOAM W/ (16) WRAPS MINIMUM.
3. WRAPPED AND SLEEVED PIPES SHALL HAVE 1½" MIN CLEAR TO REINF STEEL. MINIMUM CONCRETE COVER AT PIPES TO BE 3".
4. CLEARANCE BETWEEN 'PIPES' TO BE 3d MIN TYP W/ A MAXIMUM OF (8) PIPES PER 48". GROUPS OF PIPES MAY BE BUNDLED AS SHOWN, EXCEPT IN PAD FOOTINGS.
5. NO 'PIPE' TO RUN PARALLEL IN FOOTINGS, STEM OR CURB.
6. PVC CONDUIT ('PIPE') EMBEDDED IN CURB/STEM MAY BE WIRE TIED TO HORIZONTAL REINF.
7. NO HORIZONTAL PIPES ALLOWED THROUGH FOOTING WITHIN 2'-0" EACH SIDE OF HOLDOWNS OR STEEL COLUMNS. NO VERTICAL PIPES ALLOWED IN FOOTINGS AT BRACED FRAMES.
8. PROVIDE 18" MIN OF COMPACTED FILL ABOVE PIPES UP TO 12"ø, FOR LARGER PIPES INCREASE COMPACTED FILL DEPTH 1'-0" OF FOR EACH 6" INCREASE IN PIPE DIAMETER. OTHERWISE DEEPEN FOOTING AS SHOWN.

2 PIPES THRU FOOTING
3/4" = 1'-0"



NOTES:
1. DO NOT LOCATE BLOCKOUT WITHIN 48" OF SHEAR WALL HOLD DOWN, IN FRAME FOUNDATIONS OR COLUMN PAD FOOTINGS.
2. MINIMUM DISTANCE BETWEEN BLOCKOUTS OR OTHER PIPES TO BE 48".

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



4 TRENCHING ADJACENT TO FOOTING
3/4" = 1'-0"

	LOCATION	DEVELOPMENT LENGTHS (ld) GR60 SIZE #3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	TOP	12"	22"	32"	43"	69"	86"	103"	122"	141"
	OTHER	12"	17"	25"	33"	53"	66"	80"	94"	109"
CONCRETE f'c = 4000 PSI AT 28 DAYS	TOP	12"	19"	28"	37"	60"	74"	90"	106"	122"
	OTHER	12"	15"	21"	29"	46"	57"	69"	81"	94"
CONCRETE f'c = 5000 PSI AT 28 DAYS	TOP	12"	17"	25"	34"	54"	67"	80"	95"	109"
	OTHER	12"	13"	19"	26"	42"	51"	62"	73"	84"

	LOCATION	HOOKED DEVELOPMENT LENGTHS (Ldh) SIZE #3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	ANY	9"	11"	14"	17"	20"	22"	25"	28"	-
CONCRETE f'c = 4000 PSI AT 28 DAYS	ANY	8"	10"	12"	15"	17"	19"	22"	24"	-
CONCRETE f'c = 5000 PSI AT 28 DAYS	ANY	7"	9"	11"	13"	15"	17"	20"	22"	-

	LOCATION	LAP SPLICE LENGTHS (Ls) GR60 SIZE #3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	TOP	17"	28"	41"	56"	90"	112"	134"	158"	183"
	OTHER	13"	22"	32"	43"	69"	86"	103"	122"	141"
CONCRETE f'c = 4000 PSI AT 28 DAYS	TOP	15"	25"	36"	49"	78"	97"	116"	137"	159"
	OTHER	12"	19"	28"	37"	60"	74"	90"	106"	122"
CONCRETE f'c = 5000 PSI AT 28 DAYS	TOP	13"	22"	32"	44"	70"	87"	104"	123"	142"
	OTHER	12"	17"	25"	34"	54"	67"	80"	95"	109"

NOTES:
1. TOP REINFORCING IS HORIZONTAL REINFORCEMENT WITH MORE THAN TWELVE INCHES (12") OF CONCRETE PLACED BELOW IT.
2. IF THE LAP SPLICE REINFORCEMENT DOES NOT HAVE A MINIMUM SPACING 3db + 1/8 INCHES & A MINIMUM COVER OF db + 1/8 INCHES, USE WELDED SPLICE OR MECHANICAL CONNECTOR.

3. HOOKED DEVELOPMENT LENGTHS (Ldh) MAY BE USED IN LIEU OF DEVELOPMENT LENGTH (Ld) IF STANDARD HOOK IS PROVIDED AT END OF BAR.
4. MECHANICAL CONNECTORS SHALL BE TENSION-COMPRESSION TYPE WITH THE ABILITY TO DEVELOP 125% OF THE YIELD STRENGTH FOR THE SPLICED REINFORCEMENT (75 KSI). MECHANICAL CONNECTORS SHALL HAVE & BE INSTALLED PER AN ICC EVALUATION REPORT.
5. WWR SHALL LAP MINIMUM (3) BAR CROSSINGS.

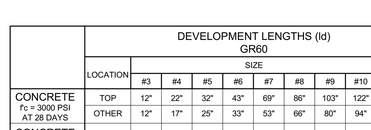
CONCRETE COVER FOR REINFORCING STEEL 'CLR'

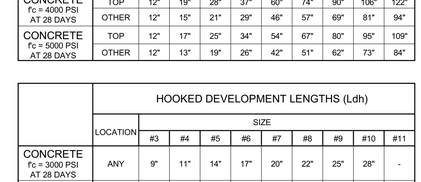
CAST AGAINST EARTH OR GRADE . . . . . 3"

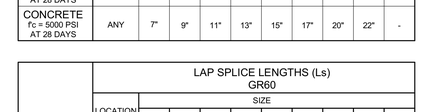
EXPOSED TO EARTH (FORMED) OR WEATHER;
- #5 AND SMALLER . . . . . 1½"
- #6 AND LARGER . . . . . 2"

NOT EXPOSED TO EARTH OR WEATHER;
- #5 AND SMALLER . . . . . 1"
- #6 AND LARGER, AND ALL BEAM STIRRUPS, COLUMN TIES AND SPIRALS . . . . . 1½"

ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN A STANDARD 90° OR 180° HOOK UNLESS DETAILED OTHERWISE.







PRINCIPAL REINF

REINF	Dmin
#3 TO #8	6 db
#9 TO #11	8 db
#14 TO #18	10 db

CROSSTIES, HOOPS & STIRRUPS

REINF	Dmin
#3	1 1/2"
#4	2"
#5	2 1/2"

NOTE:
1. ALL BENDS SHALL BE MADE COLD.

1 REINFORCING LAPS AND SPLICES AND BENDS
1" = 1'-0"

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVED REC'D:
APPROVED BY: KATHY GARCIA (DEP. DIR. PUBLIC WORKS)	ALEX AMERI (INTERIM DIR. PUBLIC WORKS)
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 WEST WINTON AVE. HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

ZFA STRUCTURAL ENGINEERS
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san carlos ca 94070 650.394.8869
zfa job no.17143

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO No. 4961 STRUCTURAL STATE OF CALIFORNIA

Sheet Title

BUILDING 4 TYPICAL CONCRETE DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

4-S1.10
Drawing No.

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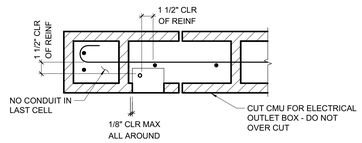
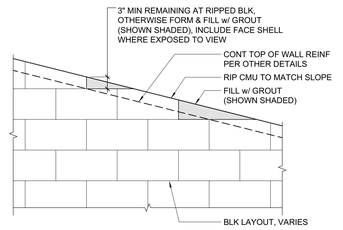
NOTES:

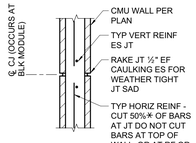
1. DO NOT TIE CONDUIT TO REINFORCING.
2. PLACE CONDUIT IN CELLS W/O REINF WHERE POSSIBLE.



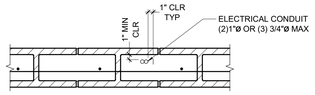
13 CONDUIT BOX IN CMU
1 1/2" = 1'-0"



14 SLOPED TOP OF MASONRY WALL
3/4" = 1'-0"



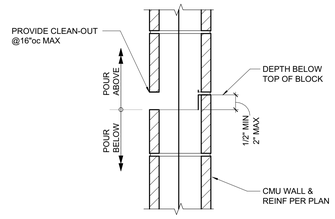
PLAN VIEW



w/o VERT REINFORCING

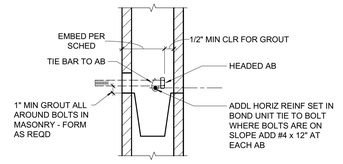
NOTES:
1. DETAILS SHOWN ARE FOR WALLS ONLY.
2. CONDUITS SHALL NOT BE LOCATED IN WALL PIERS OR UNDER BEAMS. WALL PIERS SHALL BE DEFINED AS ANY WALL SEGMENT 32" OR LESS IN LENGTH.
3. CONDUIT LOCATIONS SHALL BE SPACED 24"oc MIN.
4. DO NOT TIE CONDUIT TO REINFORCING.
5. PLACE CONDUIT IN CELLS w/ OUT REINFORCING WHERE POSSIBLE.
6. DO NOT PLACE CONDUITS IN JAMB CELLS

10 PIPES AND CONDUITS
1" = 1'-0"



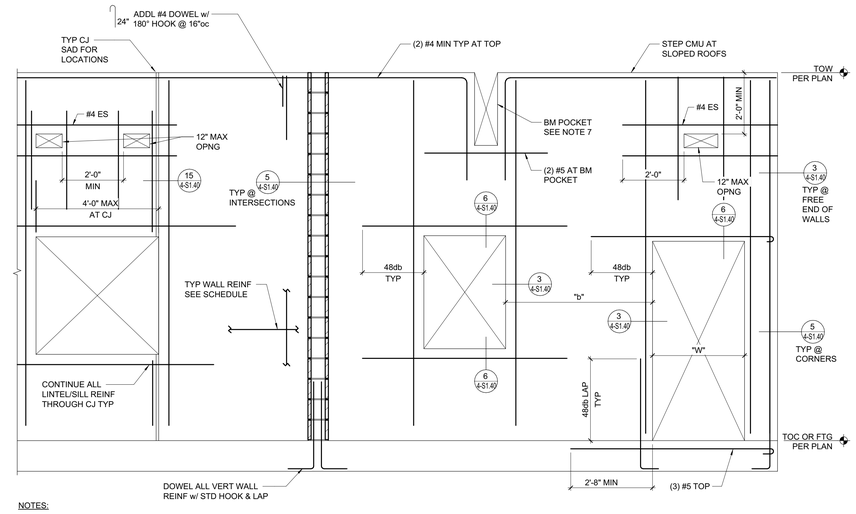
NOTE:
1. POUR HEIGHT 10'-0" MAX.

11 HORIZONTAL CONSTRUCTION JOINT
1 1/2" = 1'-0"



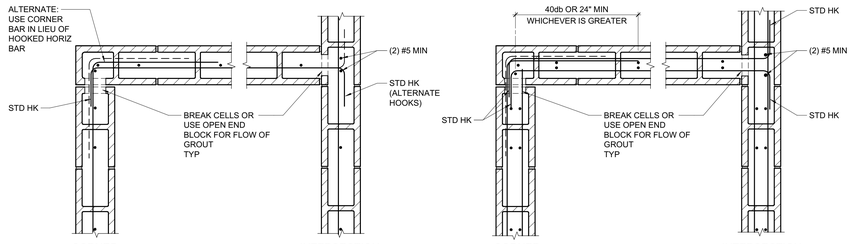
8" CMU WALL EMBEDMENT	12" CMU WALL EMBEDMENT	16" MIN PILASTER EMBEDMENT
5½"	9½"	12"

NOTE:
1. USE TEMPLATE TO SET ALL BOLTS.
2. BEDMENT TOLERANCE IS ±¼" AND AS REQUIRED FOR CLEARANCE TO CMU.
3. AB SHALL PROJECT NOT LESS THAN ¼" OR MORE THAN 1" BEYOND NUT. REMOVE EXCESS THREADS WHERE NUT IS TO BE COUNTERSUNK FLUSH

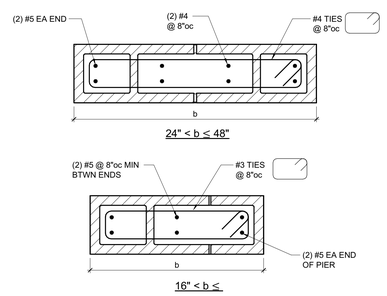


NOTES:
1. "W" DENOTES WIDTH OF OPENINGS. SEE ARCH DWGS FOR SIZE & LOCATION.
   "b" DENOTES DIMENSION BETWEEN OPENINGS. SEE ARCH DWGS.
2. DO NOT PLACE ELECTRICAL CONDUIT IN THE SAME CELL AS VERTICAL JAMB BARS. SEE **10/4-S1.40** & **13/4-S1.40** .
3. MASONRY WALL PIERS SHALL NOT BE LESS THAN 15⅝" WIDE.
4. FOR 12" CMU WALLS, REINFORCING SHOWN OCCURS AT EACH FACE.
5. ALL HORIZONTAL REINFORCING IN CMU BEARING WALLS SHALL TERMINATE WITH 90° OR 180° STANDARD HOOK.
6. FOR SLOPED TOP OF WALL, SEE **14/4-S1.40** .
7. FOR TYPE 1 WALLS PROVIDE 2" MIN 3" MAX CLEARANCE FROM UNDERSIDE OF BEAMS, SLAB & ALL SIDES OF BEAM.

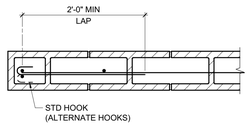
4 TYPICAL CMU WALL REINFORCING
1/2" = 1'-0"



5 REINFORCING AT WALL INTERSECTIONS
1" = 1'-0"

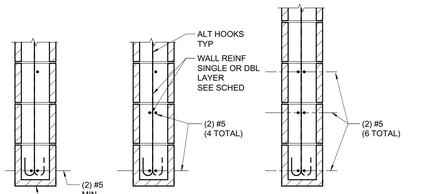


8 REINFORCING AT PIERS
1 1/2" = 1'-0"



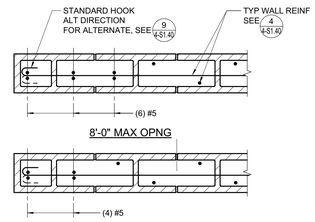
NOTES:
1. WHERE WALL IS NOT DESIGNATED AS A SHEAR WALL, STD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS.
2. HOOK AROUND END BARS AT NARROW PIERS.

9 ALTERNATE REINFORCING TERMINATION
1" = 1'-0"



NOTE:
LINTELS WILL BE SHORED FOR 28 DAYS MIN AFTER GROUT PLACEMENT.

6 REINFORCING AT LINTELS
1" = 1'-0"



FOR INFORMATION NOT NOTED SEE 3/4-S1.40

7 REINFORCING AT JAMB OR END OF CANTILEVERED WALLS
1" = 1'-0"

REINFORCING SCHEDULE					
TYPE	NOMINAL WALL THICKNESS "t"	HORIZ	VERT	JAMB AND END OF WALL	NOTES
1A	8"	#4 @ 24"oc CENTERED	#4 @ 24"oc	3/4-S1.40	NON-STRUCTURAL FULLY GROUTED
1B	8"	#4 @ 24"oc	#4 @ 24"oc CENTERED	3/4-S1.40	NON-STRUCTURAL FULLY GROUTED
1C	8"	#4 @ 24"oc	#5 @ 8"oc STAGGERED	7/4-S1.40	NON-STRUCTURAL FULLY GROUTED
2A	8"	#4 @ 16"oc	#4 @ 16"oc	3/4-S1.40	BEARING SHEAR WALL FULLY GROUTED
2B	8"	#5 @ 16"oc	#5 @ 16"oc	3/4-S1.40	BEARING SHEAR WALL FULLY GROUTED

NOTES:
1. USE THIS SCHEDULE WHERE SIZE OF CMU AND REINFORCING IS NOT SHOWN OTHERWISE ON PLANS, DETAILS, OR WALL ELEVATIONS. FOR TYPICAL CMU WALL ELEVATION, SEE **4/4-S1.40** .
2. FOR FOUNDATION OR SLAB CONNECTION AT TYPE 1A & 2B WALLS SEE **2/4-S4.10** .
3. VERTICAL REINF FOR WALLS SHALL BE CONTINUOUS FROM TOP OF SLAB TO TOP OF WALL OR FLOOR TO FLOOR WITHOUT SPLICE.
4. USE OPEN END BLOCK AT VERTICAL REINFORCING BARS.
5. USE SPECIAL BOND BEAM OR LINTEL BLOCK AT ALL HORIZONTAL BARS.
6. THE TERM "STANDARD HOOK" SHALL MEAN EITHER:
   --180 HOOK PLUS AN EXTENSION OF 4 BAR DIAMETERS OR 2.5".
   --90 HOOK PLUS AN EXTENSION OF 12 BAR DIAMETERS.
7. FOR LAP SPLICES & MIN CLEARANCES SEE **2/4-S1.40** .
8. FOR REINF AT PIERS WITH b ≤ 6t SEE **8/4-S1.40** .
9. USE 9 GA. WIRE POSITIONERS FOR ALL VERTICAL WALL REINFORCING. SPACE VERT TIES MAX 192 x (BAR DIA) oc OR 120".

1 CMU REINFORCING SCHEDULE
1" = 1'-0"

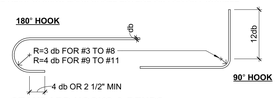
MINIMUM BAR LAPS, Ls (CMU), FOR REINFORCING STEEL MASONRY STRENGTH: 2000 PSI OR GREATER (STAGGER SPLICES)					
SIZE	LAP LENGTH	SIZE	LAP LENGTH	SIZE	LAP LENGTH
#3	12"	#6	54"	#9	82"
#4	24"	#7	64"		
#5	36"	#8	72"		

MINIMUM CLEARANCES ..... **'CLR'**

CMU TO BAR ..... ½"

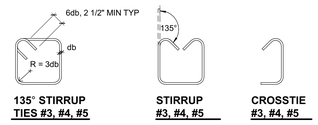
BAR TO BAR ..... 2"

ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE



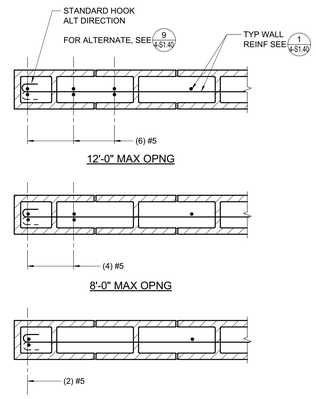
STANDARD HOOKS & BENDS

COL BAR & STRUCT OFFSET **SPLICE**



135° STIRRUP TIES #3, #4, #5 **STIRRUP #3, #4, #5** **CROSSTIE #3, #4, #5**

2 TYPICAL LAP SPLICES IN MASONRY WALLS
3/4" = 1'-0"

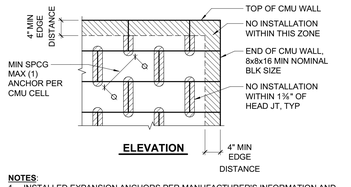


NOTES:
1. ALL JAMB BARS SHALL BE FULL HEIGHT OF WALL.
2. ELECTRICAL CONDUIT REQUIRED NEAR THE EDGE OF ANY OPENING GREATER THAN 4'-0" SHALL BE ROUTED VERTICALLY IN FIRST OPEN ADJACENT CELL, THEN HORIZONTALLY TO DESIRED LOCATION.
3. TAIL OF STANDARD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS WHERE WALL IS NOT DESIGNATED ON PLAN AS A SHEAR WALL. HOOK AROUND END BARS AT NARROW PIERS.

3 REINFORCING AT JAMB OR END OF WALL
1" = 1'-0"

CARBON STL EXP ANCHORS IN 1500 PSI MIN CMU				
ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MINIMUM EMBEDMENT DEPTH*	MIN SPCG S_{min}	INSTALL TORQUE (FT-LB)
SIMPSON STRONG-BOLT 2 (IAPMO ES-0240)	⅜"	2¾"	4"	30
	½"	3¼"	4"	35
	⅝"	4⅜"	4"	55
	¾"	5¼"	4"	120
HILTI KWIK BOLT 3 (ICC-ESR 1385)	⅜"	2½"	8"	15
	½"	3½"	8"	25
	⅝"	4"	8"	65
	¾"	4⅜"	8"	120

* PILOT HOLE DEPTH = MIN (1) DIAMETER GREATER THAN EMBEDMENT DEPTH



ELEVATION

NOTES:
1. INSTALLED EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND EVALUATION REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR AND SHALL CONSIDER BOLT SPACING WHEN SELECTING ANCHOR TYPE.
3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING CMU, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. USE ROTARY DRILL ONLY. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND ANCHOR. WHEN REINFORCEMENT IS PRESENT IN DRILLED HOLE ABANDON THE HOLE. FILL ABANDONED HOLES W/ DRY PACK AND FINISH TO MATCH CMU. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, MASONRY TYPE, MASONRY COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), MASONRY THICKNESS, AND TIGHTENING TORQUE.
5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTIONS 1705.4 AND 1913.7.

16 EXPANSION ANCHORS IN CMU
3/4" = 1'-0"

15 CMU WALL CONTROL JOINT
3/4" = 1'-0"

12 BOLT EMBEDMENT SCHEDULE
3/4" = 1'-0"

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REVISIONS

No.	Description	Date

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 4 TYPICAL CMU DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

4-S1.40
Drawing No.

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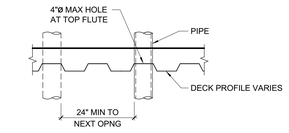
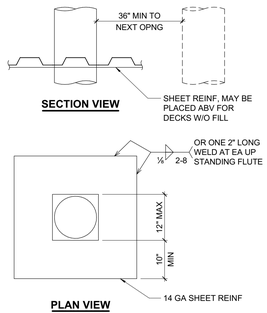
MARK	STEEL DECK GAGE & PROFILE TYPE SEE 4/4-S1.50	DECK CONNECTIONS						MINIMUM SLAB FILL THICKNESS ABV DECK	MINIMUM SLAB FILL REINFORCING	REMARKS
		END/INT BEARING CONN (A)		SIDE BEARING CONN (B)		SIDELAP CONNECTION (C)				
		SIZE & TYPE	PATTERN	SIZE & TYPE	SPACING	SIZE & TYPE	SPACING			
4	G - 22 GA	¾"ø PW	36/9	¾"ø PW	12"	1½" TSW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	SEE 2/4-S1.50 FOR SCREW CONNECTION

NOTES:
1. PUDDLE WELD WITH ½" ø MIN OF FUSION (EFFECTIVE WELD). ATTACH DECK TO ALL STEEL SUPPORT FRAMING AS OCCURS.
2. PW= ½" ø MIN OF FUSION (EFFECTIVE WELD).
3. TSW= TOP SEAM WELD (⅛" FILLET).
4. ASW= ARC SEAM WELD.
5. BP = BUTTON PUNCH.
6. VSC2 = VERCO SIDE LAP CONNECTION.
7. PINS = HILTI X-ENP-19 PER ICC ESR-2197.
8. ABOVE REFERENCED DECKS AND COMPOSITE DEPTHS ARE BASED ON ALLOWABLE DESIGN LOADS PER IAPMO ER-0217 VERCO MANUFACTURING, ESR-2047 EPIC METAL DECK CORP - EQUIVALENT DECK MUST HAVE EQUIVALENT ALLOWABLE VERTICAL LOADS, DIAPHRAGM SHEAR VALUES, AND FLEXIBILITY FACTORS.
9. SHORING OF DECK REQUIRED AT SINGLE SPAN & 2 SPAN CONDITIONS. NOT REQUIRED AT 3 SPAN CONDITIONS. AT CONTRACTOR'S OPTION, HEAVIER DECK MAY BE USED TO AVOID SHORING PER SEOR WRITTEN APPROVAL.

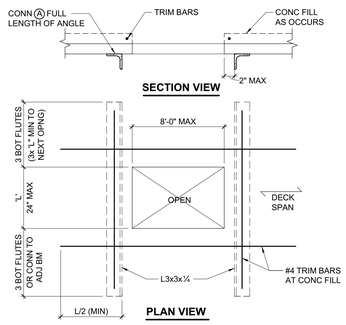
1 DECKING SCHEDULE
3/4" = 1'-0"



5 TYPICAL UNREINFORCED OPENING IN DECK (≤ 4")
3/4" = 1'-0"



6 TYPICAL REINFORCED OPENING IN DECK (LESS THAN 12")
3/4" = 1'-0"

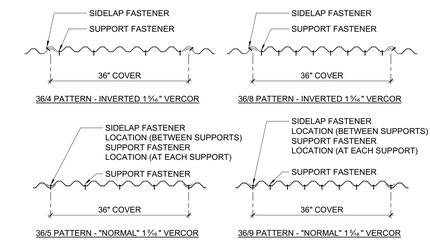


7 TYPICAL REINFORCED OPENING IN DECK (LESS THAN 24")
1" = 1'-0"

1. SCHEDULED OR REFERENCED DECKS ARE BASED ON ALLOWABLE DESIGN LOADS PER IAPMO ER-0217 VERCO MANUFACTURING PHOENIX, ARIZONA - EQUIVALENT DECK MUST HAVE EQUIVALENT ALLOWABLE LOADS.
2. SCREWS FOR DECK TO DECK SEAM FASTENING SHALL BE No. 12-14 x ¾" TEKS 1. SCREWS FOR DECK SUPPORT FASTENING SHALL BE ONE OF THE FOLLOWING:

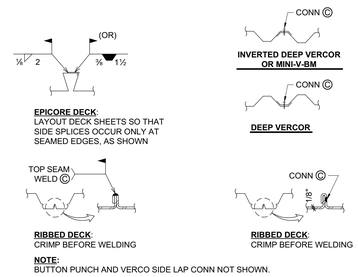
FASTENER DESCRIPTION	SUPPORT THICKNESS
#12-14 x ¾" TEKS 3	16 GAGE TO ⅜"
#12-24 x ¾" TEKS 4	⅛" TO ¼"
#12-24 x 1¼" TEKS 5	¼" TO ½"

3. SEE ICC-ES ER-3056 AND ESR-1976 FOR ADDITIONAL DETAILS ON TEKS SCREWS.
4. DECK SUPPORT FASTENER PATTERNS ARE AS DESCRIBED IN (A).
5. EIGHT OR FOUR SCREWS USED FOR INVERTED 1 5/16" VERCOR. NINE OR FIVE SCREWS USED FOR "NORMAL" 1 5/16" VERCOR.



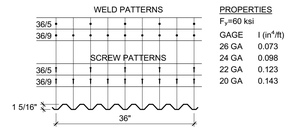
A TEKS FASTENER PATTERN FOR 1 5/16" VERCOR

2 DECKING SCHEDULE - SCREW CONNECTIED
3/4" = 1'-0"



NOTE:
BUTTON PUNCH AND VERCO SIDE LAP CONN NOT SHOWN.

3 TYPICAL DECK SIDE LAP CONNECTION
3" = 1'-0"



PROPERTIES
F_y=60 ksi

GAGE	I (in⁴/ft)
26 GA	0.073
24 GA	0.098
22 GA	0.123
20 GA	0.143

4 DECKING TYPE AND CONNECTION PATTERN
NOT TO SCALE

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No.	Description	Date

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Sheet Title

BUILDING 4
TYPICAL METAL DECKING DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

4-S1.50
Drawing No.

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TRUSS PLAN NOTES:

1. SEE **F/4-S0.10** FOR GENERAL TRUSS NOTES AND REQUIRED DEAD AND LIVE LOADS.
2. SEE "DRAG TRUSS / BLOCKING SCHEDULE" FOR LATERAL SEISMIC DESIGN LOADS. ALL LOADS ARE IN ALLOWABLE STRESS DESIGN (ASD). LOADING DERIVED BY TAKING THE ASD SEISMIC FORCE RESISTED BY EACH WALL LINE, MULTIPLYING IT BY 1.25 PER ASCE 7-10 12.3.3.4, AND DIVIDING IT BY THE FULL DIAPHRAGM LENGTH AT THAT WALL LINE.
3. TRUSSES SHALL BE DESIGNED TO TRANSFER SPECIFIED LATERAL SEISMIC LOADS, WHICH ARE APPLIED AT THE TOP CHORD, TO THE BOTTOM CHORD.
4. TRUSS MANUFACTURER SHALL BE RESPONSIBLE FOR CALCULATING CONNECTION FORCES FROM TRUSSES TO SHEAR WALLS AND SHALL PROVIDE CONNECTORS TO RESIST THE LOADS PRESENT.
5. OMEGA LOADS PER ASCE 7-10 SECTION 12.10.2.1 HAVE BEEN APPLIED FOR COLLECTOR DESIGN.
6. MEP LOADS: ROOF TRUSSES TO BE DESIGNED FOR A 300# POINT LOAD AT ANY POINT ALONG THE TOP CHORD IN ADDITION TO DESIGN DEAD AND LIVE LOADS. CONTRACTOR TO COORDINATE MEP LOADS TO ENSURE THAT NO ONE TRUSS RECEIVES MORE THAN 300# IN MEP LOADS (INCLUDING FIRE SPRINKLERS). MEP UNITS UNDER 100# ARE NOT SHOWN ON STRUCTURAL PLANS; REFER TO MEP DRAWINGS FOR SIZE, WEIGHT, AND LOCATION OF UNITS. UNITS OVER 100# ARE NOTED ON STRUCTURAL PLANS; CONTRACTOR TO COORDINATE WITH MEP ENGINEER AND BRING ANY DISCREPANCIES BETWEEN MEP AND STRUCTURAL PLANS TO THE SEOR FOR REVIEW PRIOR TO INSTALLATION OF UNITS.
7. FIRE SPRINKLERS: LOADS DISCUSSED IN ITEM 6 ABOVE INCLUDE LOADS FROM FIRE SPRINKLERS. CONTRACTOR TO ENSURE THAT FIRE SPRINKLER SUPPORTS ARE SPREAD OUT SO AS NOT TO EXCEED THE LIMITATIONS NOTED FOR ANY ONE TRUSS. CONTACT SEOR WITH ANY DISCREPANCIES.
8. NOMENCLATURE:

   - DRAG TRUSSES, DRAG BLKG, AND BLKG OCCUR DIRECTLY OVER OR DIRECTLY IN LINE WITH A SHEAR WALL.

   - "DRAG TRUSS" INDICATES A FULL SIZE ROOF TRUSS THAT SPANS BETWEEN BEARING WALLS.

   - "DRAG BLKG" INDICATES TRUSS BLOCKING WITH A DEPTH AS REQUIRED TO FIT THE SPACE BETWEEN THE TOP PLATE OF THE SHEAR WALL AND THE ROOF DECKING ABOVE.

   - "BLKG" INDICATES A BRAKE SHAPE OR OTHER SINGLE-PIECE MEMBER OCCURRING AT AN EAVE OR GABLE END BETWEEN THE TOP PLATE OF THE SHEAR WALL AND THE ROOF DECKING ABOVE. (TYPICALLY UNDER 18" TALL) DRAG BLKG MAY ALSO BE USED IN LIEU OF A SOLID BRAKE SHAPE WHERE DESIRED

DRAG TRUSS / BLOCKING SCHEDULE		
MARK	GRIDLINE	DESIGN LATERAL FORCE (ASD)
DRAG TRUSS (A)	2	286 PLF
DRAG TRUSS (B)	B	449 PLF

1 DRAG TRUSS / BLOCKING SCHEDULE
1/2" = 1'-0"

PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
2A	1/4-S1.40	INDICATES STRUCTURAL CMU BEARING WALL, TYPE "2A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
		INDICATES FOUNDATION.
CF-2		INDICATES CONTINUOUS FOOTING SIZE AND REINFORCING PER SCHEDULE.
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
1 S3.1		INDICATES ELEVATION.
TOF - 10"		INDICATES TOP OF FOOTING RELATIVE TO 0'-0". TOP OF FOOTING SHALL BE -10", UNLESS NOTED OTHERWISE. TOP OF FOOTING ELEVATIONS ARE TO BE COORDINATED BY THE CONTRACTOR UTILIZING THE STRUCTURAL, CIVIL, GEOTECHNICAL, AND LANDSCAPE DRAWINGS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO CONSTRUCTION.
1	1/4-S1.50	INDICATES BARE METAL DECK AND DIRECTION OF DECK SPAN. SEE SCHEDULE FOR ADDL INFO.
A	5/4-S1.10	5" CONC SLAB-ON-GRADE PER C/4-S0.10 NOTE #3. SEE REFERENCE DETAIL FOR SUBGRADE SLAB PREPARATION.
X 0"	8/4-S4.10	INDICATES TIE STRAP LENGTH, SEE REFERENCE DETAIL FOR STRAP, FASTENING
. . . . .		INDICATES PANEL EDGE SCREWS ALONG FULL LENGTH OF MEMBER.
		INDICATES HANGER.

FOUNDATION PLAN NOTES:

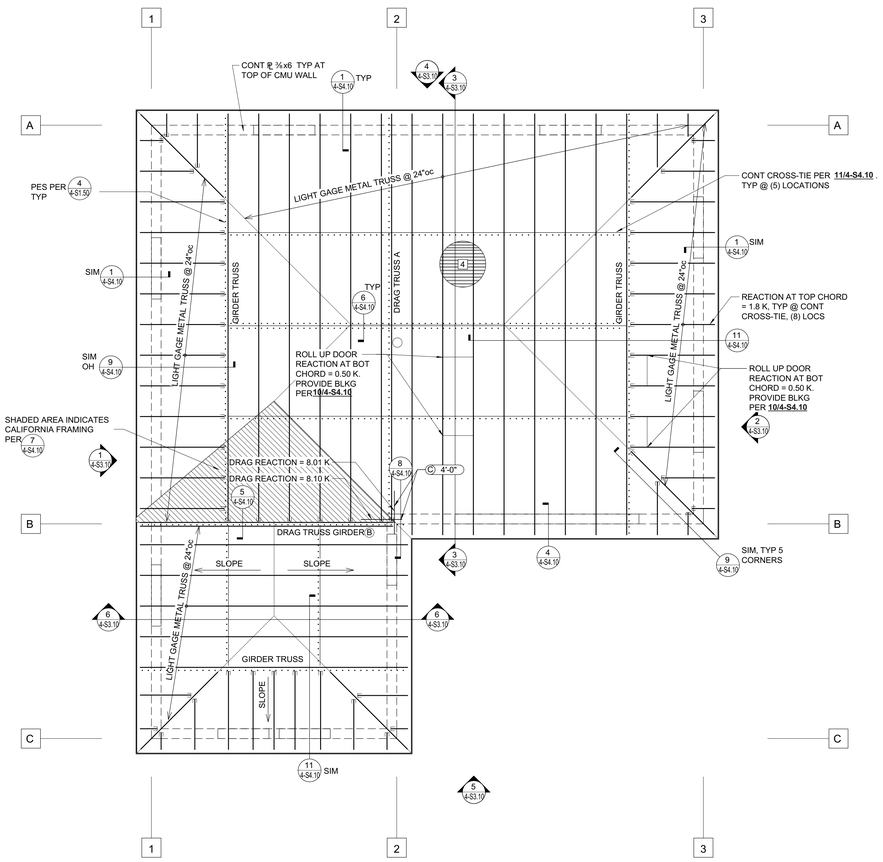
1. REFER TO SHEETS **4-S0.10** THROUGH **4-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. SEE DETAILS OR CURB PLAN FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
4. PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO PIPES OR CONDUITS THRU SILL PLATES SHALL BE WITHIN 12" OF HOLDOWN BOLTS. NO MECHANICAL, ELECTRICAL, OR PLUMBING OPENINGS SHALL BE LOCATED IN SHEAR WALLS UNLESS SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

   PIPES THROUGH FOOTINGS SHALL BE PER **2/4-S1.10** AND **3/4-S1.10**.

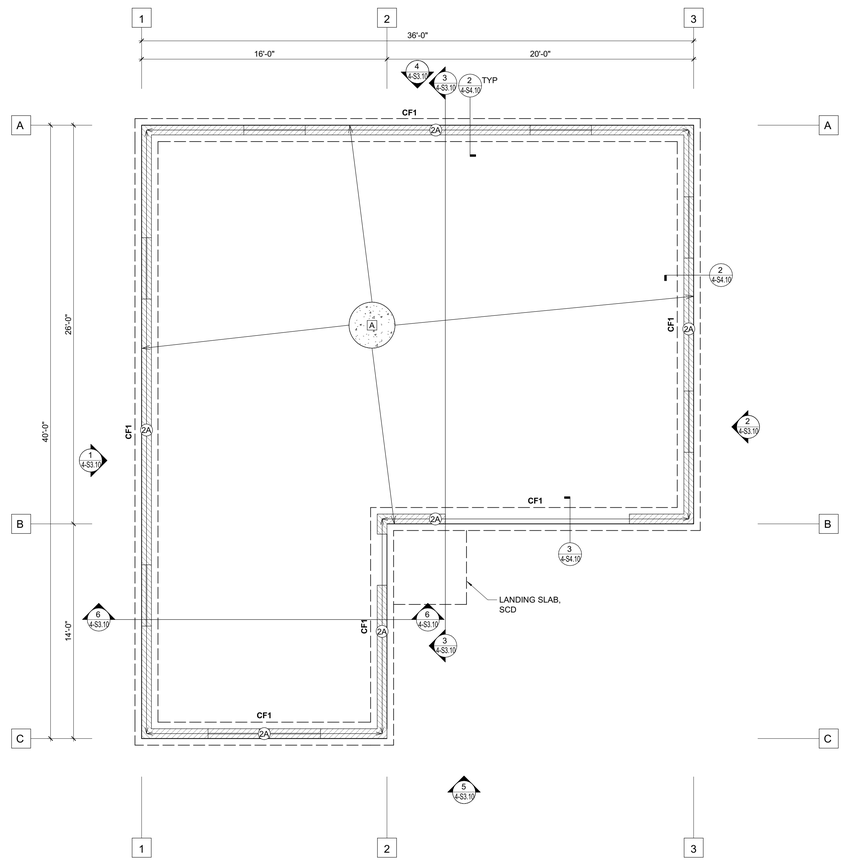
   PIPES PARALLEL TO FOOTINGS SHALL BE PER **4/4-S1.10**.

   PIPES AT SLAB ON GRADE SHALL BE PER **7/4-S1.10**.
5. ELEVATION OF THE TOP OF FINISHED SLAB = 0'-0", UNLESS NOTED OTHERWISE.

FOOTING SCHEDULE			
MARK	WIDTH	DEPTH	REINFORCING
CF-1	18"	28"	(2) #6 CONT T&B W/ #3 TIES AT 8" OC, TYP



NORTH
ROOF FRAMING PLAN
1/4" = 1'-0"



NORTH
FOUNDATION PLAN
1/4" = 1'-0"

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO No. 4961 STRUCTURAL STATE OF CALIFORNIA

Sheet Title

BUILDING 4 FOUNDATION & ROOF PLANS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

4-S2.10
Drawing No.

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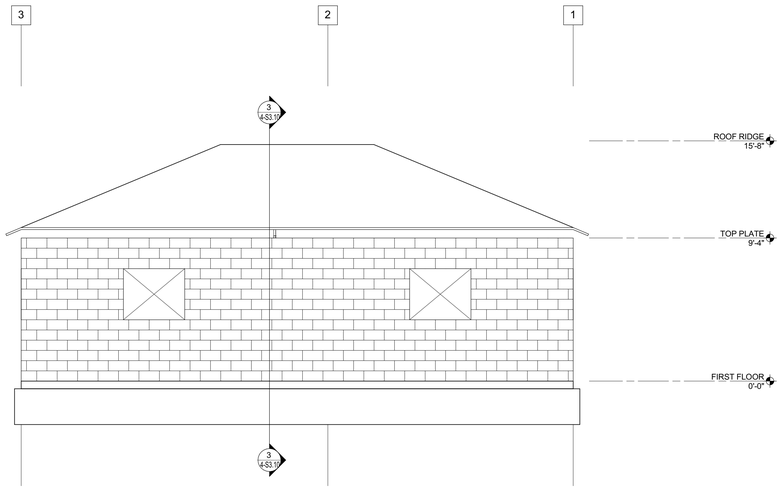
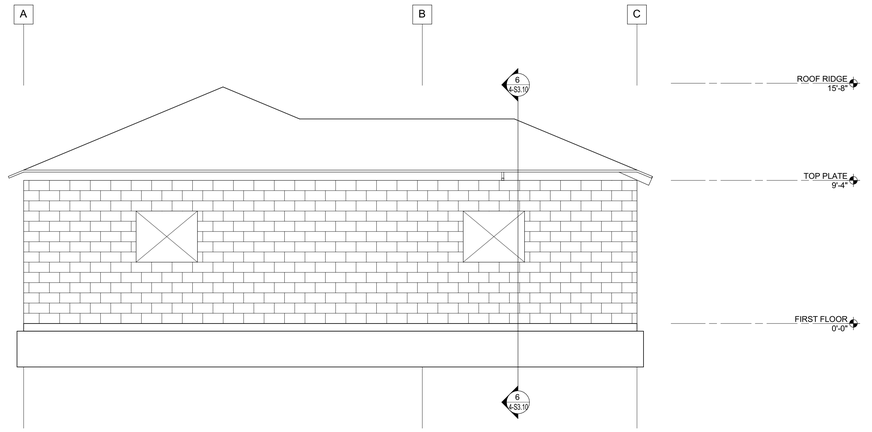


4 ELEVATION AT GRID A
1/4" = 1'-0"

ELEVATION VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER ELEVATION VIEWS.



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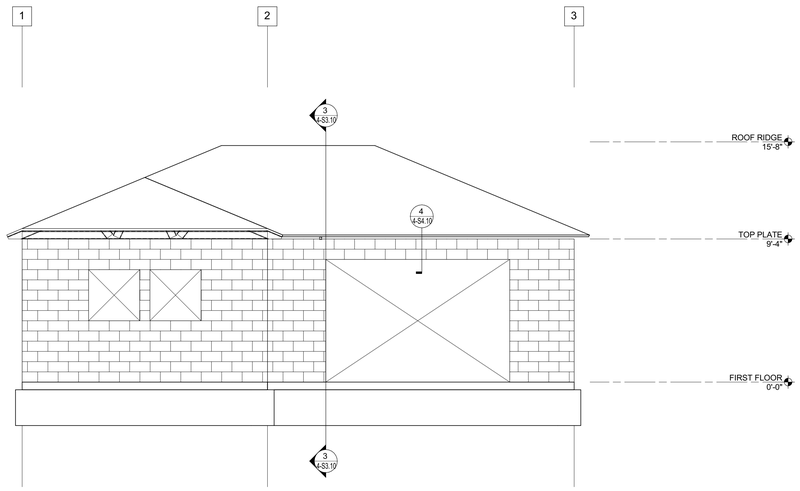
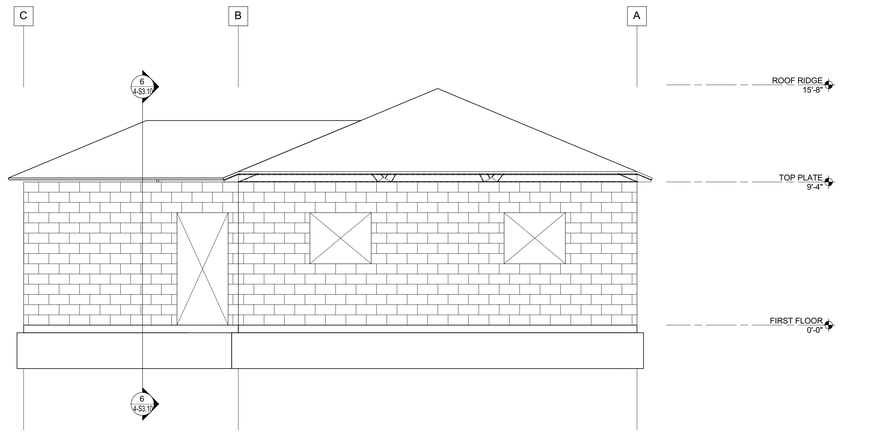
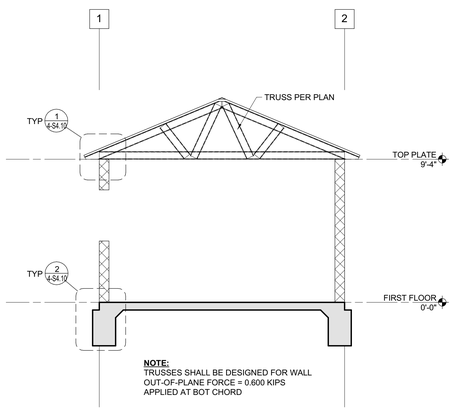
1/4" = 1'-0"



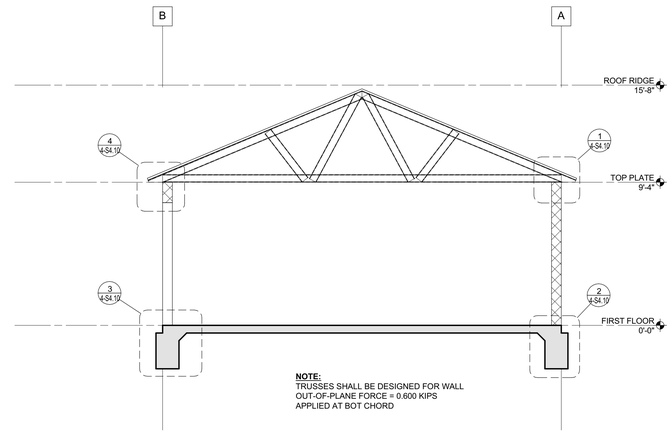
5 ELEVATION AT GRID C
1/4" = 1'-0"



2 ELEVATION AT GRID 3
1/4" = 1'-0"



6 BUILDING SECTION AT GRID B
1/4" = 1'-0"



3 BUILDING SECTION AT GRID 2
1/4" = 1'-0"

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

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Sheet Title

BUILDING 4 ELEVATIONS & SECTIONS

Drawn By: - Checked By: -

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

Date: October 4, 2019

Project No. 17143

4-S3.10
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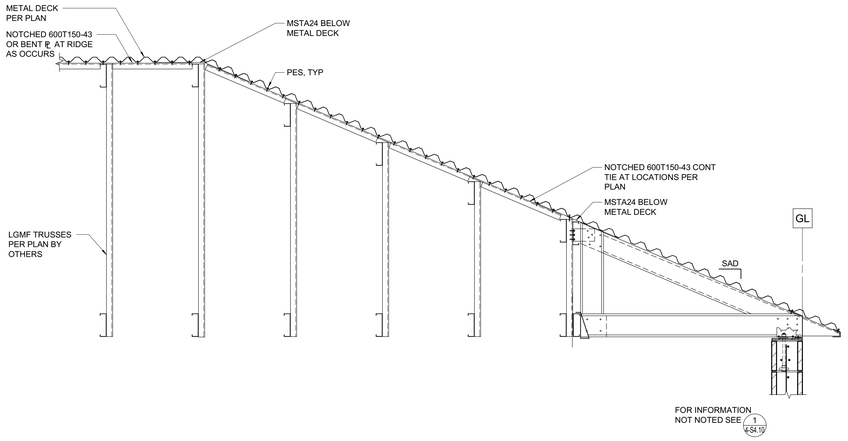
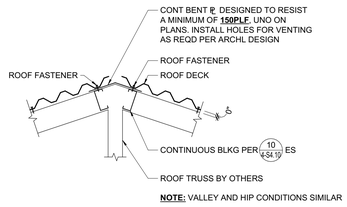
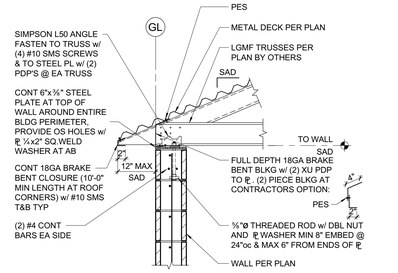


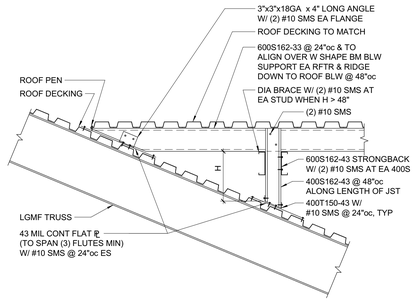
11 LGMF TRUSS TO TRUSS GIRDER
3/4" = 1'-0"



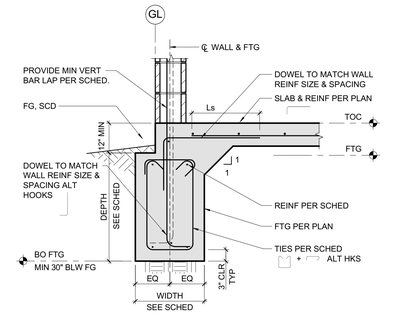
6 TRUSS RIDGE/HIP
1" = 1'-0"



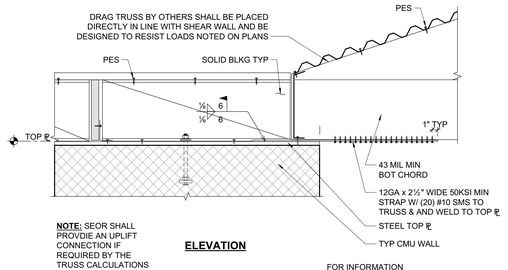
1 TYPICAL LGMF TRUSS TO CMU WALL
3/4" = 1'-0"



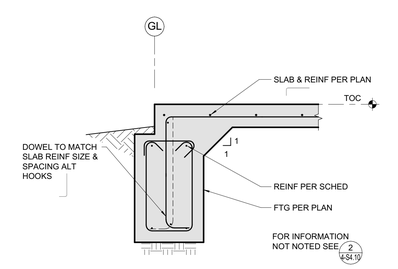
7 CALIFORNIA FRAMING
3/4" = 1'-0"



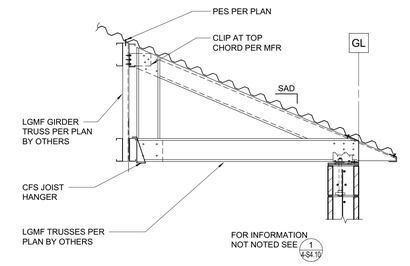
2 EXTERIOR CMU AT FOUNDATION
3/4" = 1'-0"



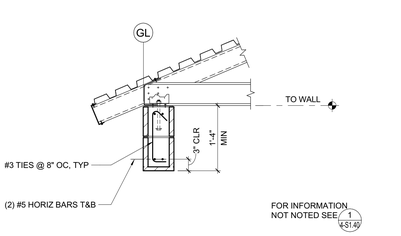
8 DRAG CONNECTION AT DRAG TRUSS TO CMU WALL
1" = 1'-0"



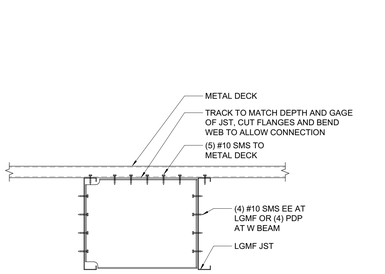
3 FOUNDATION AT DOOR OPENING
3/4" = 1'-0"



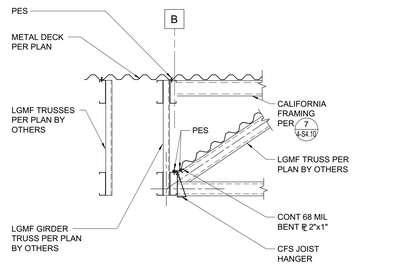
9 LGMF TRUSS TO TRUSS GIRDER
3/4" = 1'-0"



4 LGMF TRUSS TO CMU LINTEL
3/4" = 1'-0"



10 TYPICAL LGMF JOIST BLOCKING
1 1/2" = 1'-0"



5 LGMF TRUSS TO TRUSS GIRDER
3/4" = 1'-0"

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KEVIN G. ZUCCO — No. 4861 — STRUCTURAL — STATE OF CALIFORNIA — REGISTERED PROFESSIONAL ENGINEER

Sheet Title

BUILDING 4 DETAILS AND SECTIONS

Drawn By: - Checked By: -

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

4-S4.10
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PLUMBING AND FIRE PROTECTION LEGEND AND ABBREVIATIONS

ABBREVIATIONS-PLUMBING

AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BLDG	BUILDING
BOB	BOTTOM OF BEAM
BOP	BOTTOM OF PIPE
BV	BALANCING VALVE
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CLG	CEILING
CLNA	CLEAN AGENT
CO	CLEANOUT
COTG	CLEANOUT TO GRADE
CONN	CONNECTION
CONT	CONTINUATION
DIA	DIAMETER
DN	DOWN
DR	DRAIN
DROP	DROP (WITHIN FLOOR)
DWG	DRAWING
EL	ELEVATION
FL	FLOOR
FT	FEET
FU	FIXTURE UNIT
GAL	GALLONS
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HB	HOSE BIBB
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
IW	INDIRECT WASTE
LDR	LEADER
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN THIS CONTRACT
OD	OUTSIDE DIAMETER
P/FT	PITCH PER FOOT
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RISE	RISE (WITH IN FLOOR)
SD	SMOKE DETECTOR
SF	SQUARE FEET
TDH	TOTAL DISCHARGE HEAD
TOP	TOP OF PIPE
TOS	TOP OF SLAB
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP (PENETRATES FLOOR SLAB)
VB	VACUUM BREAKER
WH	WALL HYDRANT

SYMBOL LEGEND

	FLEXIBLE CONNECTION
	PRESSURE GAUGE AND COCK
	VALVE (SPECIFICATION FOR TYPE)
	UNION
	SLEEVE
	POINT OF CONNECTION (NEW TO EXISTING)
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	VALVE IN VERTICAL
	PIPE DROP UNLESS OTHERWISE NOTED
	PIPE UP UNLESS OTHERWISE NOTED
	CAP
	PIPE OFFSET
	ARROW INDICATES DIRECTION OF FLOW
	PITCH PIPE DOWN IN DIRECTION OF ARROW
	INSULATED AND HEAT TRACED PIPING
	QUICK CONNECT HOSE COUPLING

PIPING LEGEND

PLUMBING

CA	COMPRESSED AIR PIPING (100 PSI)

DRAIN

CD	CONDENSATE DRAIN PIPING

MISCELLANEOUS

CP / 1	EQUIPMENT DESIGNATION		EQUIPMENT EQUIPMENT NO.
1 / P2.1	DETAIL DESIGNATION		DETAIL NUMBER DWG. SHEET NO.
1	SHEET NOTE NUMBER		
1	REVISION NUMBER		

PLBG_DRAWING LIST Bldg 4	
SHEET NUMBER	SHEET NAME
4-P0.01	PLUMBING AND FIRE PROTECTION LEGEND ABBREVIATIONS, DRAWING LIST AND SCHEDULE
4-P2.01	PLUMBING AND FIRE PROTECTION STORAGE BUILDING FLOOR PLAN, AND DIAGRAM

MISC EQUIPMENT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL NO.	CAPACITY						ELECTRICAL					OPERATING WEIGHT	REMARKS
				GAL	FT HD	PSI	GPM	CFM	CFH	HP	V	PH	HZ	EM PWR		
4-AC-1-1	AIR COMPRESSOR	KAESER SX5AC	SX 5 AIRCENTER	53	-	125	-	21.2	-	5	480	3	60	N	639	INTEGRAL REFRIGERATED AIR DRYER, AUTOMATIC CONDENSATE DRAIN,RECIVER TANK AND FILTER

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CITY OF HAYWARD
HEART OF THE BAY

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REGISTERED PROFESSIONAL ENGINEER
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No. M36780
MECHANICAL
STATE OF CALIFORNIA

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Sheet Title

PLUMBING AND FIRE PROTECTION LEGEND ABBREVIATIONS, DRAWING LIST AND SCHEDULE

Drawn By: Author
Checked By: Checker

Scale:
12" = 1'-0"

Date:
October 4, 2019

Project No. B17.07369

4-P0.01
Drawing No.

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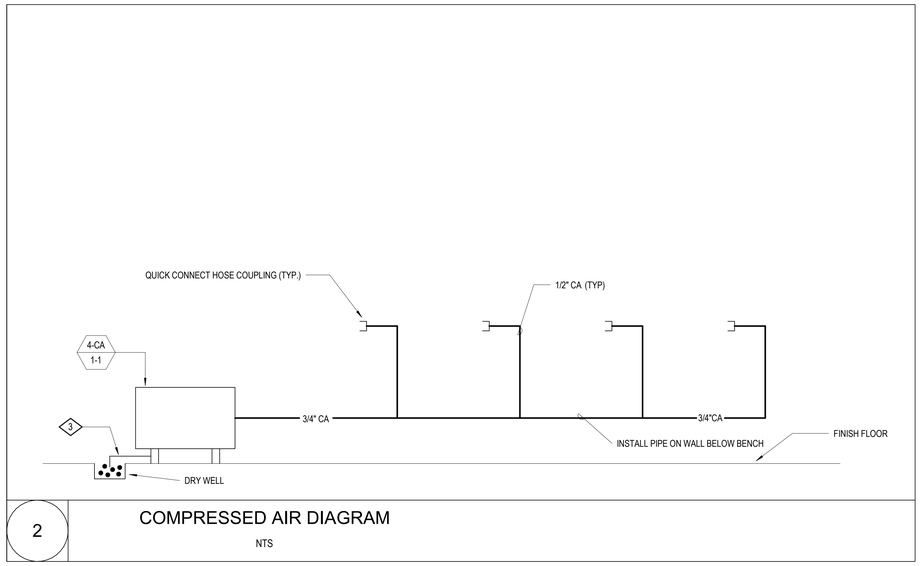
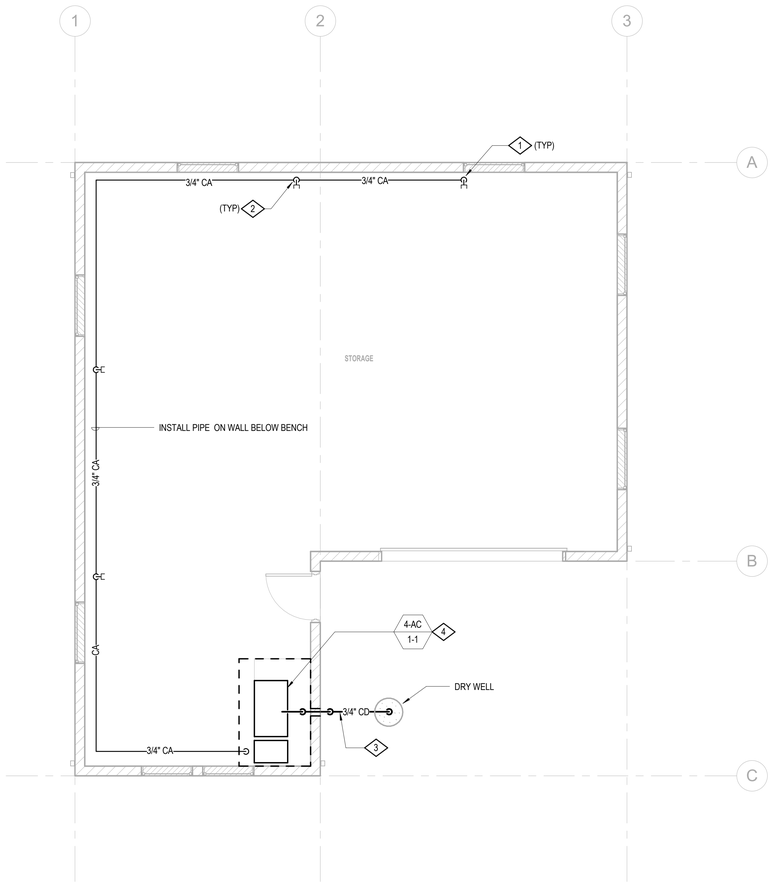


2 COMPRESSED AIR DIAGRAM

NTS



1 04-PLUMBING STORAGE BUILDING FIRST FLOOR

1/4" = 1'-0"

NUMBERED NOTES:

1. 1/2" COMPRESSED AIR FROM BELOW BENCH
2. QUICK CONNECT HOSE COUPLING TO BE SPACED EVENLY ABOVE BENCH TOP. TWO PER WALL.
3. CONDENSATE DRAIN TO DAYLIGHT INTO DRY WELL 12"DIA x 18" DEEP WITH 3/4" PEA GRAVEL.
4. LOCATE AIR COMPRESSOR ON 5"MIN CONCRETE SLAB. PROVIDE 3/8"DIA SCREW ANCHORS AT EACH CORNER (4 TOTAL).

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DEPARTMENT OF PUBLIC WORKS
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DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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No. M30765
MECHANICAL
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Sheet Title

PLUMBING AND FIRE PROTECTION STORAGE BUILDING FLOOR PLAN, AND DIAGRAM

Drawn By: Author Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. B17.07369

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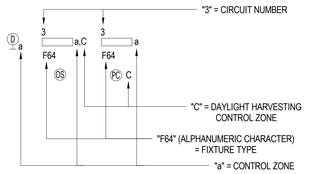
ELECTRICAL LEGEND AND ABBREVIATIONS

LIGHTING & CONTROL DEVICE SUBSCRIPT LEGEND



NOTE: OCCUPANCY SENSOR TYPICALLY CONTROLS ALL LIGHTS IN ROOM, UON.

CONTROL ZONE SUBSCRIPT KEY

a-z =	ZONE CONTROLLED BY MANUAL DEVICES AND OCCUPANCY SENSORS INDICATED
A-Z =	DAYLIGHT HARVESTING ZONE CONTROLLED BY PHOTOCELL INDICATED

EQUIPMENT NAMING LEGEND

E O U S

ATS BUS DPH DPL DSH DSL LP LPH LRC MCC MP MS PDU T TB TC - B 2 A / 1,3,5

- 1,3,5 = CIRCUIT NUMBER(S)
- A = FIRST OF THIS TYPE ON FLOOR
- 2 = BUILDING NUMBER
- B = BUILDING

ATS	AUTOMATIC TRANSFER SWITCH
BUS	BUSWAY
DPH	DISTRIBUTION PANEL 277/480V
DPL	DISTRIBUTION PANEL 120/208V
DSH	DISTRIBUTION SWITCHBOARD 277/480V
DSL	DISTRIBUTION SWITCHBOARD 120/208V
LP	BRANCH CIRCUIT PANELBOARD 120/208V
LPH	BRANCH CIRCUIT PANELBOARD 277/480V
LRC	LIGHTING RELAY CABINET
MCC	MOTOR CONTROL CENTER
MP	MECHANICAL EQUIPMENT PANELBOARD
MS	MAIN SWITCHBOARD
PDU	POWER DISTRIBUTION UNIT
T	TRANSFORMER
TB	TELECOM BACKBOARD
TC	TELECOM CABINET

E	EMERGENCY LIFE SAFETY
O	POWER OPTIONAL STANDBY
U	UPS POWER
S	LEGALLY REQUIRED STANDBY

WIRING DEVICE LEGEND

	DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V, DEDICATED; WALL MOUNTED
	DOUBLE DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
	SPECIAL PURPOSE RECEPTACLE OUTLET: RATING AS INDICATED; WALL MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V; CEILING MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V, DEDICATED; CEILING MOUNTED
	SPECIAL PURPOSE RECEPTACLE OUTLET: RATING AS INDICATED; CEILING MOUNTED
	POWER TYPE PLUGSTRIP OR SURFACE RACEWAY, LENGTH APPROXIMATELY AS SHOWN
	POWER/TELECOM TYPE PLUGSTRIP OR SURFACE RACEWAY, LENGTH APPROXIMATELY AS SHOWN
	TELECOM OUTLET
$	SINGLE POLE SWITCH
$3	THREE WAY SWITCH
$4	FOUR WAY SWITCH
$H	ILLUMINATED HANDLE SWITCH
D	WALL DIMMER
LV	LOW VOLTAGE SWITCH
PC	PHOTOCELL
OS	OCCUPANCY SENSOR; WALL MOUNTED
OS	2 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	1 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	CORRIDOR OCCUPANCY SENSOR; CEILING MOUNTED

WIRING DEVICE SUBSCRIPT LEGEND

AC	AC = ABOVE COUNTER
GFI	GFI = GROUND FAULT INTERRUPTER
WP	WP = WEATHERPROOF
a	a = LOWER CASE LETTER INDICATES SWITCH CONTROL
6	6 = NUMBER INDICATES CIRCUIT NUMBER
$a	a = LOWER CASE INDICATES SWITCH CONTROL

FIRE ALARM LEGEND

	AREA SMOKE DETECTOR, WALL MOUNTED
	DUCT TYPE SMOKE DETECTOR
S	FIRE ALARM SPEAKER; WALL MOUNTED
S	COMBINATION FIRE ALARM SPEAKER/VISUAL ALARM; WALL MOUNTED
H	FIRE ALARM HORN; WALL MOUNTED
H	COMBINATION FIRE ALARM HORN/VISUAL ALARM; WALL MOUNTED
	VISUAL ALARM; WALL MOUNTED
FSD	FIRE/SMOKE DAMPER
SD	SMOKE DAMPER
FACP	FIRE ALARM AND CONTROL PANEL
FARP	FIRE ALARM REMOTE PANEL
FATC	FIRE ALARM TERMINAL CABINET
FARA	FIRE ALARM REMOTE ANNUNCIATOR
FTS	FIREFIGHTER'S TELEPHONE SYSTEM
VCS	VOICE COMMUNICATION SYSTEM
FCIP	FIREFIGHTER'S CONTROL AND INDICATING PANEL
FPSP	FIRE PUMP REMOTE STATUS PANEL
GSP	GENERATOR REMOTE STATUS PANEL

SECURITY LEGEND

DC	DOOR CONTACT
ML	MAGNETIC LOCK
CR	CARD READER

PROGRAMMABLE LIGHTING & RECEPTACLE CONTROL SYSTEM DEVICE LEGEND

S	SWITCH
D	DIMMER
PC	PHOTOCELL
OS	OCCUPANCY SENSOR; WALL MOUNTED
OS	2 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	1 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	CORRIDOR OCCUPANCY SENSOR; CEILING MOUNTED
6	MULTI-BUTTON KEYPAD, # INDICATES QTY OF BUTTONS
6	MULTI-BUTTON PRESET SCENE CONTROLLER WITH MASTER RAISE/LOWER, # INDICATES QTY OF SCENE BUTTONS
6	GRAPHICAL INTERFACE CONTROLLER

POWER LEGEND

	ATS, CPC, DPH, DPL, DSH, DSL, MCC OR MS: SIZE APPROXIMATELY AS SHOWN. DOUBLE LINE INDICATES FRONT.
	SURFACE MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	SURFACE MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	TB: LENGTH APPROXIMATELY AS SHOWN
T F	STEP DOWN TRANSFORMER
G	GENERATOR IN WP ENCLOSURE
	AUTOMATIC TRANSFER SWITCH
	HEAVY DUTY DISCONNECT SWITCH
	HEAVY DUTY DISCONNECT SWITCH WITH FUSE
	MOTOR STARTER
MCC	MOTOR STARTER, NOT PROVIDED UNDER ELECTRICAL SCOPE
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH
MCP	COMBINATION MOTOR STARTER/DISCONNECT SWITCH, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITH DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITHOUT DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
EPO	EMERGENCY POWER OFF BUTTON
$MD	MOTORIZED DOOR CONTROLLER (FURNISHED WITH DOOR)
$MS	MOTORIZED SHADE CONTROLLER (FURNISHED WITH SHADES)
$PS	PROJECTION SCREEN CONTROLLER (FURNISHED WITH SCREEN)
$T	THERMAL OVERLOAD/DISCONNECT SWITCH
M	MOTOR CONNECTION
J	JUNCTION BOX, CEILING MOUNTED
J	JUNCTION BOX, WALL MOUNTED
P B	PULL BOX
S B	SPLICE BOX
G	GROUND BUS CABINET
	GROUND ROD
	GROUND TEST WELL
	CIRCUIT BREAKER
	SWITCH AND FUSE
	CIRCUIT BREAKER IN ENCLOSURE
M	CURRENT TRANSFORMER COMPARTMENT AND KWH METER
GFR	GROUND FAULT RELAY
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	TRANSFORMER
CT 1-1	EQUIPMENT DESIGNATION — EQUIPMENT TYPE; NUMERICAL DESIGNATION REFER TO EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION DETAILS

LIGHTING LEGEND

	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; CEILING MOUNTED
	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; WALL MOUNTED
	LIGHTING FIXTURE CONNECTED TO EMERGENCY POWER SYSTEM
2 a / A	LIGHTING FIXTURE SUBSCRIPTIONS: NUMBER INDICATES CIRCUIT. LOWERCASE LETTER INDICATES SWITCH CONTROL UPPERCASE LETTER INDICATES FIXTURE TYPE
EXIT SIGNS	ARROWS AS SHOWN. ILLUMINATED FACE AS INDICATED BY SHADING, CONNECT TO EMERGENCY POWER SYSTEM
	EXIT SIGN; WALL MOUNTED
	EXIT SIGN; CEILING MOUNTED
R	EXIT SIGN; RECESSED IN WALL
P	EXIT SIGN; PENDENT MOUNTED
L	EXIT SIGN, LOW LEVEL; RECESSED IN WALL

ABBREVIATIONS

℄	CENTER LINE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AF/AS	AMPERE RATING OF FUSE/SWITCH
AT/AF	AMPERE RATING OF CIRCUIT, BREAKER TRIP/FRAME
A/V	AUDIO/VISUAL
BMS	BUILDING MANAGEMENT SYSTEM
CKT	CIRCUIT
COPS	CRITICAL OPERATIONS POWER SYSTEM
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EC	EMPTY CONDUIT
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
FCC	FIRE CONTROL CENTER
GFI	GROUND FAULT INTERRUPTOR
GND	GROUND
IDF	INTERMEDIATE DISTRIBUTION FRAME ROOM
IG	ISOLATED GROUND
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME ROOM
MIC	MINERAL INSULATED CABLE
MS	MAIN SWITCHBOARD
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PVC	POLYVINYL CHLORIDE CONDUIT
RAC	RIGID ALUMINUM CONDUIT
RSC	RIGID STEEL CONDUIT
SCC	SECURITY CONTROL CENTER
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
TEL	TELECOM
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
WP	WEATHERPROOF
WT	WATERTIGHT
XP	EXPLOSION PROOF

HAYWARD FIRE TRAINING FACILITY
BUILDING 4 - ELECTRICAL DRAWING LIST
7/19/2019
WSP PROJECT: B17.07369.000

DRAWING NUMBER	DRAWING NAME	SCALE	50%CD 1/17/2018	90%CD 11/2/2018	100%CD 7/19/2019
4-E0.01	ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST	NTS	X	X	X
4-E0.02	ELECTRICAL SCHEDULES	NTS	X	X	X
4-E0.20	ELECTRICAL TITLE 24	NTS		X	X
4-E0.21	ELECTRICAL TITLE 24	NTS		X	X
4-E0.22	ELECTRICAL TITLE 24	NTS		X	X
4-E2.01	ELECTRICAL STORAGE BUILDING FLOOR PLAN	1/8" = 1'-0"	X	X	X
4-E5.01	ELECTRICAL SINGLE LINE DIAGRAM	NTS	X	X	X
4-E5.02	ELECTRICAL GROUNDING DIAGRAM	NTS	X	X	X
4-E6.01	ELECTRICAL DETAILS	NTS		X	X

RACEWAY LEGEND

	CONDUIT CONCEALED ABOVE CEILING OR WITHIN WALL
	CONDUIT BELOW GRADE OR EMBEDDED WITHIN SLAB
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT STUBBED OUT WITH BUSHING NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
	CONDUIT STUBBED OUT AND CAPPED NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
AV	AUDIO/VISUAL SYSTEM RACEWAY
E	ELECTRICAL SYSTEM RACEWAY
G	GROUNDING SYSTEM RACEWAY
FA	FIRE ALARM SYSTEM RACEWAY
S	SECURITY SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
T	TELECOM SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
	CONDUIT HOMERUN, MAXIMUM OF (3) BRANCH CIRCUITS, UON NOTE: MAXIMUM OF THREE BRANCH CIRCUITS FOR EACH HOMERUN, UON

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST

Drawn By: ELW
Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

4-E0.01
Drawing No.

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120V, 1-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE						
	#12	#10	#8	#6	#4	#2	#1
0.4	280ft	446ft	694ft	1,100ft	1,753ft	2,784ft	3,506ft
0.8	140ft	223ft	347ft	550ft	877ft	1,392ft	1,753ft
1.2	93ft	149ft	231ft	367ft	584ft	928ft	1,169ft
1.6	70ft	112ft	174ft	275ft	438ft	696ft	877ft
2.0	56ft	89ft	139ft	220ft	351ft	557ft	701ft
2.4	47ft	74ft	116ft	183ft	292ft	464ft	584ft
2.8	-	64ft	99ft	157ft	250ft	398ft	501ft
3.2	-	56ft	87ft	137ft	219ft	348ft	438ft
3.6	-	50ft	77ft	122ft	195ft	309ft	390ft
4.0	-	-	69ft	110ft	175ft	278ft	351ft
4.4	-	-	63ft	100ft	159ft	253ft	319ft
4.8	-	-	58ft	92ft	146ft	232ft	292ft
5.2	-	-	-	85ft	135ft	214ft	270ft
5.6	-	-	-	79ft	125ft	199ft	250ft
6.0	-	-	-	73ft	117ft	186ft	234ft
6.4	-	-	-	69ft	110ft	174ft	219ft
6.8	-	-	-	-	103ft	164ft	206ft
7.2	-	-	-	-	97ft	155ft	195ft
7.6	-	-	-	-	92ft	147ft	185ft
8.0	-	-	-	-	88ft	139ft	175ft
8.4	-	-	-	-	83ft	133ft	167ft
8.8	-	-	-	-	-	127ft	159ft
9.2	-	-	-	-	-	121ft	152ft
9.6	-	-	-	-	-	116ft	146ft
10.0	-	-	-	-	-	111ft	140ft
10.4	-	-	-	-	-	107ft	135ft
10.8	-	-	-	-	-	103ft	130ft
11.2	-	-	-	-	-	99ft	125ft
11.6	-	-	-	-	-	-	121ft
12.0	-	-	-	-	-	-	117ft
12.4	-	-	-	-	-	-	113ft
12.8	-	-	-	-	-	-	110ft
13.2	-	-	-	-	-	-	106ft
13.6	-	-	-	-	-	-	-
14.0	-	-	-	-	-	-	-
14.4	-	-	-	-	-	-	-
14.8	-	-	-	-	-	-	-
15.2	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-
16.0	-	-	-	-	-	-	-

BASED ON 3% VOLTAGE DROP ALLOWED FOR BRANCH CIRCUITS PER TITLE 24 2013.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 1-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE						
	#12	#10	#8	#6	#4	#2	#1
0.7	480ft	766ft	1,192ft	1,888ft	3,010ft	4,779ft	6,020ft
1.4	240ft	383ft	596ft	944ft	1,505ft	2,389ft	3,010ft
2.1	160ft	255ft	397ft	629ft	1,003ft	1,593ft	2,007ft
2.8	120ft	192ft	298ft	472ft	753ft	1,195ft	1,505ft
3.5	96ft	153ft	238ft	378ft	602ft	956ft	1,204ft
4.2	80ft	128ft	199ft	315ft	502ft	796ft	1,003ft
4.9	-	109ft	170ft	270ft	430ft	683ft	860ft
5.6	-	96ft	149ft	236ft	376ft	597ft	753ft
6.3	-	85ft	132ft	210ft	334ft	531ft	669ft
7.0	-	-	119ft	189ft	301ft	478ft	602ft
7.7	-	-	108ft	172ft	274ft	434ft	547ft
8.4	-	-	99ft	157ft	251ft	398ft	502ft
9.1	-	-	-	145ft	232ft	368ft	463ft
9.8	-	-	-	135ft	215ft	341ft	430ft
10.5	-	-	-	126ft	201ft	319ft	401ft
11.2	-	-	-	118ft	188ft	299ft	376ft
11.9	-	-	-	-	177ft	281ft	354ft
12.6	-	-	-	-	167ft	265ft	334ft
13.3	-	-	-	-	158ft	252ft	317ft
14.0	-	-	-	-	151ft	239ft	301ft
14.7	-	-	-	-	-	228ft	287ft
15.4	-	-	-	-	-	217ft	274ft
16.1	-	-	-	-	-	208ft	262ft
16.8	-	-	-	-	-	199ft	251ft
17.5	-	-	-	-	-	191ft	241ft
18.2	-	-	-	-	-	184ft	232ft
18.9	-	-	-	-	-	177ft	223ft
19.6	-	-	-	-	-	171ft	215ft
20.3	-	-	-	-	-	-	208ft
21.0	-	-	-	-	-	-	201ft
21.7	-	-	-	-	-	-	194ft
22.4	-	-	-	-	-	-	188ft
23.1	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-
24.5	-	-	-	-	-	-	-
25.2	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-
27.3	-	-	-	-	-	-	-
28.0	-	-	-	-	-	-	-

BASED ON 3% VOLTAGE DROP ALLOWED FOR BRANCH CIRCUITS PER TITLE 24 2013.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

480V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	1/0	2/0	3/0	4/0	250KCM	300KCM	350KCM	400KCM	500KCM
7.9	2,760ft	3,483ft	4,397ft	5,539ft	6,539ft	7,850ft	9,176ft	10,491ft	13,053ft
15.8	1,380ft	1,741ft	2,198ft	2,770ft	3,270ft	3,925ft	4,588ft	5,246ft	6,527ft
23.7	920ft	1,161ft	1,466ft	1,846ft	2,180ft	2,617ft	3,059ft	3,497ft	4,351ft
31.6	690ft	871ft	1,099ft	1,385ft	1,635ft	1,963ft	2,294ft	2,623ft	3,263ft
39.5	552ft	697ft	879ft	1,108ft	1,308ft	1,570ft	1,835ft	2,098ft	2,611ft
47.4	460ft	580ft	733ft	923ft	1,090ft	1,308ft	1,529ft	1,749ft	2,176ft
55.3	394ft	498ft	628ft	791ft	934ft	1,121ft	1,311ft	1,499ft	1,865ft
63.2	345ft	435ft	550ft	692ft	817ft	981ft	1,147ft	1,311ft	1,632ft
71.1	307ft	387ft	489ft	615ft	727ft	872ft	1,020ft	1,166ft	1,450ft
79.0	276ft	348ft	440ft	554ft	654ft	785ft	918ft	1,049ft	1,305ft
86.9	251ft	317ft	400ft	504ft	594ft	714ft	834ft	954ft	1,187ft
94.8	230ft	290ft	366ft	462ft	545ft	654ft	765ft	874ft	1,088ft
102.7	212ft	268ft	338ft	426ft	503ft	604ft	706ft	807ft	1,004ft
110.6	197ft	249ft	314ft	396ft	467ft	561ft	655ft	749ft	932ft
118.5	184ft	232ft	293ft	369ft	436ft	523ft	612ft	699ft	870ft
126.4	-	218ft	275ft	346ft	409ft	491ft	574ft	656ft	816ft
134.3	-	205ft	259ft	326ft	385ft	462ft	540ft	617ft	768ft
142.2	-	193ft	244ft	308ft	363ft	436ft	510ft	583ft	725ft
150.1	-	-	231ft	292ft	344ft	413ft	483ft	552ft	687ft
158.0	-	-	220ft	277ft	327ft	393ft	459ft	525ft	653ft
165.9	-	-	209ft	264ft	311ft	374ft	437ft	500ft	622ft
173.8	-	-	-	252ft	297ft	357ft	417ft	477ft	593ft
181.7	-	-	-	241ft	284ft	341ft	399ft	456ft	568ft
189.6	-	-	-	231ft	272ft	327ft	382ft	437ft	544ft
197.5	-	-	-	-	262ft	314ft	367ft	420ft	522ft
205.4	-	-	-	-	252ft	302ft	353ft	404ft	502ft
213.3	-	-	-	-	-	291ft	340ft	389ft	483ft
221.2	-	-	-	-	-	280ft	328ft	375ft	466ft
229.1	-	-	-	-	-	271ft	316ft	362ft	450ft
237.0	-	-	-	-	-	-	306ft	350ft	435ft
244.9	-	-	-	-	-	-	296ft	338ft	421ft
252.8	-	-	-	-	-	-	287ft	328ft	408ft
260.7	-	-	-	-	-	-	-	318ft	396ft
268.6	-	-	-	-	-	-	-	309ft	384ft
276.5	-	-	-	-	-	-	-	300ft	373ft
284.4	-	-	-	-	-	-	-	-	363ft
292.3	-	-	-	-	-	-	-	-	353ft
300.2	-	-	-	-	-	-	-	-	344ft
308.1	-	-	-	-	-	-	-	-	335ft
316.0	-	-	-	-	-	-	-	-	-

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

BUSSING: 400A, 14,000 AIC SYMMETRICAL
MAIN CB: 400A/3P

LPH-B2A

LOCATION:ELECTRICAL ROOM
MOUNTING: SURFACE

277/480V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
L	EQUIP, ELEC, MEN'S LOCKER - LTS	3946	20/1	1	●			2		10004		M
L	APPARATUS BAY - LTS	1500	20/1	3		●		4	40/3	10004	CU-B2-1	M
L	EXTERIOR - LTS	544	20/1	5			●	6		10004		M
	SPARE	0	20/1	7	●			8		3048		M
L	SITE LIGHTING	2059	20/1	9		●		10	20/3	3048	EF-B2-1	M
L	SITE LIGHTING	897	20/1	11			●	12		3048		M
M		2106		13	●			14		582		M
M	4CA-1-1	2106	20/3	15		●		16	20/3	582	CF-B2-1	M
M		2106		17			●	18		582		M
	SPARE	0	20/1	19	●			20		582		M
	SPARE	0	20/1	21		●		22	20/3	582	CF-B2-2	M
	SPARE	0	20/1	23			●	24		582		M
	SPARE	0	20/1	25	●			26		582		M
	SPARE	0	20/1	27		●		28	20/3	582	CF-B2-3	M
	SPARE	0	20/1	29			●	30		582		M
	SPARE	0	20/1	31	●			32		1801		M
	SPARE	0	20/1	33		●		34	20/3	1801	ECV-B2-1	M
	SPARE	0	20/1	35			●	36		1801		M
		38881.0		37	●			38		0		
	DPL-B2A VIA T-B2A	38881.0	175A/3	39		●		40	175/3	0	LPH-B2B	
		38881.0		41			●	42		0		
	TOTAL ALL PHASES (VA)	PHASE A (VA)		PHASE B (VA)			PHASE C (VA)			TOTAL ALL PHASES (AMPS)		
	181703.9	61531.9		61145			59027			219		

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	40196 VA	1.00	40196 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	9586 VA	1.25	11982 VA
M = MOTOR	56264 VA	1.00	56264 VA
M = LARGEST MOTOR	30002 VA	1.25	37503 VA
R = RECEPTACLE	45656 VA	NEC DEMAND	27828 VA

CONNECTED LOAD SUMMARY
181704 VA
219 AMPS

NEC LOAD SUMMARY
173773 VA
209 AMPS

EQUIPMENT CONNECTION DESIGNATIONS LEGEND

DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION
AC	AIR CONDITIONING UNIT	FCU	FAN COIL UNIT	P	PUMP
ACC	AIR COOLED CONDENSER	FOA	FUEL OIL ALARM PANEL	PS	PROJECTION SCREEN
AHU	AIR HANDLING UNIT	FOP	FUEL OIL PUMP	REF	REFRIGERATOR
BC	BATTERY CHARGER	FMS	FMS PANEL	RF	RETURN FAN
BMS	BMS PANEL	FP	FIRE PUMP	RTU	ROOF TOP UNIT
CH	CHILLER	FPB	FAN POWER BOX	SD	SMOKE DAMPER
COMP	COMPRESSOR	FSD	FIRE/SMOKE DAMPER	SE	SEWAGE EJECTOR
COP	COPIER	GD	GARBAGE DISPOSAL	SF	SUPPLY FAN
CP	CIRCULATING PUMP	GS	GRAPHIC SIGNAGE	SP	SUMP PUMP
CU	CONDENSING UNIT	HP	HEAT PUMP	UH	UNIT HEATER
DF	DUCT FURNACE	HV	HEATING/VENTILATING UNIT	VAV	VAV BOX ELECTRIC HEAT
DWBP	DOMESTIC WATER BOOSTER PUMP	IH	INSTANT HOT WATER HEATER	VM	VENDING MACHINE
ECH	ELECTRIC CABINET HEATER	JP	JOCKEY PUMP	VFD	VARIABLE FREQUENCY DRIVE
EDH	ELECTRIC DUCT HEATER	JWH	JACKET WATER HEATER	TYPE DP	DUPLEX PUMP
EF	EXHAUST FAN	MCS	MOTOR CONNECTION SCHEDULE	TYPE FR	FRACTIONAL HP MOTOR
EHC	ELECTRIC HEATING COIL	MD	MOTORIZED DOOR OR GATE	TYPE FWS	FURNISHED WITH STARTER
ELEV	ELEVATOR	MS	MOTORIZED SHADE	TYPE M	MOTOR WITH STARTER
EUH	ELECTRIC UNIT HEATER	MUA	MAKE UP AIR UNIT	TYPE SPC	SINGLE POINT CONNECTION
EWC	ELECTRIC WATER COOLER	MW	MICROWAVE OVEN	TYPE VFD	VARIABLE FREQUENCY DRIVE
EWH	ELECTRIC WATER HEATER	OH	OIL HEATER		

EQUIPMENT CONNECTION SCHEDULE

DESIGNATION	HP	FLA	KVA	VOLT-AGE	PH	POWER SOURCE	CONNECTION TYPE	BRANCH CIRCUIT WIRING	REMARKS
4CA-1-1	5			480	3	LPH-B2A	SPC	MCS	

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER/CATALOG NO.	DESCRIPT	WATTS	VOLTS	REMARKS
W1	PENDANT MOUNTED INDUSTRIAL CORROSION-RESISTANT 4 FOOT LONG FIXTURE. LAMPS IN SECTION, POLYURETHANE GASKET, UV STABILIZED PATTERN ACRYLIC HIGH IMPACT DIFFUSER, ELECTRONIC DRIVER. RUN UNSWITCHED CONDUCTOR TO FIXTURE FOR BATTERY CHARGER	WILLIAMS 17-4-L55-835-AF-EM/10W-DIM-UNV PARAMOUNT STARDUSTER CS-2-L-4-3-EMD1-D3-120-277V DAYBRITE: DWAE43L-835-4-UNV-EMLED	LED	40	120	BACK OF HOUSE SPACES

BUSSING: 225A, 10,000 AIC SYMMETRICAL
MAIN CB: 225A/3P

LP-B4A

LOCATION:ELECTRICAL ROOM
MOUNTING: SURFACE

120/208V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
R	STORAGE RECEPTS	540	20/1	1	●			2	20/1	320	BUILDING 4 - LTS	L
R	STORAGE RECEPTS	180	20/1	3		●		4	30/2	2496	5-30 RECPTACLE	R
R	STORAGE RECEPTS	180	20/1	5			●	6		2496		R
R	STORAGE RECEPTS	180	20/1	7	●			8	20/1		SPARE	
R	STORAGE RECEPTS	180	20/1	9		●		10	20/1		SPARE	
R	STORAGE RECEPTS	180	20/1	11			●	12	30/2	2496	5-30 RECPTACLE	R
R	STORAGE RECEPTS	180	20/1	13	●			14		2496		R
R	STORAGE RECEPTS	180	20/1	15		●		16	30/2	2496	5-30 RECPTACLE	R
R	STORAGE RECEPTS	180	20/1	17			●	18		2496		R
R	STORAGE RECEPTS	180	20/1	19	●			20	50/2	4160	5-50 RECEPTACLE	R
R	STORAGE RECEPTS	180	20/1	21		●		22		4160		R
E	BUILDING 4 TELECOM	2496	30/2	23			●	24	50/2	4160	5-50 RECEPTACLE	R
E		2496		25	●			26		4160		R
R	EXTERIOR RECEPTACLE	180	20/1	27		●		28	20/1	900	EXTERIOR RECEPTACLES	R
	SPARE	0	20/1	29			●	30	20/1	500	FATC	E
	SPARE	0	20/1	31	●			32		3666		M
	SPARE	0	20/1	33		●		34	40/3	3666	OFCI CASCADE AIR SYSTEM	M
	SPARE	0	20/1	35			●	36		3666		M
	SPACE	0		37	●			38		0	SPACE	
	SPACE	0		39		●		40		0	SPACE	
	SPACE	0		41			●	42		0	SPACE	
	TOTAL ALL PHASES (VA)	PHASE A (VA)		PHASE B (VA)			PHASE C (VA)			TOTAL ALL PHASES (AMPS)		
	51846	18378		14618			18850			144		

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	5492 VA	1.00	5492 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	320 VA	1.25	400 VA
M = MOTOR	-5646 VA	1.00	-5646 VA
M = LARGEST MOTOR	16644 VA	1.25	20805 VA
R = RECEPTACLE	35036 VA	NEC DEMAND	22518 VA

CONNECTED LOAD SUMMARY
51846 VA
144 AMPS

NEC LOAD SUMMARY
43569 VA
121 AMPS

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNFEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL SCHEDULES

Drawn By: ELW
Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

4-E0.02

Drawing No.

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STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 1 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A. General Information

Climate Zone:	Conditioned Floor Area: 1,065						
3	Unconditioned Floor Area: 0						
Building Type:		☑	Nonresidential	☐	High-Rise Residential	☐	Hotel/Motel
☐ Schools		☐	Relocatable Public Schools	☑	Conditioned Spaces	☐	Unconditioned Spaces
Phase of Construction:		☑	New Construction	☐	Addition	☐	Alteration
Method of Compliance:		☐	Complete Building	☑	Area Category	☐	Tailored
Project Address: 1401 W. Winton Ave.							

B. Lighting Compliance Documents (select yes for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

YES	NO	COMP. DOC.	TITLE
☑	☐	NRCC-LTI-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
☑	☐	NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All Pages required on plans for all submittals.
☑	☐	NRCC-LTI-03-E	Indoor Lighting Power Allowance
☐	☑	NRCC-LTI-04-E	Tailored Method Worksheets
☐	☑	NRCC-LTI-05-E	Line Voltage Track Lighting Worksheets
☐	☑	NRCC-LTI-06-E	Indoor Lighting Existing Conditions

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 04/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 4 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

B. Separation of Electrical Circuits for Electrical Energy Monitoring

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(b).

☒ The electrical power distribution system meets the separation of electrical circuits for electrical energy monitoring requirement of Section 130.5(b). The electrical power distribution systems is designed so that measurement devices can monitor the electrical energy usage of load types listed in Table 130.5-A.

☒ Describe the electrical power distribution system installed and the compliance method chosen in meeting the requirement of Section 130.5(b). Use the space below to include the information. Examples of compliance methods are detailed in Nonresidential Compliance Manual Chapter 8.

Fill out Column 1 thru 3 with the compliance information.

General information	Electrical Power Distribution System information and Method of compliance	Electrical Service Rating	Enforcement Agency
	01	02	03	04
Electrical Service Designation/Location/Description	Describe the electrical power distribution system installed and the compliance method used.	kVA	Check that the system complies
LP-84A	PANELBOARD DISAGGREGATION	44	☐

Field Inspector Notes:

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 04/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

General Information

Project Address:		Climate Zone:	Conditioned Floor Area: 1,065		
1401 W. Winton Ave.		3	Unconditioned Floor Area: 0		
Building Type:	☑ Nonresidential	☐ High-Rise Residential		☐ Hotel/Motel	
Phase of Construction:	☐ Schools	☐ Relocatable Public Schools		☐ Alteration	
	☑ New Construction	☐ Addition			

In the table below identify all applicable construction documents that specify the requirements for the scope of responsibility reported by this certificate. Use additional pages as needed to list all construction documents related to compliance of Section 130.5.

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Indicate which subsection of Section 130.5 is related to the document (e.g. 130.5(a) for service electrical metering)
4-ED-02	ELECTRICAL SCHEDULES		c
4-ES-01	ELECTRICAL RISER DIAGRAM		a,b

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 2 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

C. Summary of Allowed Lighting Power

Conditioned and Unconditioned space Lighting must not be combined for compliance

	Indoor Lighting Power for Conditioned Spaces		Watts	Indoor Lighting Power for Unconditioned Spaces		Watts
01	**Installed** Lighting NRCC-LTI-01-E, Table H, page 5	+	320	**Installed** Lighting NRCC-LTI-01-E, Table H, page 5	+	0
02	Portable Only for Offices NRCC-LTI-01-E, Table G, page 4	+				
03	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0
04	Adjusted **Installed** Lighting Power (row 1 plus row 2 minus row 3)	=	320	Adjusted **Installed** Lighting Power (row 1 minus row 3)	=	0
	Complies ONLY if **Installed** ≤ **Allowed** (Box 04 < Box 05)			Complies ONLY if **Installed** ≤ **Allowed** (Box 04 < Box 05)		
05	**Allowed** Lighting Power Conditioned NRCC-LTI-03-E, page 1 Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		639	**Allowed** Lighting Power Unconditioned NRCC-LTI-03-E, page 1 Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		0

D. Declaration of Required Certificates of Installation

Declare by selecting yes for all of the Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Compliance Document/Title	
☑	☐	NRCI-LTI-01-E - Must be submitted for all buildings	☐ Field Inspector
☑	☐	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ Field Inspector

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 04/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 5 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

C. Voltage Drop

Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(c).

☒ The electrical power distribution system meets the voltage drop requirement of Section 130.5(c). The maximum combined voltage drop on feeder conductors and branch circuit conductors to the farthest connected load or outlet, do not exceed 5%.

☒ Voltage drop calculation documents showing compliance to Section 130.5(c) are submitted as part of the compliance document submittal.

D. Circuit Controls for 120-Volt Receptacles and Controlled Receptacles

Check one or more boxes below for applicable requirements of Section 130.5(d) for the electrical power distribution system.

☒ The control is capable of automatically shutting OFF the controlled receptacles when the space is typically unoccupied, either at the receptacle or circuit level. For the automatic time switch control, it incorporates an automatic holiday "shut-OFF" feature that turns OFF all loads for at least 24 hours and then resumes the normally scheduled operation. Countdown timer switches are not be used to comply with the automatic time switch control requirements. The controls meet the requirement of Section 130.5(d)1.

☐ There is at least one controlled receptacle within 6 ft from each uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.

☐ There are installed split wired receptacles with at least one controlled and one uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.

☒ Permanent and durable marking for controlled receptacles or circuits to differentiate them from uncontrolled receptacles or circuits is provided. The markings meet the requirement of Section 130.5(d)3.

☐ For hotel and motel guest rooms, there are controlled receptacles for at least one half of the 120-volt receptacles in each guest room. Electric circuits serving controlled receptacles in guestrooms are installed to have captive key controls, occupancy sensing controls, or automatic controls so the power is switched off no less than 3 hours after the guest room has been vacated. The receptacles meet the requirement of Section 130.5(d)4.

☐ Receptacles that are only for the following purposes are exempted from Section 130.5(d):
-Receptacles specifically for refrigerators and water dispensers in kitchen areas.
-Receptacles located a minimum of six ft above the floor that are specifically for clocks.
-Receptacles for medical equipment, fax machines, A/V and data equipment that is intended to be in continuous use.
-Receptacles connected to an uninterruptible power supply (UPS) that are intended to be in continuous use, 24 hours per day, 7 days per week, and are marked to differentiate them from other uncontrolled receptacles or circuits.

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Applicable subsection of Section 130.5

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 04/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 6 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Hayley Viero
Company:	WSP
Address:	425 Market Street, 17th floor
City/State/Zip:	San Francisco, CA 94105
Phone:	415-243-4600

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am the responsible person for the design of the building or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I will retain a copy of the Certificate of Compliance and will make it available to the enforcement agency if requested by the enforcement agency. If the Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Amanda Brownlee
Company:	WSP
Address:	425 Market Street, 17th Floor
City/State/Zip:	San Francisco, CA 94105
Date Signed:	7/16/2019
License:	E17287
Phone:	415-243-4600

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 04/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 3 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A. Service Electrical Metering

Check one of the three boxes below if the electrical power distribution system is in compliance with Section 130.5(e).

☒ For newly installed electrical service in newly constructed buildings, Service Electrical Metering is required according to Section 130.5(a). *Fill out Column 1 thru 8 of table below.*

☐ For new or replacement electrical service equipment in existing buildings, Service Electrical Metering is required according to Section 141.0(b)2H. *Fill out Column 1 thru 6 of table below.*

☐ EXCEPTION to Electrical Service Metering: Service or feeder for which the utility company provides a metering system that indicates instantaneous kW demand and kWh for a utility-defined period. *Fill out Column 1, 2 and 6 of table below with the compliance information.*

Fill out a separate line for each electrical service that is connected to the building. If additional table space is needed for electrical service information, submit additional page with the information.

Electrical Service Schedule	Electrical Service Rating	Metering Capabilities (check all that are present)				Exception to 130.5(e)	Field Inspector
		Instantaneous kW (at the time metered)	Historical peak kW (kW)	Tracking kWh for a user-definable period	kWh per rate period	Utility metering system	Check that the metering complies
01	02	03	04	05	06	07	08
Electrical Service Designation/Location/Description	kVA						
REFER TO PACKAGE 1 FOR ELECTRICAL SERVICE SCHEDULE		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL TITLE 24

Drawn By: ELW Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

4-E0.20
Drawing No.

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STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 1 of 3)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A. Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
☑	☐	Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
☑	☐	Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
☐	☑	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
☐	☑	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
☑	☐	All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
☑	☐	All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
☑	☐	General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.1(a)4.
☑	☐	The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
☑	☐	All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
☐	☑	Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
☐	☑	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
☑	☐	Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector
										Watts of Controlled Lighting	PAF	Control Credit (K x L)	✓ if Acceptance Test Required	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass / Fail
STORAGE	Manual Area	1	☑	☐	☐	☐	☐	☐	☐				✓	☐ ☐
STORAGE	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐ ☐
STORAGE	Occupancy Sensor	2	☐	☐	☑	☐	☐	☐	☐				✓	☐ ☐
			☐	☐	☐	☐	☐	☐	☐					☐ ☐
			☐	☐	☐	☐	☐	☐	☐					☐ ☐
			☐	☐	☐	☐	☐	☐	☐					☐ ☐
Control Credit PAGE TOTAL (Sum of Column 13):												0		
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):												0		
												Enter Control Credit total into NRCC-LTI-01-E; Page 1.		

1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(d) = Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 3 of 3)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Hayley Vero	Documentation Author Signature: Hayley Vero
Company: WSP	Signature Date: 7/16/2019
Address: 425 Market Street, 17th floor	CEA Certification Identification (if applicable):
City/State/Zip: San Francisco, CA 94105	Phone: 415-243-4600

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Amanda Brownlee	Responsible Designer Signature: Amanda Brownlee
Company : WSP	Date Signed: 7/16/2019
Address: 425 Market Street, 17th Floor	License: E17287
City/State/Zip: San Francisco, CA 94105	Phone: 415-243-4600

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 4 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

G. Installed Portable Luminaires in Offices – Exception to Section 140.6(a)
☐ This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). All other planned portable luminaires shall be documented on next page of this compliance document.
☐ This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office
☐ Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

Office Portable Luminaire Schedule	Office Installed Portable Luminaire W/ft^2							Office Location	Field Inspector	
1	2	3	4	5	6	7	8	9	10	
Complete Luminaire Description (i.e., LED, under cabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (G02 x G03)	Square feet of this office	Watts per square foot (G04 / G05)	If G06 ≤ 0.3, enter zero; if G06 > 0.3, (G06-0.3)	(G05 x G07)	Identify Office area in which these portable luminaires are installed	Pass	Fail
									☐	☐
									☐	☐
									☐	☐
									☐	☐
									☐	☐
Total installed portable luminaire watts that are greater than 0.3 W/ft^2 per office:								Enter sum total of all pages into NRCC-LTI-01-E; Page 1		

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule		Installed Watts				Location	Field Inspector [3]	
01	02	03	04		05	06	07	08
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from NA8	How wattage was determined: According to §130.0(c)	Number Luminaires	Total Installed Watts in this area (H03 x H05)	Primary Function area in which these luminaires are installed	Pass / Fail
W1	W1	40.0	☐	☑	8	320	Corridor/Restroom/Support	☐ ☐
			☐	☐				☐ ☐
			☐	☐				☐ ☐
			☐	☐				☐ ☐
			☐	☐				☐ ☐
			☐	☐				☐ ☐
			☐	☐				☐ ☐
			☐	☐				☐ ☐
			☐	☐				☐ ☐
INSTALLED WATTS PAGE TOTAL:						320	Enter sum total of all pages into NRCC-LTI-01-E; Page 2	

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 6 of 6)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Hayley Vero	Documentation Author Signature: Hayley Vero
Company: WSP	Signature Date: 7/16/2019
Address: 425 Market Street, 17th floor	CEA Certification Identification (if applicable):
City/State/Zip: San Francisco, CA 94105	Phone: 415-243-4600

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Responsible Designer Name: Amanda Brownlee	Responsible Designer Signature: Amanda Brownlee
Company : WSP	Date Signed: 7/16/2019
Address: 425 Market Street, 17th Floor	License: E17287
City/State/Zip: San Francisco, CA 94105	Phone: 415-243-4600

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title
ELECTRICAL TITLE 24

Drawn By: ELW — Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

4-E0.21
Drawing No.

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STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 4 of 4)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
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Responsible Designer Name: Amanda Brownlee	Responsible Designer Signature: Amanda Brownlee
Company: WSP	Date Signed: 7/16/2019
Address: 425 Market Street, 17th Floor	License: E17287
City/State/Zip: San Francisco, CA 94105	Phone: 415-243-4600

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES

☐ If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
☐ If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)	(b)
01 Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
02 Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		639
03 Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E		0
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		639

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

01	02		03		04
TYPE OF BUILDING (From §140.6 Table 140.6-B)	WATTS PER ft^2	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C -1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES	Watts
Total from section C-2.	639
Total from section C-3.	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page).	639
For Alterations Only – Reduced lighting power option (Total Allowed Watts x 0.85). Enter this value into section A, row 2 if using this option.	

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

C -2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in Section G of NRCC-LTI-01-E.
☐ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

01		02		03		04
AREA CATEGORY (From §140.6 Table 140.6-C)		WATTS PER ft^2	X	AREA (ft^2)	=	ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
Storage	Corridor/Restroom/Support	0.60		1,065		639
		TOTALS		1,065		
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document)						639
						WATTS

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 3 of 4)
Project Name: Hayward Fire Training Center - Building 4	Date Prepared: 7/16/2019

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
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C-3 AREA CATEGORY METHOD ADDITIONAL LIGHTING WATTAGE ALLOWANCE (from Table 140.6-C Footnotes)

01	02	03 [2]	04	05	06	07
Primary Function	Sq Ft or Linear ft [1]	Additional Watts Allowed	Wattage Allowance (02 x 03)	Description(s) and Quantity of Special Luminaire Types in each Primary Function Area	Total Design Watts [3]	ALLOWED WATTS Smaller of 04 or 06
TOTALS – Enter into TOTAL AREA CATEGORY METHOD ADDITIONAL ALLOWANCES – Section C-1						0

1. Use linear feet only for additional allowance for white board or chalk board. All other additional Area Category allowances shall use watts per square foot.
2 . Additional watts are available only when allowed according to the footnotes on bottom of Table 140.6-C, which include: Specialized task work; Ornamental lighting; Precision commercial and industrial work; Per linear foot of white board or chalk board; Accent, display and feature lighting; and Videoconferencing studio lighting..
3. Luminaire classification and wattage shall be determined in accordance with §130.0(c) of the Standards.

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA DEP. DIR. PUBLIC WORKS	ALEX AMERI INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

**1401 W. WINTON AVE.
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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title
ELECTRICAL TITLE 24

Drawn By: ELW Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

4-E0.22
Drawing No.

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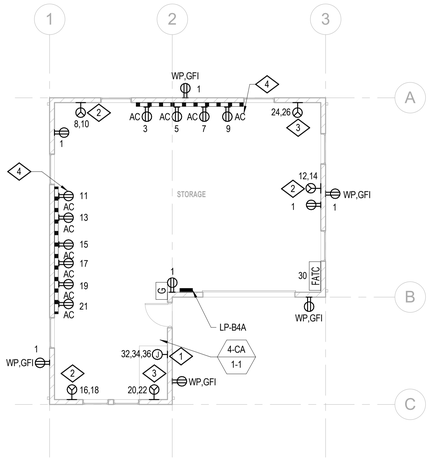
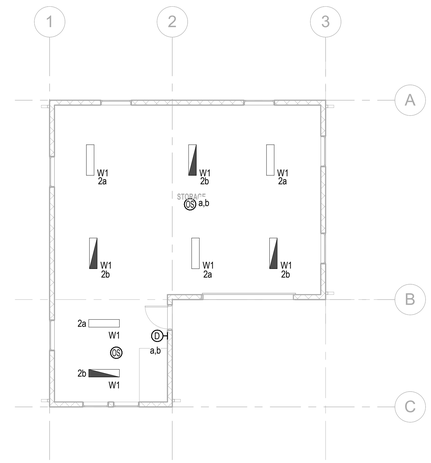


1 04-ELEC POWER STORAGE-FIRST FLOOR
1/8" = 1'-0"



2 04-ELEC LIGHTING STORAGE-FIRST FLOOR
1/8" = 1'-0"

SHEET NOTES:

A. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

B. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

C. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM.

D. CONNECT ALL 120/208V POWER AND LIGHTING TO PANEL LP-B4A, UON.

E. ALL DIMMERS ARE TO HAVE A MASTER RAISE/LOWER.

F. FOR ALL DATA CABLING, PATHWAY INFRASTRUCTURE AND DEVICES REFER TO T SERIES DRAWINGS.

NUMBERED NOTES:

1. PROVIDE 208V, 3-PHASE, 4-WIRE CONNECTION TO OFCI CASCADE AIR SYSTEM. PROVIDE 1/2"C - 4#10 & 1#10G.
2. PROVIDE NEMA TYPE 5-30 RECEPTACLE. PROVIDE 1/2"C - 2# 10 +1#10G.
3. PROVIDE NEMA TYPE 5-50 RECEPTACLE. PROVIDE 1"C - 2#6 +1#10G.
4. MOUNT AT +42" AFF, TYP.

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DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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No. E17287
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STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL STORAGE BUILDING FLOOR PLAN

Drawn By: ELW
Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

4-E2.01
Drawing No.

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WIRING SCHEDULE - COPPER CONDUCTORS (0-600V)

CIRCUIT RATING	CONDUIT SIZE (INCHES)							CONDUCTOR SIZE	
	NONE	G	N	NG	NGI	NNG	NNGI	PHASE/ NEUTRAL	GND/* IG
15	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
20	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
30	0.5	0.5	0.5	0.5	0.75	0.75	0.75	10	10
40	0.75	0.75	0.75	1	1	1	1	8	10
50	1	1	1	1.25	1.25	1.25	1.25	6	10
60	1	1.25	1.25	1.25	1.5	1.5	1.5	4	10
70	1	1.25	1.25	1.25	1.5	1.5	1.5	4	8
80	1.25	1.25	1.25	1.5	2	2	2	2	8
90	1.25	1.25	1.25	1.5	2	2	2	2	8
100	1.25	1.5	1.5	2	2	2	2.5	1	8
110	1.25	1.5	1.5	2	2	2	2.5	1	6
125	1.25	1.5	1.5	2	2	2	2.5	1	6
150	1.5	2	2	2	2.5	2.5	2.5	1/0	6
175	1.5	2	2	2	2.5	2.5	2.5	2/0	6
200	2	2	2	2.5	2.5	2.5	3	3/0	6
225	2	2.5	2.5	2.5	3	3	3	4/0	4
250	2.5	2.5	2.5	3	3	3	3.5	250	4
300	2.5	3	3	3.5	3.5	3.5	4	350	4
350	3	3.5	3.5	4	4	4	5	500	2
400	2@2	2@2	2@2	2@2.5	2@2.5	2@2.5	2@3	3/0	2
450	2@2	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	4/0	2
500	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	2@3.5	250	1
600	2@2.5	2@3	2@3	2@3.5	2@3.5	2@3.5	2@4	350	1
700	2@3	2@3.5	2@3.5	2@4	2@4	2@4	2@5	500	1/0
800	3@2.5	3@3	3@3	3@3	3@3.5	3@3.5	3@3.5	300	1/0
1000	3@3	3@3	3@3	3@3.5	3@4	3@4	3@4	400	2/0
1200	4@2.5	4@3	4@3	4@3.5	4@3.5	4@3.5	4@4	350	3/0
1600	5@3	5@3	5@3	5@3.5	5@4	5@4	5@4	400	4/0
2000	6@3.5	6@3.5	6@3.5	6@4	6@4	6@4	6@5	500	250
2500	7@3.5	7@3.5	7@3.5	7@4	7@4	7@4	7@4	500	350
3000	8@3.5	8@3.5	8@3.5	8@4	8@4	8@4	8@4	500	400

SUBSCRIPT KEY

SUBSCRIPT	CONDUCTORS PER CONDUIT
NONE	3 PHASE CONDUCTORS, CONDUIT GROUND
G	3 PHASE CONDUCTORS, 1 GROUNDING CONDUCTOR
N	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, CONDUIT GROUND
NG	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR
NGI	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR
NNG	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR
NNGI	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR

* SINGLE NEUTRAL CONDUCTOR SIZES FOR CIRCUIT RATING 125 AND LESS

PARALLEL CONDUCTORS ARE NOT PERMITTED UNDER 1/0. WHERE DOUBLE NEUTRAL CONDUCTORS ARE INDICATED, PROVIDE AN OVERSIZED NEUTRAL CONDUCTOR IN ACCORDANCE WITH THE FOLLOWING TABLE:

CIRCUIT RATING	15	20	30	40	50	60
SINGLE NEUTRAL CONDUCOTR SIZE	10	8	4	2	1	1/0
CIRCUIT RATING	70	80	90	100	125	
SINGLE NEUTRAL CONDUCTOR SIZE	2/0	3/0	4/0	250	250	

EXAMPLES

NOTES

1. SCHEDULE IS BASED ON 3 CURRENT CARRYING CONDUCTORS IN RACEWAY, CABLE OR EARTH, AT AMBIENT AIR TEMPERATURE OF 30°C (86°F). CONDUIT SIZES BASED ON EMT.
2. MODIFY IF USE OF 600MCM CONDUCTORS ARE DESIRED CONFIRM LUG SIZES ARE AVAILABLE.

TRANSFORMER SCHEDULE

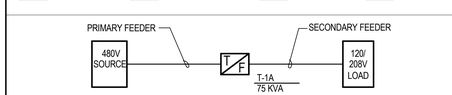
KVA	FEEDER AMPACITY			NEUTRAL GROUNDING ELECTRODE CONDUCTOR**
	PRIMARY 480V 3 PHASE-3 WIRE	SECONDARY 120/208V 3 PHASE-4 WIRE	SUPPLY SIDE BONDING JUMPER**	
3	15	15	#8	1/2"C-1#8
6	15	20	#8	1/2"C-1#8
9	15	30	#8	1/2"C-1#8
15	20	50	#8	1/2"C-1#8
30	50	100	#6	1/2"C-1#6
45	70	150	#6	1/2"C-1#6
75	110	250	#2	1/2"C-1#2
112 1/2	175	400	#1/0	3/4"C-1#3/0
150	225	500	#1/0	3/4"C-1#3/0
225	350	800	#2/0	3/4"C-1#3/0
300	450	1000	#2/0	3/4"C-1#3/0
500	800	1600	#4/0	3/4"C-1#3/0
750	1200	2500	#350	3/4"C-1#3/0

FEEDER KEY

TRANSFORMER IDENTIFICATION PREFIX	FEEDER CONFIGURATION	
	PRIMARY	SECONDARY
T	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 1 NEUTRAL CONDUCTOR 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NG***)
TK	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 2 NEUTRAL CONDUCTORS 1 GROUNDING CONDUCTOR 1 ISOLATED GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NNGI***)

** = CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS
*** = SUBSTITUTE GND/G CONDUCTOR FROM FEEDER SCHEDULE WITH SUPPLY SIDE BONDING JUMPER NOTED ABOVE

EXAMPLES



UNDERGROUND FEEDER CONDUIT SCHEDULE

TAG DESIGNATION	TO	FROM	QUANTITY	SIZE	SPARE	DESIGN FEEDER	ESTIMATED LENGTH	VOLT DROP (%)	BUILDING PACKAGE	REMARKS
F00	PG&E P/B	STREET	2	5"		PER PG&E	66'	N/A	1	
F01	PG&E TRANSF	PG&E P/B	2	5"		PER PG&E	208'	N/A	1	
F02	MS-B1A	PG&E TRANSF	7	5"		PER PG&E	40'	0.60	1	
F03	DPH-B1A	MS-B1A	1	2.5"		225NG	57'	0.12	1	
F04	FP-B1	MS-B1A	1	2.5"		70G	54'	0.29	1	LRA = 302.8A, VD_{dp}=1.7%
F05	ATS-E1B	MS-B1A	1	2"		100NG	31'	0.39	1	
F06	FP-B1	EDSH-B1A	1	2.5"		70G	138'	1.24	1	INCLUDE 1"C TO GENERATOR FOR GEN START LRA = 302.8A, VD_{dp}=6.4%
F07	ATS-E1A	MS-B1A	1	2"		150NG	33'	0.52	1	
F08	ATS-E1C	MS-B1A	2	3"		500NG	34'	0.47	1	
F09	HBI-B1	MS-B1A	1	4"	2"	300G	60'	0.35	1	
F10	CH-1	EDPH-B1A	1	2.5"		ECS	67'	0.26	1	
F11	ELEV-1	EDPH-B1A	1	1"		ECS	101'	0.18	1	
F12	FUEL	ELP-B1A	1	2"		100NG	102'	0.56	1	
F13	DPH-PV	HBI-B1	1	4"	2"	300G	77'	0.44	1	
F14	PULLBOX	MS-B1A			(2) 4"	37'	37'	N/A	1	SPARE FOR FUTURE USE
F15										NOT USED
F16										NOT USED
F17										NOT USED
F18										NOT USED
F19										NOT USED
F20	LPH-B2A	MS-B1A	2	2.5"	(2) 2.5"	400G	358'	0.86	1 / 2	
F30										NOT USED
F40	LP-B4A	DPL-B2A	1	3"	(1) 2"	250NG	150'	1.85	4	FEEDER OVERSIZED FOR VOLTAGE DROP
F50										NOT USED
F60	LP-B6A	DPL-B9A	1	2.5"		200NG	413'	1.54	6	
F70	LP-B7A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	318'	0.77	7	
F80	LP-B8A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	362'	1.06	8	
F81	LP-B8B	DPL-B9A	2	2.5"	(1) 2.5"	400NG	449'	0.84	8	
F90	LPH-B9A	MS-B1A	2	3.5"	(2) 2.5"	600G	515'	0.66	1 / 9	
F91	T-B9A	LPH-B9A	2	2.5"		450G	22'	0.04	9	
F92	DPL-B9A	T-B9A	3	3.5"		1000NG	10'	0.04	9	
F93	LP-B9A	DPL-B9A	1	2.5"		225NG	17'	0.02	9	
F94	LP-B9B	DPL-B9A	1	2.5"	(1) 2.5"	175NG	19'	0.07	9	
FE1	EDSH-B1A	GEN-B1	2	4"		700NG	20'	0.05	1	
FE2	ATS-E1A	EDSH-B1A	1	2"		150NG	100'	0.61	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE3	ATS-E1C	EDSH-B1A	2	3"		500NG	102'	0.18	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE4	ELPH-B1A	ATS-E1A	1	2"		150NG	40'	0.24	1	
FE5	EDPH-B1A	ATS-E1C	2	4"		600NG	29'	0.04	1	
FE6	UPS-B1A	ELPH-B1A	1	1.5"		70NG	70'	0.14	1	
FE7	ELP-B1A	ET-B1A	2	2.5"		400NG	69'	1.15	1	
FE8	ULP-B1A	UPS-B1A	1	1.5"		50NNGI	97'	0.25	1	
FE9	ATS-E1B	EDSH-B1A	1	2"		100NG	90'	0.04	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE10	ELPH-B1B	ATS-E1B	1	2"		100NG	56'	0.02	1	
FE11	PULLBOX	EDSH-B1A			(1) 4"			N/A	1	SPARE FOR FUTURE USE
FE12	ELPH-B2A	ELPH-B1B	1	2"		100NG	350'	0.08	2	

SHEET NOTES

A. CONFIRM AND COORDINATE ALL PG&E UTILITY ROUTING WITH PG&E PER PG&E STANDARDS AND REQUIREMENTS.

B. REFER TO "0" SERIES OF DRAWINGS FOR SITE UTILITY AND INFRASTRUCTURE INFORMATION.

C. ALL OUTDOOR EQUIPMENT SHALL BE RATED NEMA 4X, UON.

D. ALL OVERCURRENT PROTECTIVE DEVICES ASSOCIATED WITH COPS SHALL BE SELECTIVELY COORDINATED.

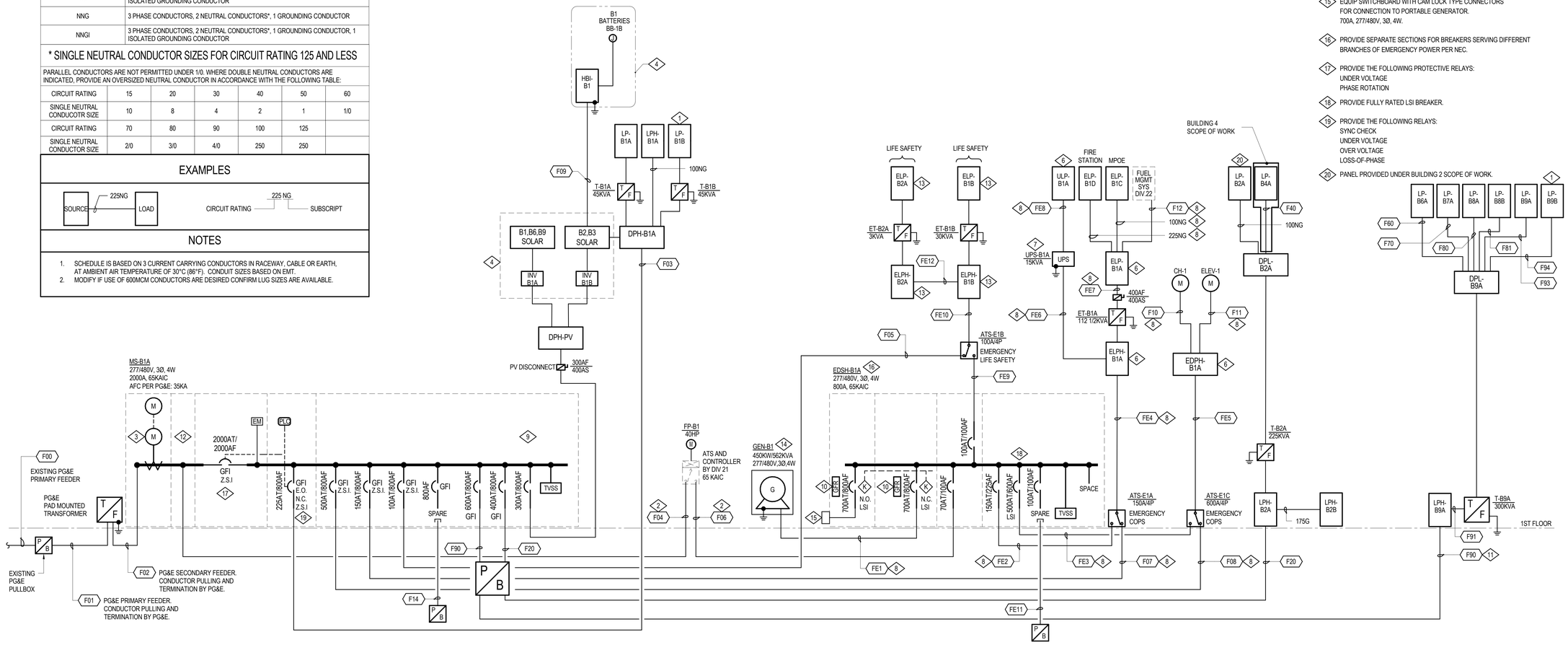
E. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM .

F. WIRING FROM AN EMERGENCY SOURCE OR EMERGENCY SOURCE DISTRIBUTION OVERCURRENT PROTECTION TO EMERGENCY LOADS SHALL BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER CEC ARTICLE 700.10.

G. ARC ENERGY REDUCTION PER CEC ARTICLE 240.87 WITH RESPECT TO DOCUMENTATION & METHOD TO REDUCE CLEARING TIES IS APPLICABLE.

NUMBERED NOTES

1. EQUIPMENT TO SERVE ELECTRIC VEHICLE CHARGERS. PROVIDE PROGRAMMABLE ELECTRONIC CIRCUIT BREAKER LEVEL SUB-METERS FOR OWNER THIRD PARTY MEASUREMENT/METERING IN THIS PANEL. CONNECT WITH 3/4"C TO NEAREST TELECOM ROOM.
2. PROVIDE 2-HR FIRE RATED ASSEMBLY FOR FEEDERS.
3. PROVIDE 2-SOCKET PG&E UTILITY METER, WITH NET METER CAPABILITY PER PG&E REQUIREMENTS.
4. REFER TO HYBRID POWER SYSTEM DRAWINGS FOR MORE INFORMATION.
5. REFER TO PHOTOVOLTAIC SYSTEM DRAWINGS FOR MORE INFORMATION.
6. PROVIDE SURGE PROTECTION DEVICE PER NEC ARTICLE 708.
7. FLOOR MOUNTED UPS WITH INTEGRAL TRANSFORMER. APC OR APPROVED EQUAL.
   INPUT VOLTAGE: 480V, 3Ø, 3W
   OUTPUT VOLTAGE: 120/208V, 3Ø, 4W
   BATTERY RUN TIME (MINIMUM): 20 MINUTES
8. PROTECT FEEDER SERVING DESIGNATED CRITICAL OPERATIONS AREA (DCOA) EQUIPMENT AS REQUIRED BY NEC ARTICLE 708.
9. PROVIDE GROUND FAULT PROTECTION FOR ALL NEXT LEVEL FEEDER DISCONNECTING MEANS IN COMPLIANCE WITH NEC ARTICLE 708.
10. GROUND FAULT INDICATION ONLY.
11. FEEDER OVERSIZED FOR VOLTAGE DROP.
12. SERVICE ENTRANCE SECTION FOR FIRE PUMP CONNECTION.
13. PROVIDE SURGE PROTECTION DEVICE PER NEC 700.
14. PROVIDE WEATHERPROOF SOUND ATTENUATING ENCLOSURE.
15. EQUIP SWITCHBOARD WITH CAM LOCK TYPE CONNECTORS FOR CONNECTION TO PORTABLE GENERATOR. 700A, 277/480V, 3Ø, 4W.
16. PROVIDE SEPARATE SECTIONS FOR BREAKERS SERVING DIFFERENT BRANCHES OF EMERGENCY POWER PER NEC.
17. PROVIDE THE FOLLOWING PROTECTIVE RELAYS:
    UNDER VOLTAGE
    PHASE ROTATION
18. PROVIDE FULLY RATED LSI BREAKER.
19. PROVIDE THE FOLLOWING RELAYS:
    SYNC CHECK
    UNDER VOLTAGE
    OVER VOLTAGE
    LOSS-OF-PHASE
20. PANEL PROVIDED UNDER BUILDING 2 SCOPE OF WORK.



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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL SINGLE LINE DIAGRAM

Drawn By: ELW
Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

4-E5.01
Drawing No.

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SHEET NOTES

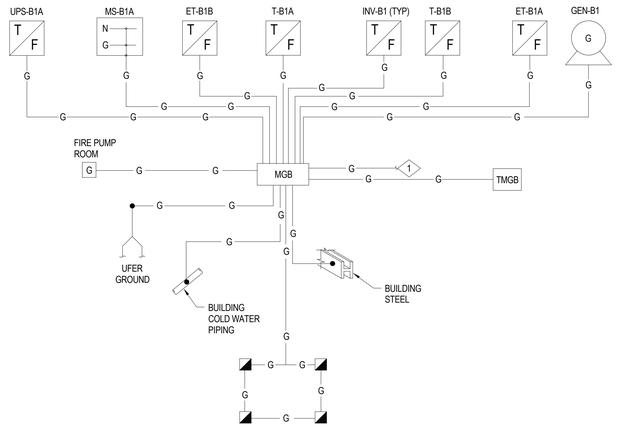
A. REFER SHEET E5.01 FOR TRANSFORMER SCHEDULE AND GROUNDING REQUIREMENTS.

B. CONTRACTOR TO COORDINATE EXACT LOCATION OF CONNECTIONS BETWEEN DIFFERENT CONSTRUCTION PACKAGES AND DIVISION OF WORK BETWEEN SUBCONTRACTORS.

NUMBERED NOTES

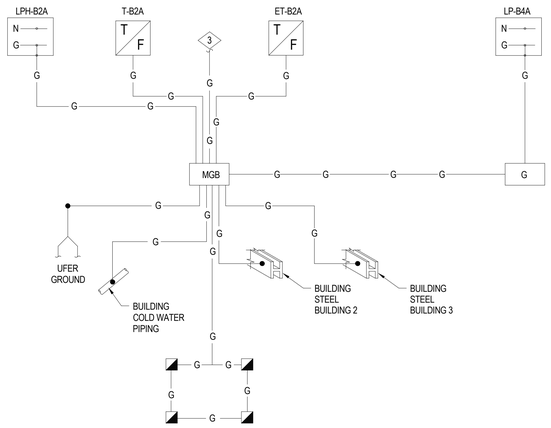
1. PROVIDE CONNECTION TO HYBRID POWER SYSTEM. REFER TO SHEET 1-H5.01.
2. DIAGRAM IS FOR ILLUSTRATION OF OVERALL GROUNDING ELECTRODE SYSTEM. SEE RISER DIAGRAMS, GROUND BUS DETAILS AND SPECIFICATIONS FOR ADDITIONAL GROUNDING CONNECTIONS AND REQUIREMENTS.
3. PROVIDE CONNECTION TO PV SYSTEM. REFER TO SHEETS 2-PV5.01 AND 3-PV5.01.
4. PROVIDE CONNECTION TO PV SYSTEM. REFER TO SHEETS 6-PV5.01 AND 9-PV5.01.
5. DO NOT BOND NEUTRAL.

BUILDING 1

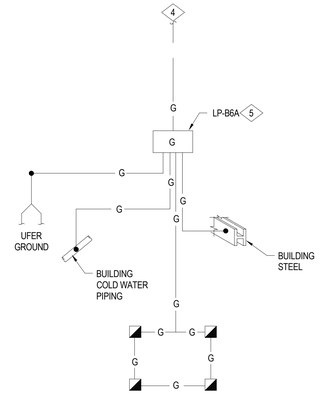


BUILDING 2

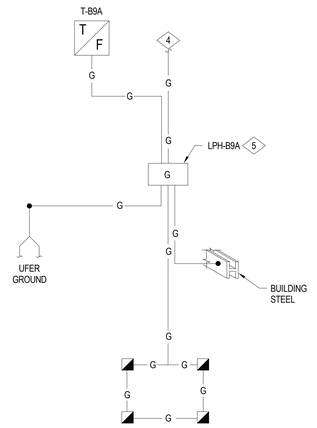
BUILDING 4



BUILDING 6



BUILDING 9



1 GROUNDING RISER DIAGRAM 2
NTS

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL GROUNDING DIAGRAM

Drawn By: ELW Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

4-E5.02
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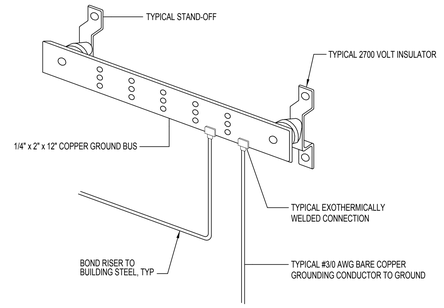
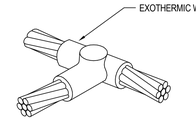
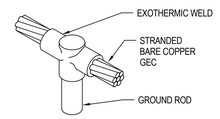


1 WALL MOUNTED GROUND BUS DETAIL — G — NO SCALE



3 GROUNDING ELECTRODE CONDUCTOR TAP DETAIL (TYP) — NO SCALE



4 GROUNDING ELECTRODE CONDUCTOR TAP DETAIL (TYP) — NO SCALE

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STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL DETAILS

Drawn By: ELW Checked By: AJB

Scale:
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Date:
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TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST

ABBREVIATIONS

AC	ABOVE COUNTER
ADA	AMERICANS WITH DISABILITIES ACT
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AMP, A	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ATR	ALL THREADED ROD
AV	AUDIOVISUAL
AWG	AMERICAN WIRE GAUGE
BDA	BI-DIRECTIONAL ANTENNA
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
BICSI	BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAT	CATEGORY
CATV	COMMUNITY ANTENNA TV (CABLE TV)
CLEC	COMPETITIVE LOCAL EXCHANGE CARRIER
CL	CLOSET
CLG	CEILING
CMP	COMMUNICATIONS PLENUM CABLE
CMR	COMMUNICATIONS RISER CABLE
CO	CENTRAL OFFICE
COAX	COAXIAL
CT	CABLE TRAY
DAS	DISTRIBUTED ANTENNA SYSTEM
DB	DECIBEL
DEMARC	DEMARCATION
DIA	DIAMETER
DWG	DRAWING
(E)	EXISTING TO REMAIN
E.G.	FOR EXAMPLE
EIA	ELECTRONICS INDUSTRY ALLIANCE
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
EP	EXPLOSION PROOF
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FCC	FEDERAL COMMUNICATIONS COMMISSION
FO	FIBER OPTIC
FR	FIRE RATED
FT	FOOT/FEET
GB	GIGABYTE
GBPS	GIGABITS PER SECOND
GC	GENERAL CONTRACTOR
GE	GROUNDING EQUALIZER
GMP	GUARANTEED MAXIMUM PRICE
GND	GROUND
GUI	GRAPHICAL USER INTERFACE
HC	HORIZONTAL CROSS-CONNECT
HVAC	HEATING, VENTILATING, AND AIR-CONDITIONING
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEC	INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT - SEE NEC ARTICLE 342
INT	INTERCOM
IP	INTERNET PROTOCOL
ISO	INTERNATIONAL ORGANIZATION OF STANDARDS
J-BOX, JB	JUNCTION BOX
KCMIL	THOUSANDS OF CIRCULAR MILLS
KM	KILOMETER
KVA	KILOVOLT AMPERES
KW	KILOWATT
LAN	LOCAL AREA NETWORK
LEC	LOCAL EXCHANGE CARRIER (OR SP)
LED	LIGHT-EMITTING DIODE
M	METER
MAG	MAGNETIC
MAN	METROPOLITAN AREA NETWORK
MAX	MAXIMUM
MB	MEGABYTE
MBPS	MEGABITS PER SECOND
MC	MAIN CROSS-CONNECT
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MI	MILE
MIN	MINIMUM
MM	MILLIMETER
MMFO	MULTIMODE FIBER OPTIC
MPOE	MAIN POINT OF ENTRY
NEC	NATIONAL ELECTRIC CODE - NFPA 70
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NETWORK INTERFACE CARD
NID	NETWORK INTERFACE DEVICE
NM	NANOMETER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER

ABBREVIATIONS

OEM	ORIGINAL EQUIPMENT MANUFACTURER
OS	OPERATING SYSTEM
OSP	OUTSIDE PLANT
PA	PUBLIC ADDRESS
PABX	PRIVATE AUTOMATIC BRANCH EXCHANGE
PBX	PRIVATE BRANCH EXCHANGE
PB	PULL-BOX (SIZED PER BICSI TDMM)
PC	PERSONAL COMPUTER
PCN	PERSONAL COMMUNICATIONS NETWORK
PCS	PERSONAL COMMUNICATIONS SYSTEMS
PIR	PASSIVE INFRARED
POTS	PLAIN OLD TELEPHONE SERVICE
PR	PAIRS (NUMBER OF PAIRS IN COPPER CABLE)
PROX	PROXIMITY
PVC	POLYVINYL CHLORIDE
PWR	POWER
RCDD	REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
RFI	RADIO FREQUENCY INTERFACE
RM	ROOM
RMC	RIGID METALLIC CONDUIT
RU	RACK UNIT; UNIT OF PATCH PANEL HEIGHT EQUAL TO 1.75 INCH
SCTP	SCREENED TWISTED PAIR
SMFO	SINGLEMODE FIBER OPTIC
SPOE	SECONDARY POINT OF ENTRY
SP	SERVICE PROVIDER
STD	STANDARD
STP	SHIELDED TWISTED PAIR
SW	SWITCH
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBD	TO BE DETERMINED
TCP/IP	TRANSMISSION CONTROL PROTOCOL W/ INTERNET PROTOCOL
TDMM	TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL
TEL	TELEPHONE
TELCO	TELEPHONE COMPANY (SP)
TELECOM	TELECOMMUNICATIONS
TEMP	TEMPERATURE
TGB	TELECOMMUNICATIONS GROUND BUS BAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUND BUS BAR
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
TYP	TYPICAL
UC	UNDER COUNTER
UG	UNDERGROUND
UL	UNDERWRITER LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
W	WATT
WAN	WIDE AREA NETWORK
WLAN	WIRELESS LOCAL AREA NETWORK
WP	WEATHERPROOF
(X)	EXISTING - TO BE DEMOLISHED

GENERAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION
TC	TELECOMMUNICATIONS CONDUIT CONCEALED
TC	TELECOMMUNICATIONS CONDUIT SURFACE MOUNTED
TC	CONDUITS BELOW GRADE/SLAB OR EMBEDDED IN SLAB
J	J-HOOK PATHWAY
I	INNERDUCT PATHWAY
CAT	COPPER CATEGORY CABLE
FO	FIBER OPTIC CABLE
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT CAPPED
	CONDUIT STUBBED OUT WITH BUSHING
	CONDUIT CROSS-SECTION
	TELECOMMUNICATIONS CABLE TRAY
	VERTICAL WALL MOUNTED CABLE LADDER
	TELECOMMUNICATIONS RACEWAY
	PULL-BOX
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
	TELECOMMUNICATIONS GROUNDING BUSBAR (PLAN VIEW)
#	CABLE SERVICE LOOP # DENOTES LENGTH
	COPPER CABLE SPLICE
	FIBER OPTIC CABLE SPLICE
	COPPER CABLE TERMINATION
	FIBER OPTIC CABLE TERMINATION
X Y	DETAIL REFERENCE "X" DENOTES DETAIL NUMBER "Y" DENOTES DRAWING NUMBER
X Y	SECTION REFERENCE "X" DENOTES DETAIL NUMBER "Y" DENOTES DRAWING NUMBER
#	NUMBERED NOTE IDENTIFIER

TELECOMMUNICATIONS DEVICE LEGEND

SYMBOL	DESCRIPTION
	WALL MOUNTED DATA DEVICE WITH (2) CAT.6 U.O.N
TV	TELEVISION LOCATION, (1) SERIES-6 COAX & (2) CAT.6
	RECESSED MOUNTED MULTIMEDIA PANEL (MMP)
W	WALLPHONE OUTLET, (1) CAT.6 CABLE
# E	TELECOMMUNICATIONS OUTLET/ CONNECTIVITY TO ELEVATOR CONTROL PANEL, U.O.N # DENOTES QUANTITY OF CAT.6 CABLES
AP	WALL-MOUNTED WI-FI ACCESS POINT LOCATION , (2) CAT.6 CABLES
#	WALL-MOUNTED TELECOMMUNICATIONS OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
#	RECESSED FLOOR BOX TELECOMMUNICATIONS OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
#	CEILING-MOUNTED TELECOMMUNICATIONS OUTLET MOUNTED WITHIN CEILING SPACE , U.O.N. # DENOTES NUMBER OF CAT.6 CABLES
AP	CEILING-MOUNTED DATA OUTLET AT WI-FI ACCESS POINT LOCATION, (2) CAT.6 CABLES
#	FLOOR POKE-TRU TELECOM DATA OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
P	CEILING-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	CABINET-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	WALL-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	FLOOR-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL TO BE PLACED WITHIN RAISED ACCESS FLOOR U.O.N.
T #	TELECOMMUNICATIONS EQUIPMENT CONNECTION
	RECESSED WALL-MOUNTED SYSTEMS FURNITURE FEEDPOINT
	RECESSED FLOOR BOX SYSTEMS FURNITURE FEEDPOINT
	CEILING-MOUNTED SYSTEMS FURNITURE FEEDPOINT
	POKE-THRU SYSTEMS FURNITURE FEEDPOINT
MH #	UNDERGROUND MANHOLE, (#) DENOTES IDENTIFIER
HH #	UNDERGROUND HANDHOLE, (#) DENOTES IDENTIFIER
P #	PEDESTAL, (#) DENOTES IDENTIFIER
U #	UNDERGROUND PULL BOX, (#) DENOTES IDENTIFIER

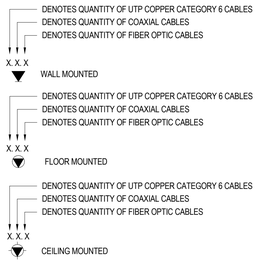
ELECTRONIC SECURITY DEVICE LEGEND

SYMBOL	DESCRIPTION
	FIXED SECURITY CAMERA
	PTZ SECURITY CAMERA
ACX	ACCESS CONTROL PANEL
GP	GUEST ENTRY PHONE
CR	CARD READER
DC	DOOR CONTACT
EL	ELECTRIFIED LOCK
IC	INTERCOM
ICM	INTERCOM MASTER
KP	KEY PAD
MON	LCD DISPLAY MONITOR
MS	MOTION SENSOR, ARROW INDICATES DIRECTION OF SENSOR
NVR	NETWORK VIDEO RECORDER
PB	PANIC BUTTON
PLC	PROGRAMMABLE LOGIC CONTROLLER
REX	REQUEST TO EXIT
RF	RADIO FREQUENCY VEHICLE GATE CONTROLLER
SS	SECURITY SERVER
WR	WIRELESS DURESS REPEATER SECURITY
WS	WORKSTATION

AUDIOVISUAL SYSTEM DEVICE LEGEND

SYMBOL	DESCRIPTION - SEE LINE DIAGRAMS FOR COORDINATION REQUIREMENTS
AVTC AV	AUDIOVISUAL TERMINATION CABINET: PROVIDE 12" x 12" x 4" NEMA 1 ENCLOSURE WITH CONDUITS AS INDICATED ON PLANS AND (1) 3/4" CONDUIT STUBBED TO FIRE ALARM PANEL
CP AV	WALL-MOUNT TOUCH PANEL BACKBOX: PROVIDE 3-GANG DEEP JUNCTION BOX AT PROJECT STANDARD SWITCH HEIGHT.
WP AV	AUDIOVISUAL SYSTEM INPUT WALL PLATE: PROVIDE 2-GANG JUNCTION BOX AT 18" AFF U.O.N.
LCD AV	LCD FLAT PANEL BACKBOX
IO AV	SHARED SERVICE AUDIOVISUAL FLOOR BOX.
PT AV	AUDIOVISUAL SYSTEM PASS THROUGH
S	6" CEILING LOUDSPEAKER: PROVIDE 6" CEILING LOUDSPEAKER WITH LOUDSPEAKER CABLE VIA J-HOOK/CONDUIT PATHWAY TO ROOM EQUIPMENT HEADEND AS SHOWN. PROVIDE ACOUSTICAL LOUDSPEAKER ENCLOSURE. COORDINATE FINAL LOCATION WITH ARCHITECT.
	THIS SYMBOL DENOTES A TELECOMMUNICATIONS OUTLET WITH (1) COPPER TWISTED PAIR CABLE.

TELECOMMUNICATIONS OUTLET CABLING LEGEND



TECHNOLOGY GENERAL NOTES

1. THE LOCATIONS AND ELEVATIONS OF TECHNOLOGY DEVICES SHOWN ON THESE DRAWINGS ARE SCHEMATIC UNLESS ACTUAL DIMENSIONS ARE SHOWN ON THE DRAWINGS. REFER TO THE ARCHITECTURAL PLANS AND OBTAIN THE APPROVAL OF THE ARCHITECT FOR THE ACTUAL LOCATIONS AND ELEVATIONS OF ALL DEVICES.
2. CONTRACTOR SHALL ENSURE THAT ALL MOUNTING HEIGHTS COMPLY WITH CURRENT ADA REQUIREMENTS.
3. ABOVE CONTER DEVICES SHALL BE MOUNTED 8" ABOVE COUNTER OR A MAXIMUM OF 44" AFF (TO TOP OF DEVICE).
4. PROVIDE SUPPORTS AND ANCHORING FOR PIPING, CONDUIT, DUCTS, EQUIPMENT, AND OTHER NON-STRUCTURAL ELEMENTS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE SOUND PUTTY PADS IN ALL BACK BOXES.
6. FIRESTOPPING: ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS AND CONDUIT/SLEEVE OPENINGS SHALL BE SEALED WITH MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES, HOT GASSES AND SMOKE WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR ALL APPLICABLE CODES.
7. ALL COMMUNICATIONS CONDUIT, CABLE TRAYS, LADDER RACKS AND EQUIPMENT RACKS SHALL BE BONDED TO BUILDING GROUND SYSTEM PER NEC 250 AND ANSI/TIA-607-B.
8. LABEL ALL CLOSETS, RACKS, FRAMES, CABINETS, TERMINATION BLOCKS, CABLES, TERMINATIONS, RACEWAYS, ETC. IN ACCORDANCE WITH ANSI/TIA-606-B.
9. ALL COMMUNICATIONS RACEWAYS AND PATHWAYS SHALL BE INSTALLED TO MINIMIZE UNNECESSARY CABLE LENGTHS AND MAINTAIN INDUSTRY STANDARD LENGTH LIMITATIONS FOR HORIZONTAL CABLE DISTRIBUTION (E.G. CAT.6). BASIC LINK CABLE LENGTH SHALL NOT EXCEED 295-FT (90M) FOR UTP CABLE, 200-FT (60M) FOR SERIES-6 COAXIAL CABLE.
10. ALL COMMUNICATIONS CABLE SHALL BE PLENUM RATED (CMP), RISER RATED (CMR) AND UNDERGROUND RATED (WATERBLOCK) ACCORDING TO USE AND ENVIRONMENTAL CONDITIONS.
11. PROVIDE PROTECTIVE BUSHINGS ON ALL COMMUNICATIONS CONDUITS AND WHERE CABLING ROUTES THROUGH METAL STUDS.
12. ALL NON-ARMORED FIBER OPTIC CABLE SHALL BE INSTALLED IN APPROVED INNERDUCT.
13. ALWAYS INSTALL LOW-VOLTAGE CABLES IN CONDUITS, CABLE TRAYS, WIREWAYS OR OTHER APPROVED CABLE MANAGEMENT DEVICES OR SYSTEMS. NEVER INSTALL CABLES IN SUCH A MANNER THAT THEY ARE SUPPORTED BY CEILING SYSTEMS (CEILING TILE OR GRID, GYPSUM BOARD, LATH & PLASTER), HVAC DUCTS OR PIPES, LIGHTING FIXTURES, ELECTRICAL CONDUITS OR CABLES, PLUMBING/FIRE PROTECTION PIPES, OR ANY OTHER DEVICES NOT INTENDED FOR THE SUPPORT OF LOW-VOLTAGE CABLING.
14. PROVIDE WEATHERPROOF, IN-USE COVER FOR EXTERIOR DATA DEVICES.
15. ALL CABLE TRAY MOUNTING HEIGHTS INDICATED ON FLOOR PLANS ARE TO THE BOTTOM OF CABLE TRAY SUPPORTS.
16. SEISMIC BRACING FOR ALL CABLE TRAYS SHALL BE PROVIDED AS REQUIRED BY CODE, LOCAL GOVERNING JURISDICTION AND CABLE TRAY MANUFACTURER SPECIFICATIONS.
17. ALL CABLE TRAY ROUTING THROUGH ELECTRICAL ROOMS SHALL BE FULLY ENCLOSED. REFER TO CABLE TRAY DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
18. REUSABLE VELCRO TIES SHALL BE USED TO BUNDLE OR MANAGE CABLES. PLASTIC ZIP TIES ARE NOT APPROVED FOR USE.
19. SIZE AND ORIENTATION OF ALL TELECOM PULL-BOXES SHALL MEET OR EXCEED THE PER BICSI TDMM REQUIREMENTS.
20. PROVIDE PROTECTIVE BUSHINGS WHERE CABLING ROUTES THROUGH METAL STUDS.
21. ALL LOW-VOLTAGE CONDUIT LARGER THAN 2" SHALL HAVE A MINIMUM BEND RADIUS OF 10:1 OF THE INSIDE DIAMETER FOR ALL ELBOWS. ALL LOW-VOLTAGE CONDUIT 2" AND SMALLER SHALL HAVE A MINIMUM BEND RADIUS OF 6:1 OF THE INSIDE DIAMETER FOR ALL ELBOWS.
22. ALL CONDUITS SHALL BE INSTALLED WITH PULL-STRINGS.

TECHNOLOGY BUILDING 4 DRAWING LIST

SHEET NUMBER	SHEET NAME	50% DD - 07/05/2017	100% DD - 08/25/2017
4-T0.01	TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST	X	X
4-T2.01	TECHNOLOGY STORAGE BUILDING FLOOR PLAN	X	X
4-T7.01	TECHNOLOGY DETAILS		
4-T7.02	TECHNOLOGY DETAILS		
4-T7.03	TECHNOLOGY DETAILS		
4-T7.04	SECURITY DETAILS		

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DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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APPROVED BY:	
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No.	Description	Date

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Sheet Title

TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST

Drawn By: Author
Checked By: Checker

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

4-T0.01
Drawing No.

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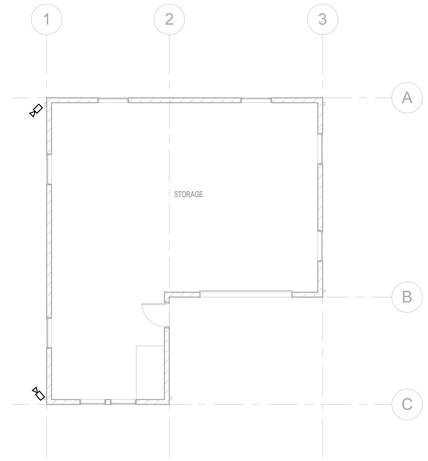

1 04-TECHNOLOGY - STORAGE-FIRST FLOOR
1/8" = 1'-0"

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TECHNOLOGY STORAGE BUILDING FLOOR PLAN

Drawn By: Author
Checked By: Checker

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

Date:
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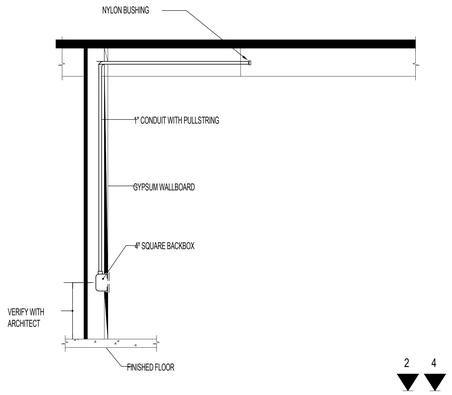
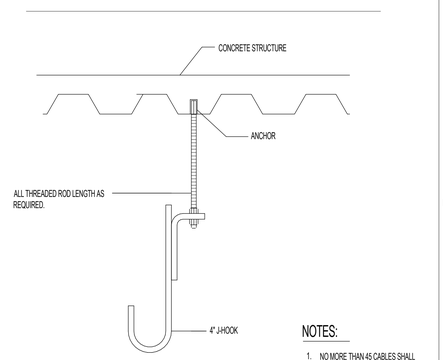
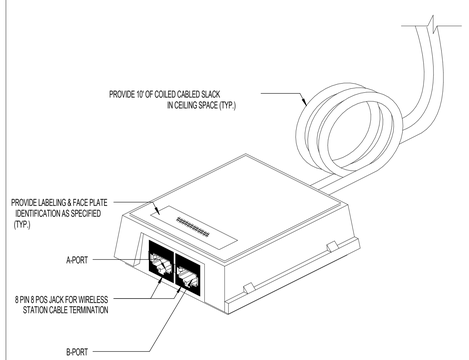


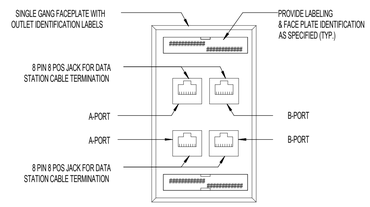
9 WALL MOUNTED SYSTEMS OUTLET — NO SCALE



7 J-HOOK MOUNTED CEILING DETAIL — NO SCALE



4 2-PORT CEILING OUTLET
(2) DATA — NO SCALE



1 WALL MOUNTED OUTLET
(4) DATA — NO SCALE

10 WALL MOUNTED OUTLET
(2) DATA (1) CO-AXIAL — NO SCALE

8 TELECOMMUNICATIONS SYSTEM OUTLET
CONNECTRAC — NO SCALE

5 UTILITY ROOM WALLPHONE
(1) VOICE — NO SCALE

2 WALL MOUNTED OUTLET
(2) DATA — NO SCALE

11 FLOORBOX DETAIL — NO SCALE

GENERAL NOTES:

1. THIS DETAIL INDICATES RACEWAY AND BACK-BOX REQUIREMENTS FOR ALL COMMUNICATIONS DEVICES, U.N.O.
2. REFER TO ADDITIONAL DETAILS FOR SPECIFIC DEVICE FACEPLATE CONFIGURATIONS.
3. PROVIDE CABLING FOR EACH DEVICE PORT OR TERMINAL.

6 TYPICAL COMMUNICATIONS OUTLET ROUGH-IN DETAIL — NO SCALE

3 1-PORT SURFACE MOUNTED CAMERA OUTLET
(1) DATA — NO SCALE

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TECHNOLOGY DETAILS

Drawn By: Author — Checked By: Checker

Scale: **NTS**

Date: **October 4, 2019**

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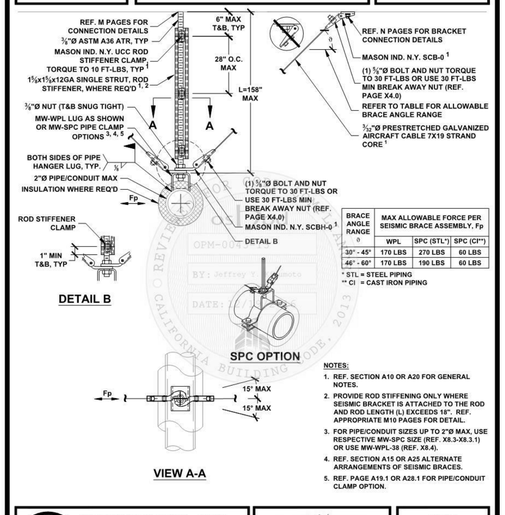
HANGER ROD DIAMETER = ⅜"

PIPING/CONDUIT TRANSVERSE SEISMIC CABLE BRACING SYSTEM 2'Ø PIPE/CONDUIT MAX

KIT OPTIONS
C0T



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp		
	WPL	SPC (STL*)	SPC (CI**)
30° - 45°	170 LBS	270 LBS	60 LBS
46° - 60°	170 LBS	190 LBS	60 LBS

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF. X8.3-X8.3.1) OR USE MW-WPL-36 (REF. X8.4).
4. REF. SECTION A15 OR A25 ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
5. REF. PAGE A19.1 OR A28.1 FOR PIPE/CONDUIT CLAMP OPTION.

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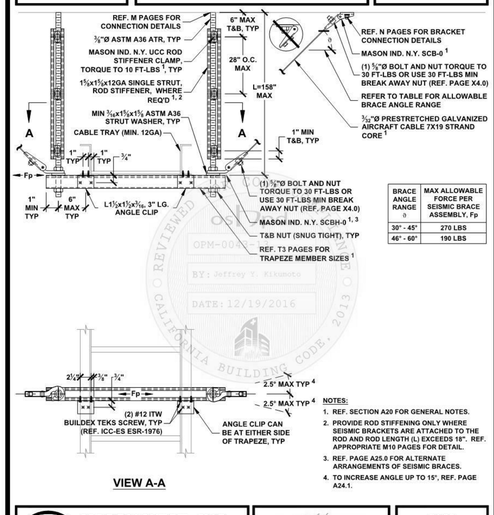
PAGE **C2.10**

HANGER ROD DIAMETER = ⅜"

CABLE TRAY TRANSVERSE TRAPEZE SEISMIC CABLE BRACING SYSTEM 20 PLF MAX

KIT OPTIONS
TC0T



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	270 LBS
46° - 60°	190 LBS

NOTES:
1. REF. SECTION A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A25.0 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. TO INCREASE ANGLE UP TO 15°, REF. PAGE A24.1.

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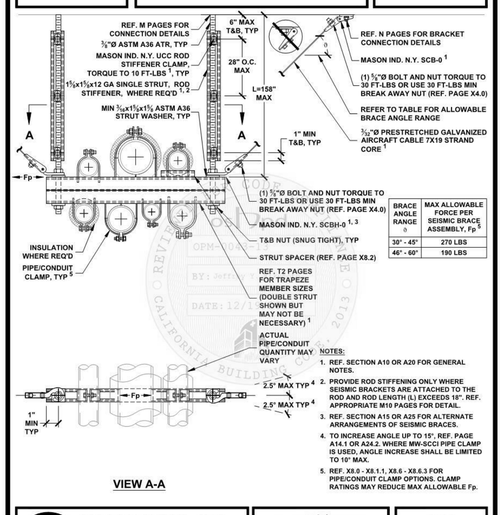
PAGE **E2.10**

HANGER ROD DIAMETER = ⅜"

PIPING/CONDUIT TRANSVERSE TRAPEZE SEISMIC CABLE BRACING SYSTEM 30 PLF MAX

KIT OPTIONS
TC0T



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	270 LBS
46° - 60°	190 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18", REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. TO INCREASE ANGLE UP TO 15°, REF. PAGE A14.1 OR A24.2. WHERE MW-SCCI PIPE CLAMP IS USED, ANGLE INCREASE SHALL BE LIMITED TO 10° MAX.
5. REF. X8.0 - X8.1.1, X8.6 - X8.6.3 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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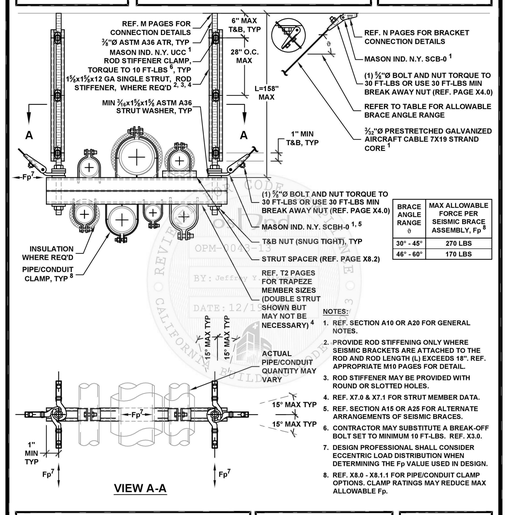
PAGE **F2.10**

HANGER ROD DIAMETER = ¾"

PIPING/CONDUIT ALL-DIRECTIONAL TRAPEZE SEISMIC CABLE BRACING SYSTEM 30 PLF MAX

KIT OPTIONS
TC0A



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	270 LBS
46° - 60°	170 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. ROD STIFFENER MAY BE PROVIDED WITH ROUND OR SLOTTED HOLES.
4. REF. X7.0 & X7.1 FOR STRUT MEMBER DATA.
5. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
6. CONTRACTOR MAY SUBSTITUTE A BREAK-OFF BOLT SET TO MINIMUM 10 FT-LBS. REF. X3.0.
7. DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE Fp VALUE USED IN DESIGN.
8. REF. X8.0 - X8.1.1 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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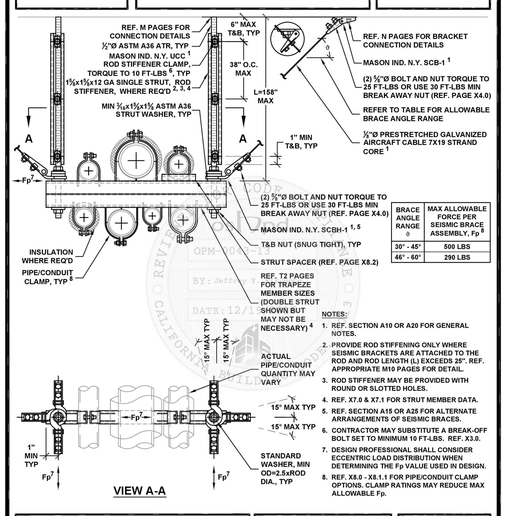
PAGE **F2.12**

HANGER ROD DIAMETER = ½"

PIPING/CONDUIT ALL-DIRECTIONAL TRAPEZE SEISMIC CABLE BRACING SYSTEM 60 PLF MAX

KIT OPTIONS
TC1A



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	500 LBS
46° - 60°	290 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. ROD STIFFENER MAY BE PROVIDED WITH ROUND OR SLOTTED HOLES.
4. REF. X7.0 & X7.1 FOR STRUT MEMBER DATA.
5. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
6. CONTRACTOR MAY SUBSTITUTE A BREAK-OFF BOLT SET TO MINIMUM 10 FT-LBS. REF. X3.0.
7. DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE Fp VALUE USED IN DESIGN.
8. REF. X8.0 - X8.1.1 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, www.masonwest.com

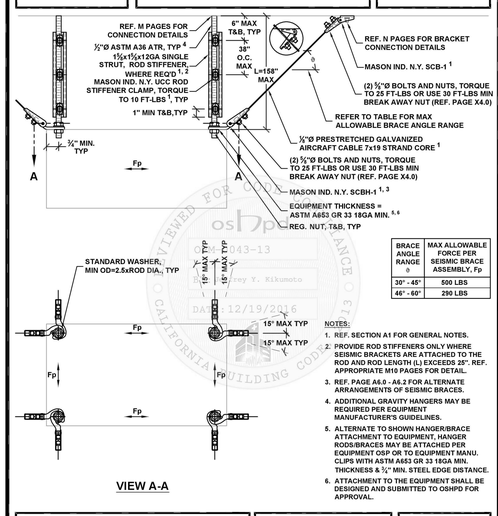
Jiefu "Jeff" Zhang, SE
California SE No. S5270

PAGE **F2.22**

HANGER ROD DIAMETER = ½"

SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 375 LB MAX VERTICAL LOAD PER HANGER

KIT OPTIONS
C1SE



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	500 LBS
46° - 60°	290 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 18GA MIN. THICKNESS ≥ ⅛" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

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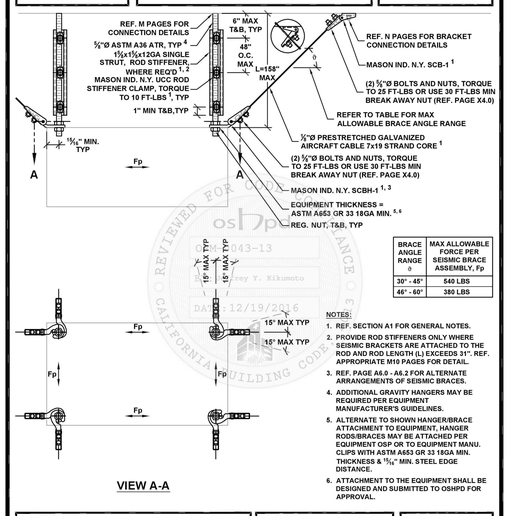
PAGE **D12.11**

HANGER ROD DIAMETER = ⅝"

SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 750 LB MAX VERTICAL LOAD PER HANGER

KIT OPTIONS
C1SE



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	540 LBS
46° - 60°	380 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 31". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 16GA MIN. THICKNESS & 1½" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

MASON WEST, INC.
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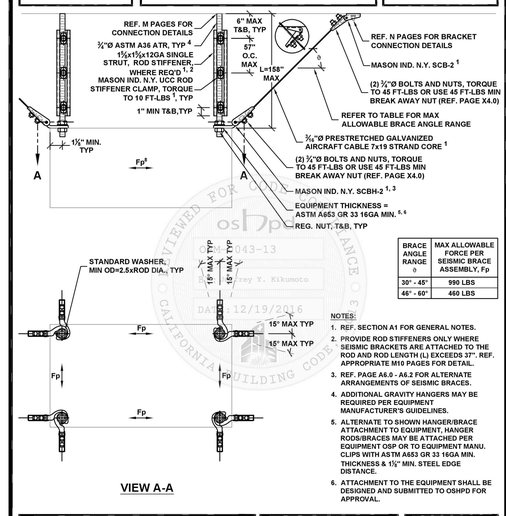
PAGE **D12.12**

HANGER ROD DIAMETER = ¾"

SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 1250 LB MAX VERTICAL LOAD PER HANGER

KIT OPTIONS
C2SE



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	990 LBS
46° - 60°	460 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 16GA MIN. THICKNESS & 1½" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

MASON WEST, INC.
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Jiefu "Jeff" Zhang, SE
California SE No. S5270

PAGE **D12.13**

OPM-0043-13 REVIEWED FOR CODE COMPLIANCE BY: Jeffrey Y. Kikumoto DATE: 12/19/2016 CALIFORNIA BUILDING CODE, 2013

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FAX 707 996 8542
ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA (DEP. DIR. PUBLIC WORKS)	ALEX AMERI (INTERIM DIR. PUBLIC WORKS)
PROJ. NO. 07481 & 07482	FILE NO. E-2157

WSP USA Buildings, Inc.
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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

Sheet Title

TECHNOLOGY DETAILS

Drawn By: Author Checked By: Checker

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

4-T7.02
Drawing No.

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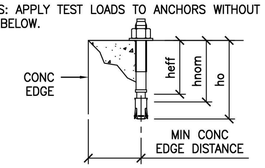
Extron Electronics
INTERFACING, SWITCHING AND CONTROL

GENERAL NOTES CONTINUED:

3E. TEST VALUES: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE, SEE TABLE BELOW.

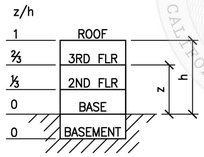


MECHANICAL ANCHOR

ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) heff	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPACING (INCH)	TEST LOAD TORQUE (FT–LBS)	CONDITION OF ANCHORAGE
⅜	2 5/16	2	2 5/8	4*	6	6¾	25	CASE 1

* SEE PAGE 11 FOR UNDERSIDE OF METAL DECK DETAIL.

4. A SINGLE CASE OF ANCHORAGE IS SPECIFIED AND PRESENTED IN THIS PRE–APPROVAL:



BUILDING ELEV

CASE 1: ANCHORAGE DETAILS LOCATED AT ANY LEVEL OF A BUILDING (z/h<=1.0), IT IS ASSUMED THAT THE FLOORS ARE BUILT OF A MINIMUM 3¼" SAND–LIGHT WEIGHT CONCRETE OR NORMAL WEIGHT CONCRETE TOPPING OVER METAL DECK OR 4" NORMAL WEIGHT CONCRETE SLAB (f'c = 3000 PSI, MINIMUM).

5. THIS PRE–APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA. WHERE S_{DS} IS LESS THAN OR EQ TO 2.50.

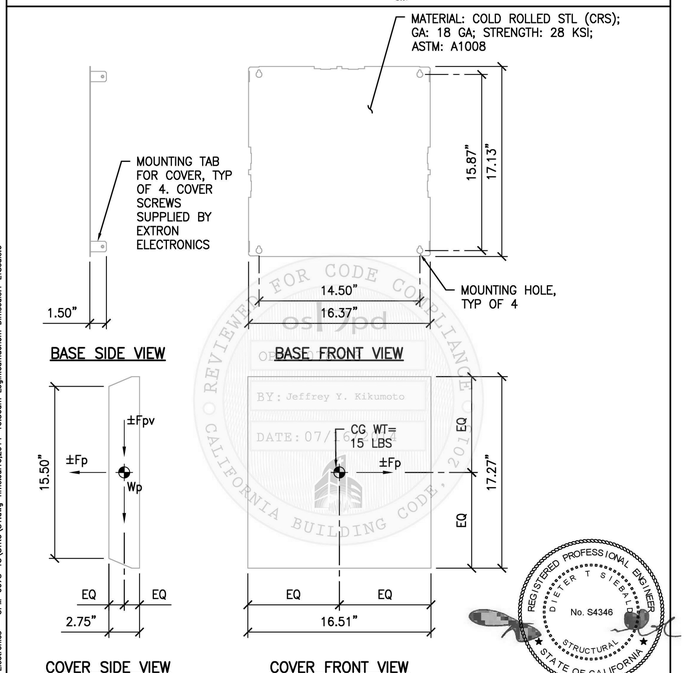
REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBALD No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: GENERAL NOTES (CONTINUED)

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 3 of 13

Extron Electronics
INTERFACING, SWITCHING AND CONTROL

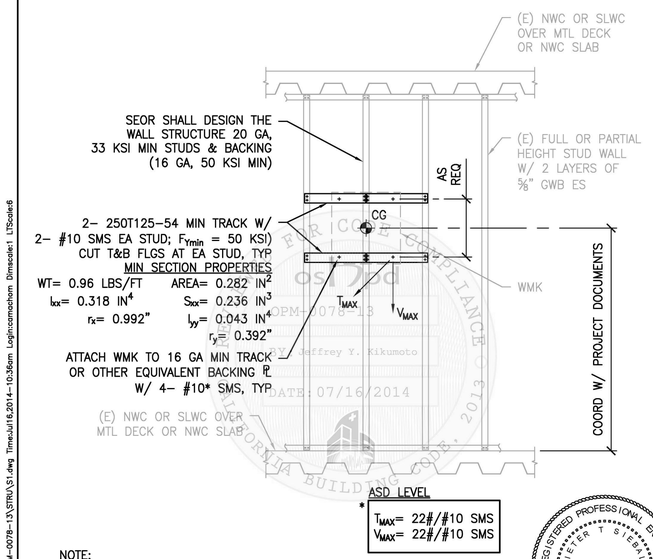


SHEET TITLE: WMK 160
ELEVATIONS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 6 of 13

Extron Electronics
INTERFACING, SWITCHING AND CONTROL



* ASD LEVEL
T_{MAX}= 22#/#10 SMS
V_{MAX}= 22#/#10 SMS

NOTE:
AS AN ALTERNATE, THE WMK MAY BE ATTACHED DIRECTLY TO (E) WALL STUDS W/ 4– #10 SMS MIN IF THE UNIT ATTACHMENT HOLES ALIGN W/ THE ℄ OF THE STUD FLG, TYP

SHEET TITLE: WMK 160
STUD WALL ATTACHMENT

CYS STRUCTURAL ENGINEERS, INC.
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Date: 06-30-2014
Page: 7 of 13

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FAX 707 996 8542

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA (DEP. DIR. PUBLIC WORKS)	ALEX AMERI (INTERIM DIR. PUBLIC WORKS)
PROJ. NO. 07481 & 07482	FILE NO. E-2157

WSP USA Buildings, Inc.
405 Howard St. Suite 500
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(415) 398-3833
wsp.com

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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Sheet Title

TECHNOLOGY DETAILS

Drawn By: Author Checked By: Checker

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Date: October 4, 2019

Project No. B17.07369

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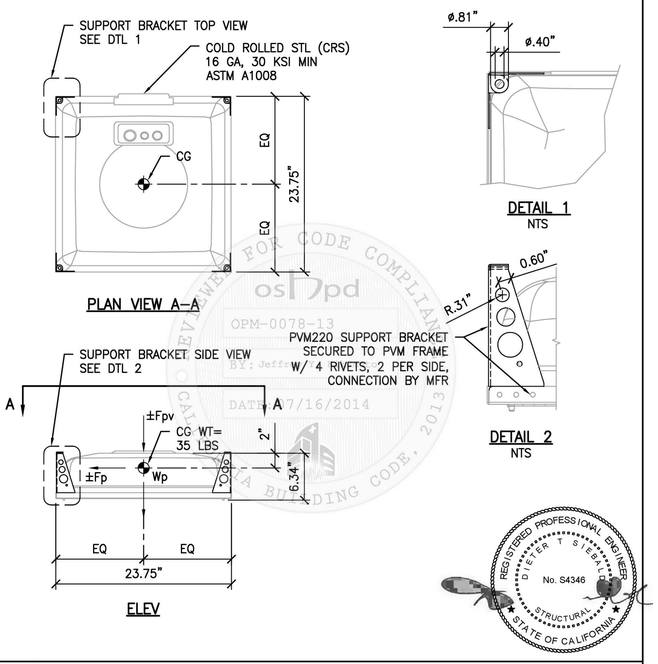
Extron Electronics
INTERFACING, SWITCHING AND CONTROL

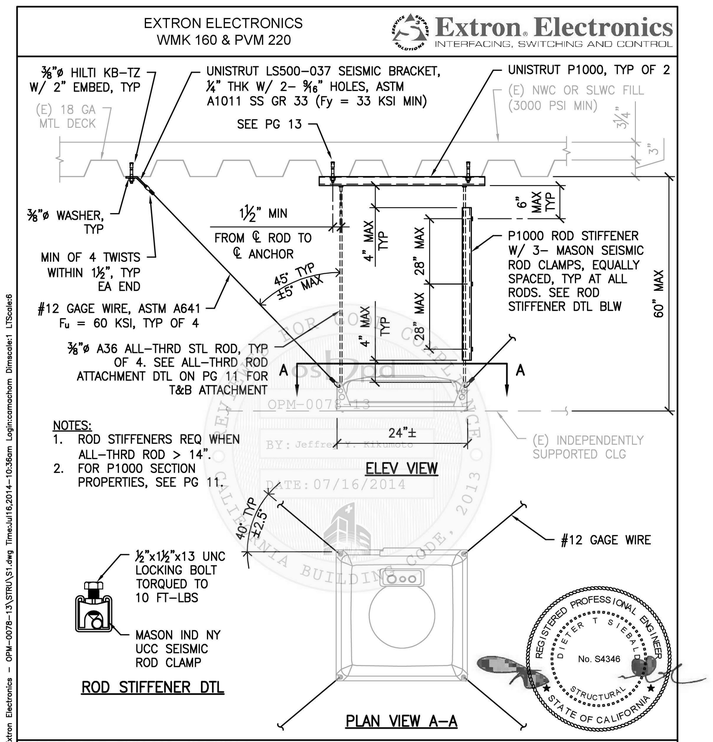


SHEET TITLE: PVM 220
PLAN & ELEVATIONS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 9 of 13

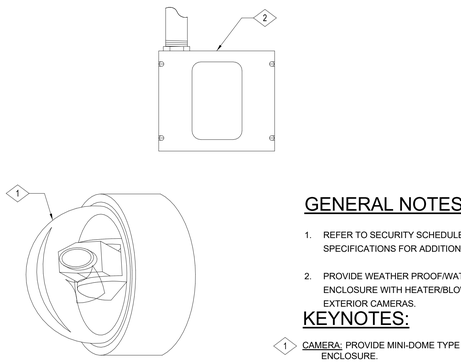
Extron Electronics
INTERFACING, SWITCHING AND CONTROL



SHEET TITLE: PVM 220 - OPTION 1:
UNDERSIDE OF METAL DECK SUPPORT & ATTACHMENT

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 10 of 13



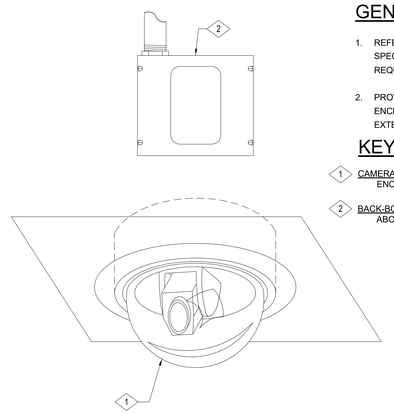
GENERAL NOTES:

1. REFER TO SECURITY SCHEDULES AND WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE WEATHER PROOF/WATER RESISTANT ENCLOSURE WITH HEATER/BLOWER FOR ALL EXTERIOR CAMERAS.

KEYNOTES:

1. CAMERA: PROVIDE MINI-DOME TYPE CAMERA WITH ENCLOSURE.
2. BACK-BOX: CAMERA CABLE BACK-BOX MOUNTED FLUSH IN WALL.

4 FIXED WALL SURFACE MOUNT CCTV CAMERA — NO SCALE



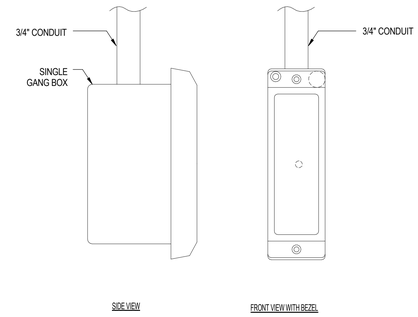
GENERAL NOTES:

1. REFER TO SECURITY SCHEDULES AND WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE WEATHER PROOF/WATER RESISTANT ENCLOSURE WITH HEATER/BLOWER FOR ALL EXTERIOR CAMERAS.

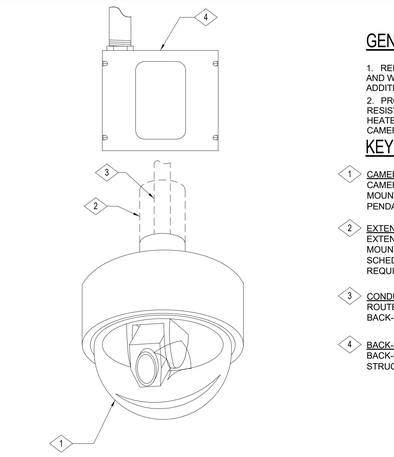
KEYNOTES:

1. CAMERA: PROVIDE MINI-DOME TYPE CAMERA WITH ENCLOSURE.
2. BACK-BOX: CAMERA CABLE BACK-BOX MOUNTED ABOVE CEILING.

1 FIXED CEILING MOUNT CCTV CAMERA — NO SCALE



5 CARD READER DETAIL - MULLION — NO SCALE



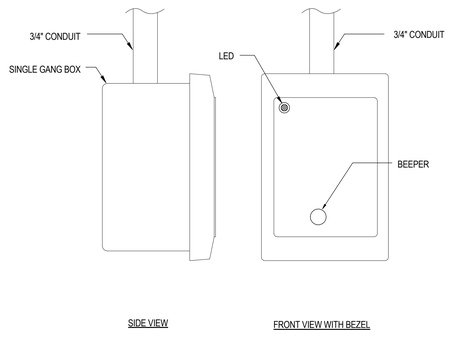
GENERAL NOTES:

1. REFER TO SECURITY SCHEDULES AND WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE WEATHER PROOF/WATER RESISTANT ENCLOSURE WITH HEATER/BLOWER FOR ALL EXTERIOR CAMERAS.

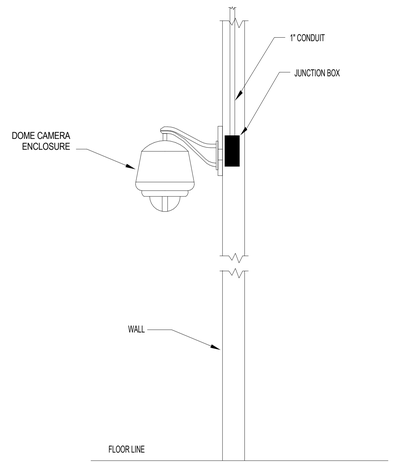
KEYNOTES:

1. CAMERA: PROVIDE MINI-DOME TYPE CAMERA WITH ENCLOSURE SURFACE MOUNTED DIRECTLY TO BACK-BOX OR PENDANT MOUNTED FROM BACK-BOX.
2. EXTENSION: PROVIDE PENDANT MOUNT EXTENSION AS REQUIRED BASED ON CAMERA MOUNTING HEIGHT. REFER TO CAMERA SCHEDULES FOR MOUNTING HEIGHT REQUIREMENTS.
3. CONDUIT: PROVIDE (1) 1-INCH CONDUIT ROUTED FROM CAMERA TO DATA DEVICE BACK-BOX.
4. BACK-BOX: CAMERA CABLE BACK-BOX SURFACE MOUNTED TO STRUCTURE.

2 FIXED OVERHEAD MOUNT CCTV CAMERA — NO SCALE



6 CARD READER DETAIL — NO SCALE



3 WALL MOUNTED DOME CAMERA ENCLOSURE — NO SCALE

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18294 Sonoma Highway
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FAX 707 996 8542

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

WSP USA Buildings, Inc.
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(415) 398-3833
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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

Sheet Title

SECURITY DETAILS

Drawn By: Author — Checked By: Checker

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

4-T7.04
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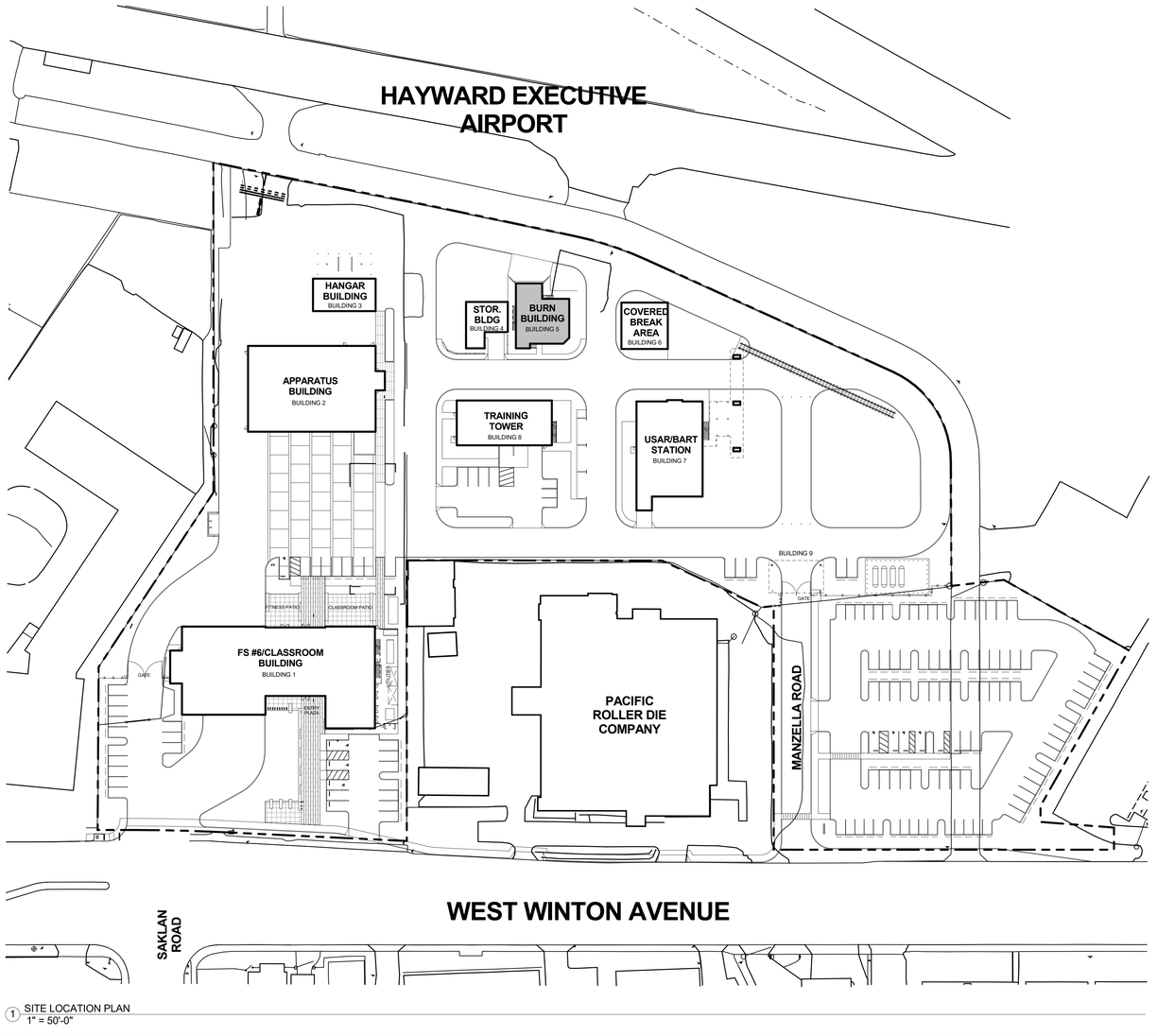
HAYWARD FIRE STATION #6
& FIRE TRAINING CENTER

1401 WEST WINTON AVE., HAYWARD, CA 94545

BUILDING 5

PERMIT SUBMITTAL



1 SITE LOCATION PLAN
1" = 50'-0"

PROJECT INFORMATION

APN:	432-124-1-4 (PORTION)
PROJECT:	HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER BUILDING 5 1401 WEST WINTON AVENUE, HAYWARD, CA 94545
DESCRIPTION:	CLASS "A" BURN BUILDING (BUILDING 5)
BUILDING AREAS:	39,156 SF SITE COVERAGE 66,278 SF GROSS FLOOR AREA
TOTAL BUILDING AREA FOR THIS PERMIT:	4,732 SF
SITE:	293,364 SF (6.73 ACRES) SITE DEVELOPMENT AREA 13% LOT COVERAGE (TOTAL DEVELOPMENT)
BUILDING FLOOR AREA RATIO:	23% (TOTAL DEVELOPMENT)
FIRE SPRINKLERED:	NO (BUILDING 5)
BUILDING USE/OCCUPANCY:	NFPA 1402 LIVE FIRE TRAINING STRUCTURE THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.
CONSTRUCTION TYPE:	II-B
ZONING:	AT/AC
TOTAL BUILDING STORIES:	3
DEFERRED SUBMITTALS:	STEEL STAIRS

BUILDING 5 SCOPE OF WORK

The general scope of work covered under this contract includes but is not limited to:

Structure

- New concrete slabs, concrete columns, concrete beams, and concrete roof.
- New bearing and non-bearing CMU walls.
- New metal guard railings.
- New walk-out Basement.
- New Class "A" burn prop training space throughout building and accessible attic with fire brick at floor and thermal lining at walls and ceiling.
- New roof level training space with "cut-able" roof area.
- New fiberglass composition shingle roofing.

SHEET INDEX

NUMBER	NAME
ARCHITECTURAL	
5-A0.10	BUILDING 5 SHEET INDEX, PROJECT INFORMATION
5-A0.11	BUILDING 5 EXTERIOR AXOMETRIC VIEW
5-A2.00	BUILDING 5 BASEMENT LEVEL FLOOR PLAN
5-A2.01	BUILDING 5 BASEMENT LEVEL DRAINAGE PLAN
5-A2.10	BUILDING 5 FIRST LEVEL FLOOR PLAN
5-A2.11	BUILDING 5 FIRST LEVEL FLOOR DRAINAGE PLAN
5-A2.20	BUILDING 5 SECOND LEVEL FLOOR PLAN
5-A2.21	BUILDING 5 SECOND LEVEL FLOOR DRAINAGE PLAN
5-A2.30	BUILDING 5 ATTIC PLAN
5-A2.31	BUILDING 5 ATTIC DRAINAGE PLAN
5-A2.60	BUILDING 5 ROOF PLAN
5-A2.70	BUILDING 5 DOOR, WINDOW, & ROOM FINISH SCHEDULES
5-A3.10	BUILDING 5 EXTERIOR ELEVATIONS
5-A3.11	BUILDING 5 EXTERIOR ELEVATIONS
5-A3.40	BUILDING 5 BUILDING CROSS SECTIONS
5-A3.41	BUILDING 5 BUILDING CROSS SECTIONS
5-A3.42	BUILDING 5 WALL SECTIONS
5-A3.43	BUILDING 5 WALL SECTIONS
5-A5.10	BUILDING 5 INTERIOR ELEVATIONS
5-A5.11	BUILDING 5 INTERIOR ELEVATIONS
5-A6.00	BUILDING 5 BASEMENT REFLECTED CEILING PLAN
5-A6.10	BUILDING 5 FIRST LEVEL REFLECTED CEILING PLAN
5-A6.20	BUILDING 5 SECOND LEVEL REFLECTED CEILING PLAN
5-A7.10	BUILDING 5 STAIR PLANS AND DETAILS
5-A7.11	BUILDING 5 STAIR PLANS AND DETAILS
5-A8.30	BUILDING 5 ARCHITECTURAL DETAILS
5-A8.31	BUILDING 5 ARCHITECTURAL DETAILS
5-A8.32	BUILDING 5 ARCHITECTURAL DETAILS
5-A8.33	BUILDING 5 ARCHITECTURAL DETAILS
STRUCTURAL	
5-S0.10	BUILDING 5 GENERAL NOTES AND SPECIFICATIONS
5-S1.10	BUILDING 5 TYPICAL CONCRETE DETAILS
5-S1.40	BUILDING 5 TYPICAL CMU DETAILS
5-S1.41	BUILDING 5 TYPICAL CMU DETAILS
5-S1.50	BUILDING 5 TYPICAL METAL DECKING DETAILS
5-S2.10	BUILDING 5 FOUNDATION PLAN
5-S2.20	BUILDING 5 FIRST FLOOR FRAMING PLAN
5-S2.30	BUILDING 5 SECOND FLOOR FRAMING PLAN
5-S2.40	BUILDING 5 ATTIC FRAMING PLAN
5-S2.50	BUILDING 5 ROOF FRAMING PLAN
5-S3.10	BUILDING 5 ELEVATIONS
5-S3.20	BUILDING 5 ELEVATIONS
5-S4.10	BUILDING 5 FOUNDATION DETAILS
5-S4.11	BUILDING 5 CONCRETE WALL DETAILS
5-S4.12	BUILDING 5 CONCRETE COLUMN DETAILS
5-S4.13	BUILDING 5 CONCRETE BEAM DETAILS
5-S4.14	BUILDING 5 CONCRETE SLAB DETAILS
5-S4.15	BUILDING 5 CMU WALL DETAILS
5-S4.16	BUILDING 5 CMU WALL DETAILS
5-S4.17	BUILDING 5 TURRET FRAMING PLAN AND DETAILS

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/30/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 SHEET INDEX, PROJECT INFORMATION

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

5-A0.10
Drawing No.

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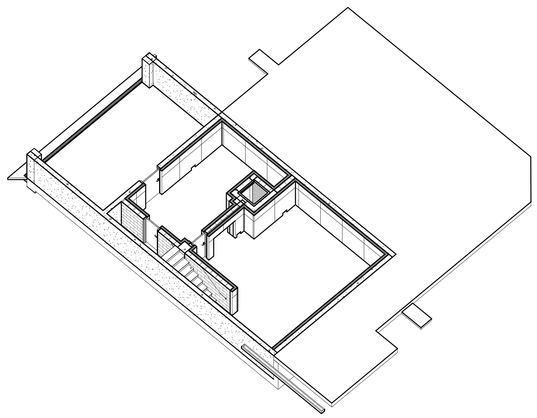
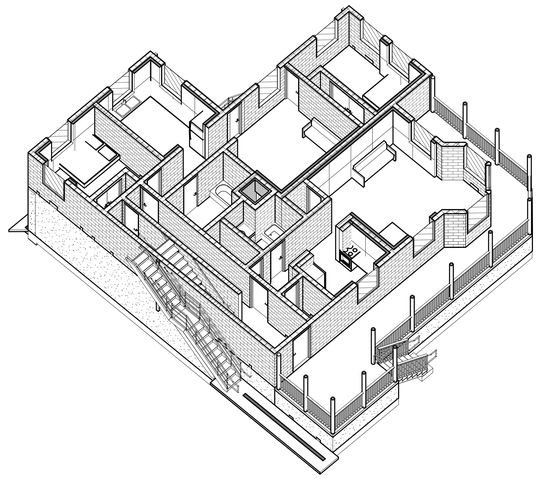
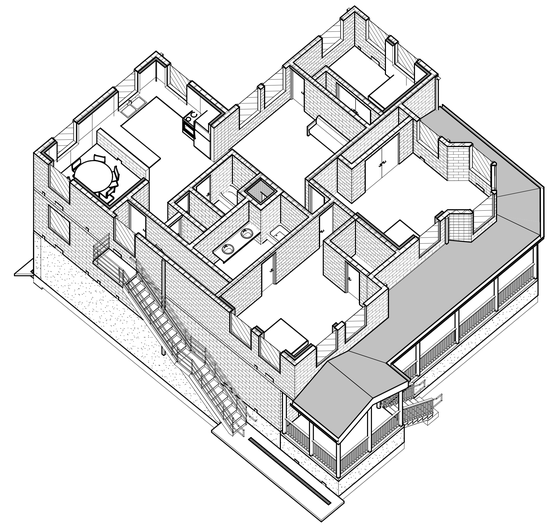


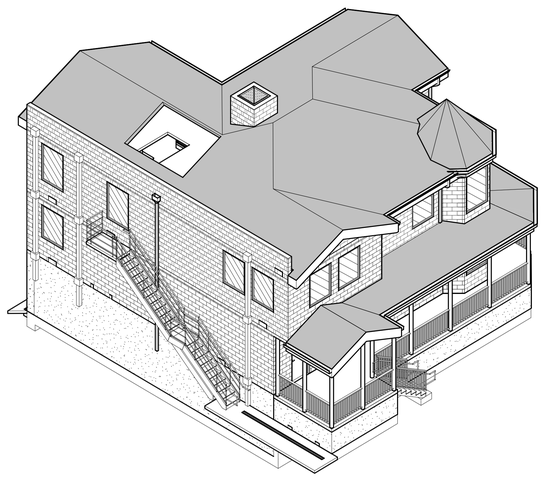
1 SOUTHWEST AXONOMETRIC VIEW AT BASEMENT FLOOR LEVEL



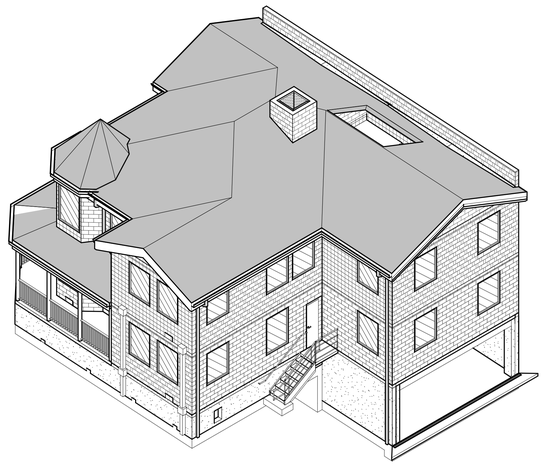
2 SOUTHWEST AXONOMETRIC VIEW AT FIRST FLOOR LEVEL



3 SOUTHWEST AXONOMETRIC VIEW AT SECOND FLOOR LEVEL



4 SOUTHWEST AXONOMETRIC VIEW



5 NORTHEAST AXONOMETRIC VIEW

GRAPHIC FOR REFERENCE ONLY

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MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 EXTERIOR AXONOMETRIC VIEWS

Drawn By: NM Checked By: EW

Scale:

Date:
October 4, 2019

Project No. 2016039

5-A0.11
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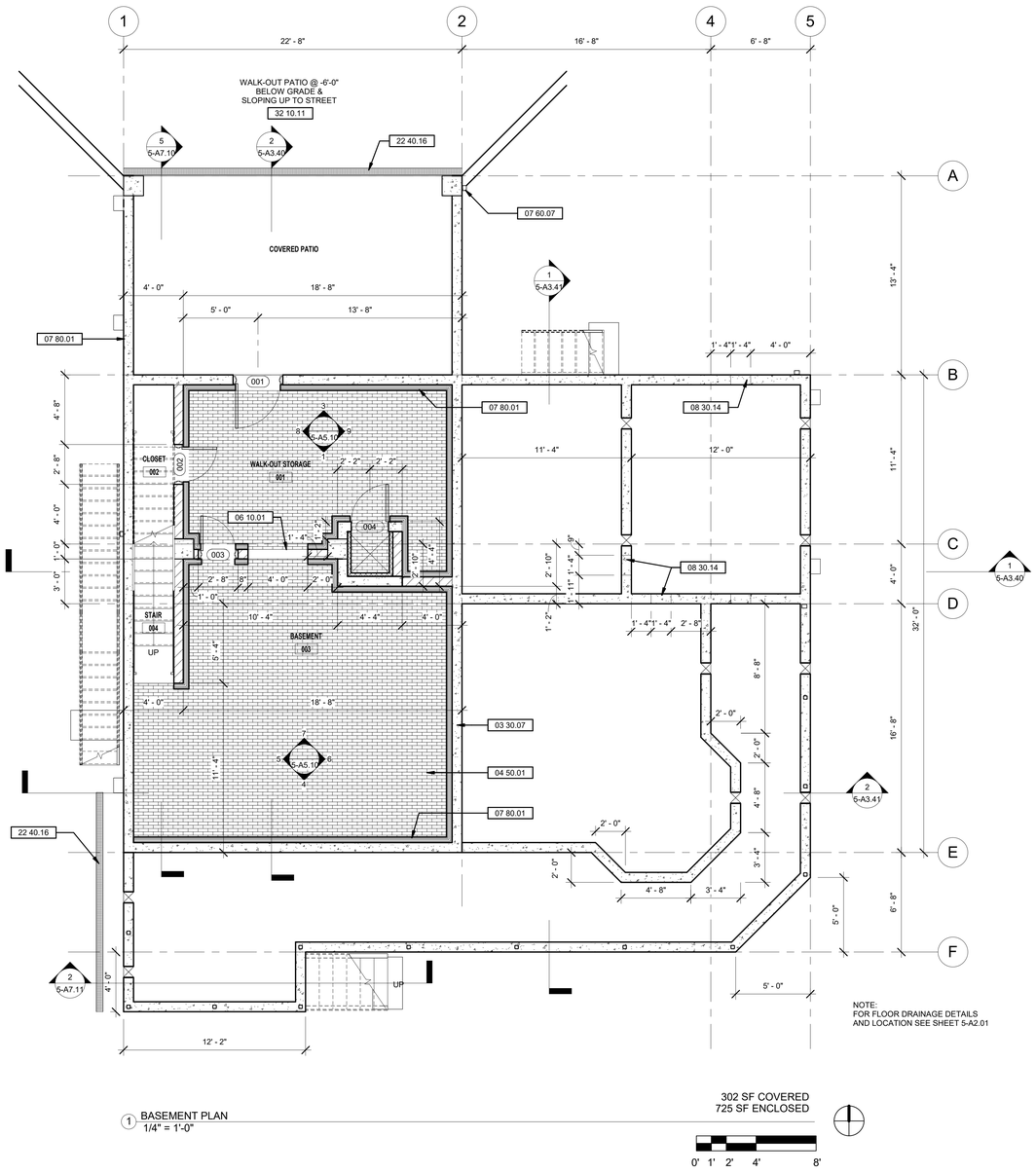

1 BASEMENT PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.
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3. FOR ADDITIONAL INFORMATION AND COORDINATION, REFER TO STRUCTURAL DRAWINGS.
4. REFER TO CIVIL DRAWINGS FOR SITE AND UTILITY INFRASTRUCTURE WORK.
5. DURING THE VARIOUS TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING WATER THROUGHOUT THE BUILDING. INASMUCH, **ALL** INTERIOR AND EXTERIOR EXPOSED METAL SURFACES MUST BE PROTECTED FROM RUST AND CORROSION WITH EITHER FACTORY FINISHES, GALVANIZED METAL FINISH, OR HIGH TEMPERATURE PAINT FINISH.
6. UPON COMPLETION OF CMU, ALL WALL SURFACES SHALL BE SEALED WITH THE APPROVED MASONRY SEALER. REFER TO PROJECT SPECIFICATIONS.
7. CONTRACTOR SHALL COORDINATE ALL INTERIOR CONSTRUCTION, INCLUDING WALLS AND DOORS WITH THE INTERIOR FLOOR SLOPE PLANS AND STRUCTURAL ELEMENTS PRIOR TO COMMENCING CONSTRUCTION.
8. THIS BUILDING WILL BE SUBJECT TO HIGH HEAT LEVELS DUE TO THE USE OF LIVE FIRE DURING TRAINING SCENARIOS. ALL EXPOSED METAL SURFACES SHALL BE PROTECTED WITH EITHER GALVANIZED FINISHES WHERE NOTED, OR HIGH TEMPERATURE PAINT FINISH PER PROJECT SPECIFICATIONS.
9. UPON FINAL CLEANING OF EXPOSED CONCRETE FLOORS, SURFACES SHALL BE PREPPED FOR APPLICATION OF SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- SPLIT FACE CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
04 50.01	PATTERN INDICATES AREA OF FIRE BRICK FLOORING, DEPRESSED INTO STRUCTURAL CONCRETE SLAB AND DRY-STACKED WITHOUT MORTAR OR GROUT, TYPICAL
06 10.01	4-FOOT SQUARE BREACH PANEL THROUGH WALL WITH SILL AT FLOOR LINE
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 30.14	16" X 24" CRAWL SPACE ACCESS WITH SILL 6" ABOVE CRAWL SPACE SLAB
22 40.16	PREMANUFACTURED TRENCH DRAIN WITH GALVANIZED STEEL FRAME AND DUCTILE IRON GRATE. REFER TO SHEET 0-C3.2 FOR PLUMBING CONNECTIONS
32 10.11	PERMEABLE PAVERS ON SLOPED SURFACE DOWN TO BASEMENT PER ARCHITECTURAL SITE PLAN, CIVIL, AND LANDSCAPE DRAWINGS

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
BASEMENT FLOOR PLAN

Drawn By: NM Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

5-A2.00
Drawing No.

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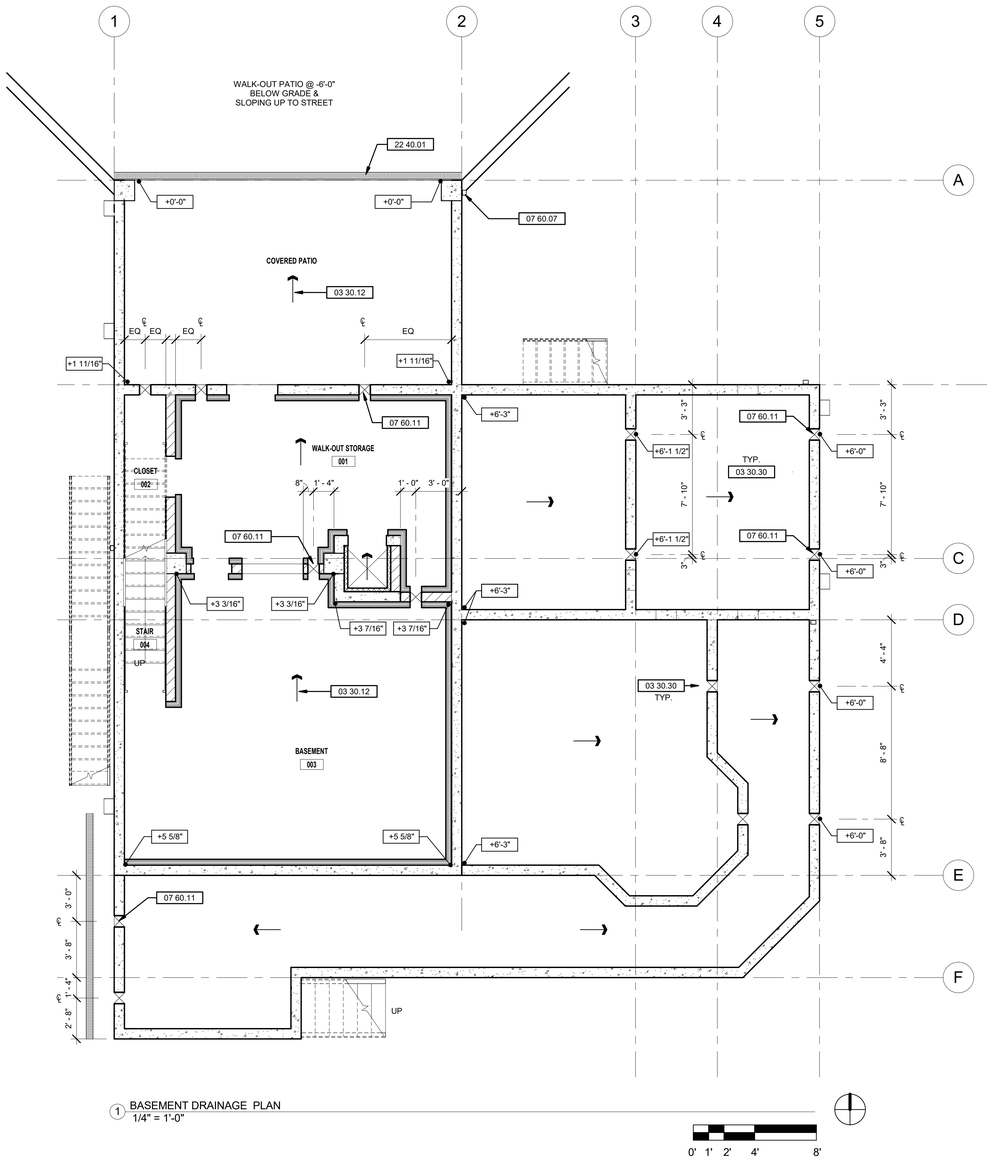

1 BASEMENT DRAINAGE PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. DURING TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING LARGE AMOUNTS OF WATER FOR THE EXTINGUISHING OF FIRE SIMULATIONS. THEREFORE, ALL FLOORS WITHIN THE TRAINING BUILDING ARE TO BE SLOPED AT A MINIMUM OF 1% FOR DRAINAGE, UNLESS OTHERWISE NOTED.
2. THE INTENT OF WATER DRAINAGE WITH THE TRAINING BUILDING IS THROUGH THE SHOWN OPENINGS IN THE PERIMETER AND INTERIOR CMU WALLS. REFER TO NOTED DETAILS. FLOORS SHALL BE SLOPED AS SHOWN TO THESE LOCATIONS.
3. THE ELEVATIONS SHOWN ON THE DRAINAGE PLANS INDICATE ELEVATION ABOVE THE 0'-0" DATUM POINT ON EACH FLOOR LEVEL TO ACHIEVE SLOPE FOR DRAINAGE. THE MINIMUM AND MAXIMUM FLOOR SLAB THICKNESS SHALL BE AS ESTABLISHED ON THE STRUCTURAL DRAWINGS.
4. THE SURFACE OF ALL INTERIOR EXPOSED CONCRETE FLOORS SHALL BE A LIGHT BROOM FINISH SO AS NOT TO RESTRICT THE FLOW OF WATER TO THE SHOWN DRAINAGE POINTS. CONTRACTOR TO PROVIDE MOCK-UP OF FLOOR FINISH FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF CONCRETE FLOORS.
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7. UPON COMPLETION OF WATER DRAINAGE TESTING, ALL INTERIOR FLOOR SLABS SHALL BE SEALED WITH AN APPLIED SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- SPLIT FACE CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.12	ARROW INDICATES DOWNWARD DIRECTION OF FLOOR SLOPE, TYPICAL
03 30.30	SLOPE CONCRETE FLOORS TO DRAINAGE SCUPPERS SUCH THAT THERE ARE NO LOW SPOTS OR PONDING, TYP.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 60.11	DRAINAGE SCUPPER THROUGH WALL AT FLOOR LINE, SEE 12/5-A8.33
22 40.01	PREMANUFACTURED TRENCH DRAIN WITH GALVANIZED STEEL FRAME AND DUCTILE IRON GRATE, TYPICAL

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
BASEMENT DRAINAGE PLAN

Drawn By: EW
Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

5-A2.01
Drawing No.

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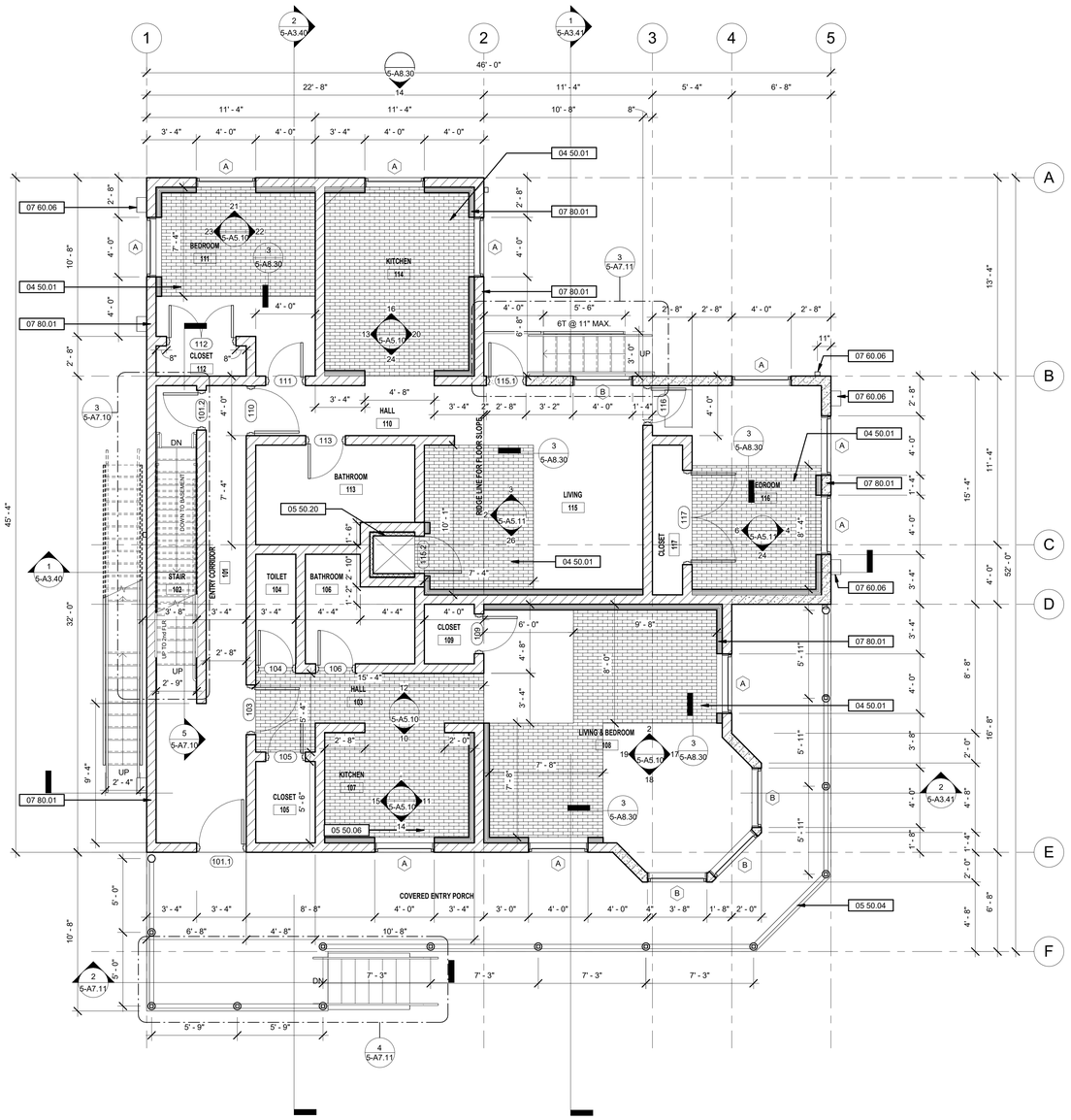

1 FIRST LEVEL FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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- SPLIT FACE CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

04 50.01	PATTERN INDICATES AREA OF FIRE BRICK FLOORING, DEPRESSED INTO STRUCTURAL CONCRETE SLAB AND DRY-STACKED WITHOUT MORTAR OR GROUT, TYPICAL
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.06	METAL EMERGENCY FIRE ESCAPE PLATFORM WITH PERMANENT STAIR
05 50.20	REMOVABLE CAST IRON GRATE W/ FLAT PLATE FRAME, SEE 5/5-A8.31
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
FIRST LEVEL FLOOR PLAN

Drawn By: EW
Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

5-A2.10
Drawing No.

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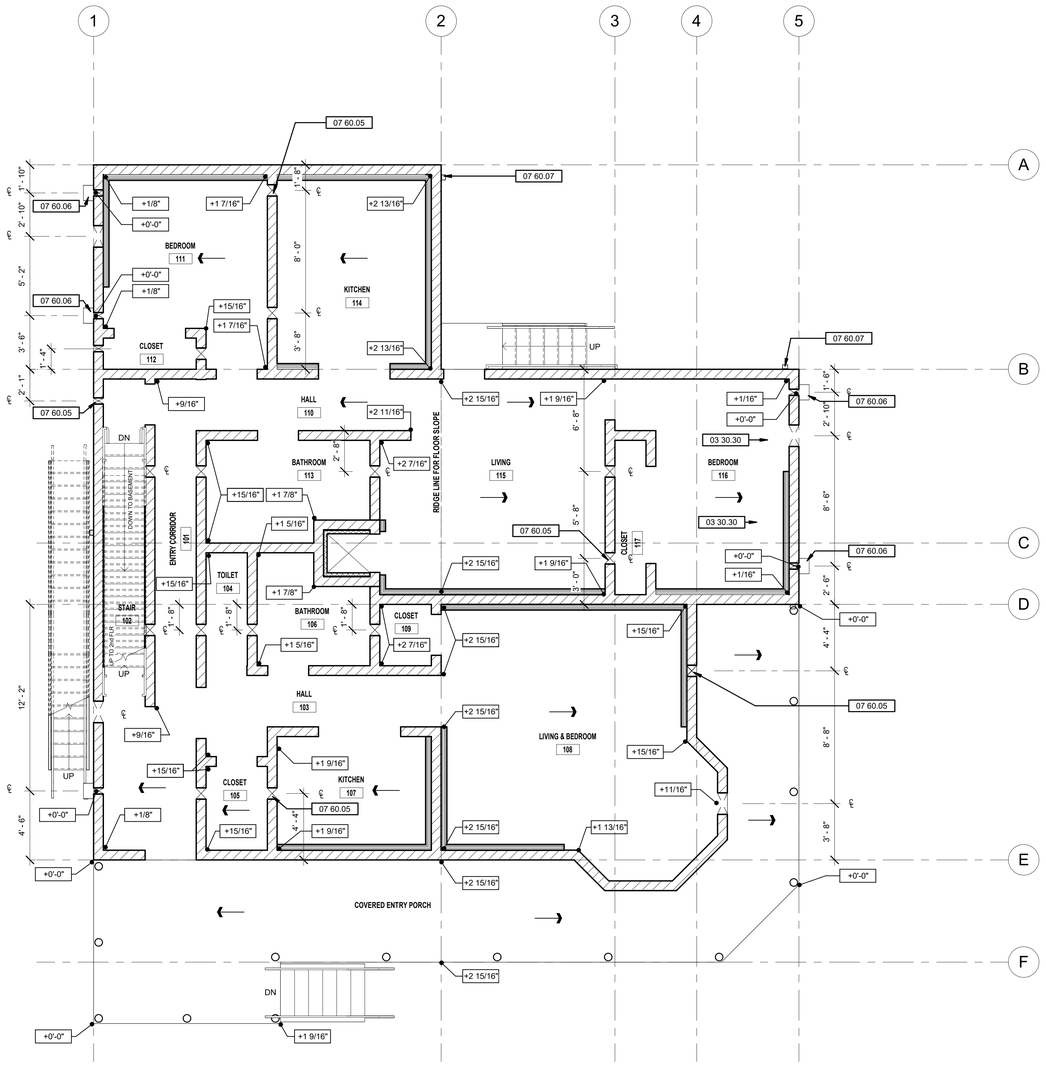

1 FIRST LEVEL SLAB DRAINAGE PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

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- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.30	SLOPE CONCRETE FLOORS TO DRAINAGE SCUPPERS SUCH THAT THERE ARE NO LOW SPOTS OR PONDING, TYP.
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE

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MICHAEL B. ROSS
No. C-18867
2/28/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
FIRST LEVEL FLOOR DRAINAGE PLAN

Drawn By: EW
Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

5-A2.11
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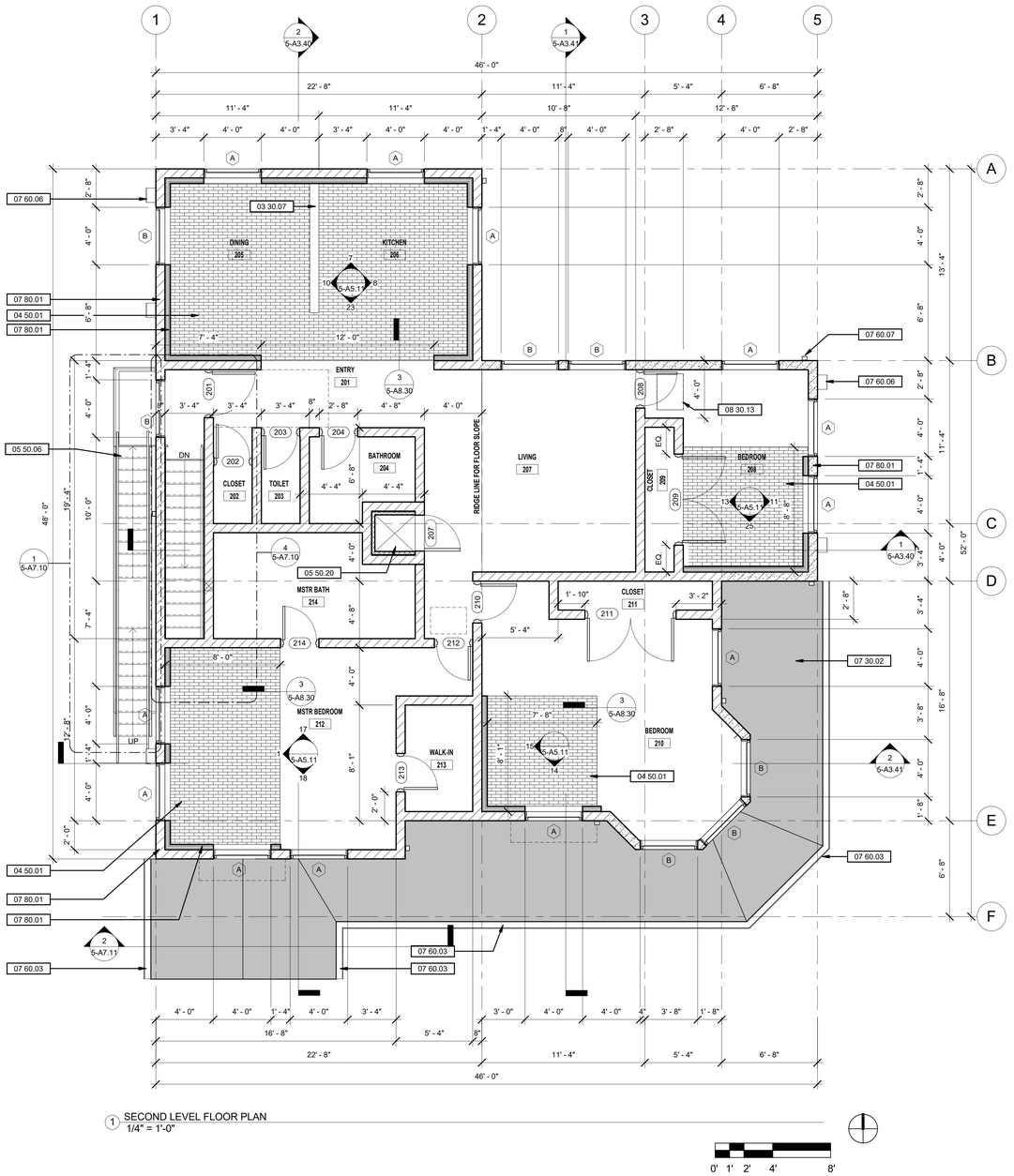

1 SECOND LEVEL FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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4. REFER TO CIVIL DRAWINGS FOR SITE AND UTILITY INFRASTRUCTURE WORK.
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6. UPON COMPLETION OF CMU, ALL WALL SURFACES SHALL BE SEALED WITH THE APPROVED MASONRY SEALER. REFER TO PROJECT SPECIFICATIONS.
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9. UPON FINAL CLEANING OF EXPOSED CONCRETE FLOORS, SURFACES SHALL BE PREPPED FOR APPLICATION OF SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- SPLIT FACE CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
04 50.01	PATTERN INDICATES AREA OF FIRE BRICK FLOORING, DEPRESSED INTO STRUCTURAL CONCRETE SLAB AND DRY-STACKED WITHOUT MORTAR OR GROUT, TYPICAL
05 30	METAL DECKING
05 50.06	METAL EMERGENCY FIRE ESCAPE PLATFORM WITH PERMANENT STAIR
05 50.20	REMOVABLE CAST IRON GRATE W/ FLAT PLATE FRAME, SEE 5/5-A8.31
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 30.13	22" X 30" ATTIC ACCESS WITH REMOVABLE GYPSUM BOARD LID

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
SECOND LEVEL FLOOR PLAN

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

5-A2.20
Drawing No.

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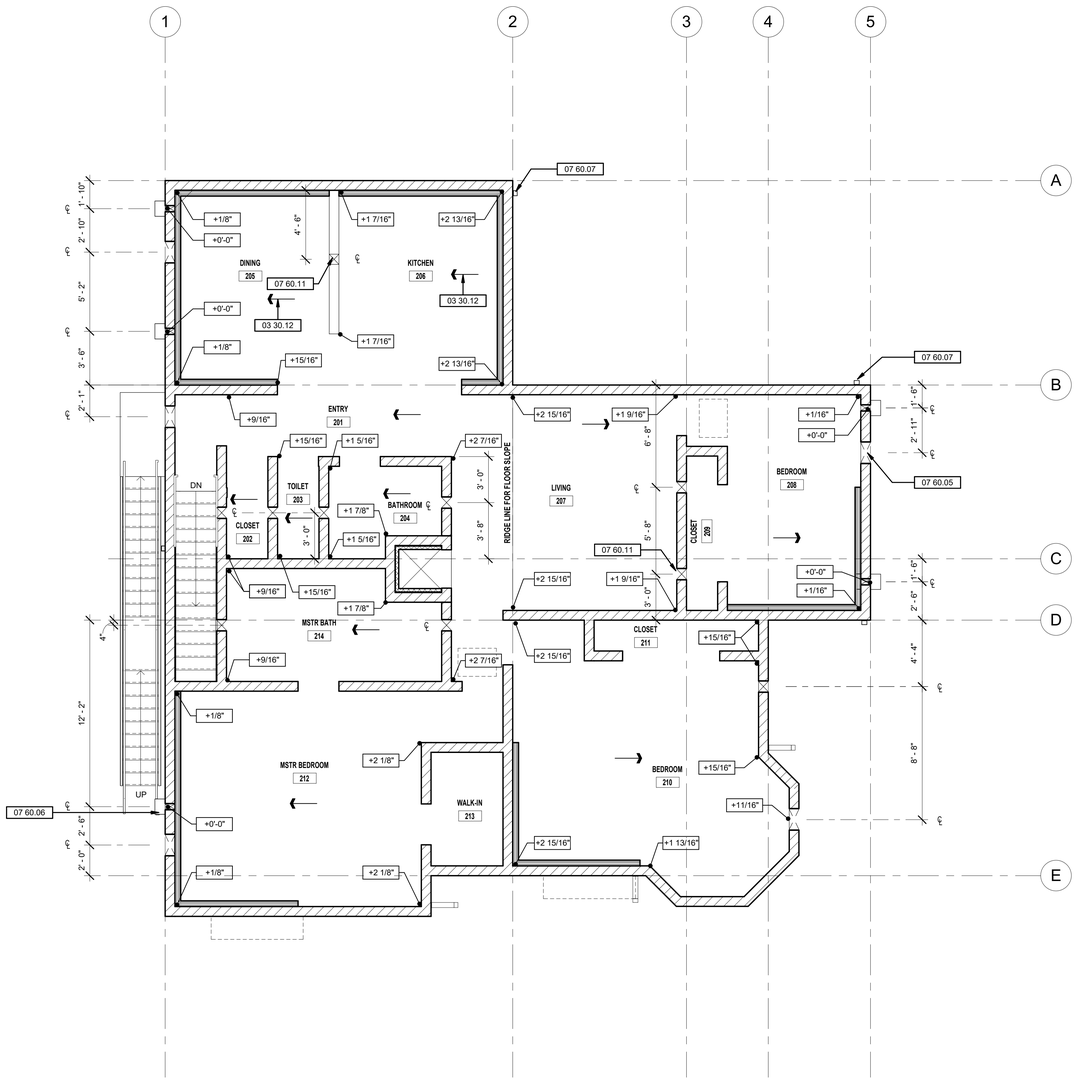

1 SECOND LEVEL SLAB DRAINAGE PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. DURING TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING LARGE AMOUNTS OF WATER FOR THE EXTINGUISHING OF FIRE SIMULATIONS. THEREFORE, ALL FLOORS WITHIN THE TRAINING BUILDING ARE TO BE SLOPED AT A MINIMUM OF 1% FOR DRAINAGE, UNLESS OTHERWISE NOTED.
2. THE INTENT OF WATER DRAINAGE WITHIN THE TRAINING BUILDING IS THROUGH THE SHOWN OPENINGS IN THE PERIMETER AND INTERIOR CMU WALLS. REFER TO NOTED DETAILS. FLOORS SHALL BE SLOPED AS SHOWN TO THESE LOCATIONS.
3. THE ELEVATIONS SHOWN ON THE DRAINAGE PLANS INDICATE ELEVATION ABOVE THE 0'-0" DATUM POINT ON EACH FLOOR LEVEL TO ACHIEVE SLOPE FOR DRAINAGE. THE MINIMUM AND MAXIMUM FLOOR SLAB THICKNESS SHALL BE AS ESTABLISHED ON THE STRUCTURAL DRAWINGS.
4. THE SURFACE OF ALL INTERIOR EXPOSED CONCRETE FLOORS SHALL BE A LIGHT BROOM FINISH SO AS NOT TO RESTRICT THE FLOW OF WATER TO THE SHOWN DRAINAGE POINTS. CONTRACTOR TO PROVIDE MOCK-UP OF FLOOR FINISH FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF CONCRETE FLOORS.
5. FIRE BRICK FINISH SHALL BE RECESSED AS NECESSARY TO BE SET FLUSH WITH THE ADJACENT EXPOSED CONCRETE SLAB FINISH.
6. INTERIOR FLOOR SLABS SHALL BE FLOOD TESTED FOR PROPER DRAINAGE. CONTRACTOR SHALL FLOOD THE FLOOR AREAS IN OBSERVATION BY THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL TO DEMONSTRATE POSITIVE DRAINAGE. ANY AREAS OF PONDING OR STANDING WATER SHALL BE REPAIRED TO THE SATISFACTION OF THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL.
7. UPON COMPLETION OF WATER DRAINAGE TESTING, ALL INTERIOR FLOOR SLABS SHALL BE SEALED WITH AN APPLIED SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

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- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
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- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.12	ARROW INDICATES DOWNWARD DIRECTION OF FLOOR SLOPE, TYPICAL
05 30	METAL DECKING
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 60.11	DRAINAGE SCUPPER THROUGH WALL AT FLOOR LINE, SEE 12/5-A8.33

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 SECOND LEVEL FLOOR DRAINAGE PLAN

Drawn By: Author
Checked By: Checker

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

5-A2.21
Drawing No.

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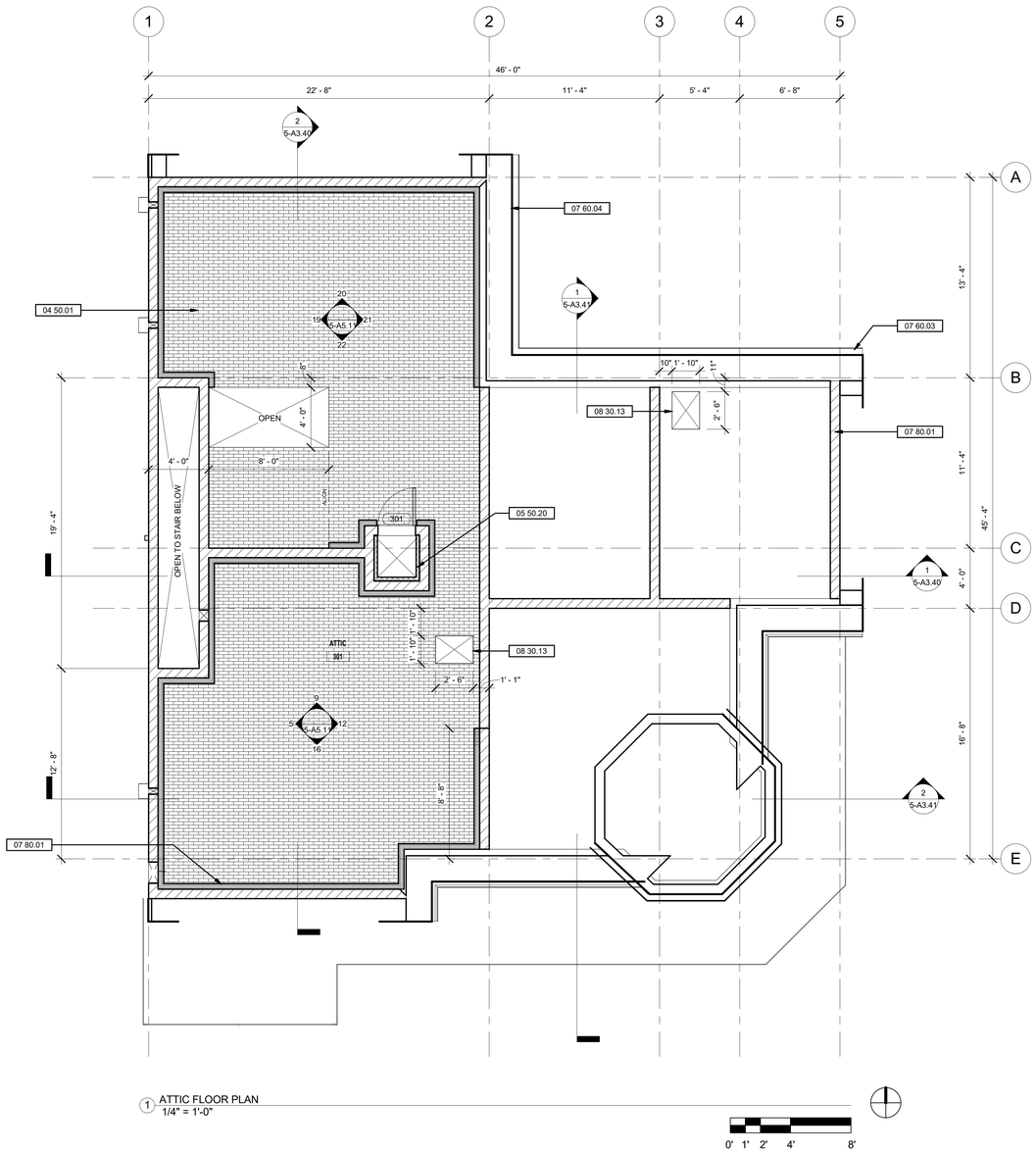

1 ATTIC FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

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- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

04 50.01	PATTERN INDICATES AREA OF FIRE BRICK FLOORING, DEPRESSED INTO STRUCTURAL CONCRETE SLAB AND DRY-STACKED WITHOUT MORTAR OR GROUT, TYPICAL
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07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.04	PAINTED ALUMINUM FASCIA TRIM
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08 30.13	22" X 30" ATTIC ACCESS WITH REMOVABLE GYPSUM BOARD LID

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 9/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 ATTIC PLAN

Drawn By: EW
Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

5-A2.30
Drawing No.

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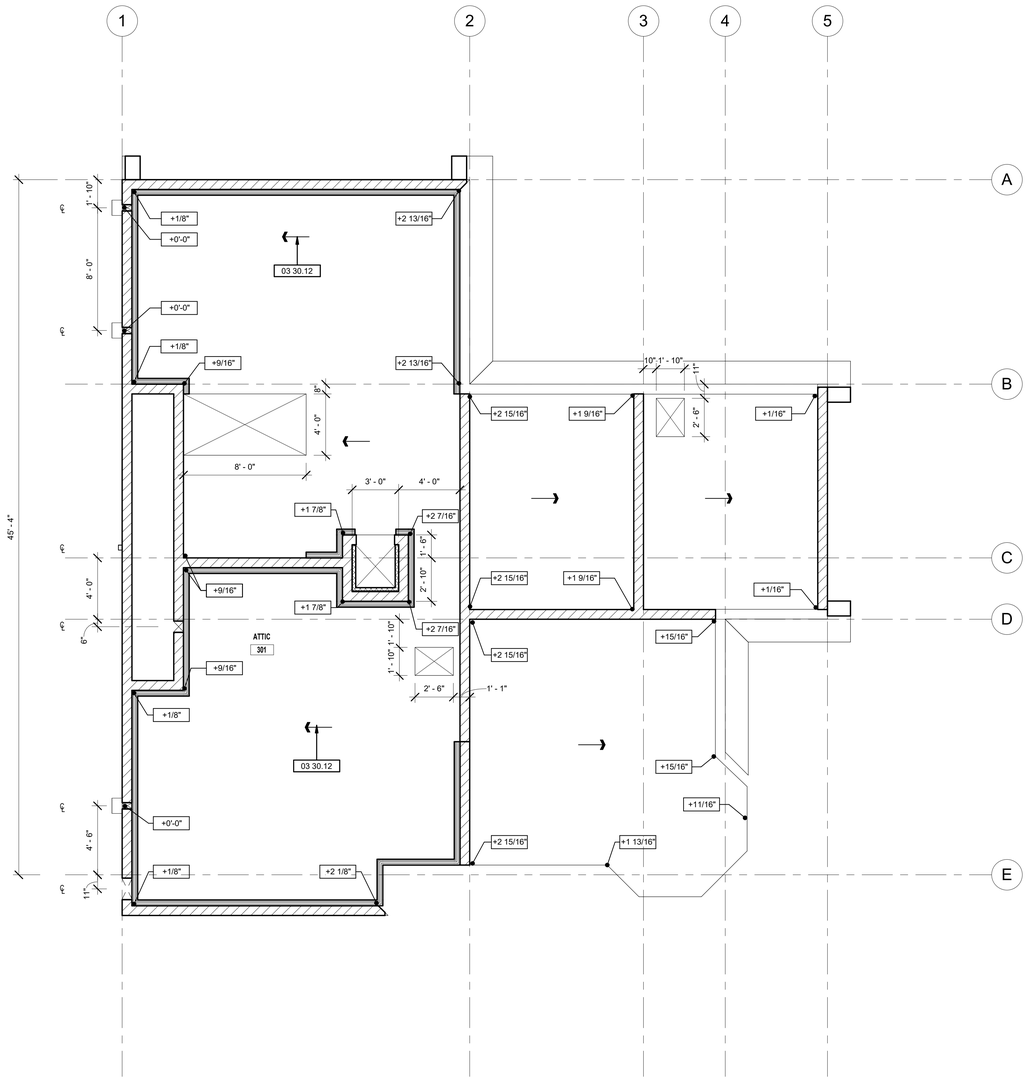

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0' 1' 2' 4' 8'

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- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.12	ARROW INDICATES DOWNWARD DIRECTION OF FLOOR SLOPE, TYPICAL
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING

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DEPARTMENT OF PUBLIC WORKS
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DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18887
3/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
ATTIC DRAINAGE PLAN

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. 2016039

5-A2.31
Drawing No.

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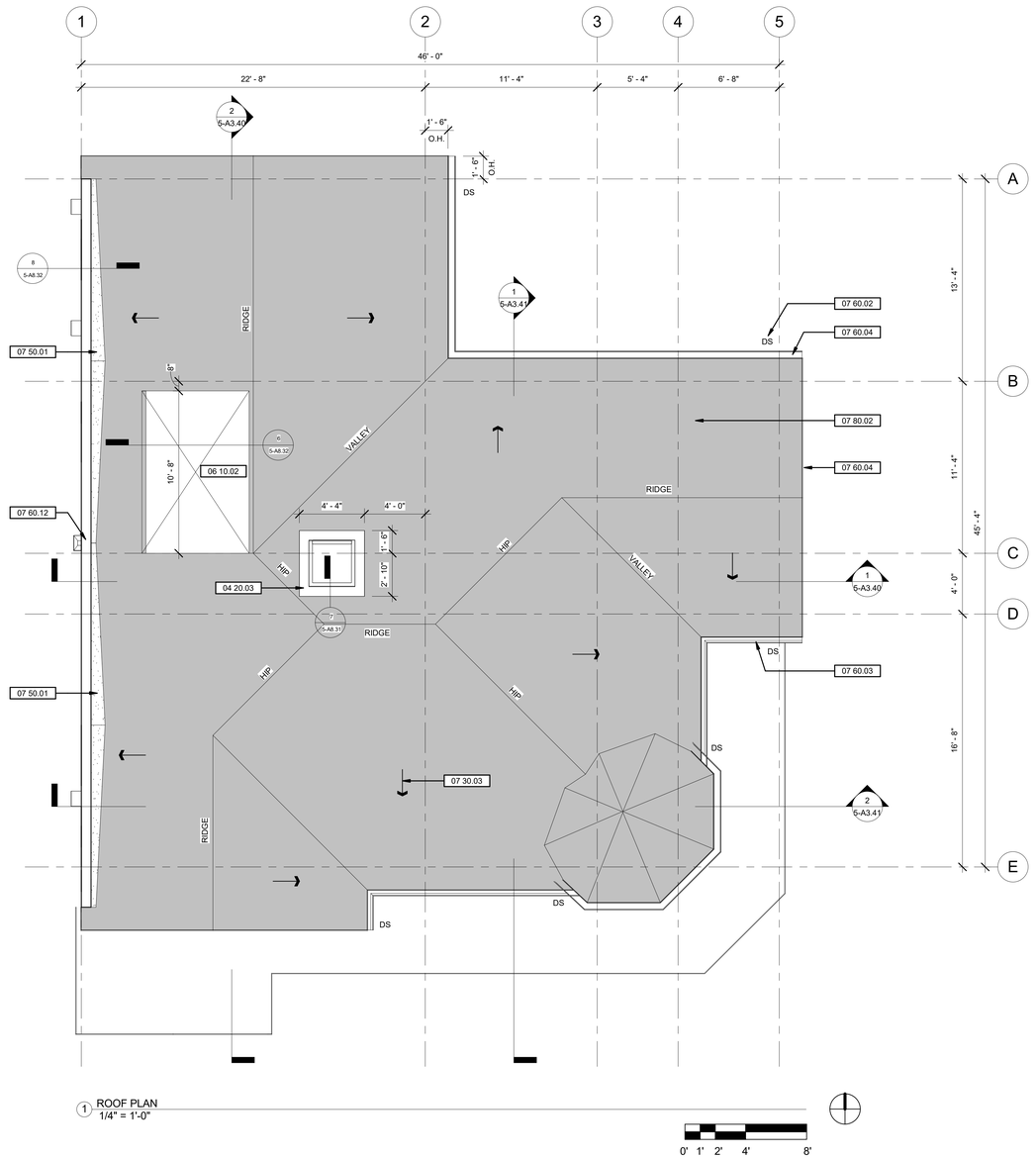

1 ROOF PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

04 20.03	CMU CHIMNEY WITH INTERIOR FIRE BRICK LINING
06 10.02	8' X 10'-8" ROOF VENTILATION CUT-DOWN PANEL AREA
07 30.03	ARROW INDICATES DOWNWARD DIRECTION OF ROOF SLOPE, TYPICAL
07 50.01	MODIFIED BITUMEN MEMBRANE ROOF CRICKET
07 60.02	INDICATES DOWNSPOUT LOCATION, TYPICAL
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.04	PAINTED ALUMINUM FASCIA TRIM
07 60.12	MINIMUM 8" WIDE X 4" HIGH ROOF SCUPPER THROUGH WALL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
ROOF PLAN

Drawn By: EW Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

5-A2.60
Drawing No.

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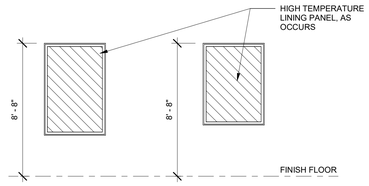
SPECIAL OPENING SCHEDULE

MARK	SIZE		FRAME		GLASS			OPERATION	DETAILS			FIRE RATING LABEL	ACCESSORIES			NOTES
	WIDTH	HEIGHT	MATERIAL	FINISH	THK	COLOR	TYPE		HEAD	JAMB	SILL		INSECT SCREEN	GRID	WINDOW COVERING	
A	4' - 0"	5' - 4"	HM	FP					9/5-A8.30	2/5-A8.30	10/5-A8.30					
B	4' - 0"	6' - 0"	HM	FP					9/5-A8.30	2/5-A8.30	10/5-A8.30					

WINDOW TYPES



B

STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL

A

STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL

DOOR AND FRAME SCHEDULE

MARK	TYPE	DOOR SIZE			DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	DETAILS			HARDWARE GROUP	REMARKS
		WIDTH	HEIGHT	THICKNESS					HEAD	JAMB	SILL		
001	A	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	1/5-A8.30	4/5-A8.30	7/5-A8.30	5-E	
002	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	15/5-A8.30	15/5-A8.30	7/5-A8.30	5-C	REMOVE STOP
003	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	15/5-A8.30	15/5-A8.30		5-C	REMOVE STOP
004	F	2' - 6"	5' - 0"	2 1/4"	HM	FP	MTL	FP	14/5-A8.30	14/5-A8.30		5-02	FIRE-RATED ACCESS PANEL
101.1	C	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	BY MFR.	BY MFR.	BY MFR.	5-02	PRE-MANUFACTURED FORCIBLE ENTRY TRAINING DOOR
101.2	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-C	
103	A	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30	7/5-A8.30	5-A	
104	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30	7/5-A8.30	5-B	
105	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-C	
106	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
109	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-C	
110	A	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-A	
111	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
112	B	4' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-D	
113	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
115.1	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	12/5-A8.30	12/5-A8.30	6/5-A8.30	5-01	
115.2	F	2' - 6"	5' - 0"	2 1/4"	HM	FP	MTL	FP	14/5-A8.30	14/5-A8.30		5-02	FIRE-RATED ACCESS PANEL
116	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
117	B	6' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30	7/5-A8.30	5-D	
201	A	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-A	
202	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-C	
203	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
204	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
207	F	2' - 6"	5' - 0"	2 1/4"	HM	FP	MTL	FP	14/5-A8.30	14/5-A8.30		5-02	FIRE-RATED ACCESS PANEL
208	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
209	B	6' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30	7/5-A8.30	5-D	
210	A	2' - 6"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
211	B	6' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-D	
212	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
213	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-C	
214	A	2' - 4"	7' - 0"	1 3/4"	HM	FP	HM	FP	11/5-A8.30	11/5-A8.30		5-B	
301	U	2' - 6"	2' - 6"	2 1/4"	HM	FP	MTL	FP	14/5-A8.30	14/5-A8.30		5-02	FIRE-RATED ACCESS PANEL

DOOR SCHEDULE LEGEND

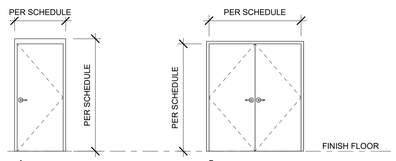
DOOR CONSTRUCTION:
AL = ALUMINUM
FAB = FABRIC
GL = TEMPERED GLASS
HC = HOLLOW CORE
SC = SOLID CORE
HM = HOLLOW METAL
MTL = METAL

DOOR FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

FRAME MATERIAL:
AL = ALUMINUM
HM = HOLLOW METAL
MTL = METAL
WD = WOOD

FRAME FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

DOOR TYPE ELEVATIONS



A

PAINTED HOLLOW METAL DOOR & FRAME

B

HOLLOW METAL DOOR & FRAME

ROOM FINISH SCHEDULE

NUMBER	NAME	FLOOR	BASE	WALLS				CEILING	COMMENTS
				NORTH	EAST	SOUTH	WEST		
001	WALK-OUT STORAGE	FRBK	-	THRM	THRM	THRM	THRM	THRM	
002	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU		
003	BASEMENT	FRBK	-	THRM	THRM	THRM	THRM	THRM	
004	STAIR	CONC-1	-	CMU	CMU	-	CMU	UNF	
101	ENTRY CORRIDOR	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
102	STAIR	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
103	HALL	FRBK	-	FRBK/THRM	-	FRBK/THRM	-	THRM	
104	TOILET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
105	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
106	BATHROOM	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
107	KITCHEN	CONC-1	-	FRBK/THRM	FRBK/THRM	FRBK/THRM	FRBK/THRM	THRM	
108	LIVING & BEDROOM	CONC-1/FRBK	-	FRBK/THRM/CMU	FRBK/THRM/CMU	FRBK/THRM/CMU	FRBK/THRM/CMU	UNF/THRM	
109	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
110	HALL	CONC-1	-	CMU	-	CMU	-	UNF	
111	BEDROOM	CONC-1/FRBK	-	FRBK/THRM	FRBK/THRM/CMU	FRBK/THRM/CMU	CMU	UNF/THRM	
112	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
113	BATHROOM	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
114	KITCHEN	CONC-1/FRBK	-	FRBK/THRM	FRBK/THRM	FRBK/THRM	FRBK/THRM	THRM	
115	LIVING	CONC-1/FRBK	-	CMU	CMU	FRBK/THRM/CMU	FRBK/THRM	UNF/THRM	
116	BEDROOM	CONC-1/FRBK	-	CMU	FRBK/THRM/CMU	FRBK/THRM	FRBK/THRM/CMU	UNF/THRM	
117	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
201	ENTRY	CONC-1	-	CMU	-	CMU	CMU	UNF	
202	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
203	TOILET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
204	BATHROOM	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
205	DINING	CONC-1/FRBK	-	FRBK/THRM	FRBK/THRM		FRBK/THRM	THRM	
206	KITCHEN	CONC-1/FRBK	-	FRBK/THRM	FRBK/THRM	FRBK/THRM	-	THRM	
207	LIVING	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
208	BEDROOM	CONC-1/FRBK	-	CMU	FRBK/THRM/CMU	FRBK/THRM	FRBK/THRM/CMU	UNF/THRM	
209	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
210	BEDROOM	CONC-1/FRBK	-	CMU	CMU	FRBK/THRM/CMU	FRBK/THRM/CMU	UNF/THRM	
211	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
212	MSTR BEDROOM	CONC-1/FRBK	-	FRBK/THRM/CMU	CMU	FRBK/THRM/CMU	FRBK/THRM/CMU	UNF/THRM	
213	WALK-IN	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
214	MSTR BATH	CONC-1	-	FRBK/THRM/CMU	CMU	FRBK/THRM/CMU	FRBK/THRM	UNF/THRM	
301	ATTIC	CONC-1/FRBK	-	FRBK/THRM	FRBK/THRM	FRBK/THRM	FRBK/THRM	THRM	

ROOM FINISH SCHEDULE LEGEND:

FLOOR FINISH
CONC = EXPOSED CONCRETE w/ SEALER
FRBK = FIRE BRICK

BASE FINISH
- = NO BASE
CONC = EXPOSED CONCRETE CURB
RB-1 = RUBBER TOPSET BASE - COVED
T-1 = PORCELAIN TILE - COVED

WALL FINISH
CONC = EXPOSED CONCRETE
CMU = EXPOSED CMU
FRBK = FIRE BRICK
THRM = THERMAL LINING

CEILING FINISH
THRM = THERMAL LINING
UNF = UNFINISHED (EXPOSED STRUCTURE)

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
DOOR, WINDOW, & ROOM FINISH SCHEDULES

Drawn By: EW
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

5-A2.70
Drawing No.

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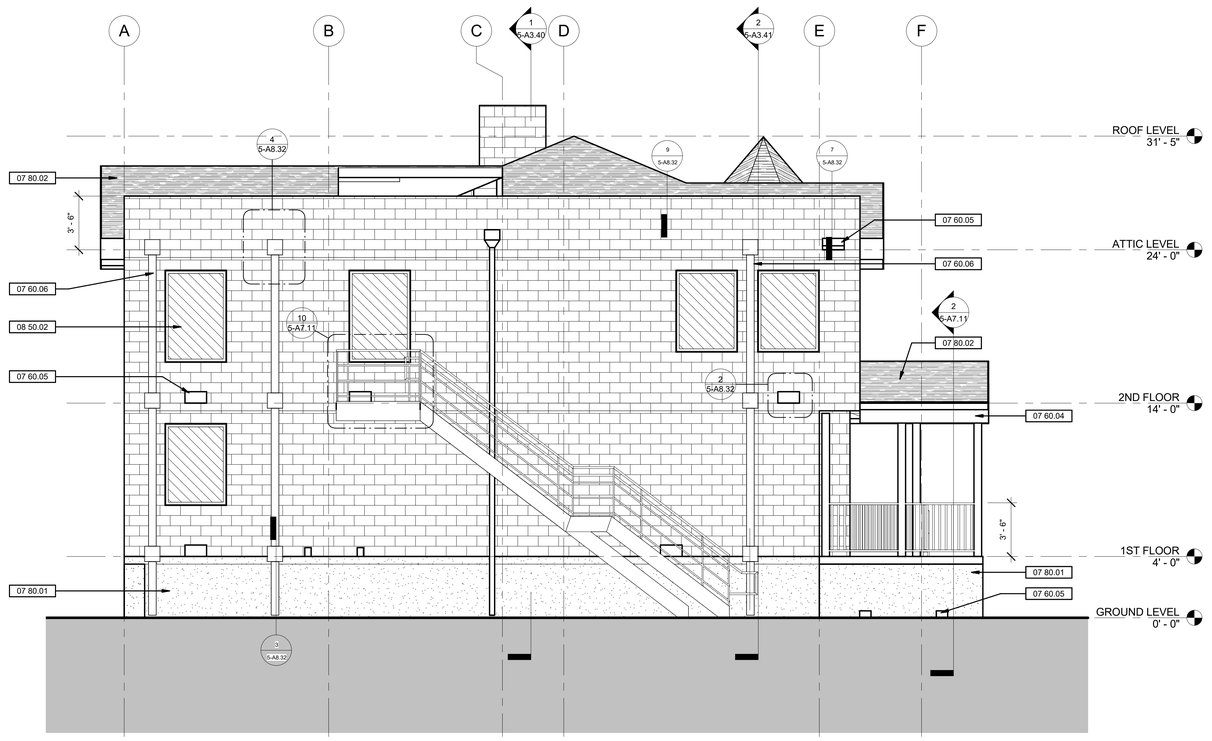
1 SOUTH EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'



2 WEST EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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2. REFER TO FLOOR PLANS FOR LOCATION OF WALLS CONSTRUCTED WITH SPLIT-FACE CMU.

SHEET KEYNOTE LEGEND

05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.15	1-1/2" OD TOP RAIL
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.04	PAINTED ALUMINUM FASCIA TRIM
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL
08 30.08	PRE-MANUFACTURED FORCIBLE ENTRY TRAINING DOOR
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL RECD:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 EXTERIOR ELEVATIONS

Drawn By: NM Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

5-A3.10
Drawing No.

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1 NORTH EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'

2 EAST EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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2. REFER TO FLOOR PLANS FOR LOCATION OF WALLS CONSTRUCTED WITH SPLIT-FACE CMU.

SHEET KEYNOTE LEGEND

03 30.06	CAST-IN-PLACE (CIP) CONCRETE WALLS AT EXTERIOR OF BASEMENT LEVEL, TYPICAL
03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.23	ANGLED CONCRETE RETAINING WALL ON EACH SIDE OF WALK-OUT BASEMENT. SEE SITE PLAN & STRUCTURAL DRAWINGS.
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.12	CONCRETE FILLED STEEL PAN STAIR
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.04	PAINTED ALUMINUM FASCIA TRIM
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 30.14	16" X 24" CRAWL SPACE ACCESS WITH SILL 6" ABOVE CRAWL SPACE SLAB
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL

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ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 EXTERIOR ELEVATIONS

Drawn By: NM Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

5-A3.11
Drawing No.

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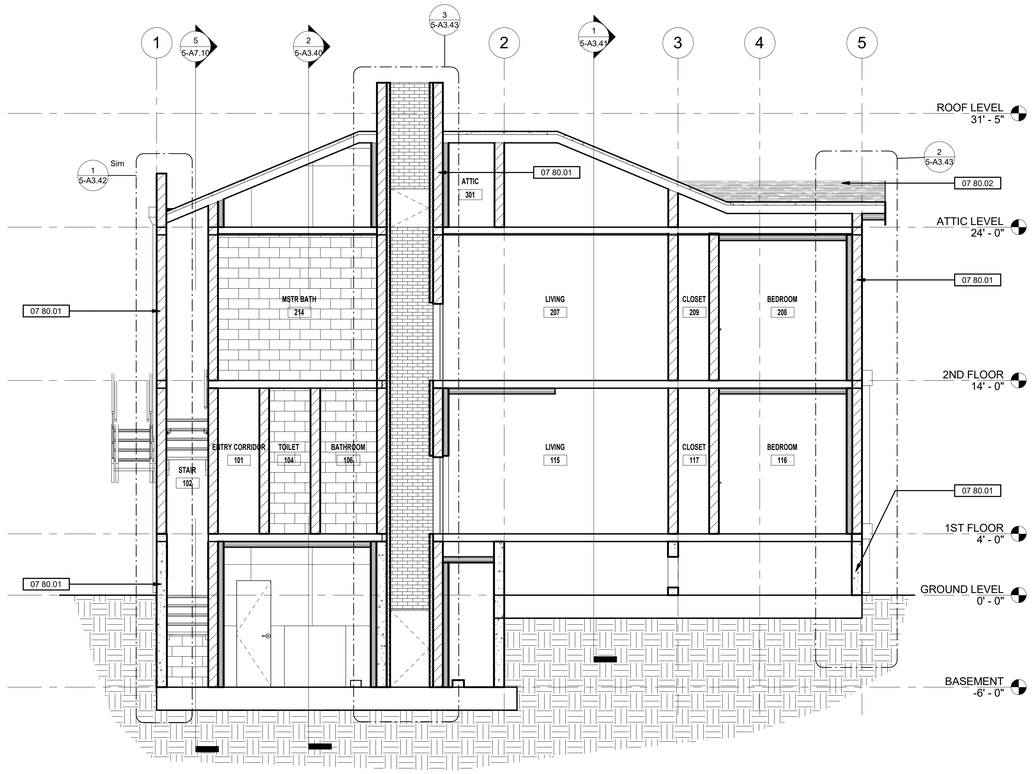
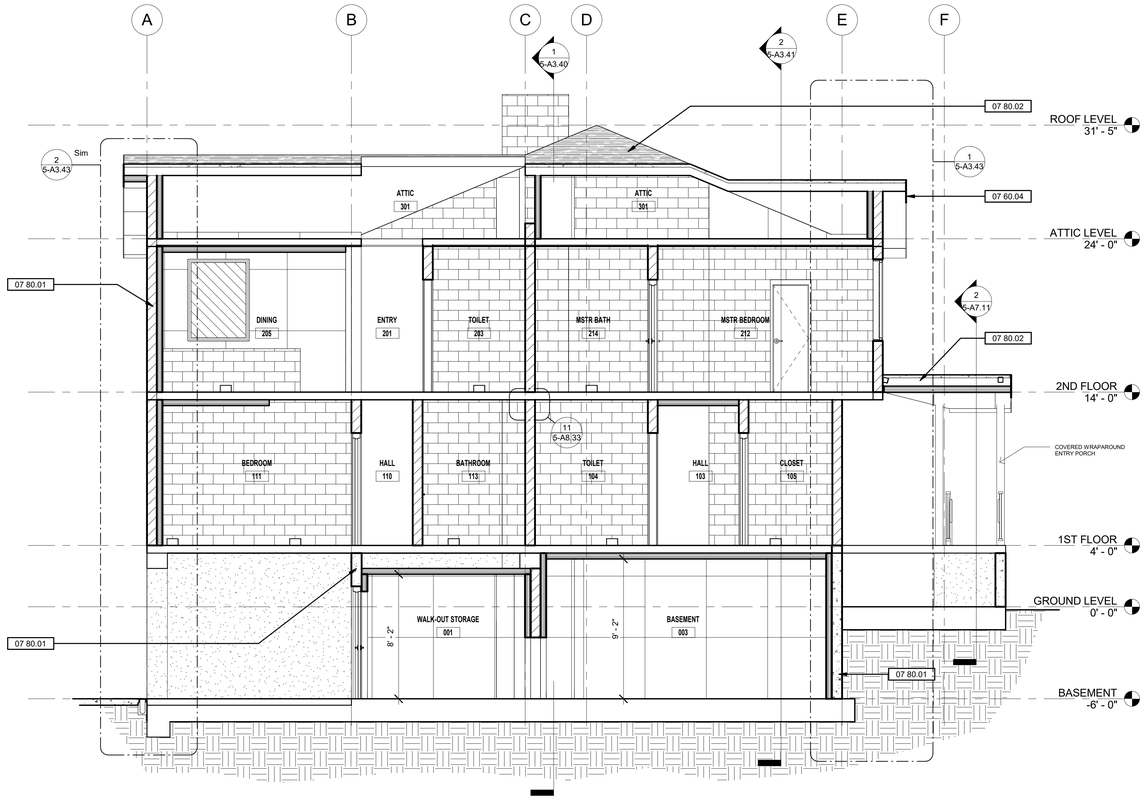


1 TRANSVERSE SECTION @ CHIMNEY
1/4" = 1'-0"

0' 1' 2' 4' 8'



2 LONGITUDINAL SECTION #1
1/4" = 1'-0"

0' 1' 2' 4' 8'

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SHEET KEYNOTE LEGEND

07 60.04	PAINTED ALUMINUM FASCIA TRIM
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL

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CITY OF HAYWARD
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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
BUILDING CROSS SECTIONS

Drawn By: EW
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

5-A3.40
Drawing No.

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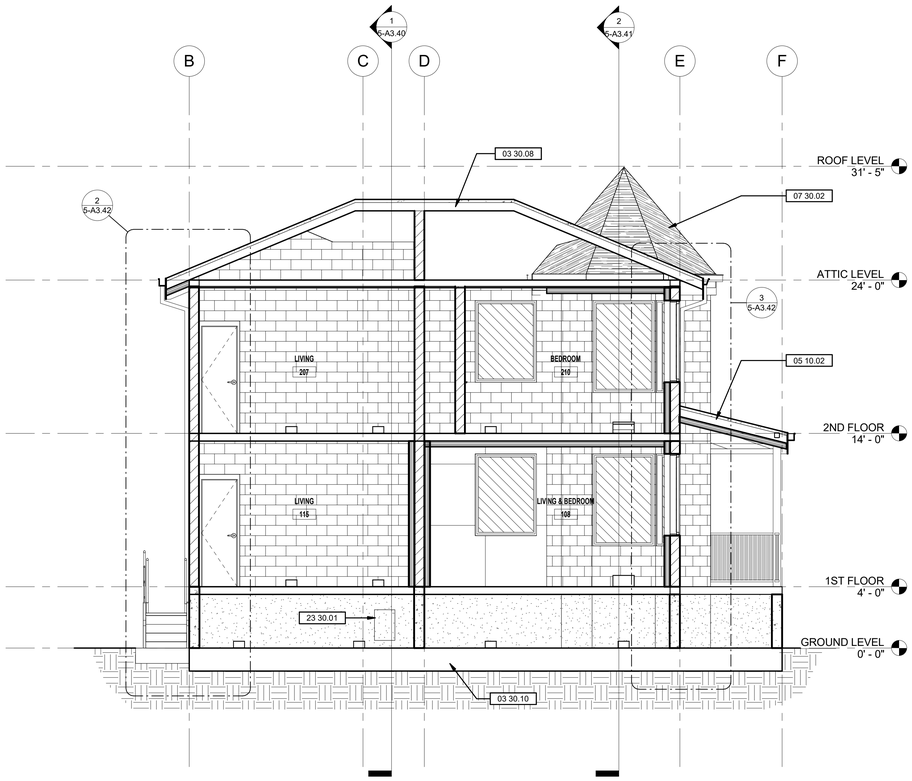
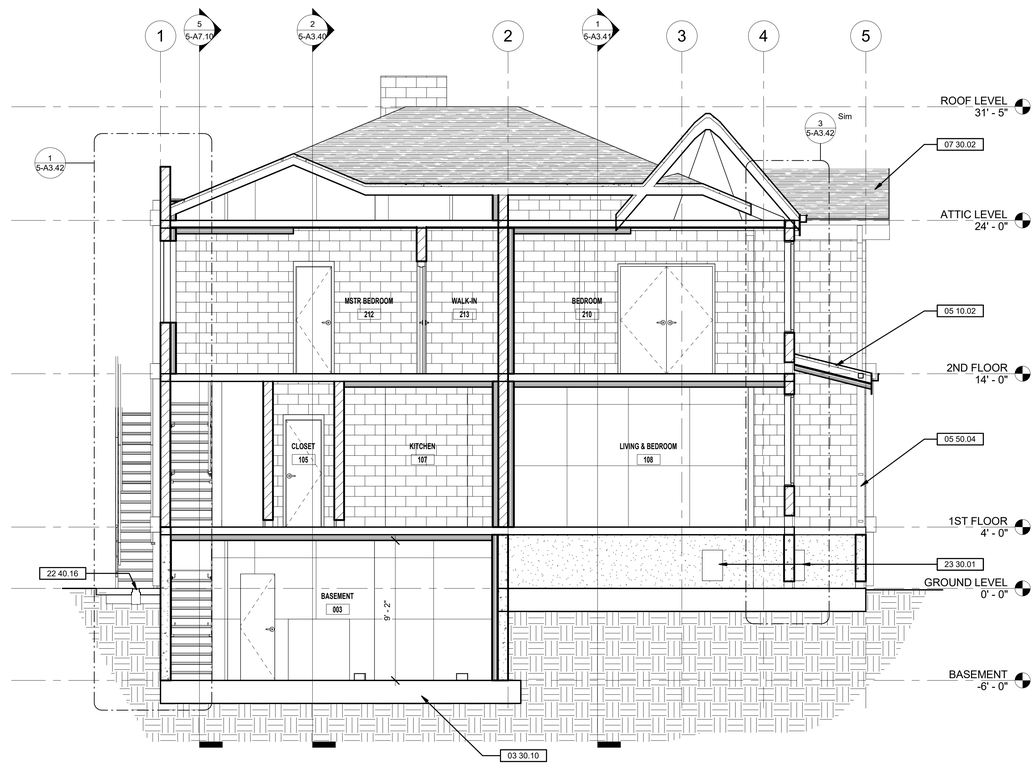


1 LONGITUDINAL SECTION #2
1/4" = 1'-0"



2 TRANSVERSE SECTION AT TURRET ROOF
1/4" = 1'-0"

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

03 30.08	CAST-IN-PLACE (CIP) CONCRETE SLAB WITH PENETRATING SEALER
03 30.10	CONCRETE FLOOR SLAB, S.S.D.
05 10.02	PAINTED STEEL BEAM, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
22 40.16	PREMANUFACTURED TRENCH DRAIN WITH GALVANIZED STEEL FRAME AND DUCTILE IRON GRATE. REFER TO SHEET 0-C3.2 FOR PLUMBING CONNECTIONS
23 30.01	EXHAUST TRANSFER GRILLE

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
BUILDING CROSS SECTIONS

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. 2016039

5-A3.41
Drawing No.

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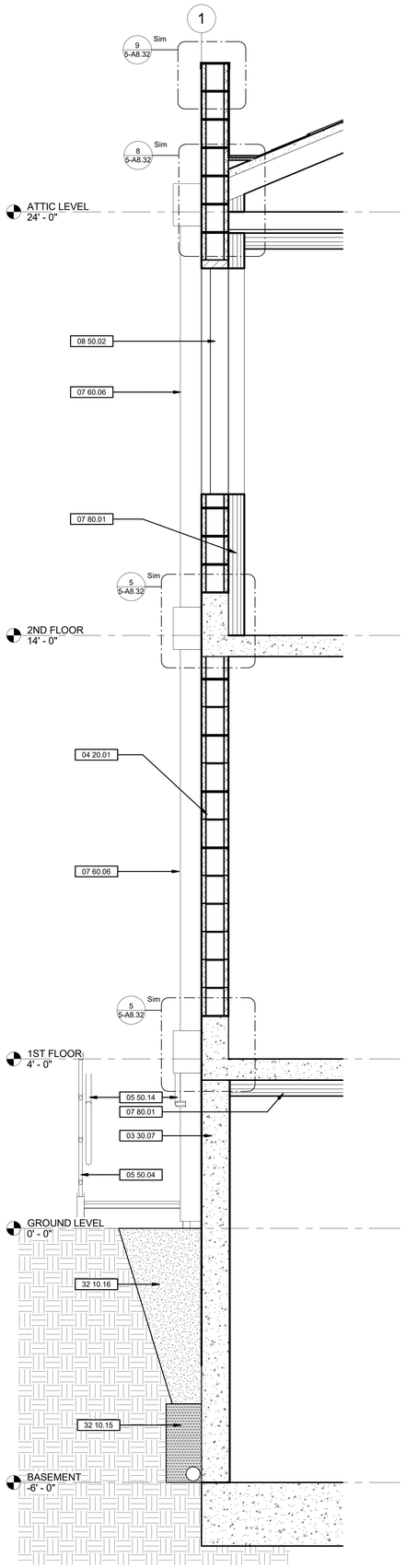
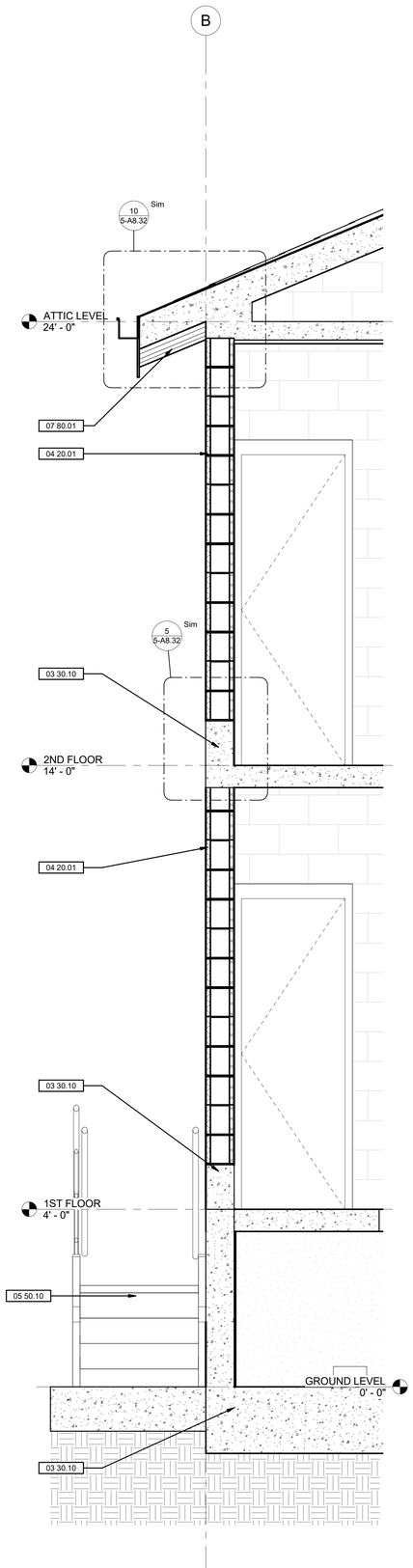
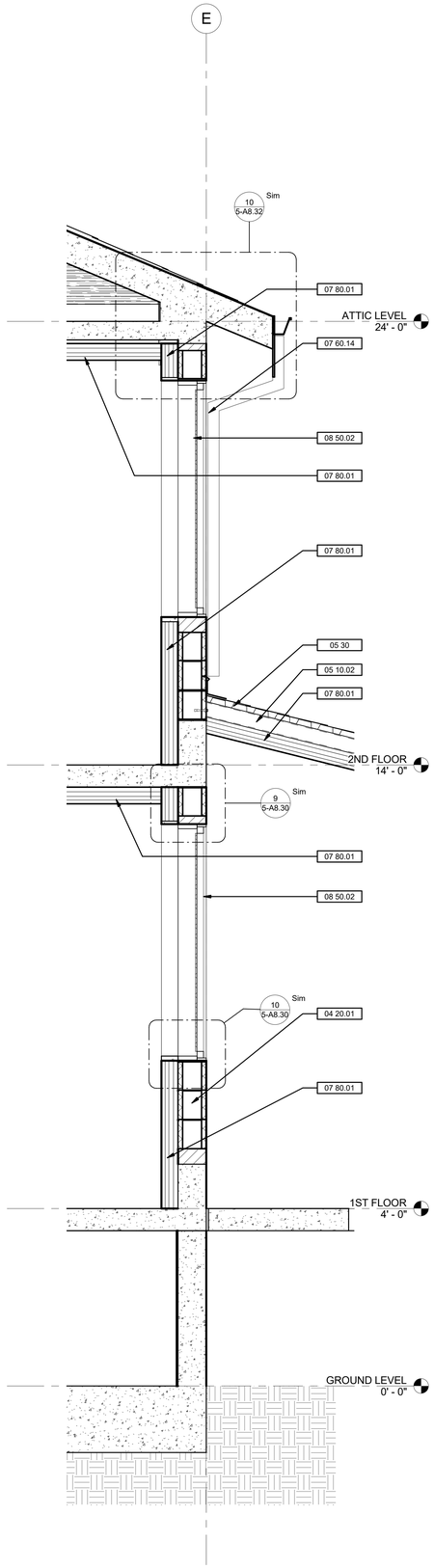


1 TYPICAL WALL SECTION @ PARAPET
3/4" = 1'-0"



2 TYPICAL WALL SECTION
3/4" = 1'-0"



3 TYPICAL WALL SECTION @ PORCH
3/4" = 1'-0"

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.10	CONCRETE FLOOR SLAB, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 10.02	PAINTED STEEL BEAM, S.S.D.
05 30	METAL DECKING
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.10	FABRICATED METAL STAIR WITH HANDRAIL EACH SIDE, S.S.D.
05 50.14	1-1/2" OD SS HANDRAIL
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 60.14	CONTINUOUS ALUMINUM REGLET FLASHING
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL
32 10.15	4" DIAMETER PERFORATED PVC DRAIN PIPE WITHIN MINIMUM 24" DEEP CALTRANS CLASS 2 PERMEABLE MATERIAL OR 3/4" DRAIN ROCK WRAPPED IN FILTER FABRIC AS RECOMMENDED IN PROJECT GEOTECHNICAL REPORT. SLOPE PIPE TO DRAIN, S.C.D.
32 10.16	GRANULAR BACKFILL BEHIND BASEMENT RETAINING WALL AS RECOMMENDED IN PROJECT GEOTECHNICAL REPORT, S.S.D.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
8/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
WALL SECTIONS

Drawn By: TV
Checked By: EW

Scale:
3/4" = 1'-0"

Date:
October 4, 2019

Project No. 2016039

5-A3.42
Drawing No.

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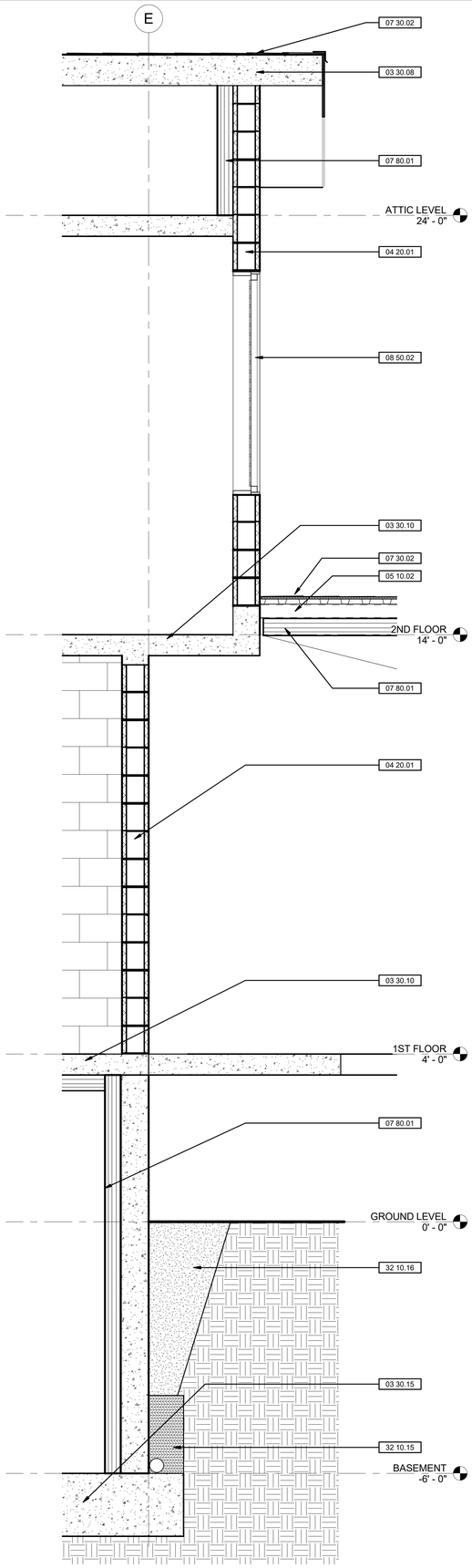
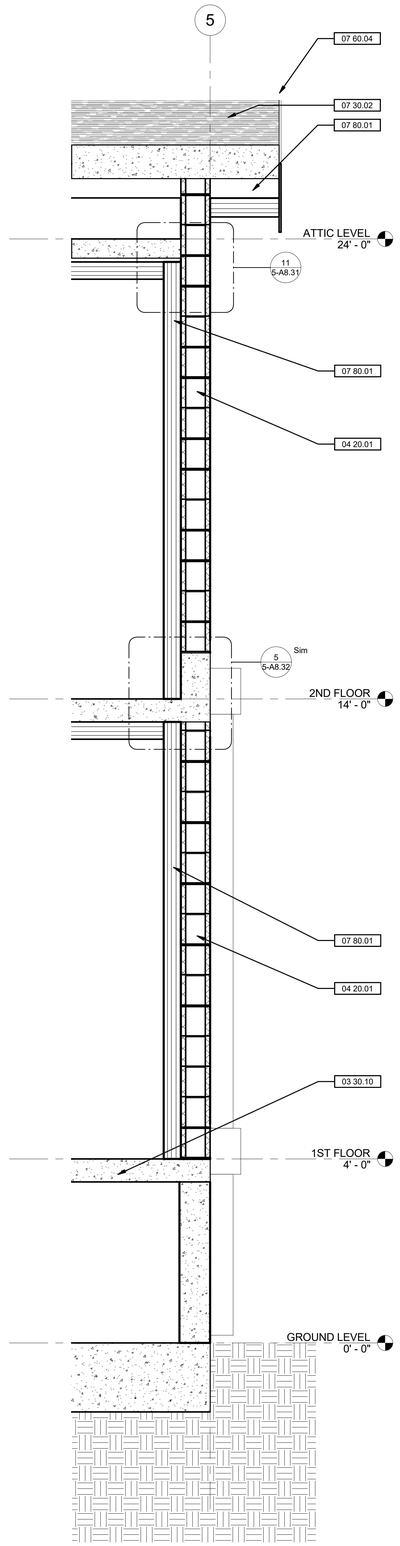
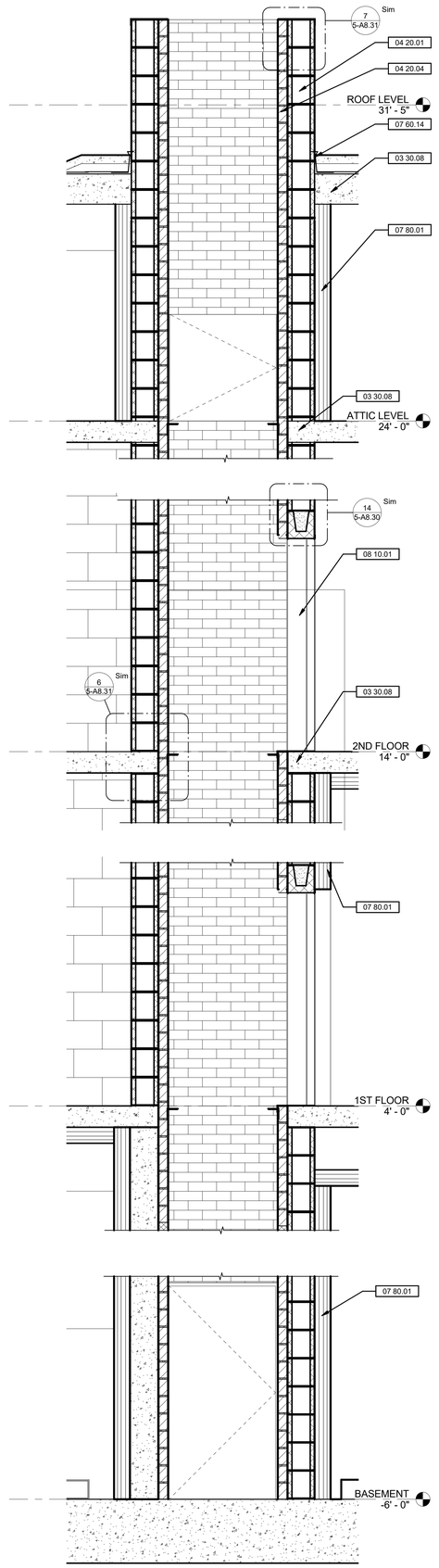


1 WALL SECTION @ ENTRY PORCH
3/4" = 1'-0"



2 TYPICAL WALL SECTION @ EAVE
3/4" = 1'-0"



3 SECTION @ FIRE CHIMNEY
3/4" = 1'-0"

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

SHEET KEYNOTE LEGEND

03 30.08	CAST-IN-PLACE (CIP) CONCRETE SLAB WITH PENETRATING SEALER
03 30.10	CONCRETE FLOOR SLAB, S.S.D.
03 30.15	CAST-IN-PLACE (CIP) CONCRETE SPREAD FOOTING, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
04 20.04	INTERIOR FIRE BRICK LINING
05 10.02	PAINTED STEEL BEAM, S.S.D.
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
07 60.04	PAINTED ALUMINUM FASCIA TRIM
07 60.14	CONTINUOUS ALUMINUM REGLET FLASHING
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL
32 10.15	4" DIAMETER PERFORATED PVC DRAIN PIPE WITHIN MINIMUM 24" DEEP CALTRANS CLASS 2 PERMEABLE MATERIAL OR 3/4" DRAIN ROCK WRAPPED IN FILTER FABRIC AS RECOMMENDED IN PROJECT GEOTECHNICAL REPORT. SLOPE PIPE TO DRAIN, S.C.D.
32 10.16	GRANULAR BACKFILL BEHIND BASEMENT RETAINING WALL AS RECOMMENDED IN PROJECT GEOTECHNICAL REPORT, S.S.D.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
WALL SECTIONS

Drawn By: TV
Checked By: EW

Scale:
3/4" = 1'-0"

Date:
October 4, 2019

Project No. 2016039

5-A3.43
Drawing No.

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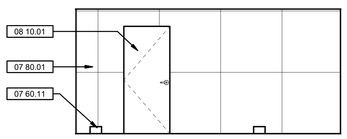
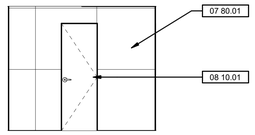
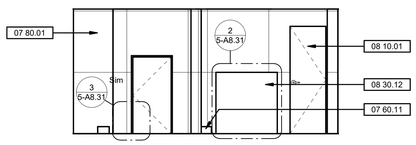


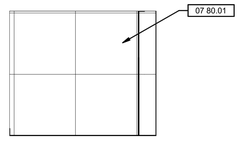
3 WALK OUT STORAGE B01 - NORTH
1/4" = 1'-0"



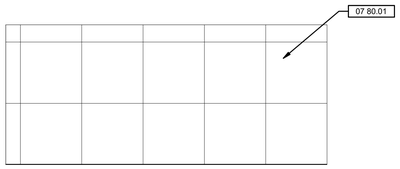
8 WALKOUT STORAGE B01 - WEST
1/4" = 1'-0"



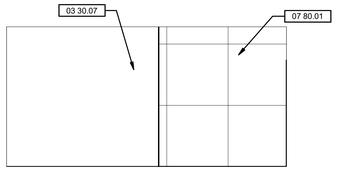
1 WALK OUT STORAGE B01 - SOUTH
1/4" = 1'-0"



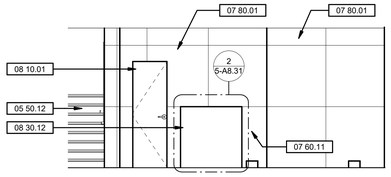
9 WALKOUT STORAGE B01 - EAST
1/4" = 1'-0"



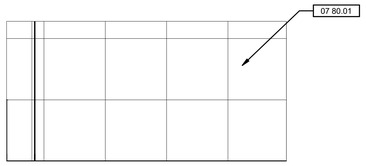
4 BASEMENT B03 SOUTH
1/4" = 1'-0"



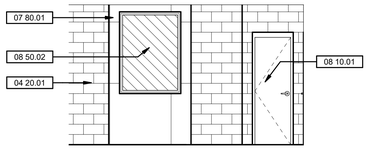
5 BASEMENT B03 WEST
1/4" = 1'-0"



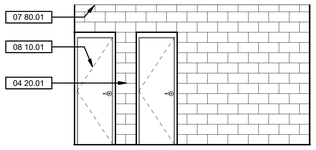
7 BASEMENT B03 - NORTH
1/4" = 1'-0"



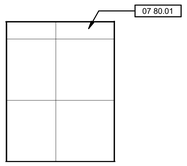
6 BASEMENT B03 -EAST
1/4" = 1'-0"



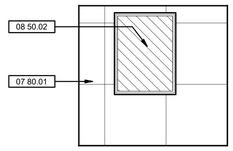
10 HALL 103 - SOUTH
1/4" = 1'-0"



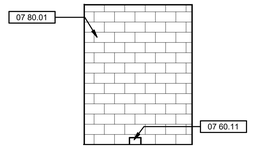
12 HALL 103 - NORTH
1/4" = 1'-0"



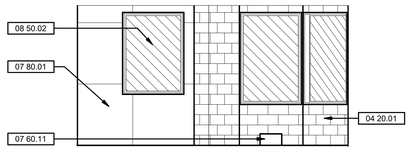
11 KITCHEN 107 - EAST
1/4" = 1'-0"



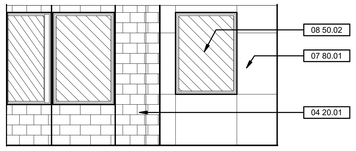
14 KITCHEN 107 - SOUTH
1/4" = 1'-0"



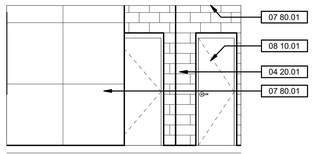
15 KITCHEN 107 - WEST
1/4" = 1'-0"



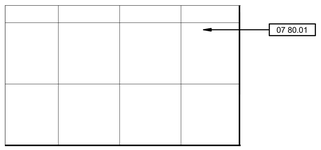
17 LIVING & BEDROOM 108 - EAST
1/4" = 1'-0"



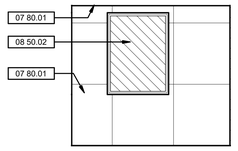
18 LIVING & BEDROOM 108 - SOUTH
1/4" = 1'-0"



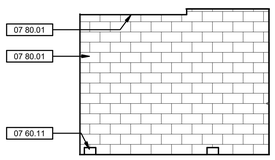
19 LIVING & BEDROOM 108 - WEST
1/4" = 1'-0"



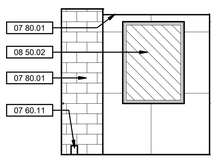
2 LIVING & BEDROOM 108 NORTH
1/4" = 1'-0"



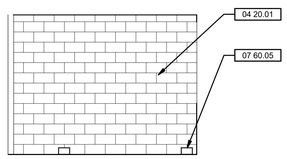
21 BEDROOM 111 - NORTH
1/4" = 1'-0"



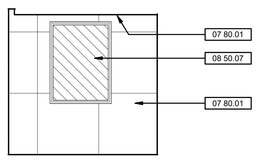
22 BEDROOM 111 - EAST
1/4" = 1'-0"



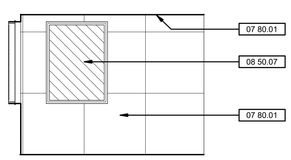
23 BEDROOM 111 - WEST
1/4" = 1'-0"



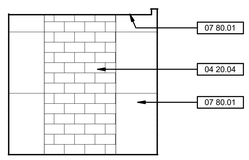
13 KITCHEN 114 - WEST
1/4" = 1'-0"



16 KITCHEN 114 - NORTH
1/4" = 1'-0"



20 KITCHEN 114 - EAST
1/4" = 1'-0"



24 KITCHEN 114 - SOUTH
1/4" = 1'-0"

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
04 20.04	INTERIOR FIRE BRICK LINING
05 50.12	CONCRETE FILLED STEEL PAN STAIR
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.11	DRAINAGE SCUPPER THROUGH WALL AT FLOOR LINE, SEE 12/5-A8.33
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 30.12	50" SQUARE BREACH PANEL OPENING IN CONCRETE SLAB PER DTL 11/7-A8.10.
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL
08 50.07	DOUBLE ACTING WINDOW W/ HIGH TEMP. LINING

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
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DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
INTERIOR ELEVATIONS

Drawn By: EW
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

5-A5.10
Drawing No.

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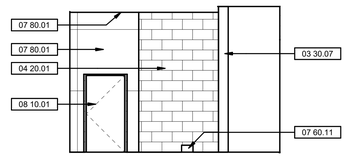
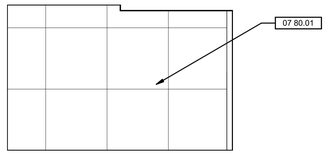
SHEET KEYNOTE LEGEND

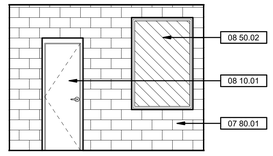
03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
07 40.07	6" STEEL FRAMING W/ ASPHALT SHINGLES
07 60.11	DRAINAGE SCUPPER THROUGH WALL AT FLOOR LINE, SEE 12/S-A8.33
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 30.05	30" SQUARE ALUMINUM FLOOR ACCESS DOOR
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL
22 40.17	BATHTUB TRAINING MODULE



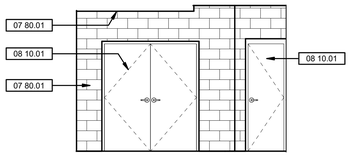
2 LIVING 115 - WEST
1/4" = 1'-0"



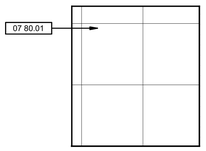
26 LIVING 115 - SOUTH
1/4" = 1'-0"



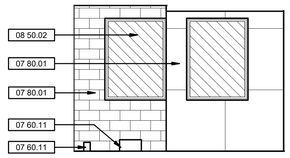
3 LIVING 115 - NORTH
1/4" = 1'-0"



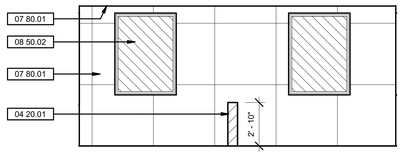
6 BEDROOM 116- WEST
1/4" = 1'-0"



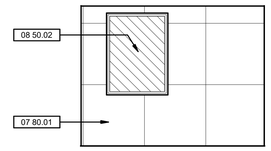
24 BEDROOM 116- SOUTH
1/4" = 1'-0"



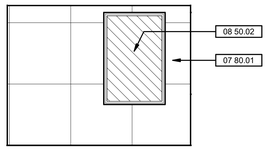
4 BEDROOM 116- EAST
1/4" = 1'-0"



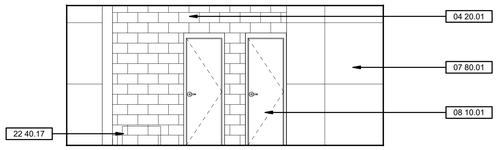
7 KITCHEN 206 - NORTH
1/4" = 1'-0"



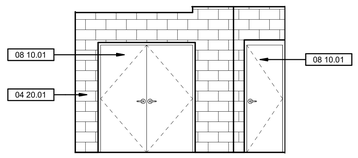
8 KITCHEN 206 - EAST
1/4" = 1'-0"



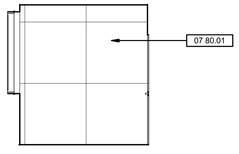
10 KITCHEN 206 - WEST
1/4" = 1'-0"



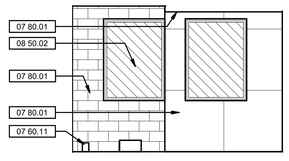
23 KITCHEN 206 - SOUTH
1/4" = 1'-0"



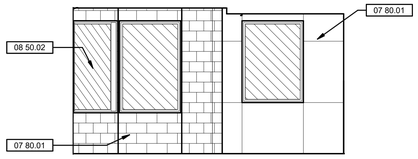
13 BEDROOM 208 - WEST
1/4" = 1'-0"



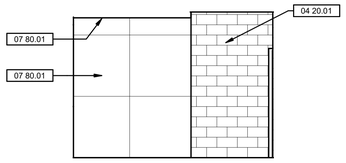
25 BEDROOM 208 - SOUTH
1/4" = 1'-0"



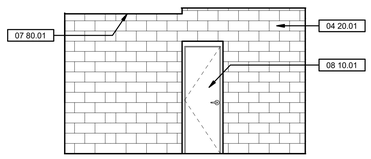
11 BEDROOM 208 - EAST
1/4" = 1'-0"



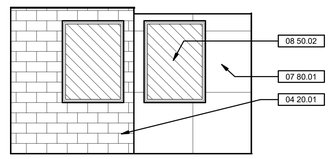
14 BEDROOM 210 - SOUTH
1/4" = 1'-0"



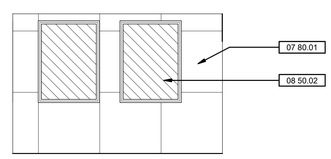
15 BEDROOM 210 - WEST
1/4" = 1'-0"



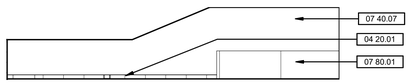
17 MASTER BEDROOM 212 - NORTH
1/4" = 1'-0"



18 MASTER BEDROOM 212 - SOUTH
1/4" = 1'-0"

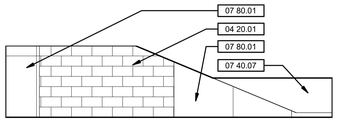


1 MASTER BEDROOM 212 - WEST
1/4" = 1'-0"

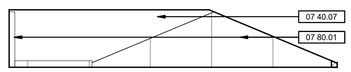


5 ATTIC 301 - WEST
1/4" = 1'-0"

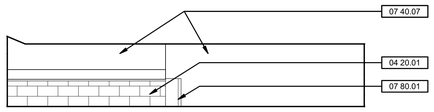
9 ATTIC 301 - NORTH
1/4" = 1'-0"



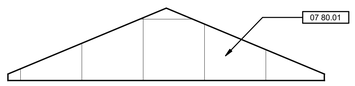
12 ATTIC 301 - EAST
1/4" = 1'-0"



16 ATTIC 301 - SOUTH
1/4" = 1'-0"

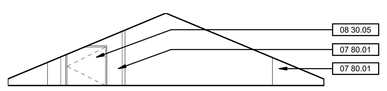


19 ATTIC 301B - WEST
1/4" = 1'-0"



20 ATTIC 301B - NORTH
1/4" = 1'-0"

21 ATTIC 301B - EAST
1/4" = 1'-0"



22 ATTIC 301B - SOUTH
1/4" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/30/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
INTERIOR ELEVATIONS

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. 2016039

5-A5.11
Drawing No.

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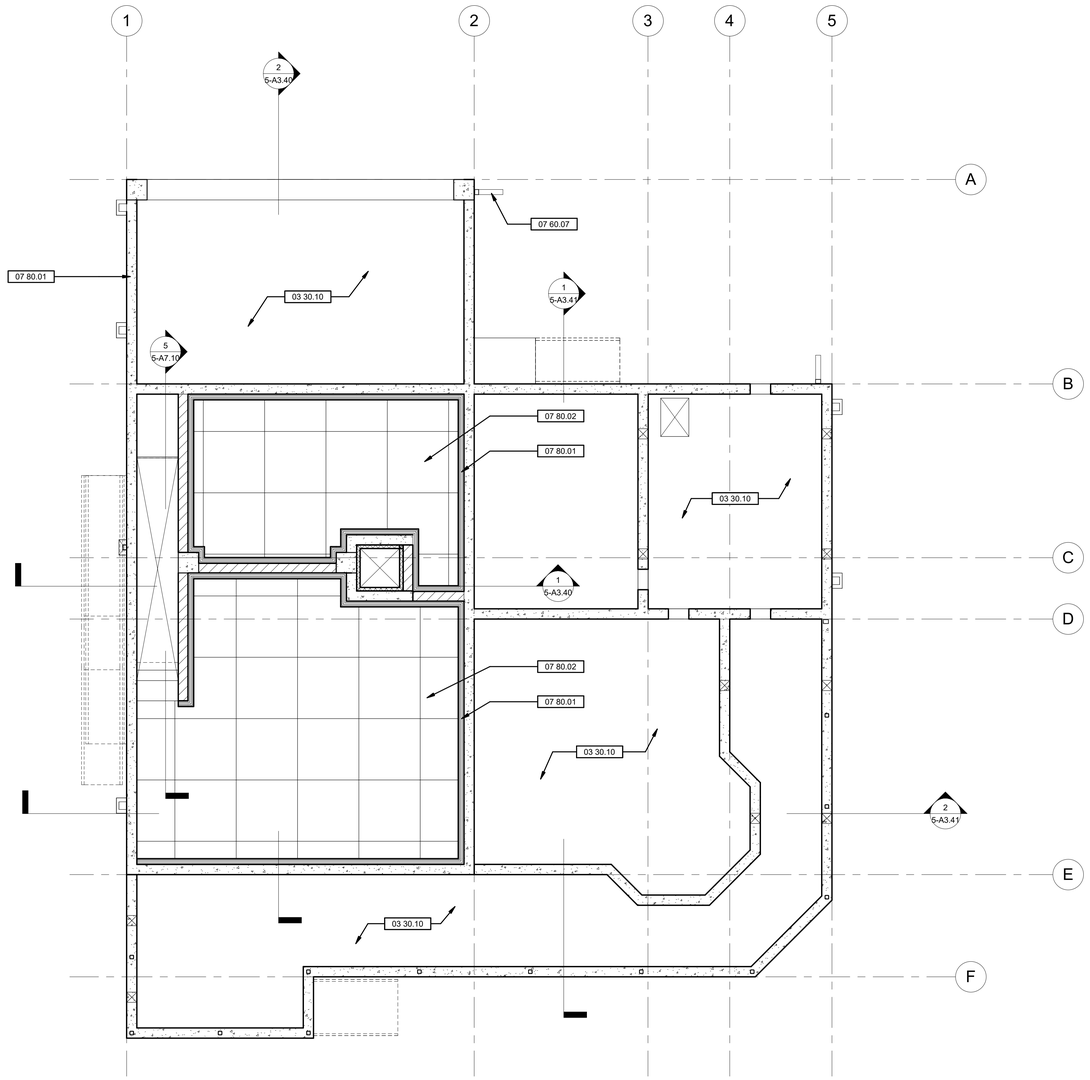

1 BASEMENT LEVEL REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- SPLIT FACE CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.10	CONCRETE FLOOR SLAB, S.S.D.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 BASEMENT REFLECTED CEILING PLAN

Drawn By: EW
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

5-A6.00
Drawing No.

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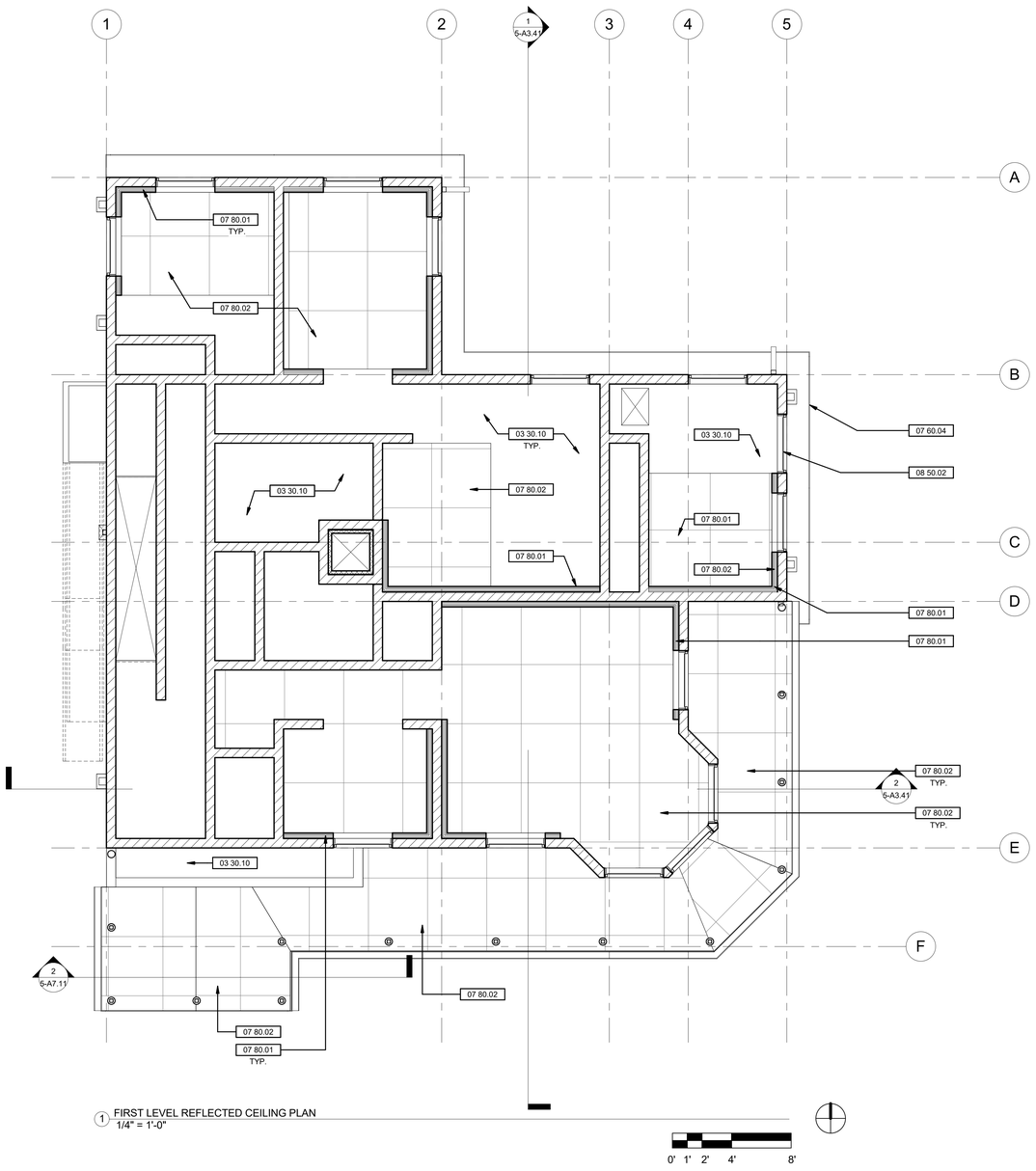

1 FIRST LEVEL REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

WALL LEGEND

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- SPLIT FACE CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.10	CONCRETE FLOOR SLAB, S.S.D.
07 60.04	PAINTED ALUMINUM FASCIA TRIM
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
8/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
FIRST LEVEL REFLECTED CEILING PLAN

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

5-A6.10
Drawing No.

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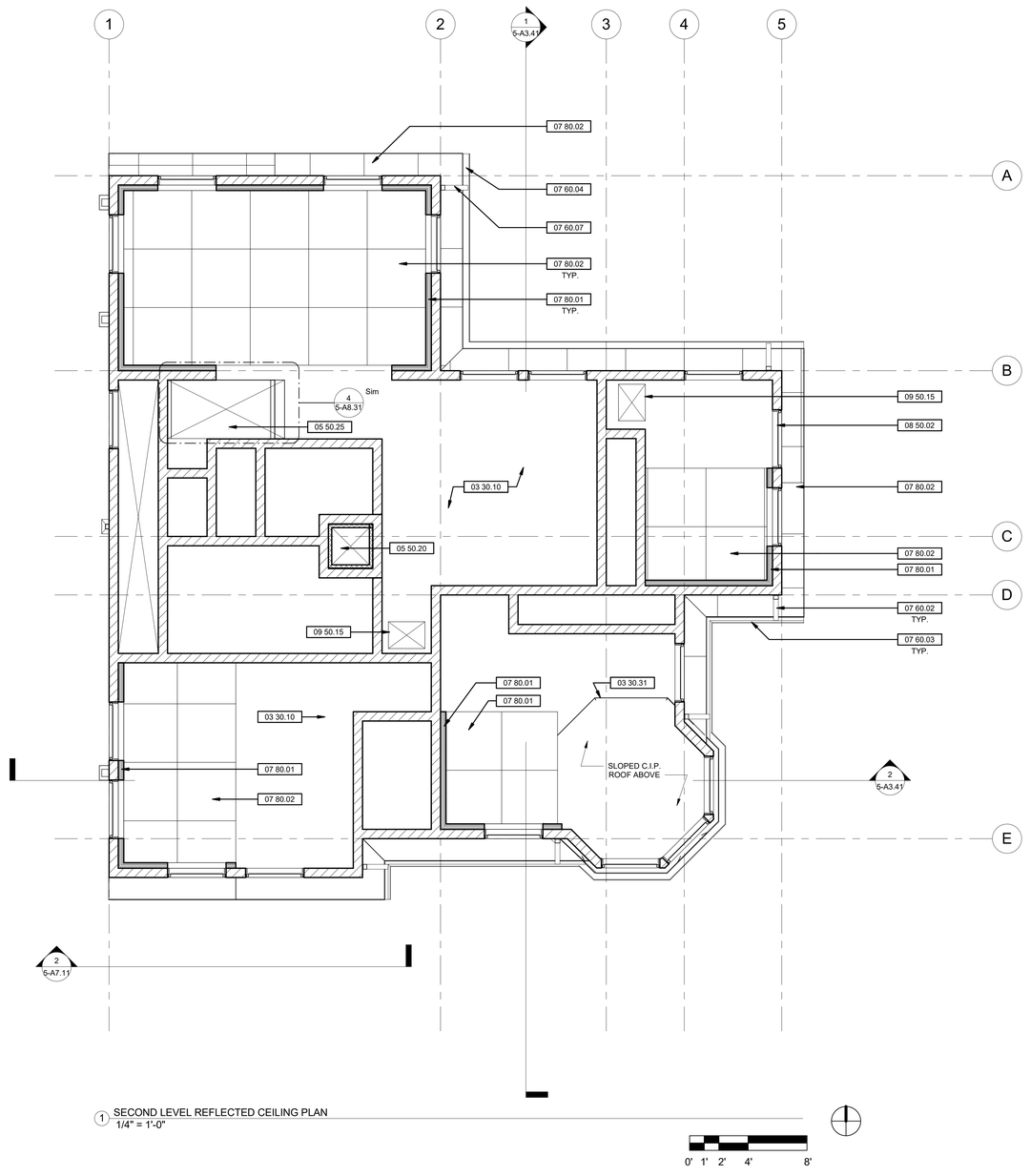

1 SECOND LEVEL REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- SPLIT FACE CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- FIRE BRICK LINING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.10	CONCRETE FLOOR SLAB, S.S.D.
03 30.31	LINE OF CAST-IN-PLACE SOFFIT, S.S.D.
05 50.20	REMOVABLE CAST IRON GRATE W/ FLAT PLATE FRAME, SEE 5/5-A8.31
05 50.25	CEILING BREACH PROP
07 60.02	INDICATES DOWNSPOUT LOCATION, TYPICAL
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 60.04	PAINTED ALUMINUM FASCIA TRIM
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL
09 50.15	CEILING BREACH PROP

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ARCHITECTURE

CITY OF HAYWARD
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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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APPROVED BY:	
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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 SECOND LEVEL REFLECTED CEILING PLAN

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

5-A6.20
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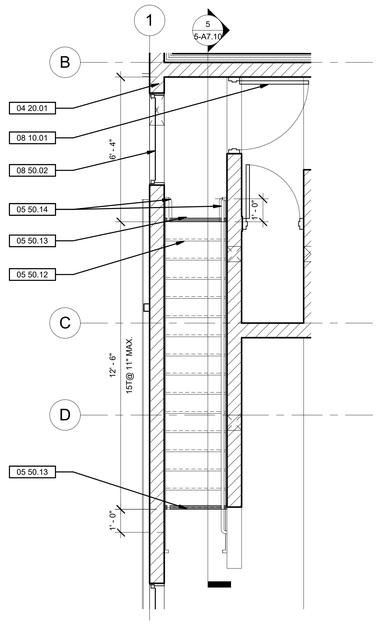
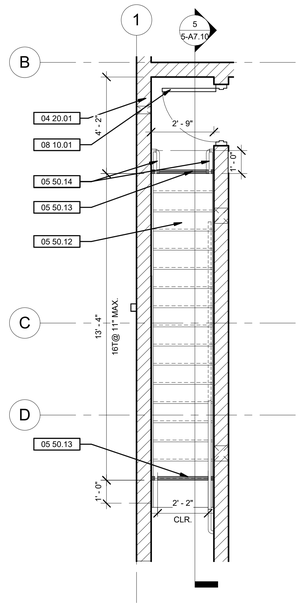
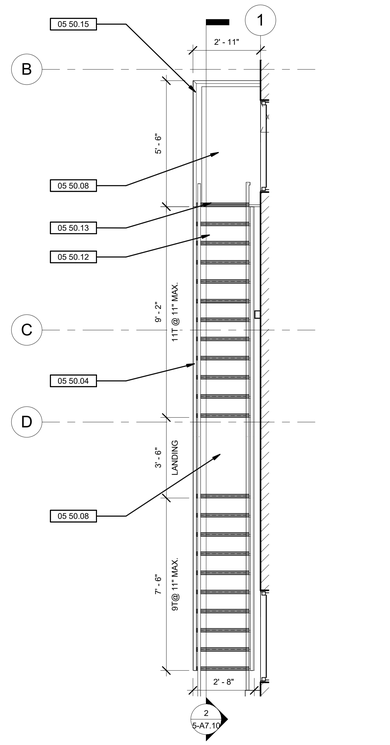


4 INTERIOR STAIR SECOND FLOOR PLAN
3/8" = 1'-0"

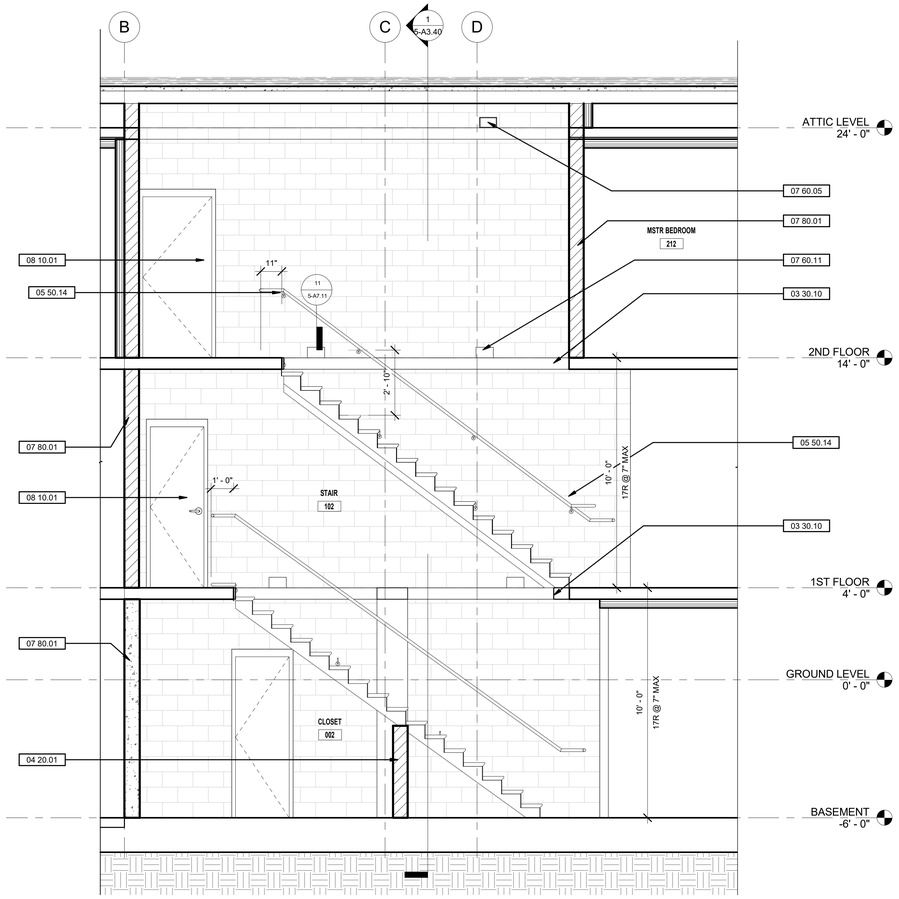


3 INTERIOR STAIR FIRST FLOOR PLAN
3/8" = 1'-0"

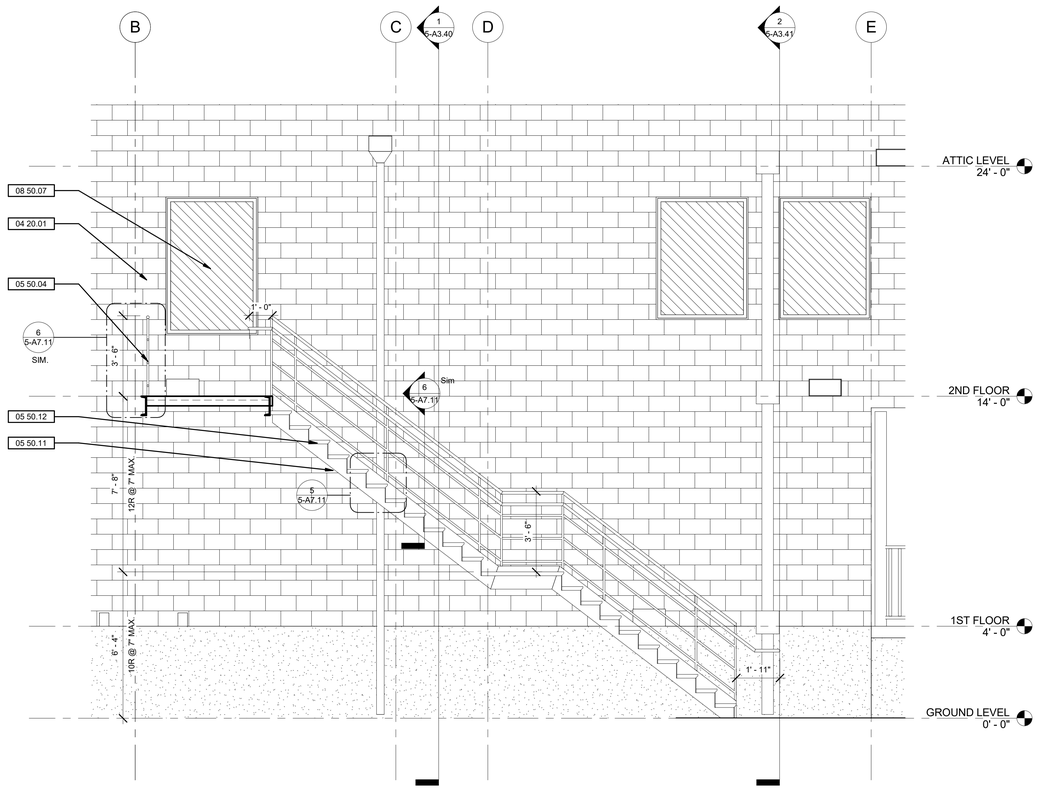


1 EXTERIOR ESCAPE STAIR PLAN
3/8" = 1'-0"

SHEET KEYNOTE LEGEND	
03 30.10	CONCRETE FLOOR SLAB, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.08	PAINTED STEEL STAIR WITH LANDINGS, GUARDS, & HANDRAILS
05 50.11	4X TUBE STL. STRINGER
05 50.12	CONCRETE FILLED STEEL PAN STAIR
05 50.13	CONTRASTING STRIPE FOR VISUALLY IMPAIRED
05 50.14	1-1/2" OD SS HANDRAIL
05 50.15	1-1/2" OD TOP RAIL
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.11	DRAINAGE SCUPPER THROUGH WALL AT FLOOR LINE, SEE 12/5-A8.33
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL
08 50.07	DOUBLE ACTING WINDOW W/ HIGH TEMP. LINING



5 INTERIOR STAIR SECTION
3/8" = 1'-0"



2 EXTERIOR ESCAPE STAIR SECTION
3/8" = 1'-0"

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ARCHITECTURE

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HEART OF THE BAY

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APPROVED BY:	
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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REVISIONS

No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
3/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
STAIR PLANS AND DETAILS

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. 2016039

5-A7.10
Drawing No.

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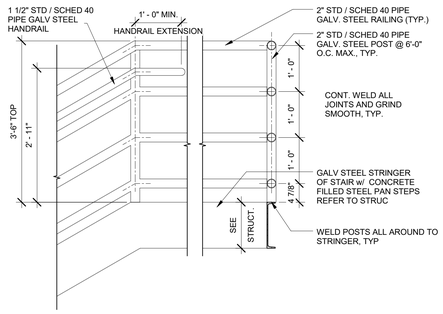
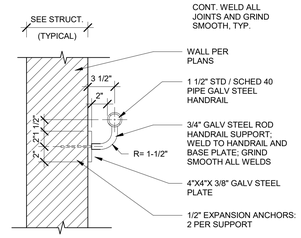
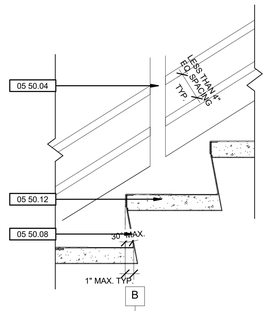


10 STAIR HANDRAIL/GUARDRAIL @ TOP LANDING
3/4" = 1'-0"

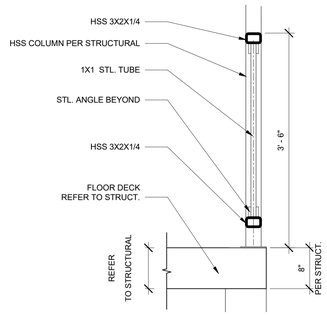


11 GUARDRAIL @ CMU WALL
1 1/2" = 1'-0"

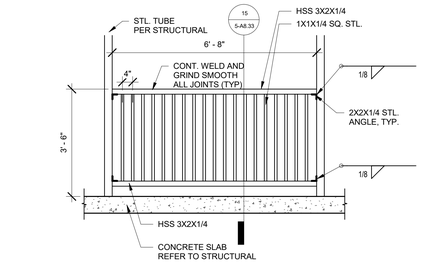
SHEET KEYNOTE LEGEND	
03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.10	CONCRETE FLOOR SLAB, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 10.05	PAINTED STEEL CHANNEL FASCIA. MITER ALL EXPOSED CORNERS. COMPLY WITH AESS SPECIFICATION SECTION 05 1250 FOR FASCIA FABRICATION AND FINISH WITH HIGH-PERFORMANCE PAINT COATING
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.08	PAINTED STEEL STAIR WITH LANDINGS, GUARDS, & HANDRAILS
05 50.12	CONCRETE FILLED STEEL PAN STAIR
05 50.13	CONTRASTING STRIPE FOR VISUALLY IMPAIRED
05 50.14	1-1/2" OD SS HANDRAIL
05 50.15	1-1/2" OD TOP RAIL
05 50.17	1" OD SCH 40 STL. PIPE RAILING, HIGH PERFORMANCE PAINT COATING
05 50.23	1 1/2" OD STL. HANDRAIL WHERE OCCURS
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL



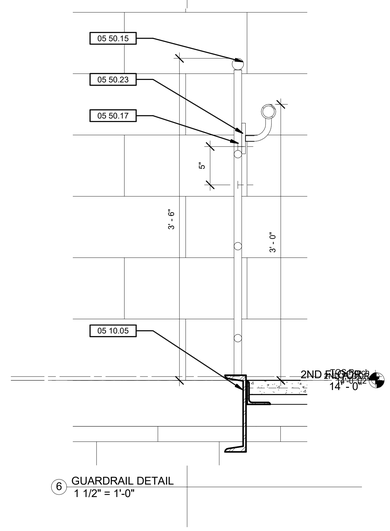
5 TYP. RISER DETAIL
1 1/2" = 1'-0"



9 GUARDRAIL - BASE ATTACHMENT
1" = 1'-0"



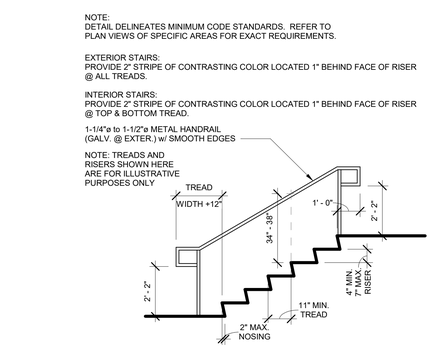
8 FIXED EXTERIOR GUARDRAIL
1/2" = 1'-0"



6 GUARDRAIL DETAIL
1 1/2" = 1'-0"

4 ENLARGED FRONT ENTRY STAIR
3/8" = 1'-0"

3 ENLARGED REAR STAIR PLAN
3/8" = 1'-0"



NOTE:
DETAIL DELINEATES MINIMUM CODE STANDARDS. REFER TO PLAN VIEWS OF SPECIFIC AREAS FOR EXACT REQUIREMENTS.

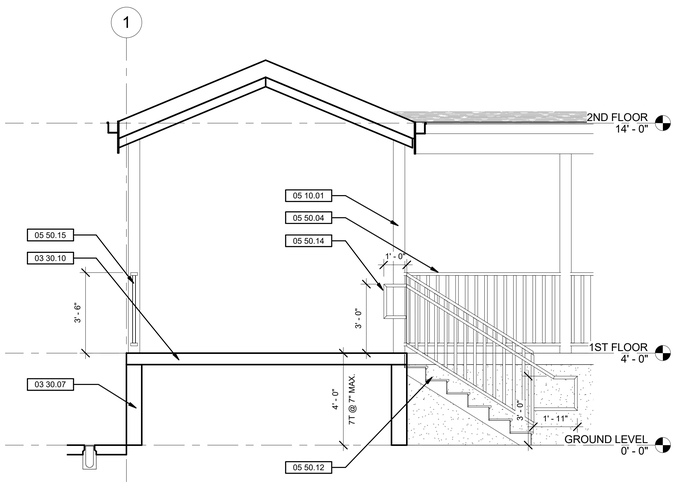
EXTERIOR STAIRS:
PROVIDE 2" STRIPE OF CONTRASTING COLOR LOCATED 1" BEHIND FACE OF RISER @ ALL TREADS.

INTERIOR STAIRS:
PROVIDE 2" STRIPE OF CONTRASTING COLOR LOCATED 1" BEHIND FACE OF RISER @ TOP & BOTTOM TREAD.

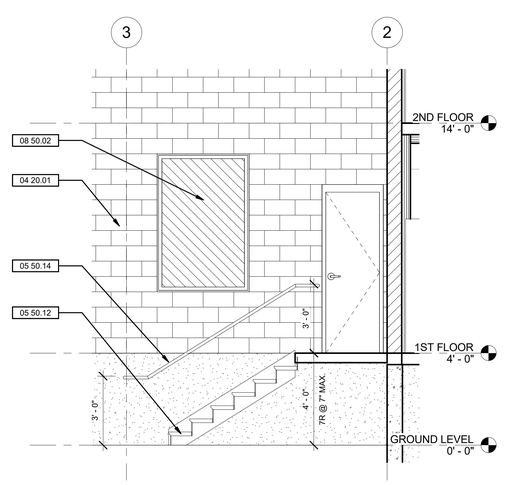
1-1/4"ø to 1-1/2"ø METAL HANDRAIL (GALV. @ EXTER.) w/ SMOOTH EDGES

NOTE: TREADS AND RISERS SHOWN HERE ARE FOR ILLUSTRATIVE PURPOSES ONLY

7 STAIR RAIL EXTENSIONS
3/8" = 1'-0"



2 FRONT ENTRY STAIR SECTION
3/8" = 1'-0"



1 SECTION AT REAR STAIR
3/8" = 1'-0"

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
STAIR PLANS AND DETAILS

Drawn By: Author
Checked By: Checker

Scale: As indicated

Date: October 4, 2019

Project No. 2016039

5-A7.11
Drawing No.

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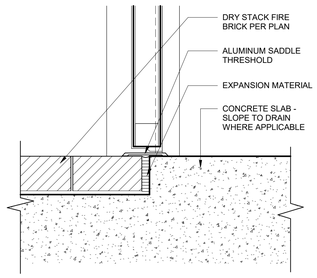
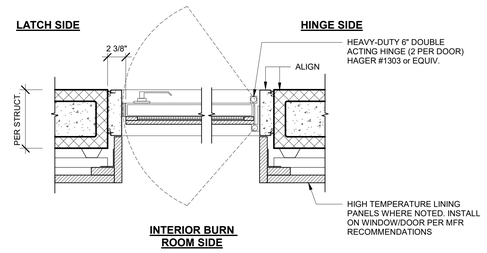
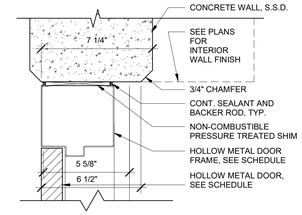


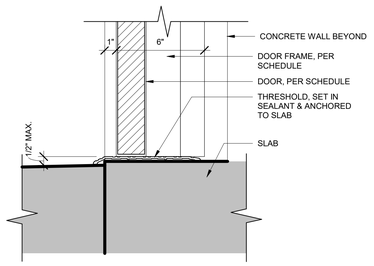
7 DOOR TRANSITION @ FIRE BRICK
3" = 1'-0"



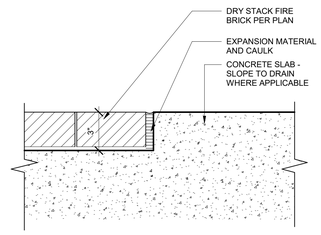
2 DR/WND-DOUBLE ACTING DOOR JAMB
1 1/2" = 1'-0"



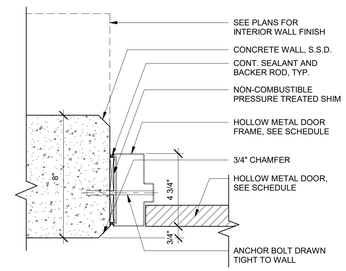
1 DR- DOOR HEAD- CONCRETE
3" = 1'-0"



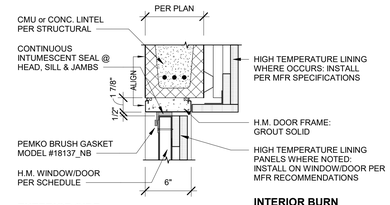
6 DOOR SILL @ EXTERIOR
3" = 1'-0"



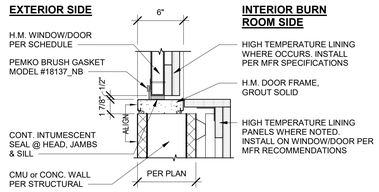
3 TRANSITION @ FIRE BRICK
3" = 1'-0"



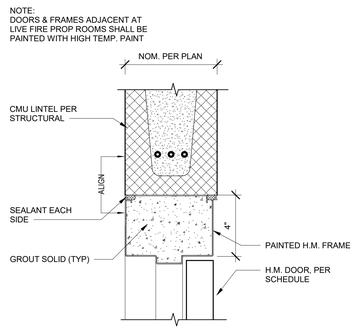
4 DR- DOOR JAMB- CONCRETE
3" = 1'-0"



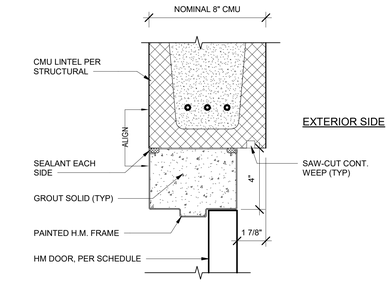
9 DR/WND- DOUBLE ACTING DOOR HEAD
1 1/2" = 1'-0"



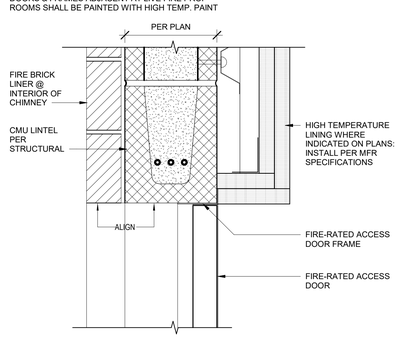
10 DR/WND- DOUBLE ACTING DOOR SILL
1 1/2" = 1'-0"



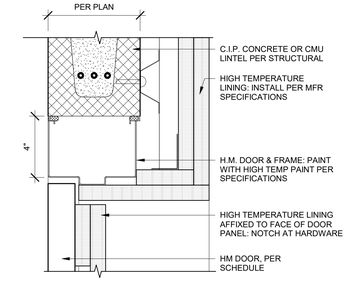
11 DR- DOOR HEAD- 6" CMU
3" = 1'-0"



12 DR- EXTERIOR DOOR HEAD- 8" CMU
3" = 1'-0"



14 DR- FIRE-RATED ACCESS PANEL DOOR HEAD (JAMB SIM.)
3" = 1'-0"



15 DR- HIGH TEMP LINING @ DOOR (4" HEAD, 2" @ JAMBS)
3" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 ARCHITECTURAL DETAILS

Drawn By: Author
Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

5-A8.30
Drawing No.

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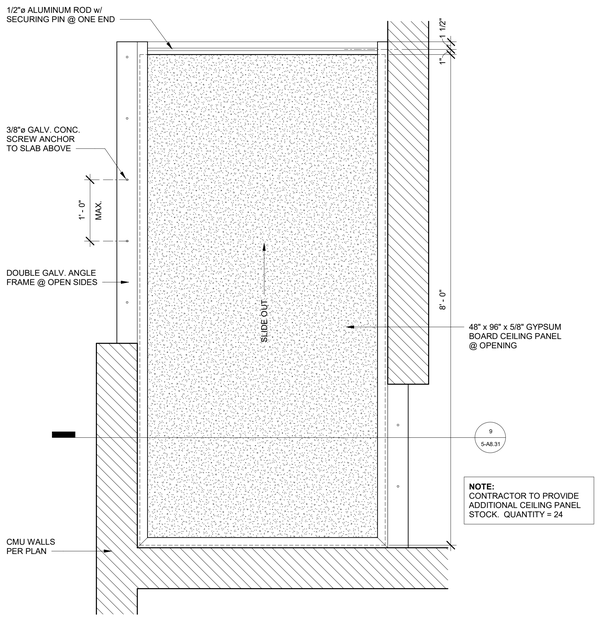
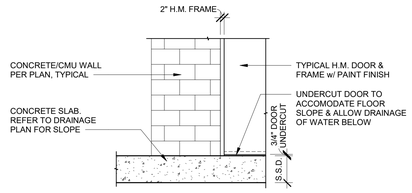
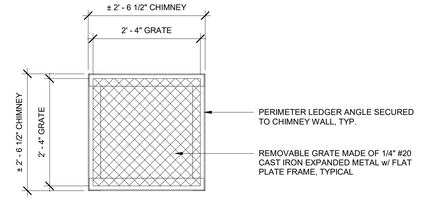


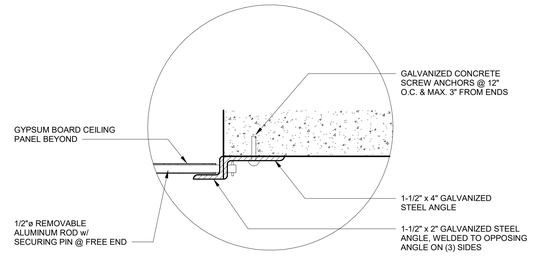
4 CEILING BREACH PROP FRAMING
1" = 1'-0"



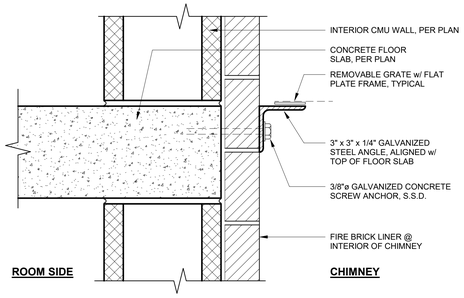
3 DR- TYP. DOOR BOTTOM @ SLOPING CONC. FLOOR
3/8" = 1'-0"



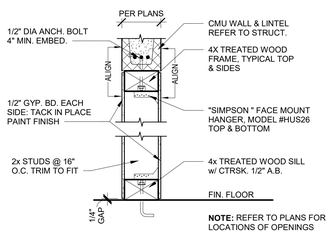
5 CHIMNEY BURN RACK
3/4" = 1'-0"



1 DR- CEILING BREACH PANEL DETAIL
3" = 1'-0"

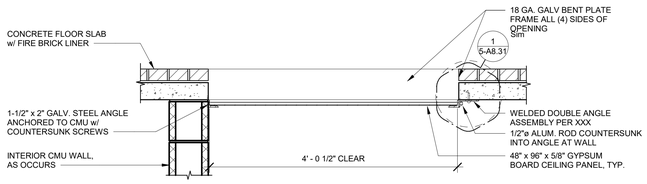


6 DR- CHIMNEY BURN RACK
3" = 1'-0"

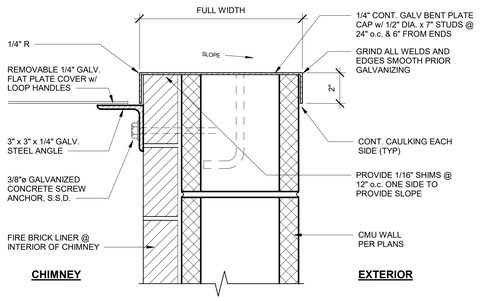


8 BREACH PROP WALL SECTION
1" = 1'-0"

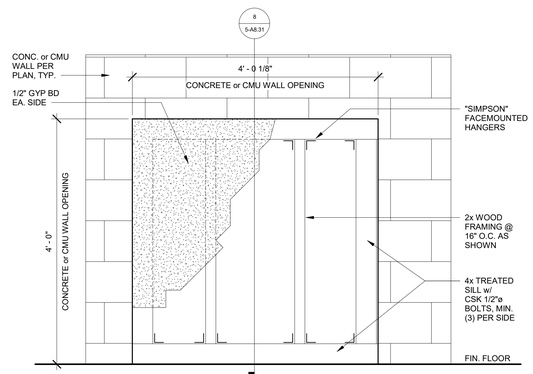
NOTE:
THE PURPOSE OF THIS PROP IS FOR THE FIREFIGHTER TO BREACH AND REMOVE A CEILING TILE USING HIS TOOLS TO ALLOW VISIBILIY TO ATTIC SPACE ABOVE. UPON BREACHING, THE TRAINER WILL SIMPLY REPLACE THE 48" x 96" GYPSUM BOARD CEILING PANEL FOR THE NEXT SCENARIO



9 CEILING BREACH PROP SECTION
1" = 1'-0"

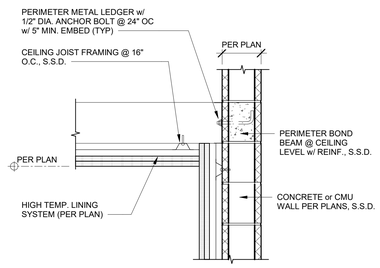


7 DR- CHIMNEY DAMPER
3" = 1'-0"



NOTE: THE PURPOSE OF THIS PROP IS TO ALLOW THE FIREFIGHTER TO BREACH THRU THE WALL USING A TOOL. THIS SCENARIO WILL BE REPEATED REQUIRING THE TRAINER TO REPLACE THE INTERIOR 2x FRAMING AND GYPSUM BOARD AS REQUIRED.

2 WALL BREACH PROP ELEVATION
1" = 1'-0"



11 FRAMING FOR HIGH TEMP CEILING
1" = 1'-0"

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 ARCHITECTURAL DETAILS

Drawn By: Author
Checked By: Checker

Scale:
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Date:
October 4, 2019

Project No. 2016039

5-A8.31
Drawing No.

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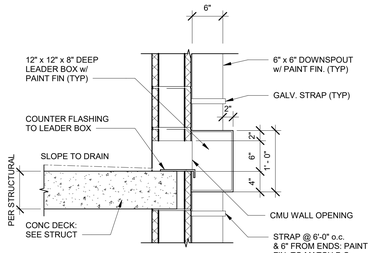
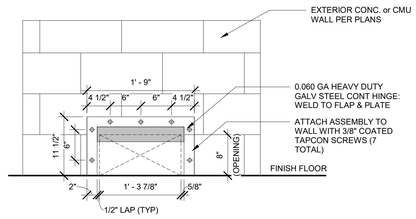
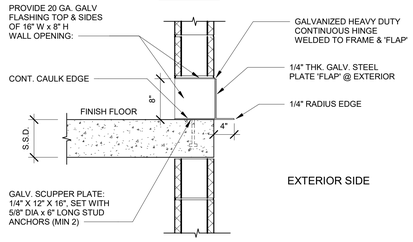


SECTION THRU WALL

1 RE- TYPICAL COLLECTOR BOX
1" = 1'-0"



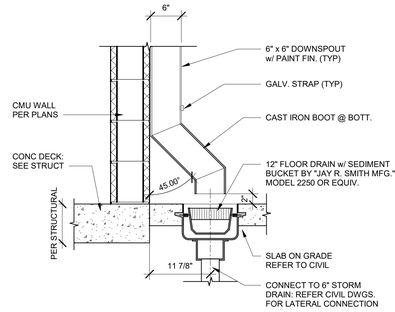
ELEVATION



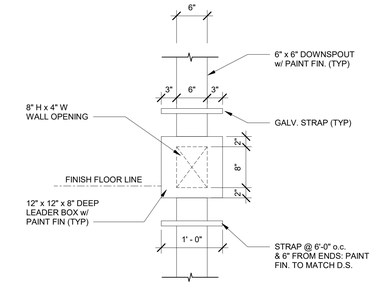
SECTION

EXTERIOR SIDE

2 RF- CLEAN-OUT SCUPPER
1" = 1'-0"

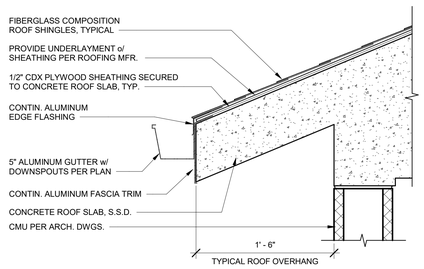


3 RF- DOWNSPROUT TO DRAIN
1" = 1'-0"

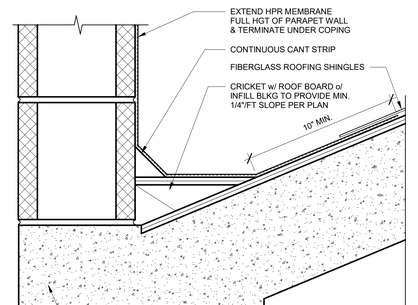


ELEVATION OF EXTERIOR FACE

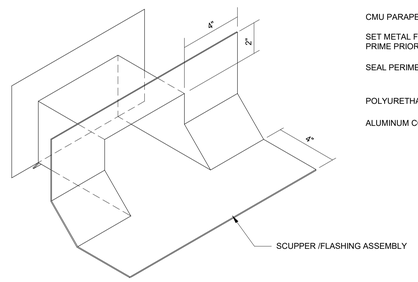
4 RF- TYPICAL DOWNSPOUT ELEVATION
1" = 1'-0"



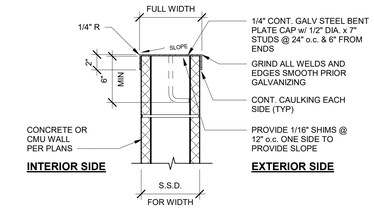
10 ROOF EAVE
1 1/2" = 1'-0"



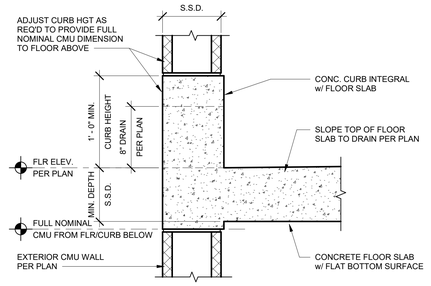
8 DR- ROOF CRICKET
3" = 1'-0"



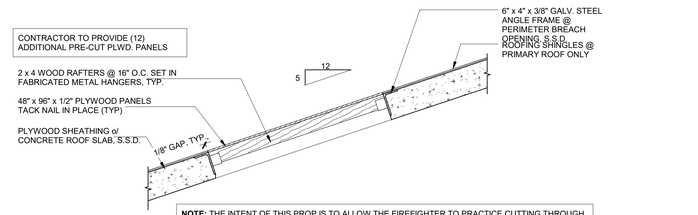
7 ROOF SCUPPER THROUGH WALL
3" = 1'-0"



9 WALL-TYP. CMU PARAPET CAP
1 1/2" = 1'-0"



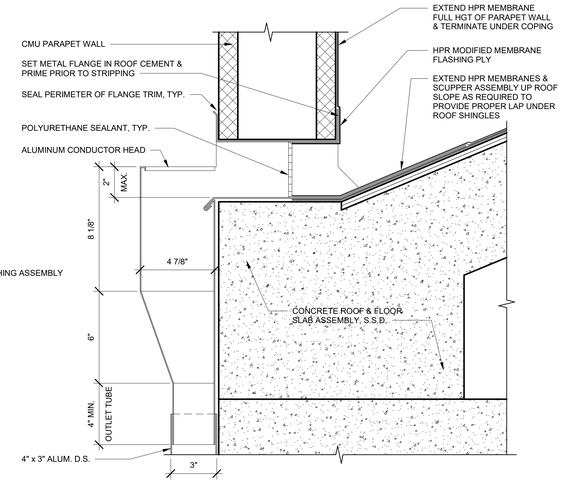
5 FLOOR @ EXT. WALL
1 1/2" = 1'-0"



NOTE: THE INTENT OF THIS PROP IS TO ALLOW THE FIREFIGHTER TO PRACTICE CUTTING THROUGH THE ROOF PANELS IN PLACE ATOP THE PITCHED ROOF. THE BREACHED PANELS ARE REMOVED AND NEW PANELS ARE INSERTED FOR THE NEXT FIREFIGHTER. PLWD. PANELS ARE UNFINISHED.

SECTION THRU BREACH OPENING

6 ROOF-TYP. PITCHED ROOF CUTTING/BREACHING PROP
3/4" = 1'-0"



7 ROOF SCUPPER THROUGH WALL
3" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 8/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 ARCHITECTURAL DETAILS

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

5-A8.32
Drawing No.

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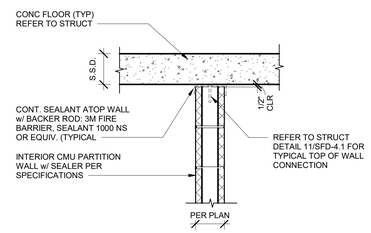
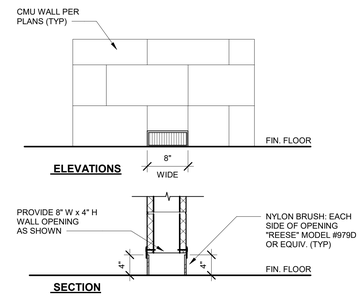
NOTE:
FOR ADDITIONAL HIGH TEMP. LINING PANEL INFORMATION, REFER TO PROJECT SPECIFICATIONS

10 HIGH TEMPERATURE LINING PANEL INSTALLATION
1" = 1'-0"



11 TYP. TOP OF WALL SEALANT
1" = 1'-0"



12 WALL - THRU-WALL SCUPPER
1" = 1'-0"

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ARCHITECTURE

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 ARCHITECTURAL DETAILS

Drawn By: TV
Checked By: EW

Scale:
1" = 1'-0"

Date:
October 4, 2019

Project No. 2016039

5-A8.33
Drawing No.

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ABBREVIATIONS

AB	ANCHOR BOLT	GB	GRADE BEAM	PTDF	PRESSURE TREATED
ABV	ABOVE	GLB	GLUE LAMINATED BEAM		DOUGLAS FIR
AC	AIR CONDITIONING	GR	GRADE	PT	POINT
ADJ	ADJACENT	HD	HOLD DOWN	R	RADIUS
ADDL	ADDITIONAL	HDG	HOT-DIP GALVANIZED	RBS	REDUCED BEAM SECTION
ALT	ALTERNATE	HDR	HEADER	RFTR	RAFTER
ALUM	ALUMINUM	HGR	HANGER	REF	REFERENCE
ARCH	ARCHITECT	HK	HOOK	REINF	REINFORCING
@	AT	HORIZ	HORIZONTAL	REQD	REQUIRED
BLDG	BUILDING	HSS	HIGH STRENGTH	RET	RETAINING
BLK/BLKG	BLOCK/BLOCKING	HSB	HIGH STRENGTH BOLT	REV	REVISION
BLW	BELOW	HSFB	HIGH STRENGTH	RF	ROOF
BM	BEAM		FRICTION BOLT	RWD	REDWOOD
BN	BOUNDARY NAIL	HSG	HIGH STRENGTH GROUT	S	AMERICAN STANDARD BEAM
BOT	BOTTOM	HSH	HORIZONTAL SLOTTED	SAD	SEE ARCHITECTURAL
BRG	BEARING		HOLE		DRAWINGS
BTWN	BETWEEN	HSS	HOLLOW STRUCTURAL	SB	SOLID BLOCK
BW	BOTTOM OF WALL		SECTION	SC	SHEAR CLIP
BYND	BEYOND	HT	HEIGHT	SCBF	SPECIAL CONCENTRIC
C	AMERICAN STANDARD	ID	INSIDE DIAMETER		BRACED FRAME
	CHANNEL	IJ	I SHAPED WOOD BUILT	SCD	SEE CIVIL DRAWINGS
CANT	CANTILEVER		UP TRUSS	SCHED	SCHEDULE
CB	CARRIAGE BOLT	INT	INTERIOR	SED	SEE ELECTRICAL DRAWINGS
CIP	CAST IN PLACE	JST	JOIST	SEOR	STRUCTURAL ENGINEER OF
CGL	CERTIFIED GLUED LUMBER	JT	JOINT		RECORD
CJ	CONTROL JOINT	KP	KING PIST	SFRS	SEISMIC FORCE RESISTING
CL	CENTERLINE		SHEAR ANGLE		SYSTEM
CLIP	CONNECTOR SEL JOINT	Lb or #	POUND(s)	SHTG	SHEATHING
	PENETRATION	LGMF	LIGHT GAGE METAL	SIM	SIMILAR
CLG	CEILING		FRAMING	SKYLT	SKYLIGHT
CLR	CLEAR	LGMFC	LIGHT GAGE METAL	SMF	SPECIAL MOMENT FRAME
COL	COLUMN		FRAMING CONTRACTOR	SMS	SHEET METAL SCREW
COLL	COLLECTOR	LL	LIVE LOAD	SMD	SEE MECHANICAL DRAWINGS
CONC	CONCRETE	LLH	LONG LEG HORIZONTAL	SOG	SLAB ON GRADE
CONN	CONNECTION	LLV	LONG LEG VERTICAL	SPCG	SPACING
CONT	CONTINUOUS	LOC	LOCATION	SPD	SEE PLUMBING DRAWINGS
COORD	COORDINATE	LSL	LAMINATED STRAND	SPEC	SPECIFICATION
	COORDINATION		LAMINATED STRAND LUMBER	SQ	SQUARE
CMU	CONCRETE MASONRY UNIT	LVL	LAMINATED VENEER LUMBER	SS	SELECT STRUCTURAL
CSK	COUNTERSINK	MAX	MAXIMUM		or STAINLESS STEEL
CW	CUT WASHER	MB	MACHINE BOLT	STGR	STAGGERED
DBL	DOUBLE	MBM	METAL BUILDING	STD	STANDARD
DCW	DEMAND CRITICAL WELD		MANUFACTURER	ST/FF	STIFFENER
DF	DOUGLAS FIR	MC	MISCELLANEOUS CHANNEL	STL	STEEL
Dia or ø	DIAMETER	MECH	MECHANICAL	STRUCT	STRUCTURAL
DIAG	DIAGONAL	MEZZ	MEZZANINE	SW	SHEAR WALL
DIM	DIMENSION	MF	MOMENT FRAME	SYM	SYMMETRICAL
DJ	DOWEL JOINT	MFR	MANUFACTURER	T&B	TOP AND BOTTOM
DL	DEAD LOAD	MIN	MINIMUM	T&G	TONGUE AND GROOVE
DN	DOWN	MISC	MISCELLANEOUS	THK	THICK
DO	DITTO	MW	MALLEABLE IRON WASHER	THRD	THREADED
DWG	DRAWING	MTL	METAL	THRU	THROUGH
DWL	DOWEL	(N)	NEW	TL	TOTAL LOAD
EA	EACH	NIC	NOT IN CONTRACT	TNC	TOE NAIL
EE	EACH END	No or #	NUMBER	TNG	TOE NAIL CONCRETE
EF	EACH FACE	NS	NEAR SIDE	TOF	TOP OF FRAMING
ELEC	ELECTRICAL	NSG	NON-SHRINK GROUT	TOM	TOP OF MASONRY
ELEV	ELEVATOR/ELEVATION	NTS	NOT TO SCALE	TOP	TOP OF PLYWOOD
EMBED	EMBEDMENT	O/	OVER	TOS	TOP OF STEEL
EQ	EQUAL	oc	ON CENTER	TOT	TOTAL
EQUIP	EQUIPMENT	OD	OUTSIDE DIAMETER	TU	TILT UP
ES	EACH SIDE	OH	OPPOSITE HAND	TYP	TYPICAL
EW	EACH WAY	OPNG	OPENING	UNO	UNLESS NOTED OTHERWISE
FAST or (E)	FASTENER	OPP	OPPOSITE	VERT	VERTICAL
EXP	EXPANSION	OW	OTHERWISE	VIF	VERIFY IN FIELD
EXT	EXTERIOR	OWT	OPEN WEB TRUSS	VSH	VERTICAL SLOTTED HOLE
FDN	FOUNDATION	P	PLATE or PROPERTY LINE	W	WIDE FLANGE STEEL BEAM
FIN	FINISH	PA	POST ABOVE	W/	WITH
FG	FINISH GRADE	PDP	POWDER DRIVEN PINS	WD	WITHOUT
FLI	FERRULE LOOP INSERT	PEN	PANEL EDGE NAIL	WHS	WOOD
FLR	FLOOR	PERP	PERPENDICULAR	WLD	WELDED HEADED STUD
FN	FACE NAIL	PES	PANEL EDGE SCREWS	WP	WELDED
FNC	FACE NAIL CONCRETE	PJT	PANEL JOINT PENETRATION	WS	WELDED POINT/WATERPROOF
FOM	FACE OF MASONRY	PLF	POUNDS PER LINEAR FOOT	WT	WOOD SCREW
FOS	FACE OF STUD	PNL	PANEL	WTS	WEIGHT
FRMG	FRAMING	PSF	POUNDS PER SQUARE FOOT	WWR	WELDED THREADED STUD
FS	FAR SIDE	PSI	POUNDS PER SQUARE INCH		WELDED WIRE
FTG	FOOTING	PSL	PARALLEL STRAND LUMBER		REINFORCEMENT
GA	GAGE or GAUGE	PTB	PANEL TIE BAR		
GALV	GALVANIZED				

F CONCRETE MASONRY UNIT NOTES

1. CONCRETE MASONRY UNIT CONSTRUCTION SHALL BE PER **4/S-S1.40** UNO. USE DOUBLE OPEN END WHERE POSSIBLE AND SINGLE OPEN END OTHERWISE. ALL CELLS TO BE GROUTED SOLID. ALL CMU TO BE LAID IN RUNNING BOND.
2. PROVIDE INVERTED BOND BEAM UNITS AT FOUNDATION LEVEL. SEE SPECIFICATIONS FOR CLEANOUT AND GROUTING REQUIREMENTS.
3. DOWELS FROM FOUNDATION ARE TO MATCH SIZE AND ALIGNMENT WITH THE WALL VERTICAL REINFORCEMENT. EXTEND DOWELS FROM FOUNDATION INTO WALL TO PROVIDE MINIMUM LAP WITH WALL VERTICAL REINFORCEMENT. INSTALL DOWEL BARS PER PLAN AND **2/S-S1.40**. ALL DOWELS TO EXTEND TO THE LOWEST FOUNDATION REINFORCEMENT AND END WITH A STANDARD HOOK.
4. WALL REINFORCING SHALL BE PER **1/S-S1.40** UNO.
5. PROVIDE (2) #5 IN BOND BEAM UNITS AT THE TOPS OF ALL WALLS AND AT EACH FLOOR AND ROOF ELEVATION, UNO.
6. PROVIDE SASH UNITS AT ALL OPENINGS TYPICAL UNO.
7. SET ALL LEDGER AND CONNECTOR BOLTS PER **12/S-S1.40** UNO. 1" GROUT AROUND BOLT REQUIRED.
8. SAD FOR TYPE OF FINISH, LOCATION, COLOR, ETC. SEE SPECIFICATIONS OTHERWISE.
9. VERTICAL CONTROL JOINTS SHALL BE SPACED NO GREATER THAN 25'-0"oc. SEE **15/S-S1.40** CONTRACTOR TO SUBMIT VERTICAL JOINT LAYOUT FOR REVIEW PRIOR TO CONSTRUCTION.

G MATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY ULTIMATE COMPRESSIVE STRENGTH:
- F'_c = 5,000 PSI FOUNDATIONS
- F'_c = 5,000 PSI WALLS, COLUMNS AND ELEVATED SLABS
- F'_c = 3,000 PSI EXTERIOR SLAB ON GRADE (4,000 PSI AT 56 DAYS)

REINFORCING STEEL YIELD STRENGTH:
ALL SPECIAL SHEARWALL REINFORCING SHALL BE A706 GR. 60.
ALL BEAM AND COLUMN LONGITUDINAL REINFORCING SHALL BE A706 GR. 60.
MAT SLAB REINFORCING SHALL BE A615 GR. 80, UNO
- F_y = 40,000 PSI AT #3 AND SMALLER
- F_y = 60,000 PSI AT #4 AND LARGER

STEEL YIELD STRENGTH (UNO):
- F_y = 36,000 PSI ANGLES, CHANNELS, AND PLATES
- F_y = 46,000 PSI RECTANGULAR HSS

FASTENERS:
MACHINE BOLTS SHALL BE ASTM A307
ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNO
ARC-WELDING ELECTRODES SHALL BE E70

MASONRY COMPRESSIVE STRENGTH:
- F'_m = 2,000 PSI

D FOUNDATION NOTES

1. FOUNDATION DESIGN PRESSURES ARE:

   SHALLOW FOOTINGS:
   DEAD LOAD + LIVE LOAD = 3,000 PSF
   DEAD LOAD + LIVE LOAD + LATERAL = 4,000 PSF

2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW, AND CHAPTER 18 OF THE CBC. ALL FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED, NATIVE SOILS OR ENGINEERED FILL AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. ENGINEERED FILL TO BE COMPACTED PER GEOTECHNICAL REPORT. INCREASE FILL AND OR FOOTING DEPTH AS REQUIRED BY GEOTECHNICAL ENGINEER. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. MAXIMUM OVER EXCAVATION IN WIDTH SHALL BE LESS THAN 12 INCHES OR 25% OF FOOTING WIDTH, WHICH EVER IS LESS. 6 INCHES MAXIMUM PER SIDE. LARGER OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH ADDITIONAL REINFORCED CONCRETE AS DIRECTED BY THE ENGINEER, OR FORMWORK SHALL BE PROVIDED. OVER-EXCAVATIONS IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE. GEOTECHNICAL REPORT BY:

   ROCKRIDGE GEOTECHNICAL
   REPORT NO. 15-919B
   DATED: JULY 14, 2017

3. WHERE BOTTOM OF ADJACENT FOOTINGS ARE DIFFERENT PROVIDE STEPPED FOOTING PER **6/S-S1.10**
4. USE 5/8" DIAMETER x 12" (18" AT CURBS) ANCHOR BOLTS (AB) AT 48"oc WHERE NOT OTHERWISE NOTED. MINIMUM EMBEDMENT INTO CONCRETE IS 7" (EXCLUDING CURB) UNLESS DETAILED OTHERWISE. ANCHOR BOLTS ARE TO BE TIED IN PLACE PRIOR TO PLACEMENT OF CONCRETE. SEE SHEAR WALL SCHEDULE FOR ADDITIONAL REQUIREMENTS. MINIMUM TWO ANCHOR BOLTS PER SILL PIECE.
5. TYPICAL SLAB: 4" CONCRETE REINFORCED WITH #3 @ 16"oc EACH WAY AT MID-DEPTH OVER VAPOR RETARDER (PER SPECIFICATIONS) AND 6" MINIMUM FREE DRAINING COMPACTED CRUSHED ROCK ON SUBGRADE PER THE GEOTECHNICAL RECOMMENDATIONS, AND AS APPROVED BY THE GEOTECHNICAL ENGINEER. DO NOT DRIVE CONCRETE TRUCKS OR LARGE SCREED MACHINES ON VAPOR RETARDER WITHOUT ADDITIONAL BUFFER MATERIAL AND APPROVAL FROM THE STRUCTURAL ENGINEER.
6. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DEPRESSED SLABS FOR ARCHITECTURAL FILLS OR INSERTS. SLOPED SLABS TO DRAIN AND PIPES OR CONDUITS AT SLAB. SEE **6/S-S4.14** & **7/S-S4.14** AT DEPRESSED SLAB **9/S-S4.14** & **10/S-S4.14** FOR PIPES AND CONDUITS.
7. PROVIDE CONTROL JOINTS PER **11/S-S4.14** (OR CONSTRUCTION/DOWEL JOINTS AT CONTRACTOR'S OPTION) AS SHOWN ON PLAN AND AS REQUIRED TO MEET A MAXIMUM SPACING IN FEET OF 3 TIMES THE SLAB DEPTH IN INCHES (FOR EXAMPLE 3x4" = 12'-0"oc MAX) AND 15'-0"oc MAX. INSTALL JOINTS TO DIVIDE SLAB INTO RECTANGULAR AREAS WITH LONG DIMENSION LESS THAN 1.5 x SHORT DIMENSION. INSTALL JOINTS AT FACE OF STUDS OF WALL WHERE POSSIBLE. SUBMIT JOINT LAYOUT PLAN FOR REVIEW PRIOR TO PLACEMENT.
8. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, ETC.

E SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH CBC CHAPTER 17 AND THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY CBC SECTIONS 1704.2.3 AND 1704.3 FOR BUILDING STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. **STRUCTURAL STEEL CONSTRUCTION** PER CBC SECTIONS 1705.2, 1705.12.1, 1705.13.1, AND TABLE 1705.2.3 INCLUDING MATERIAL IDENTIFICATION, SHOP AND FIELD WELDING, AND INSTALLATION OF HIGH-STRENGTH BOLTS.
2. **CONCRETE CONSTRUCTION** PER CBC SECTIONS 1705.3, AND TABLE 1705.3 INCLUDING FORMWORK, REINFORCING STEEL, CAST-IN-PLACE BOLTS, MIX DESIGNS, CONCRETE SAMPLES, AND PLACEMENT FOR ALL CONCRETE. REINFORCING DOWELS FROM FOOTINGS TO RETAINING WALLS SHALL BE INSPECTED PRIOR TO PLACEMENT OF FOOTING CONCRETE AND WALL GROUT OR CONCRETE. CONTINUOUS OR ISOLATED SPREAD FOOTINGS WITH DESIGN STRENGTH NO GREATER THAN 2500 PSI, NON-STRUCTURAL SLABS ON GRADE, AND EXTERIOR FLATWORK DO NOT REQUIRE SPECIAL INSPECTION PER CBC SECTION 1705.3.
3. **MASONRY CONSTRUCTION** PER CBC SECTION 1705.4 INCLUDING COMPRESSIVE STRENGTH, BLOCK LAYING PROCEDURES, MORTAR PREPARATION, REINFORCEMENT SIZE AND GRADE, REINFORCEMENT PLACEMENT, GROUT PREPARATION AND GROUT PLACEMENT, AND ANCHOR BOLT TYPE, SIZE AND PLACEMENT.
4. **SOILS** PER CBC SECTION 1705.6, TABLE 1705.6, AND THE APPROVED SOILS REPORT INCLUDING SUBGRADE PREPARATION, FOUNDATION BEARING MATERIALS AND DEPTH OF EXCAVATIONS, AND VERIFICATION, PLACEMENT AND TESTING OF CONTROLLED FILL.
5. **SPECIAL CASES** PER CBC SECTION 1705.1.1 AND PRODUCT ICC REPORTS FOR ALL STRUCTURAL MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE CBC OR REFERENCED STANDARDS INCLUDING POST-INSTALLED ANCHOR BOLTS IN CONCRETE AND CMU, AND PRE-MANUFACTURED SHEAR PANELS AND BRACED FRAMES.

A DESIGN CRITERIA

DESIGN CRITERIA: 2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
FLOOR LIVE LOAD: 40 PSF (REDUCIBLE)
ROOF LIVE LOAD: 20 PSF (REDUCIBLE)
RISK CATEGORY: II
WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110
WIND EXPOSURE: C
INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18
COMPONENTS AND CLADDING DESIGN PRESSURES FOR SYSTEMS DESIGNED BY OTHERS SHALL COMPLY WITH THE "ASCE 7" DESIGN STANDARD
EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_E: 1.0
APPED SPECTRAL RESPONSE ACCELERATIONS: S_S = 1.923; S_1 = 0.777
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 1.282; S_{D1} = 0.777
SEISMIC DESIGN CATEGORY: E
SEISMIC FORCE RESISTING SYSTEM: SPECIAL REINFORCED MASONRY SHEAR WALLS (LEVEL 1 AND ABOVE), SPECIAL REINFORCED CONCRETE SHEAR WALLS (BASEMENT)
RESPONSE MODIFICATION FACTOR(S): R = 5
DESIGN BASE SHEAR: 468 K (LRFD)
SEISMIC RESPONSE COEFFICIENT(S), C_S = 0.256 (LRFD)
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

MAXIMUM ANTICIPATED STORY DRIFT = 0.007 X HEIGHT
PROVIDE DEFORMATION COMPATIBILITY PER ASCE 7 SECTION 12.12.5 FOR NON-STRUCTURAL ITEMS, INCLUDING CLADDING, STAIRS, GLAZING, ETC.

BUILDING #5: BURN BUILDING

NARRATIVE: GENERAL DESCRIPTION: 3 STORIES, MASONRY BEARING WALL STRUCTURE. THE BUILDING IS NOT DESIGNED AS ESSENTIAL SERVICE FACILITY AND WILL NOT BE USED FOR THAT PURPOSE.

- 3-STORY, 2,100 SF NON-ESSENTIAL SERVICES BUILDING
- MAT SLAB FOUNDATION
- CONCRETE SUSPENDED FLOOR AND ROOF SLABS
- MASONRY WALLS FOR GRAVITY AND LATERAL SUPPORT
- STEEL PORCH ROOF FRAMING, SUPPORTING UNFILLED METAL DECK
- FIRE SPRINKLERS THROUGHOUT
- FIRE PROOFING AT SELECT BURN ROOMS

B GENERAL NOTES

1. REFER TO SHEETS **S-S0.10** THROUGH **S-S1.50** FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.
2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.
6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. USE DETAILS **2/S-S1.10** AND **3/S-S1.10** .
7. AT CONDITIONS WHERE THESE DETAILS DO NOT APPEAR TO APPLY, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
8. VERIFY WEIGHTS AND LOCATIONS OF MECHANICAL UNITS WITH MECHANICAL ENGINEER PRIOR TO PLACEMENT. UNITS VARYING OVER 10% IN WEIGHT SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION (MECHANICAL WEIGHTS SHOWN ARE MAXIMUM). CONTRACTOR TO VERIFY MECHANICAL UNIT SIZES AND WEIGHTS AS INSTALLED PRIOR TO INSTALLATION OF SPECIAL FRAMING TO ENSURE CORRECT PLACEMENT UNDER CURBS, ETC.
9. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL ENGAGE A LICENSED CIVIL OR STRUCTURAL ENGINEER TO PROVIDE SHORING.
10. SPECIAL INSPECTIONS ARE REQUIRED PER **F/S-S0.10** AND THE TESTING AND INSPECTION FORM.
11. VEHICULAR TRAFFIC, HEAVY EQUIPMENT AND MATERIAL STAGING SHALL NOT BE ALLOWED ADJACENT TO ANY RETAINING/BASEMENT WALL, NEW OR EXISTING WITHIN A HORIZONTAL DISTANCE EQUAL TO THE WALL HEIGHT MEASURED FROM THE BOTTOM OF FOOTING OR 5'-0" WHICHEVER IS GREATER, UNLESS APPROVED BY THE STRUCTURAL ENGINEER OR NOTED OTHERWISE. WITHIN THIS ZONE, ONLY HAND-OPERATED EQUIPMENT ("WHACKERS", VIBRATORY PLATES, OR PNEUMATIC COMPACTORS) SHALL BE USED TO COMPACT THE BACKFILL SOILS.
12. STRUCTURAL OBSERVATION PER CBC SECTION 1704.6 IS NOT REQUIRED. NOTIFY ZFA FOR GENERAL REVIEW OF:
    - MINIMUM FOOTING SIZE AND REINFORCING STEEL.
    - RETAINING WALLS AND REINFORCING.
    - STRUCTURAL CONCRETE WALL REINFORCING.
    - STRUCTURAL CONCRETE SLAB REINFORCING.
    - MASONRY CONSTRUCTION AND REINFORCING.

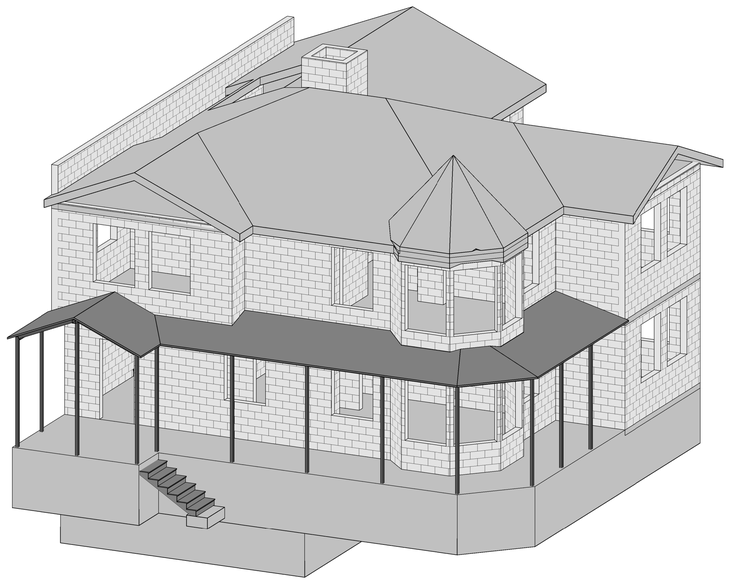
    NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE.
13. SUBMIT ENGINEERING FOR DEFERRED APPROVAL ITEMS TO ARCHITECT/ENGINEER FOR REVIEW AND SUBMITTAL TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO FABRICATION. DEFERRED APPROVAL ITEMS SHALL BE DESIGNED AND DETAILED BY MANUFACTURER TO ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS AS NOTED IN STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL REVIEW AND APPROVE DIMENSIONS AND DETAILS SHOWN ON THE SHOP DRAWINGS PRIOR TO SUBMITTAL. MANUFACTURER TO PROVIDE DRAWINGS AND CALCULATIONS DESIGNED IN ACCORDANCE WITH THE CBC AND SPECIFICATIONS, PREPARED AND SIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER FOR THE FOLLOWING ITEMS, UNLESS NOTED OTHERWISE:
    A. CONCRETE/METAL PAN STAIR TREADS AND LANDINGS. HAND RAILS. INCLUDE ATTACHMENTS TO STRUCTURE.
    B. FIRE PROTECTION ASSUMED WEIGHTS: 10 PSF (CEILING AND WALL), 30 PSF (FLOOR)

C STEEL NOTES

1. COORDINATE TOP OF FOOTING ELEVATIONS AS DETERMINED BY THE CONTRACTOR PER **D/S-S0.10** NOTE #6.
2. TOP OF STEEL ELEVATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS.

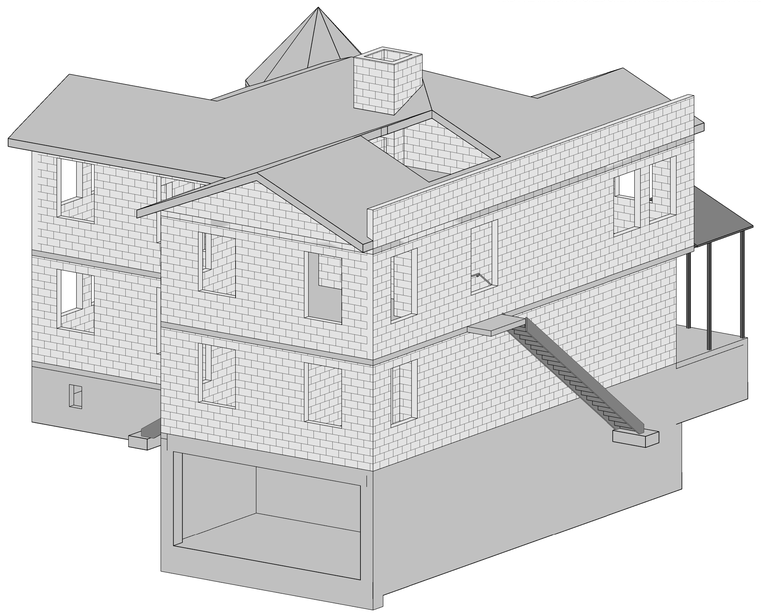
STRUCTURAL SHEET INDEX

S-S0.10	BUILDING 5	GENERAL NOTES
S-S1.10	BUILDING 5	TYPICAL CONCRETE DETAILS
S-S1.40	BUILDING 5	TYPICAL CMU DETAILS
S-S1.41	BUILDING 5	TYPICAL CMU DETAILS
S-S1.50	BUILDING 5	TYPICAL METAL DECKING DETAILS
S-S2.10	BUILDING 5	FOUNDATION PLAN
S-S2.20	BUILDING 5	FIRST FLOOR FRAMING PLAN
S-S2.30	BUILDING 5	SECOND FLOOR FRAMING PLAN
S-S2.40	BUILDING 5	ATTIC FRAMING PLAN
S-S2.50	BUILDING 5	ROOF FRAMING PLAN
S-S3.10	BUILDING 5	ELEVATIONS AND SECTIONS
S-S3.20	BUILDING 5	ELEVATIONS AND SECTIONS
S-S4.10	BUILDING 5	FOUNDATION DETAILS
S-S4.11	BUILDING 5	CONCRETE WALL DETAILS
S-S4.12	BUILDING 5	CONCRETE COLUMN DETAILS
S-S4.13	BUILDING 5	CONCRETE BEAM DETAILS
S-S4.14	BUILDING 5	CONCRETE SLAB DETAILS
S-S4.15	BUILDING 5	CMU WALL DETAILS
S-S4.16	BUILDING 5	CMU WALL DETAILS
S-S4.17	BUILDING 5	TURRET FRAMING PLAN AND DETAILS



THREE DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREEDIMENSIONAL VIEWS.

2 3D REFERENCE VIEW



THREE DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREEDIMENSIONAL VIEWS.

1 3D REFERENCE VIEW

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

ZFA STRUCTURAL ENGINEERS
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zfa job no.17143

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4867 STATE OF CALIFORNIA

Sheet Title

BUILDING 5 GENERAL NOTES

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S0.10
Drawing No.

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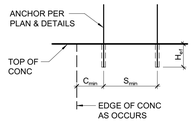
ADHESIVE ANCHOR IN 2500 PSI MIN CONCRETE

ADHESIVE TYPE	ANCHOR: THRD ROD	ANCHOR: REBAR	PILOT HOLE	MIN EMBED UNO H_{ef}	MIN EDGE DISTANCE C_{min}	MIN SPCG S_{min}	MIN CONC DEPTH H_{min}
SIMPSON SET-XP (ICC-ESR 2508)	⅜"ø	#3	⅛"ø	3"	1¾"	3"	5"
	½"ø	#4	⅜"ø	4"	1¾"	3"	6½"
	⅝"ø	#5	¾"ø	5"	1¾"	3"	8½"
	¾"ø	#6	⅞"ø	6"	1¾"	3"	9½"
	⅞"ø	#7	1"ø	7"	1¾"	3"	11½"
	1"ø	#8	1⅛"ø	8"	1¾"	3"	13"
	1⅛"ø	#10	1⅜"ø	10"	2¾"	6"	16½"
HILTI HIT-HY 200R (ICC-ESR 3187)	⅜"ø	N/A	⅝"ø	3"	1¾"	1⅛"	4½"
	N/A	#3	½"ø	3"	1¾"	1⅛"	4¼"
	½"ø	N/A	⅝"ø	4"	1¾"	2½"	5½"
	N/A	#4	¾"ø	4"	1¾"	2½"	5¼"
	⅝"ø	#5	¾"ø	5"	1¾"	3⅛"	6½"
	¾"ø	#6	⅞"ø	6"	1¾"	3¾"	7¾"
	⅞"ø	#7	1"ø	7"	1¾"	4⅜"	9"
	1"ø	#8	1⅛"ø	8"	1¾"	5"	10¼"
	N/A	#9	1⅜"ø	9"	1¾"	5⅝"	11⅜"
	1¼"ø	N/A	1⅜"ø	10"	1¾"	6¼"	12⅜"
	N/A	#10	1½"ø	10"	1¾"	6¼"	13"



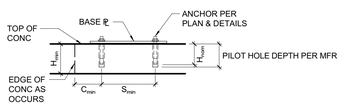
NOTES:

1. INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING, AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORTS. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND ADHESIVE INJECTION. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 . SEE DRAWINGS FOR SPECIFIC TENSION TEST LOADS FOR ANCHORS.

13 ADHESIVE ANCHOR IN CONCRETE
3/4" = 1'-0"

STAINLESS STL EXPANSION ANCHORS IN 2500 PSI MIN CONC

ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MIN NOMINAL EMBED H_{nom}	MIN EDGE DISTANCE C_{min}	MIN SPACING S_{min}	MIN CONC THICKNESS H_{min}	INSTALL TORQUE (FT-LB)
SIMPSON STRONG-BOLT 2 (ICC-ESR 3037)	⅜"	1⅞"	6"	10"	3½"	30
	½"	2¼"	6½"	8"	4½"	65
	⅝"	3⅜"	4"	8"	5½"	80
	¾"	4⅛"	6"	6½"	6¾"	150
HILTI KWIK BOLT TZ (ICC-ESR 1917)	⅜"	2⅜"	2½"	5"	4"	25
	½"	2⅜"	2¼"	5¾"	4"	40
	⅝"	3⅜"	3¼"	5½"	5"	60
	¾"	4⅜"	4¼"	10"	6"	110



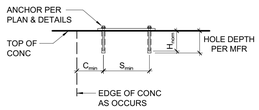
NOTES:

1. INSTALL EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705
2. AND THE REQUIREMENTS OF THE ICC REPORTS.
3. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
4. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
5. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.

14 STAINLESS STEEL EXPANSION ANCHOR IN CONCRETE
3/4" = 1'-0"

SCREW ANCHOR IN 2500 PSI MIN CONCRETE

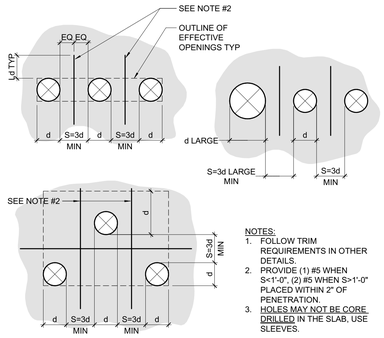
ANCHOR TYPE	ANCHOR AND PILOT HOLE DIA	MINIMUM EMBEDMENT H_{nom}	MINIMUM EDGE DIST C_{min}	MINIMUM SPCG S_{min}	MINIMUM CONCRETE DEPTH H_{min}	INSTALL TORQUE (FT-LB)	MAX INSTALL TORQUE (FT-LB)
SIMPSON TITEN HD (ICC-ESR 2713)	⅜"	2⅛"	1¾"	3"	4"	10	50
	½"	3¼"	1¾"	3"	5"	10	65
	⅝"	4"	1¾"	3"	6"	10	100
	¾"	5½"	1¾"	3"	8¾"	20	150
HILTI KH-EZ (ICC-ESR 3027)	⅜"	2⅛"	1½"	3"	4"	10	40
	½"	3"	1½"	3"	4¾"	10	45
	⅝"	3¼"	1½"	4"	5"	10	85
	¾"	4"	1¾"	4"	6"	20	115



NOTES:

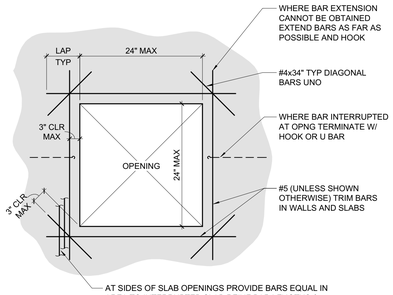
1. INSTALL SCREW ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 OF THE CBC AND THE REQUIREMENTS OF THE ICC REPORTS. INSTALLED ANCHORS SHALL BRING CONNECTED PLIES INTO FIRM CONTACT, MEETING THE INSTALL TORQUE BUT NOT EXCEEDING THE MAXIMUM INSTALL TORQUE.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.
5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 .

12 SCREW ANCHOR IN CONCRETE
3/4" = 1'-0"

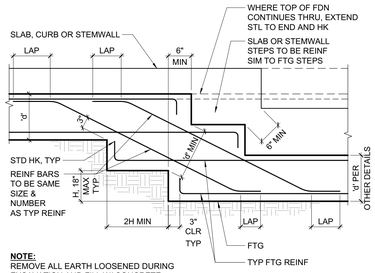


NOTES:
1. FOLLOW TRIM REQUIREMENTS IN OTHER DETAILS.
2. PROVIDE (1) #5 WHEN S<1'-0", (2) #5 WHEN S>1'-0" PLACED WITHIN 2" OF PENETRATION.
3. HOLES MAY NOT BE CORE DRILLED IN THE SLAB, USE SLEEVES.

10 MULTIPLE WALL PENETRATIONS
1" = 1'-0"

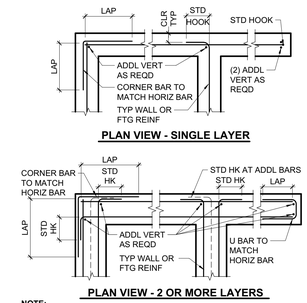


11 SMALL WALL PENETRATIONS
1" = 1'-0"



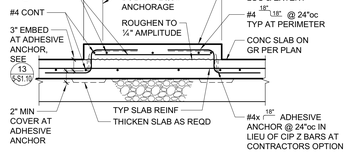
NOTE:
REMOVE ALL EARTH LOOSENED DURING EXCAVATION AND FILL W/ CONCRETE.

6 STEPPED FOOTING
3/4" = 1'-0"

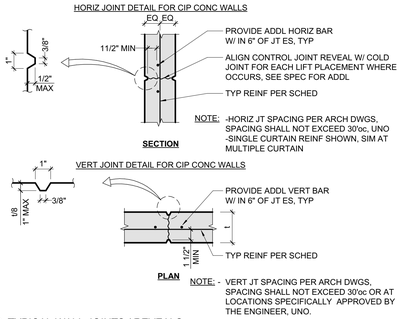


NOTE:
FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

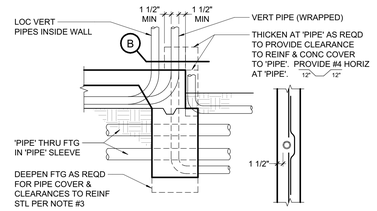
7 TYPICAL CORNER, INTERSECTION AND END REINFORCING
3/4" = 1'-0"

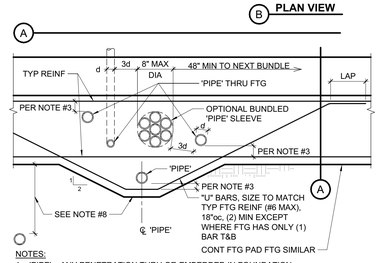


8 TYPICAL HOUSEKEEPING PAD AT SLAB ON GRADE
3/4" = 1'-0"



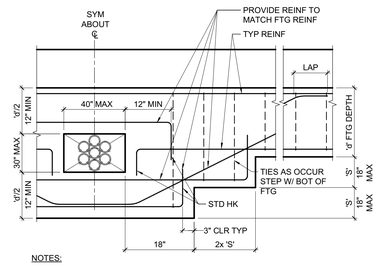
9 TYPICAL WALL JOINTS / REVEALS
3/4" = 1'-0"





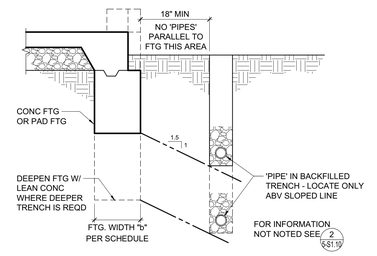
NOTES:
1. 'PIPE' = ANY PENETRATION THRU OR EMBEDDED IN FOUNDATION.
2. ALL PIPES THROUGH FOOTINGS TO BE WRAPPED OR SLEEVED AS FOLLOWS:
   a. SLEEVES: PROVIDE 1" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE, UNO. SEAL SLEEVE ENDS W/ MASTIC OR PLASTIC BITUMINOUS CEMENT.
   b. WRAPPED VERTICAL PIPES: PROVIDE ¼" NOMINAL SHEET FOAM W/ (3) WRAPS MINIMUM, UNO.
   c. WRAPPED HORIZONTAL PIPES: PROVIDE ¼" NOMINAL SHEET FOAM W/ (8) WRAPS MINIMUM, UNO.
   d. UNDERGROUND FIRE LINES 4" AND LARGER:
      1. SLEEVES: PROVIDE 2" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE. SEAL ENDS PER ABOVE.
      2. WRAPPED: PROVIDE ¼" NOMINAL SHEET FOAM W/ (16) WRAPS MINIMUM.
3. WRAPPED AND SLEEVED PIPES SHALL HAVE 1½" MIN CLEAR TO REINF STEEL. MINIMUM CONCRETE COVER AT PIPES TO BE 3".
4. CLEARANCE BETWEEN 'PIPES' TO BE 3d MIN TYP W/ A MAXIMUM OF (8) PIPES PER 48", GROUPS OF PIPES MAY BE BUNDLED AS SHOWN, EXCEPT IN PAD FOOTINGS.
5. NO 'PIPE' TO RUN PARALLEL IN FOOTINGS, STEM OR CURB.
6. PVC CONDUIT ('PIPE') EMBEDDED IN CURB/STEM MAY BE WIRE TIED TO HORIZONTAL REINF.
7. NO HORIZONTAL PIPES ALLOWED THROUGH FOOTING WITHIN 2'-0" EACH SIDE OF HOLDOWNS OR STEEL COLUMNS. NO VERTICAL PIPES ALLOWED IN FOOTINGS AT BRACED FRAMES.
8. PROVIDE 18" MIN OF COMPACTED FILL ABOVE PIPES UP TO 12"ø, FOR LARGER PIPES INCREASE COMPACTED FILL DEPTH 1'-0" OF FOR EACH 6" INCREASE IN PIPE DIAMETER. OTHERWISE DEEPEN FOOTING AS SHOWN.

2 PIPES THRU FOOTING
3/4" = 1'-0"

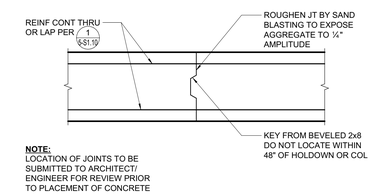


NOTES:
1. DO NOT LOCATE BLOCKOUT WITHIN 48" OF SHEAR WALL HOLD DOWN, IN FRAME FOUNDATIONS OR COLUMN PAD FOOTINGS.
2. MINIMUM DISTANCE BETWEEN BLOCKOUTS OR OTHER PIPES TO BE 48".

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



4 TRENCHING ADJACENT TO FOOTING
3/4" = 1'-0"



NOTE:
LOCATION OF JOINTS TO BE SUBMITTED TO ARCHITECT/ ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE

5 FOOTING CONSTRUCTION JOINT
3/4" = 1'-0"

DEVELOPMENT LENGTHS (ld) GR60

	LOCATION	SIZE #3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	TOP	12"	22"	32"	43"	69"	86"	103"	122"	141"
	OTHER	12"	17"	25"	33"	53"	66"	80"	94"	109"
CONCRETE f'c = 4000 PSI AT 28 DAYS	TOP	12"	19"	28"	37"	60"	74"	90"	106"	122"
	OTHER	12"	15"	21"	29"	46"	57"	69"	81"	94"
CONCRETE f'c = 5000 PSI AT 28 DAYS	TOP	12"	17"	25"	34"	54"	67"	80"	95"	109"
	OTHER	12"	13"	19"	26"	42"	51"	62"	73"	84"

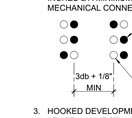
HOOKED DEVELOPMENT LENGTHS (Ldh)

	LOCATION	SIZE #3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	ANY	9"	11"	14"	17"	20"	22"	25"	28"	-
CONCRETE f'c = 4000 PSI AT 28 DAYS	ANY	8"	10"	12"	15"	17"	19"	22"	24"	-
CONCRETE f'c = 5000 PSI AT 28 DAYS	ANY	7"	9"	11"	13"	15"	17"	20"	22"	-

LAP SPLICE LENGTHS (Ls) GR60

	LOCATION	SIZE #3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	TOP	17"	28"	41"	56"	90"	112"	134"	158"	183"
	OTHER	13"	22"	32"	43"	69"	86"	103"	122"	141"
CONCRETE f'c = 4000 PSI AT 28 DAYS	TOP	15"	25"	36"	49"	78"	97"	116"	137"	159"
	OTHER	12"	19"	28"	37"	60"	74"	90"	106"	122"
CONCRETE f'c = 5000 PSI AT 28 DAYS	TOP	13"	22"	32"	44"	70"	87"	104"	123"	142"
	OTHER	12"	17"	25"	34"	54"	67"	80"	95"	109"

NOTES:
1. TOP REINFORCING IS HORIZONTAL REINFORCEMENT WITH MORE THAN TWELVE INCHES (12") OF CONCRETE PLACED BELOW IT.
2. IF THE LAP SPLICE REINFORCEMENT DOES NOT HAVE A MINIMUM SPACING 3db + 1/8 INCHES & A MINIMUM COVER OF db + 1/8 INCHES, USE WELDED SPLICE OR MECHANICAL CONNECTOR.



3. HOOKED DEVELOPMENT LENGTHS (Ldh) MAY BE USED IN LIEU OF DEVELOPMENT LENGTH (Ld) IF STANDARD HOOK IS PROVIDED AT END OF BAR.
4. MECHANICAL CONNECTORS SHALL BE TENSION-COMPRESSION TYPE WITH THE ABILITY TO DEVELOP 125% OF THE YIELD STRENGTH FOR THE SPLICED REINFORCEMENT (75 KSI). MECHANICAL CONNECTORS SHALL HAVE & BE INSTALLED PER AN ICC EVALUATION REPORT.
5. WWR SHALL LAP MINIMUM (3) BAR CROSSINGS.

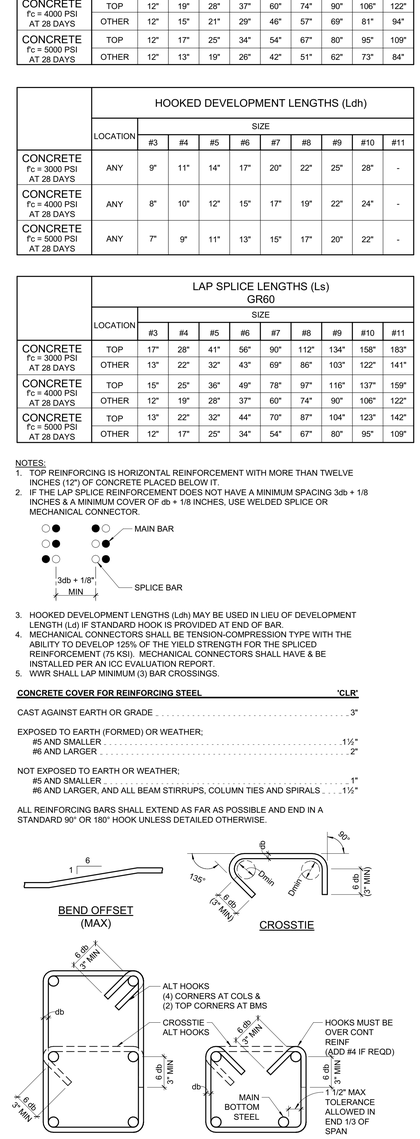
CONCRETE COVER FOR REINFORCING STEEL **'CLR'**

CAST AGAINST EARTH OR GRADE . . . . . 3"

EXPOSED TO EARTH (FORMED) OR WEATHER;
#5 AND SMALLER . . . . . 1½"
#6 AND LARGER . . . . . 2"

NOT EXPOSED TO EARTH OR WEATHER;
#5 AND SMALLER . . . . . 1"
#6 AND LARGER, AND ALL BEAM STIRRUPS, COLUMN TIES AND SPIRALS . . . . 1½"

ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN A STANDARD 90° OR 180° HOOK UNLESS DETAILED OTHERWISE.



PRINCIPAL REINF

REINF	Dmin
#3 TO #8	6 db
#9 TO #11	8 db
#14 TO #18	10 db

CROSSTIES, HOOPS & STIRRUPS

REINF	Dmin
#3	1 1/2"
#4	2"
#5	2 1/2"

NOTE:
1. ALL BENDS SHALL BE MADE COLD.

1 REINFORCING LAPS AND SPLICES AND BENDS
1" = 1'-0"

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DESIGNED BY:	CHECKED BY:
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PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

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zfa job no.17143

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Sheet Title

BUILDING 5 TYPICAL CONCRETE DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

5-S1.10

Drawing No.

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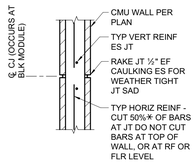
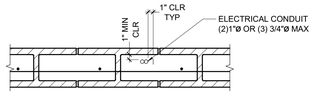


PLAN VIEW

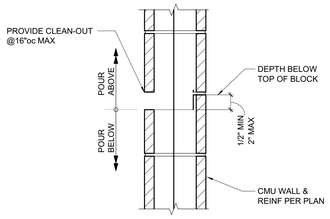


w/o VERT REINFORCING

NOTES:
1. DETAILS SHOWN ARE FOR WALLS ONLY.
2. CONDUITS SHALL NOT BE LOCATED IN WALL PIERS OR UNDER BEAMS. WALL PIERS SHALL BE DEFINED AS ANY WALL SEGMENT 32" OR LESS IN LENGTH.
3. CONDUIT LOCATIONS SHALL BE SPACED 24"oc MIN.
4. DO NOT TIE CONDUIT TO REINFORCING.
5. PLACE CONDUIT IN CELLS w/ OUT REINFORCING WHERE POSSIBLE.
6. DO NOT PLACE CONDUITS IN JAMB CELLS

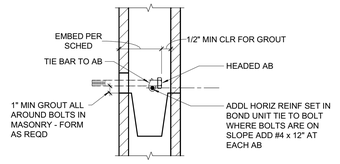
15 CMU WALL CONTROL JOINT
3/4" = 1'-0"

10 PIPES AND CONDUITS
1" = 1'-0"



NOTE:
1. POUR HEIGHT 10'-0" MAX.

11 HORIZONTAL CONSTRUCTION JOINT
1 1/2" = 1'-0"

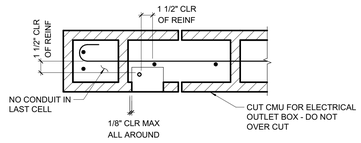


8" CMU WALL EMBEDMENT	12" CMU WALL EMBEDMENT	16" MIN PILASTER EMBEDMENT
5½"	9½"	12"

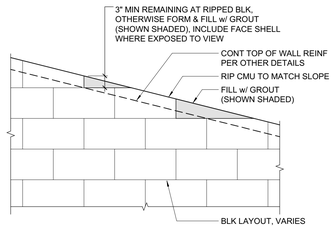
NOTE:
1. USE TEMPLATE TO SET ALL BOLTS.
2. BEDMENT TOLERANCE IS ±½" AND AS REQUIRED FOR CLEARANCE TO CMU.
3. AB SHALL PROJECT NOT LESS THAN ¼" OR MORE THAN 1" BEYOND NUT. REMOVE EXCESS THREADS WHERE NUT IS TO BE COUNTERSUNK FLUSH

12 BOLT EMBEDMENT SCHEDULE
3/4" = 1'-0"

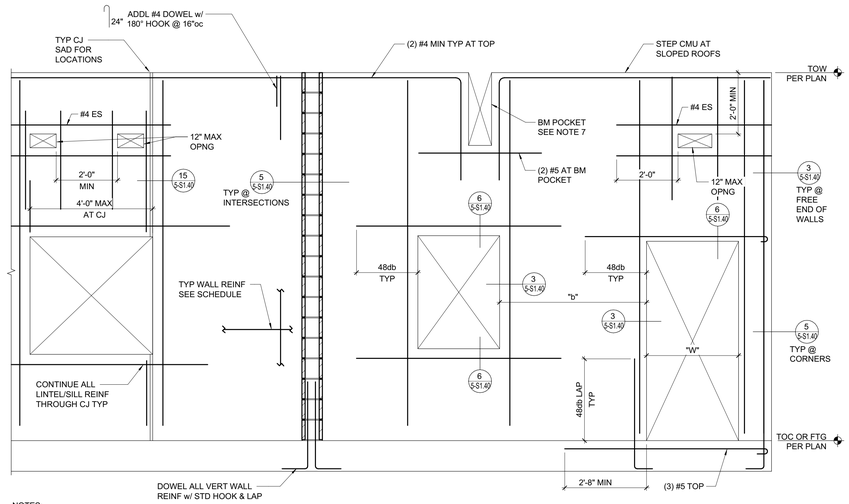
NOTES:
1. DO NOT TIE CONDUIT TO REINFORCING.
2. PLACE CONDUIT IN CELLS W/O REINF WHERE POSSIBLE.



13 CONDUIT BOX IN CMU
1 1/2" = 1'-0"

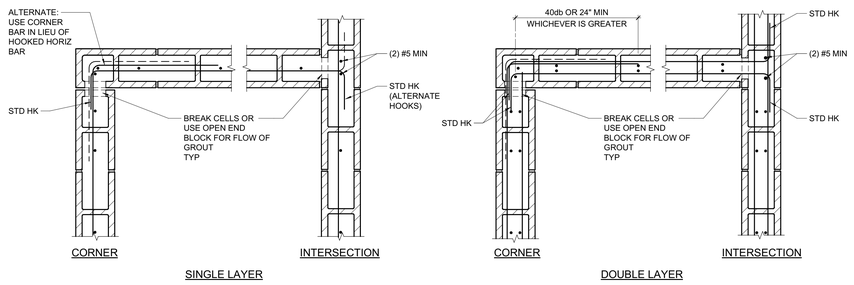


14 SLOPED TOP OF MASONRY WALL
3/4" = 1'-0"

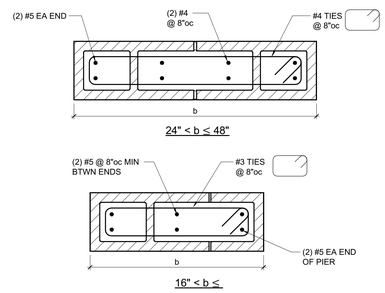


NOTES:
1. "W" DENOTES WIDTH OF OPENINGS. SEE ARCH DWGS FOR SIZE & LOCATION.
   "b" DENOTES DIMENSION BETWEEN OPENINGS. SEE ARCH DWGS.
2. DO NOT PLACE ELECTRICAL CONDUIT IN THE SAME CELL AS VERTICAL JAMB BARS. SEE **10/5-S1.40** & **13/5-S1.40** .
3. MASONRY WALL PIERS SHALL NOT BE LESS THAN 15⅝" WIDE.
4. FOR 12" CMU WALLS, REINFORCING SHOWN OCCURS AT EACH FACE.
5. ALL HORIZONTAL REINFORCING IN CMU BEARING WALLS SHALL TERMINATE WITH 90° OR 180° STANDARD HOOK.
6. FOR SLOPED TOP OF WALL, SEE **14/5-S1.40** .
7. FOR TYPE 1 WALLS PROVIDE 2" MIN 3" MAX CLEARANCE FROM UNDERSIDE OF BEAMS, SLAB & ALL SIDES OF BEAM.

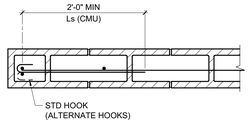
4 TYPICAL CMU WALL REINFORCING
1/2" = 1'-0"



5 REINFORCING AT WALL INTERSECTIONS
1" = 1'-0"

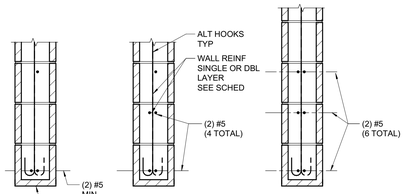


8 REINFORCING AT PIERS
1 1/2" = 1'-0"



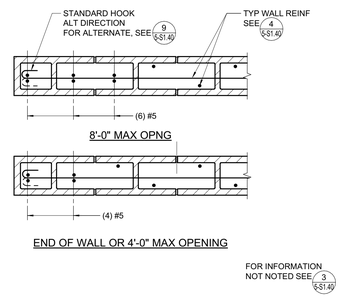
NOTES:
1. WHERE WALL IS NOT DESIGNATED AS A SHEAR WALL, STD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS.
2. HOOK AROUND END BARS AT NARROW PIERS.

9 ALTERNATE REINFORCING TERMINATION
1" = 1'-0"



NOTE:
LINTELS WILL BE SHORED FOR 28 DAYS MIN AFTER GROUT PLACEMENT.

6 REINFORCING AT LINTELS
1" = 1'-0"



7 REINFORCING AT JAMB OR END OF CANTILEVERED WALLS
1" = 1'-0"

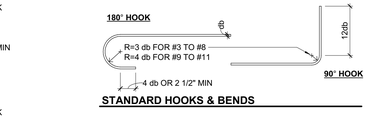
REINFORCING SCHEDULE					
TYPE	NOMINAL WALL THICKNESS "t"	HORIZ	VERT	JAMB AND END OF WALL	NOTES
1A	8"	#4 @ 24"oc CENTERED	#4 @ 24"oc	3/5-S1.40	NON-STRUCTURAL FULLY GROUTED
1B	8"	#4 @ 24"oc	#4 @ 24"oc CENTERED	3/5-S1.40	NON-STRUCTURAL FULLY GROUTED
1C	8"	#4 @ 24"oc	#5 @ 8"oc STAGGERED	7/5-S1.40	NON-STRUCTURAL FULLY GROUTED
2A	8"	#4 @ 16"oc	#4 @ 16"oc	3/5-S1.40	BEARING SHEAR WALL FULLY GROUTED
2B	8"	#4 @ 16"oc	#4 @ 8"oc	3/5-S1.40	BEARING SHEAR WALL FULLY GROUTED

NOTES:
1. USE THIS SCHEDULE WHERE SIZE OF CMU AND REINFORCING IS NOT SHOWN OTHERWISE ON PLANS, DETAILS, OR WALL ELEVATIONS. FOR TYPICAL CMU WALL ELEVATION, SEE **4/5-S1.40** .
2. FOR FOUNDATION CONNECTION AT TYPE 1C WALLS SEE **1/5-S1.41** .
3. FOR FOUNDATION OR SLAB CONNECTION AT TYPE 1A & 1B WALLS SEE **2/5-S1.41** .
4. FOR TYP 1B WALLS PROVIDE TOP OF WALL CONNECTION TO UNDERSIDE OF STRUCTURE ABOVE PER **5/5-S1.41** OR **6/5-S1.41** .
5. VERTICAL REINF FOR WALLS SHALL BE CONTINUOUS FROM TOP OF SLAB TO TOP OF WALL OR FLOOR TO FLOOR WITHOUT SPLICE.
6. USE OPEN END BLOCK AT VERTICAL REINFORCING BARS.
7. USE SPECIAL BOND BEAM OR LINTEL BLOCK AT ALL HORIZONTAL BARS.
8. THE TERM "STANDARD HOOK" SHALL MEAN EITHER:
   --180 HOOK PLUS AN EXTENSION OF 4 BAR DIAMETERS OR 2.5".
   --90 HOOK PLUS AN EXTENSION OF 12 BAR DIAMETERS.
9. FOR LAP SPLICES & MIN CLEARANCES SEE **2/5-S1.40** .
10. FOR REINF AT PIERS WITH b ≤ 6t SEE **8/5-S1.40** .
11. USE 9 GA. WIRE POSITIONERS FOR ALL VERTICAL WALL REINFORCING. SPACE VERT TIES MAX 192 x (BAR DIA) oc OR 120°.
12. FOR ATTACHMENT TO CONC COLUMNS OR WALLS SEE **4/5-S1.41** .

1 CMU REINFORCING SCHEDULE
NOT TO SCALE

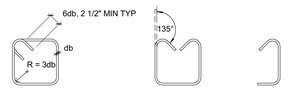
MINIMUM BAR LAPS, Ls (CMU), FOR REINFORCING STEEL MASONRY STRENGTH: 2000 PSI OR GREATER (STAGGER SPLICES)					
SIZE	LAP LENGTH	SIZE	LAP LENGTH	SIZE	LAP LENGTH
#3	12"	#6	54"	#9	82"
#4	24"	#7	64"		
#5	36"	#8	72"		

MINIMUM CLEARANCES ..... **'CLR'**
CMU TO BAR ..... ½"
BAR TO BAR ..... 2"
ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE



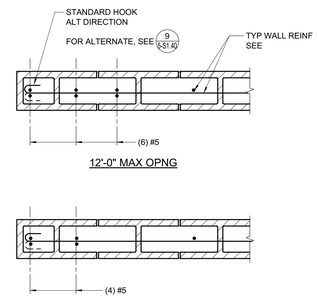
STANDARD HOOKS & BENDS

COL BAR & STRUCT OFFSET **SPLICE**



135° STIRRUP TIES #3, #4, #5 **STIRRUP #3, #4, #5** **CROSSTIE #3, #4, #5**

2 TYPICAL LAP SPLICES IN MASONRY WALLS
3/4" = 1'-0"



NOTES:
1. ALL JAMB BARS SHALL BE FULL HEIGHT OF WALL.
2. ELECTRICAL CONDUIT REQUIRED NEAR THE EDGE OF ANY OPENING GREATER THAN 4'-0" SHALL BE ROUTED VERTICALLY IN FIRST OPEN ADJACENT CELL, THEN HORIZONTALLY TO DESIRED LOCATION.
3. TAIL OF STANDARD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS WHERE WALL IS NOT DESIGNATED ON PLAN AS A SHEAR WALL. HOOK AROUND END BARS AT NARROW PIERS.

3 REINFORCING AT JAMB OR END OF WALL
1" = 1'-0"

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Sheet Title

BUILDING 5
TYPICAL CMU DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S1.40
Drawing No.

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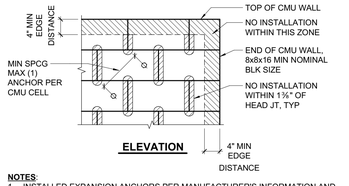
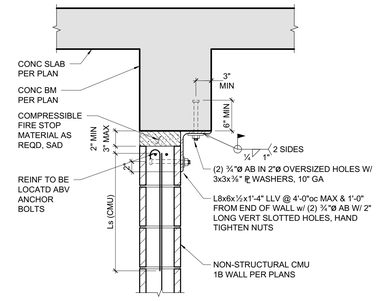
CARBON STL EXP ANCHORS IN 1500 PSI MIN CMU				
ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MINIMUM EMBEDMENT DEPTH*	MIN SPCG S_{min}	INSTALL TORQUE (FT-LB)
SIMPSON STRONG-BOLT 2 (IAPMO ES-0240)	⅜"	2⅜"	4"	30
	½"	3½"	4"	35
	⅝"	4⅜"	4"	55
	¾"	5¼"	4"	120
HILTI KWIK BOLT 3 (ICC-ESR 1385)	⅜"	2½"	8"	15
	½"	3⅛"	8"	25
	⅝"	4"	8"	65
	¾"	4⅜"	8"	120

* PILOT HOLE DEPTH = MIN (1) DIAMETER GREATER THAN EMBEDMENT DEPTH

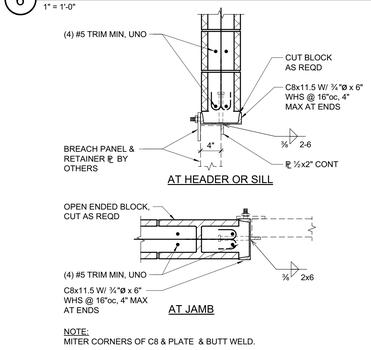


NOTES:
1. INSTALLED EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND EVALUATION REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR AND SHALL CONSIDER BOLT SPACING WHEN SELECTING ANCHOR TYPE.
3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING CMU, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. USE ROTARY DRILL ONLY. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND ANCHOR. WHEN REINFORCEMENT IS PRESENT IN DRILLED HOLE ABANDON THE HOLE. FILL ABANDONED HOLES W/ DRY PACK AND FINISH TO MATCH CMU. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, MASONRY TYPE, MASONRY COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), MASONRY THICKNESS, AND TIGHTENING TORQUE.
5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTIONS 1705.4 AND 1913.7.

8 EXPANSION ANCHORS IN CMU
3/4" = 1'-0"

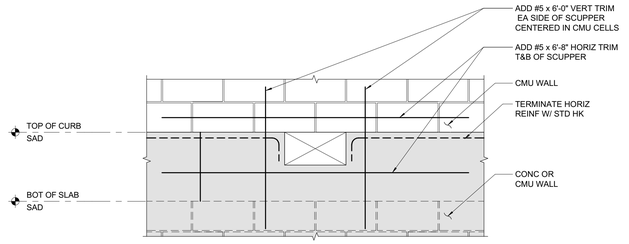


6 TOP OF WALL BRACE - CMU WALL TO BEAM
1" = 1'-0"



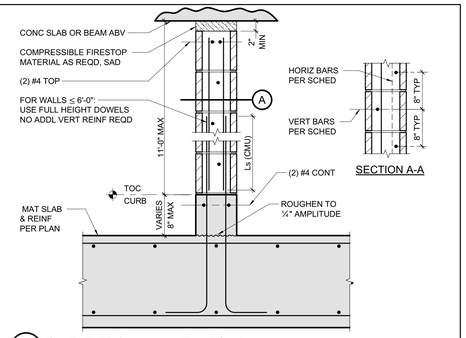
NOTE:
MITER CORNERS OF C8 & PLATE & BUTT WELD.

7 TYP BREACH PANEL AT CMU
1" = 1'-0"

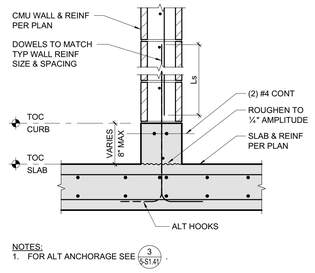


NOTE: WALL REINF NOT SHOWN FOR CLARITY

9 TYPICAL SCUPPER TRIM REINFORCING
3/4" = 1'-0"

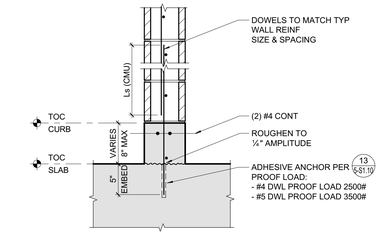


1 CANTILEVER CMU WALL AT MAT SLAB
1" = 1'-0"



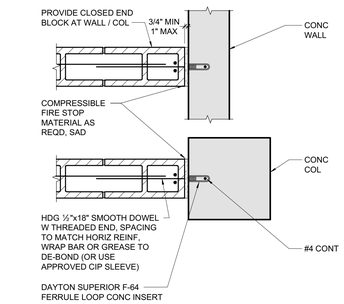
NOTES:
1. FOR ALT ANCHORAGE SEE 3/S1.41

2 CMU WALL AT ALTERNATE MAT SLAB
1" = 1'-0"

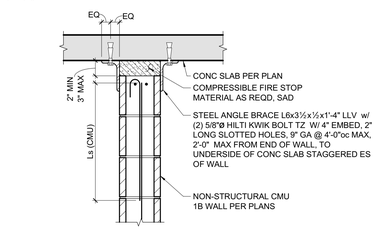


NOTES:
1. LOCATE SLAB REINF PRIOR TO DRILLING.
2. DO NOT DAMAGE SLAB REINFORCING.
3. IF HOLE CONFLICTS w/ SLAB REINF, FILL ABANDONED HOLE WITH ADHESIVE.

3 ALTERNATE ANCHORAGE FOR TYPE 1A AND TYPE 1B WALLS
1" = 1'-0"



4 NON-STRUCTURAL CMU WALL ANCHORAGE TO CONCRETE WALL OR COLUMN
1" = 1'-0"



NOTES:
1. WHERE BM INTERSECTS TOP OF WALL, PROVIDE BM POCKET W/ MIN 2" CLR TO BM ALL AROUND WITH STEEL ANGLE BRACES AT EA SIDE OF WALL W/ IN 2'-0" ℄ OF BM.
2. LONG SLOTTED HOLES IN STEEL ANGLE SHALL BE INLINE W/ WALL.
3. IF REINF IS ENCOUNTERED DURING ANCHOR INSTALLATION, DRY PACK ABANDONED HOLE W/ NON-SHRINK GROUT AND ADJUST ANCHOR LOCATION AS REQD. IF ENCOUNTERED REINFORCING STEEL IS INLNE WITH WALL, USE L6x6x½x1'-4" STEEL BRACING ANGLE TO AVOID CONFLICT.

5 TOP OF WALL BRACE - CMU WALL TO SLAB
1" = 1'-0"

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HEART OF THE BAY

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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No.	Description	Date

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Sheet Title

BUILDING 5
TYPICAL CMU DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S1.41
Drawing No.

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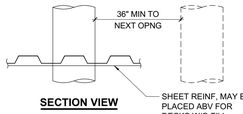
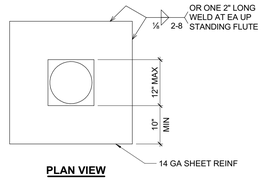
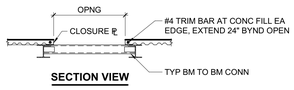
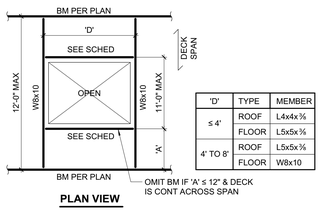




7 TYPICAL REINFORCED OPENING IN DECK (LESS THAN 12")

3/4" = 1'-0"





'D'	TYPE	MEMBER
≤ 4'	ROOF	L4x4x⅜
	FLOOR	L5x5x⅜
4' TO 8'	ROOF	L5x5x⅜
	FLOOR	W8x10

8 TYPICAL FRAMED OPENING IN DECK (LESS THAN 11'-0")

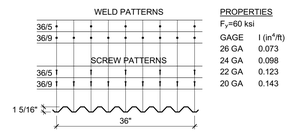
1" = 1'-0"

MARK	STEEL DECK GAGE & PROFILE TYPE SEE 4/S1.50	DECK CONNECTIONS						MINIMUM SLAB FILL THICKNESS ABV DECK	MINIMUM SLAB FILL REINFORCING	REMARKS
		END/INT BEARING CONN (A)		SIDE BEARING CONN (B)		SIDELAP CONNECTION (C)				
		SIZE & TYPE	PATTERN	SIZE & TYPE	SPACING	SIZE & TYPE	SPACING			
1	D - 18 GA	¾"ø PW	36/4	¾"ø PW	12"	1½" TSW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	
2	G - 22 GA	¾"ø PW	36/9	¾"ø PW	12"	1½" TSW OR ¾"x1½" ASW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	

NOTES:
1. * = ¾"ø MIN OF FUSION (EFFECTIVE WELD). ATTACH DECK TO ALL STEEL SUPPORT FRAMING AS OCCURS.
2. ALL DECK TYPES TO RECEIVE CONCRETE FILL TO HAVE FACTORY PUNCHED VENT TABS.
3. PW = PUDDLE WELD.
4. TSW = TOP SEAM WELD (¼" FILLET).
5. ASW = ARC SEAM WELD.
6. BP = BUTTON PUNCH.
7. VSC2 = VERCO SIDE LAP CONNECTION.
8. PINS = HILTI X-ENP-19 PER ICC ESR-2197.
9. ABOVE REFERENCED DECKS AND COMPOSITE DEPTHS ARE BASED ON ALLOWABLE DESIGN LOADS PER IAPMO ER-0217 VERCO MANUFACTURING, ESR-2047 EPIC METAL DECK CORP - EQUIVALENT DECK MUST HAVE EQUIVALENT ALLOWABLE VERTICAL LOADS, DIAPHRAGM SHEAR VALUES, AND FLEXIBILITY FACTORS.
10. SHORING OF DECK REQUIRED AT SINGLE SPAN & 2 SPAN CONDITIONS. NOT REQUIRED AT 3 SPAN CONDITIONS. AT CONTRACTOR'S OPTION, HEAVIER DECK MAY BE USED TO AVOID SHORING PER SEOR WRITTEN APPROVAL.
11. PROVIDE EXTRA CONCRETE TOPPING TO PROVIDE FLAT LEVEL SURFACE, 1" MAX.
12. WHERE A WELDED HEADED STUD OCCURS COINCIDENT WITH A TYPE 'A' DECK ATTACHMENT, THE TYPE 'A' ATTACHMENT MAY BE OMITTED.
13. PROVIDE FULL WIDTH DECK SHEET ON EACH SIDE OF BEAMS IN THE SFRS, AND AT THE BUILDING PERIMETER.

1 DECKING SCHEDULE

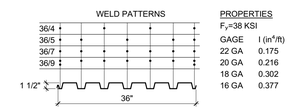
3/4" = 1'-0"



PROPERTIES	
F_y=60 ksi	
GAGE	I (in⁴/ft)
26 GA	0.073
24 GA	0.098
22 GA	0.123
20 GA	0.143

TYPE "G" DECK

VERCO DEEP VERCOR OR APPROVED EQUAL

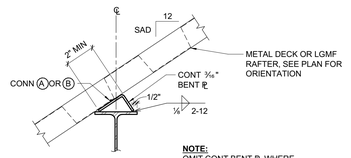


PROPERTIES	
F_y=38 KSI	
GAGE	I (in⁴/ft)
22 GA	0.175
20 GA	0.216
18 GA	0.302
16 GA	0.377

TYPE "D" DECK

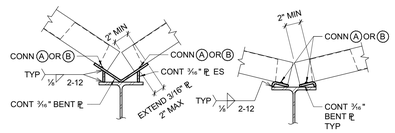
VERCO PLB, HSB, OR APPROVED EQUAL

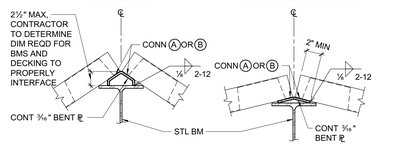
4 DECKING TYPE AND CONNECTION PATTERN



SINGLE SLOPE

NOTE:
OMIT CONT BENT ℄ WHERE DECK SLOPE < ½" PER 12"



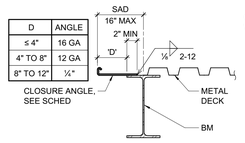


NOTE:
OMIT CONTINOUS BENT ℄ WHERE DECK SLOPE < ½" PER 12"

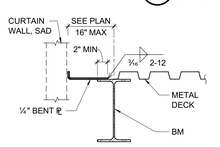
5 TYPICAL SLOPED DECK SUPPORT

1 1/2" = 1'-0"

D	ANGLE
≤ 4"	16 GA
4" TO 8"	12 GA
8" TO 12"	¼"

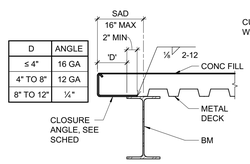


UNTOPPED DECK AT OPENING

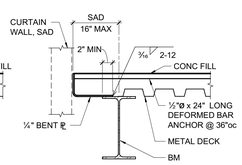


UNTOPPED DECK AT CURTAIN WALL

D	ANGLE
≤ 4"	16 GA
4" TO 8"	12 GA
8" TO 12"	¼"



TOPPED DECK AT OPENING



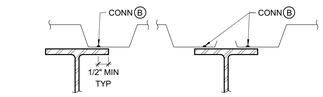
TOPPED DECK AT CURTAIN WALL

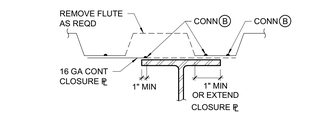
6 TYPICAL EDGE OF DECK

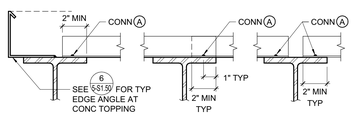
1" = 1'-0"

3 TYPICAL DECK SIDE LAP CONNECTION

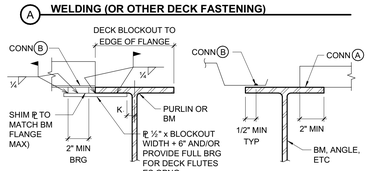
3" = 1'-0"







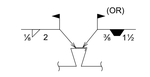
A WELDING (OR OTHER DECK FASTENING)



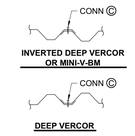
NOTES:
1. WELD OR DECK FASTENERS PER SCHEDULE. FOR DECKING SCHEDULE SEE 1/S-S1.50AS SHOWN IN THIS DETAIL, PROVIDE ARC SEAM WELD "⌓" AT SAME SPACING AS ARC SPOT WELD "◡" PER 1/S-S1.50

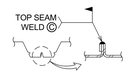
2 TYPICAL STEEL DECK SUPPORT AND WELDING

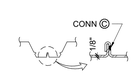
3/4" = 1'-0"



EPICORE DECK:
LAYOUT DECK SHEETS SO THAT SIDE SPLICES OCCUR ONLY AT SEAMED EDGES, AS SHOWN







NOTE:
BUTTON PUNCH AND VERCO SIDE LAP CONN NOT SHOWN.

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

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No.	Description	Date

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Sheet Title

BUILDING 5 TYPICAL METAL DECKING DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

5-S1.50
Drawing No.

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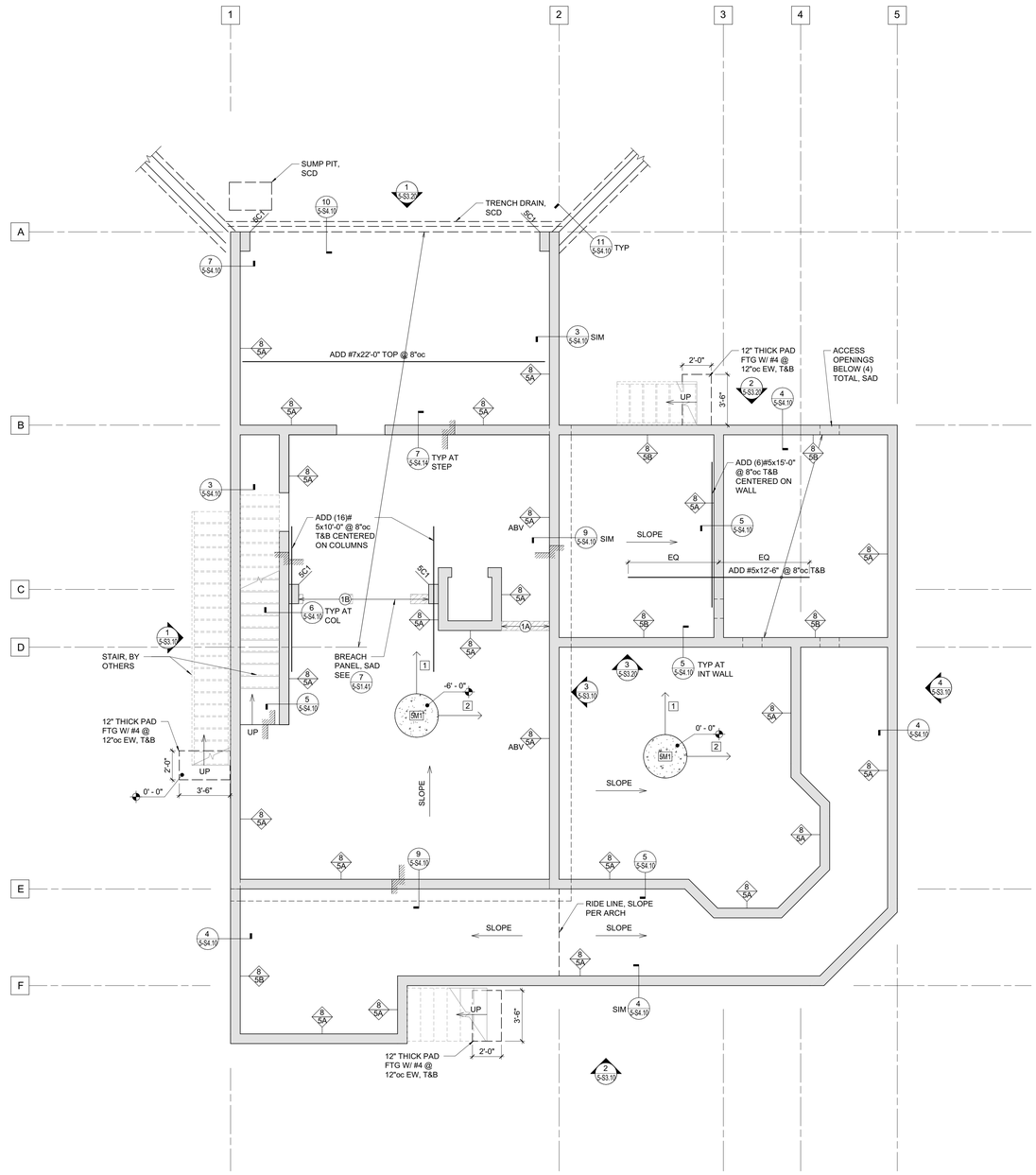

FOUNDATION PLAN

1/4" = 1'-0"

FOUNDATION PLAN NOTES:

1. REFER TO SHEETS **5-S0.10** THROUGH **5-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. SEE DETAILS OR CURB PLAN FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
4. PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO PIPES OR CONDUITS THRU SILL PLATES SHALL BE WITHIN 12" OF HOLDOWN BOLTS. NO MECHANICAL, ELECTRICAL, OR PLUMBING OPENINGS SHALL BE LOCATED IN SHEAR WALLS UNLESS SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

   PIPES THROUGH FOOTINGS SHALL BE PER **2/5-S1.10** AND **3/5-S1.10**

   PIPES PARALLEL TO FOOTINGS SHALL BE PER **4/5-S1.10** .

   PIPES AT MAT FOUNDATION SHALL BE PER **9/5-S4.14** .
5. ELEVATION OF THE TOP OF FINISHED SLAB = -6'-0", UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
1 / 5A	1/5-S4.11	INDICATES CAST IN PLACE CONCRETE WALL PANEL W/ THICKNESS "t" AND REINFORCING TYPE "5A" PER SCHEDULE TYP, UNO.
5C1	1/5-S4.12	INDICATES CONCRETE COLUMN TYPE '5C1' PER SCHEDULE, TYP, UNO
1A		INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A", SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
		INDICATES FOUNDATION.
88		INDICATES GRIDLINE AT FACE OF WALL.
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
	7/5-S4.14 9/5-S4.10	INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
1 / S3.1		INDICATES ELEVATION.
1 / 5M1 / 2	1/5-S4.10	INDICATES CONCRETE MAT FOUNDATION TYPE '5M1' PER SCHEDULE AND REINF LAYER DIRECTIONS. INCREASE SLAB THICKNESS AS REQUIRED TO SLOPE TOP OF SLAB TO DRAINS PER ARCH. MAT TO BE PLACED OVER VAPOR BARRIER OVER 12" OF NON-EXPANSIVE SOIL CONSISTING OF COMPACTED IMPORTED SELECT FILL OR LIME TREATED ON-SITE SOIL.

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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Sheet Title

BUILDING 5 FOUNDATION PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S2.10
Drawing No.

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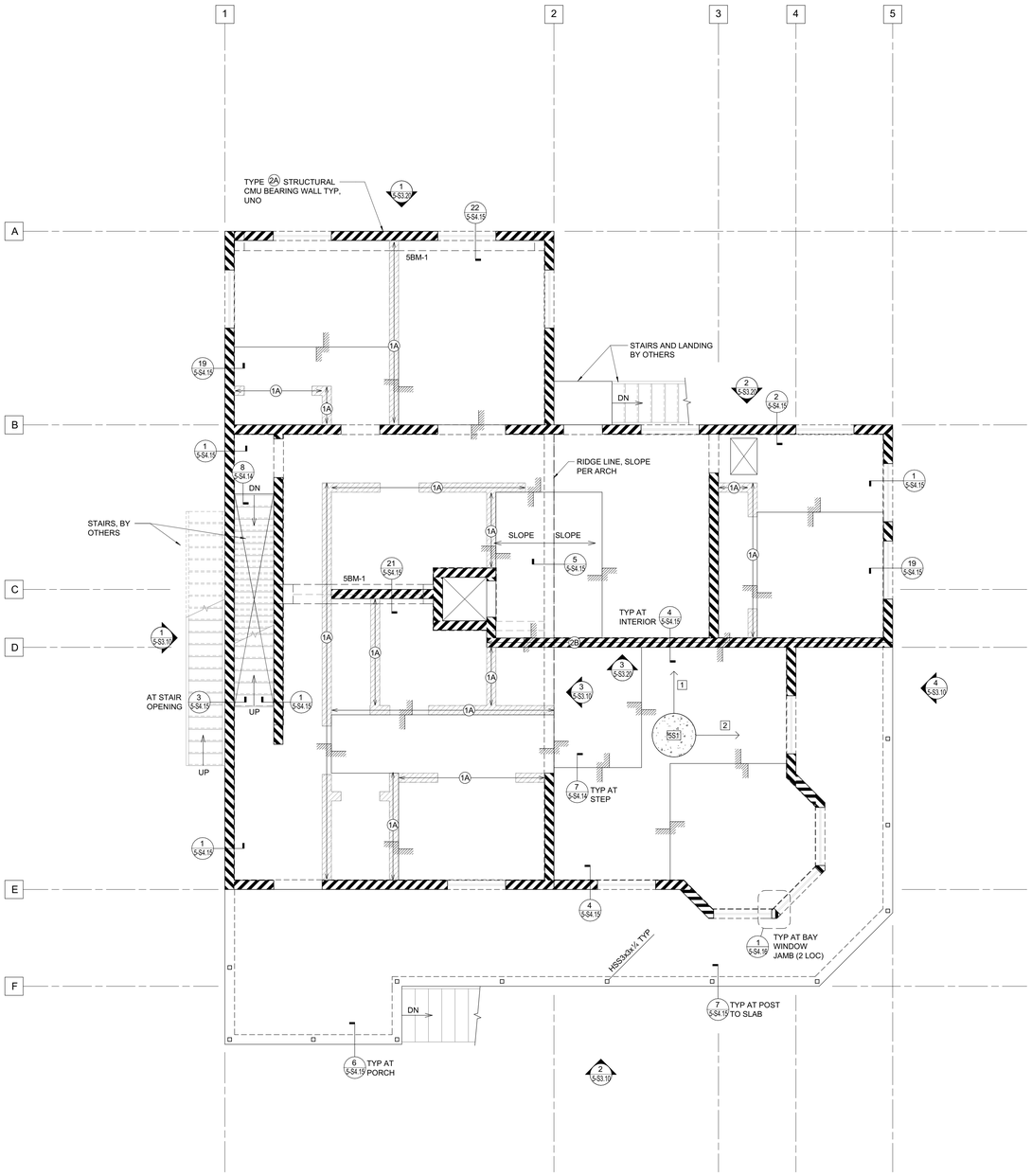

NORTH

FIRST FLOOR FRAMING PLAN

1/4" = 1'-0"

FLOOR FRAMING PLAN NOTES:

1. REFER TO SHEETS **S-S0.10** THROUGH **S-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. SEE ARCHITECTURAL DRAWINGS FOR EDGE OF SLAB, FACE OF WALL, ETCETERA.
4. SEE ARCHITECTURAL DRAWINGS FOR TOP OF SLAB.
5. BEAM CENTERLINES TO ALIGN WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
2A	1/S-S1.40	INDICATES STRUCTURAL CMU BEARING WALL, TYPE "2A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
1A	1/S-S1.40	INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
		INDICATES STRUCTURAL CMU OR CONCETE WALL BELOW.
5BM-1	1/S-S4.13	INDICATES CONCRETE BEAM AND TYPE "5BM-1" PER SCHEDULE TYP, UNO.
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
88		INDICATES GRIDLINE AT FACE OF STUD.
		INDICATES STEEL COLUMN.
1 / SS1 / 2	1/S-S4.14	INDICATES SUSPENDED STRUCTURAL SLAB, TYPE "SS1" PER SCHEDULE AND REINF LAYER DIRECTIONS.
2	1/S-S1.50	INDICATES BARE METAL DECK AND DIRECTION OF DECK SPAN. SEE TYPICAL DETAILS FOR ADDL INFO.
	5/S-S4.14	INDICATES SLAB OPENING, SEE ARCHITECTURAL AND MEP DRAWINGS FOR EXACT LOCATIONS
MU 1,000#		INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
1 / S3.1		INDICATES ELEVATION.
	7/S-S4.14	INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 5
FIRST FLOOR FRAMING PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S2.20
Drawing No.

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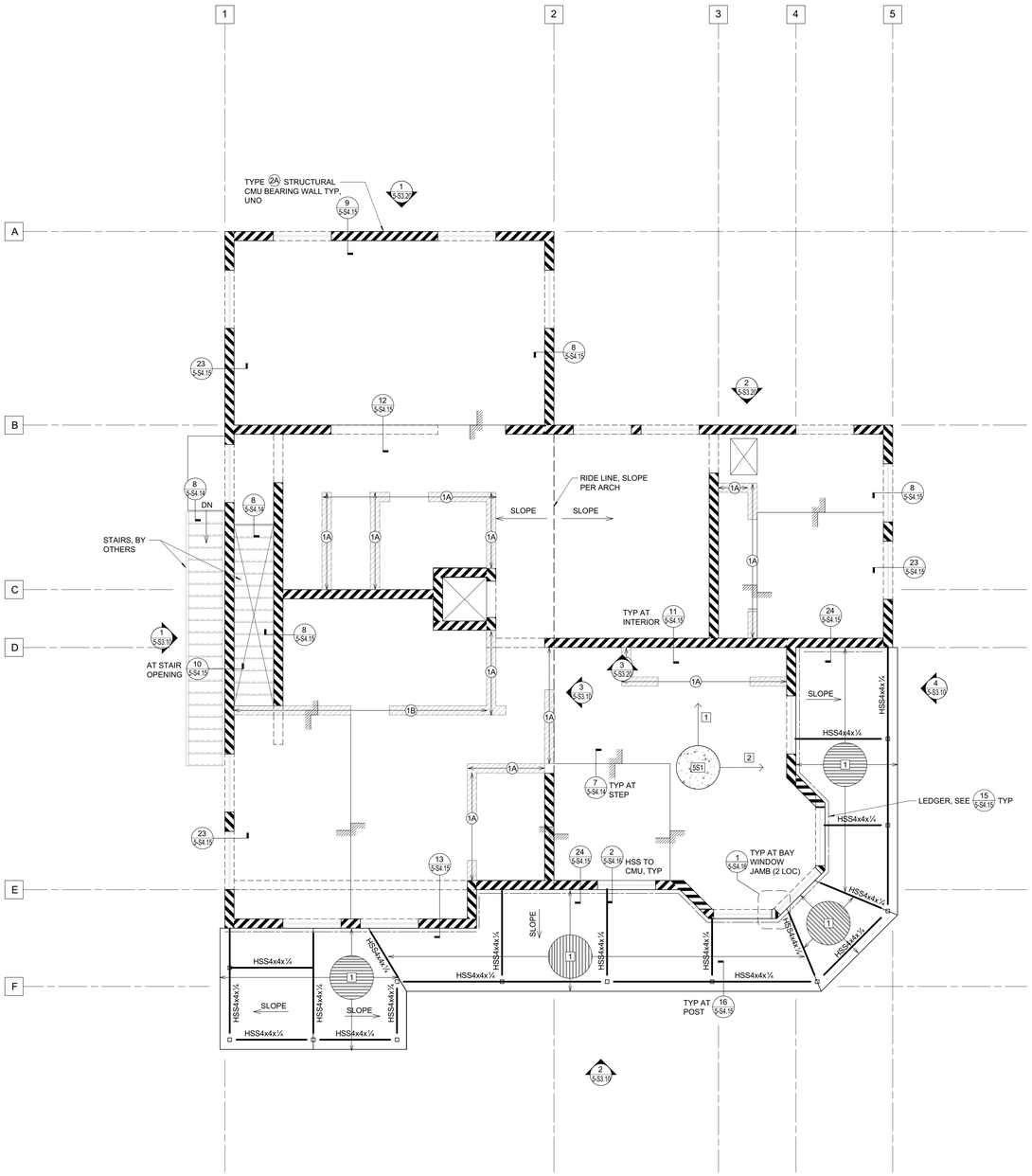

NORTH

SECOND FLOOR FRAMING PLAN

1/4" = 1'-0"

FLOOR FRAMING PLAN NOTES:

1. REFER TO SHEETS **S-S0.10** THROUGH **S-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. SEE ARCHITECTURAL DRAWINGS FOR EDGE OF SLAB, FACE OF WALL, ETCETERA.
4. SEE ARCHITECTURAL DRAWINGS FOR TOP OF SLAB.
5. BEAM CENTERLINES TO ALIGN WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
2A	1/S-S1.40	INDICATES STRUCTURAL CMU BEARING WALL, TYPE "2A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
1A	1/S-S1.40	INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
		INDICATES STRUCTURAL CMU OR CONCETE WALL BELOW.
5BM-1	1/S-S4.13	INDICATES CONCRETE BEAM AND TYPE "5BM-1" PER SCHEDULE TYP, UNO.
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
88		INDICATES GRIDLINE AT FACE OF STUD.
		INDICATES STEEL COLUMN.
1 §S1 2	1/S-S4.14	INDICATES SUSPENDED STRUCTURAL SLAB, TYPE "SS1" PER SCHEDULE AND REINF LAYER DIRECTIONS.
2	1/S-S1.50	INDICATES BARE METAL DECK AND DIRECTION OF DECK SPAN. SEE TYPICAL DETAILS FOR ADDL INFO.
	5/S-S4.14	INDICATES SLAB OPENING, SEE ARCHITECTURAL AND MEP DRAWINGS FOR EXACT LOCATIONS
MU 1,000#		INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
1 S-S3.1/		INDICATES ELEVATION.
	7/S-S4.14	INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.

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ENGINEERING DIVISION

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DRAWN BY:	APPROVAL RECD:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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KEVIN G. ZUCCO — No. 4861 — STRUCTURAL — STATE OF CALIFORNIA — REGISTERED PROFESSIONAL ENGINEER

Sheet Title

BUILDING 5 SECOND FLOOR FRAMING PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S2.30
Drawing No.

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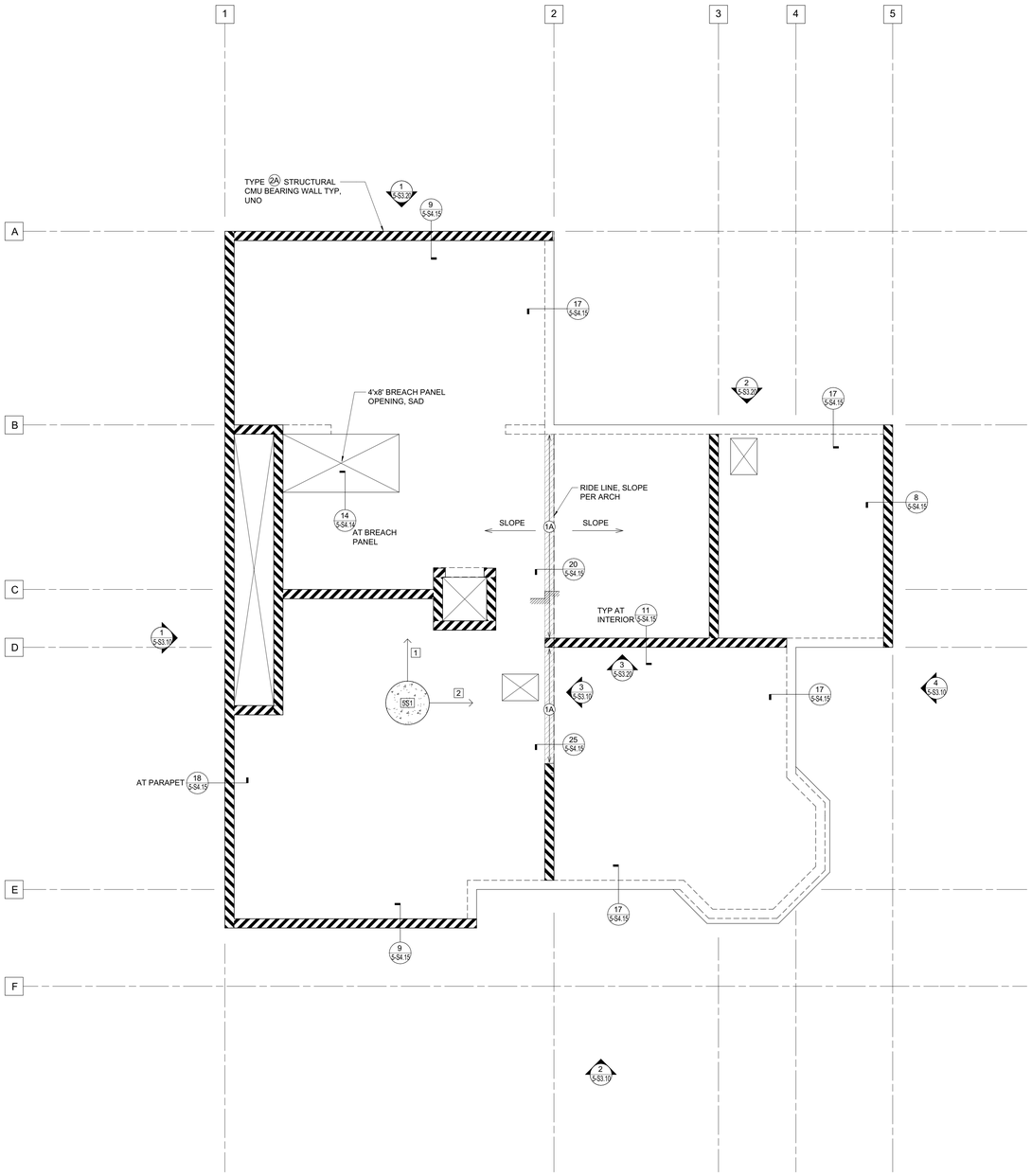

NORTH

ATTIC SPACE FRAMING PLAN

1/4" = 1'-0"

FLOOR FRAMING PLAN NOTES:

1. REFER TO SHEETS **5-S0.10** THROUGH **5-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
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3. SEE ARCHITECTURAL DRAWINGS FOR EDGE OF SLAB, FACE OF WALL, ETCETERA.
4. SEE ARCHITECTURAL DRAWINGS FOR TOP OF SLAB.
5. BEAM CENTERLINES TO ALIGN WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
2A	1/5-S1.40	INDICATES STRUCTURAL CMU BEARING WALL, TYPE "2A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
1A	1/5-S1.40	INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
		INDICATES STRUCTURAL CMU OR CONCETE WALL BELOW.
5BM-1	1/5-S4.13	INDICATES CONCRETE BEAM AND TYPE "5BM-1" PER SCHEDULE TYP, UNO.
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
88		INDICATES GRIDLINE AT FACE OF STUD.
		INDICATES STEEL COLUMN.
1 / SS1 / 2	1/5-S4.14	INDICATES SUSPENDED STRUCTURAL SLAB, TYPE "SS1" PER SCHEDULE AND REINF LAYER DIRECTIONS.
2	1/5-S1.50	INDICATES BARE METAL DECK AND DIRECTION OF DECK SPAN. SEE TYPICAL DETAILS FOR ADDL INFO.
	5/5-S4.14	INDICATES SLAB OPENING, SEE ARCHITECTURAL AND MEP DRAWINGS FOR EXACT LOCATIONS
MU 1,000#		INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
1 / S3.1		INDICATES ELEVATION.
	7/5-S4.14	INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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KEVIN G. ZUCCO
No. 4861
STRUCTURAL
STATE OF CALIFORNIA

Sheet Title

BUILDING 5
ATTIC FRAMING PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S2.40
Drawing No.

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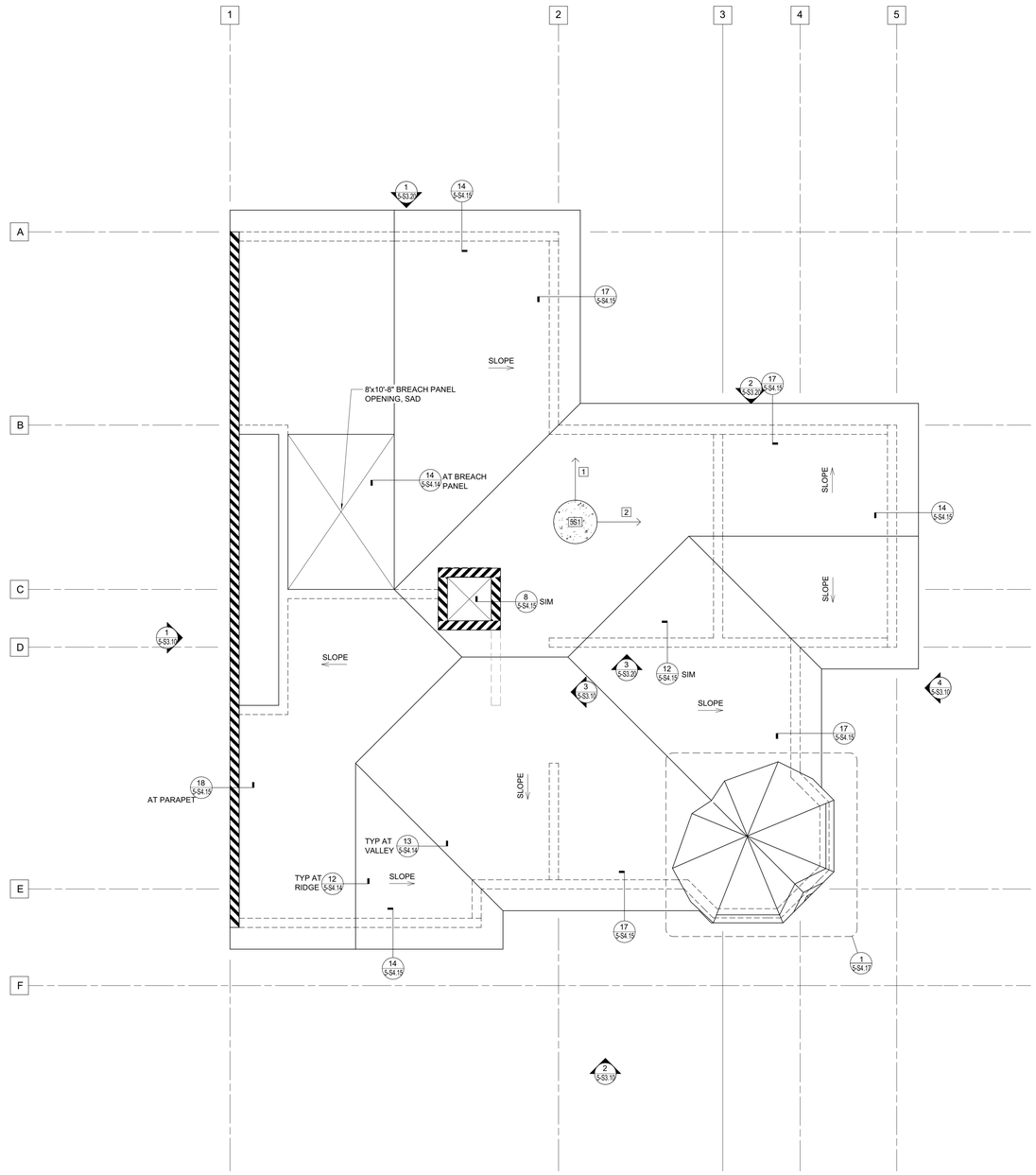

ROOF FRAMING PLAN

1/4" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. REFER TO SHEETS **5-S0.10** THROUGH **5-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
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4. SEE ARCHITECTURAL DRAWINGS FOR TOP OF SLAB.
5. BEAM CENTERLINES TO ALIGN WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
	1/5-S1.40	INDICATES STRUCTURAL CMU BEARING WALL, TYPE "2A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
1A	1/5-S1.40	INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A", SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
		INDICATES STRUCTURAL CMU OR CONCETE WALL BELOW.
5BM-1	1/5-S4.13	INDICATES CONCRETE BEAM AND TYPE "5BM-1" PER SCHEDULE TYP, UNO.
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
88		INDICATES GRIDLINE AT FACE OF STUD.
		INDICATES STEEL COLUMN.
1 / SS1 / 2	1/5-S4.14	INDICATES SUSPENDED STRUCTURAL SLAB, TYPE "5S1" PER SCHEDULE AND REINF LAYER DIRECTIONS.
2	1/5-S1.50	INDICATES BARE METAL DECK AND DIRECTION OF DECK SPAN. SEE TYPICAL DETAILS FOR ADDL INFO.
DS		INDICATES DEPRESSED SLAB, SEE ARCHITECTURAL AND PLUMBING DRAWINGS FOR COMPLETE LOCATIONS, DEPTH AND SLOPE INFORMATION.
	5/5-S4.14	INDICATES SLAB OPENING, SEE ARCHITECTURAL AND MEP DRAWINGS FOR EXACT LOCATIONS
MU 1,000lbs		INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
S3.1		INDICATES ELEVATION.
	7/5-S4.14	INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 5
ROOF FRAMING PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S2.50

Drawing No.

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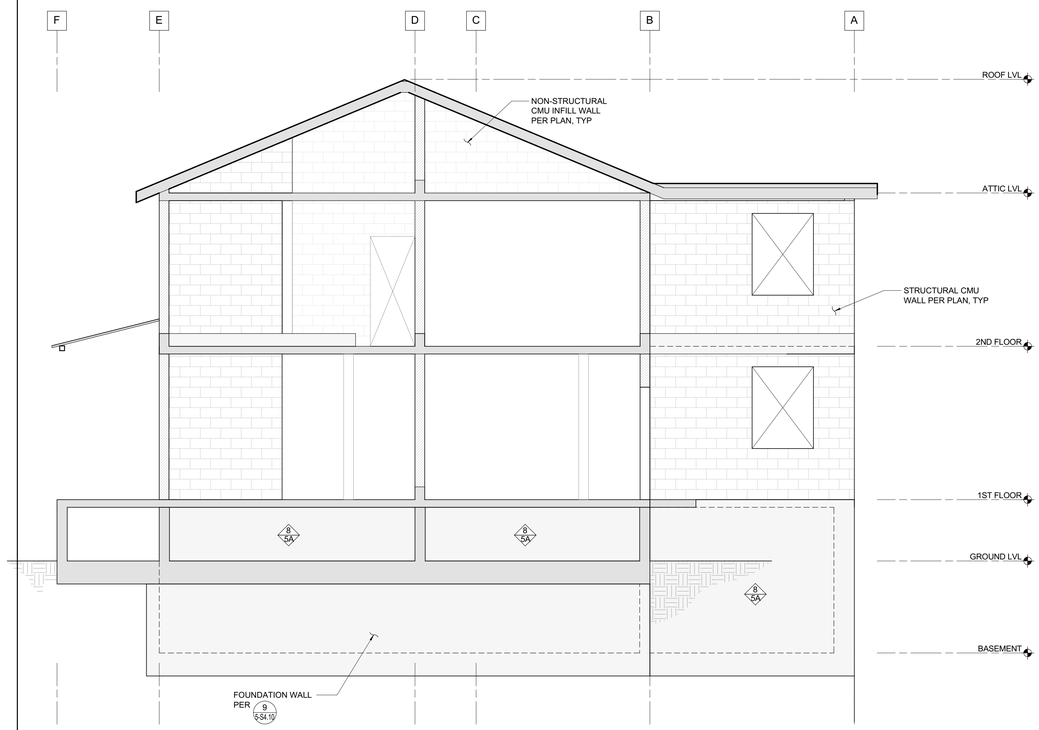
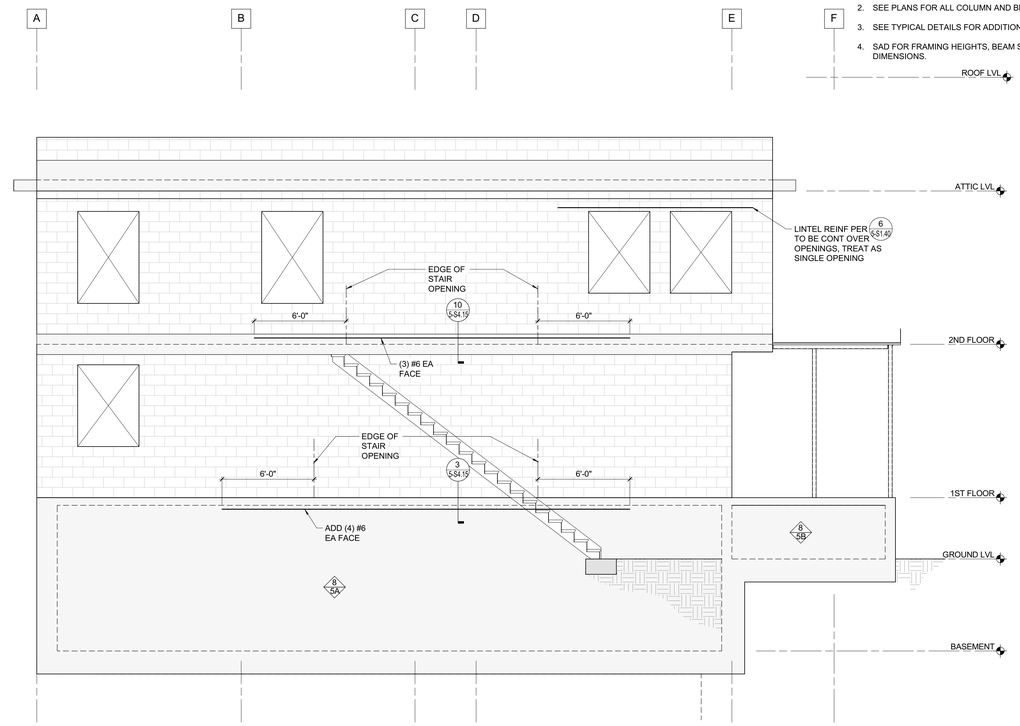
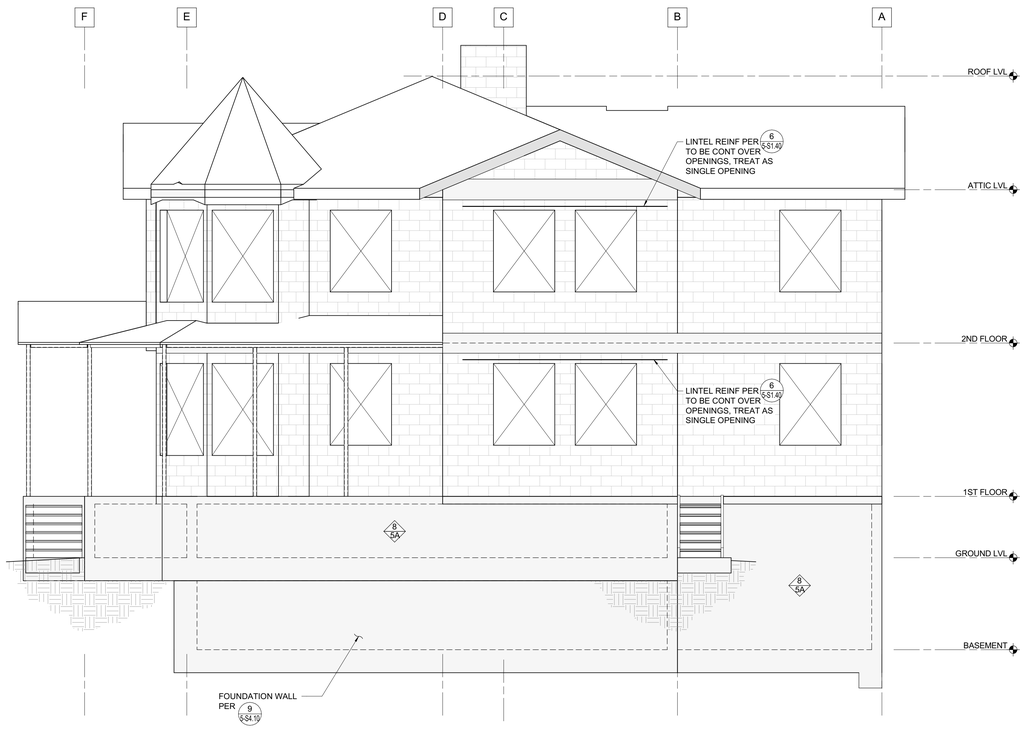


3 SECTION AT GRID 2
1/4" = 1'-0"



1 ELEVATION AT GRID 1
1/4" = 1'-0"



4 ELEVATION AT GRID 5
1/4" = 1'-0"

2 ELEVATION AT GRID F
1/4" = 1'-0"

WALL ELEVATION NOTES:

1. ELEVATIONS ARE SCHEMATIC. SEE PLANS FOR ADDITIONAL INFORMATION.
2. SEE PLANS FOR ALL COLUMN AND BEAM SIZES.
3. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION
4. SAD FOR FRAMING HEIGHTS, BEAM SLOPES AND ALL DIMENSIONS.

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO No. 4961 STRUCTURAL STATE OF CALIFORNIA

Sheet Title

BUILDING 5 ELEVATIONS AND SECTIONS

Drawn By: LS Checked By: SRP

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

5-S3.10
Drawing No.

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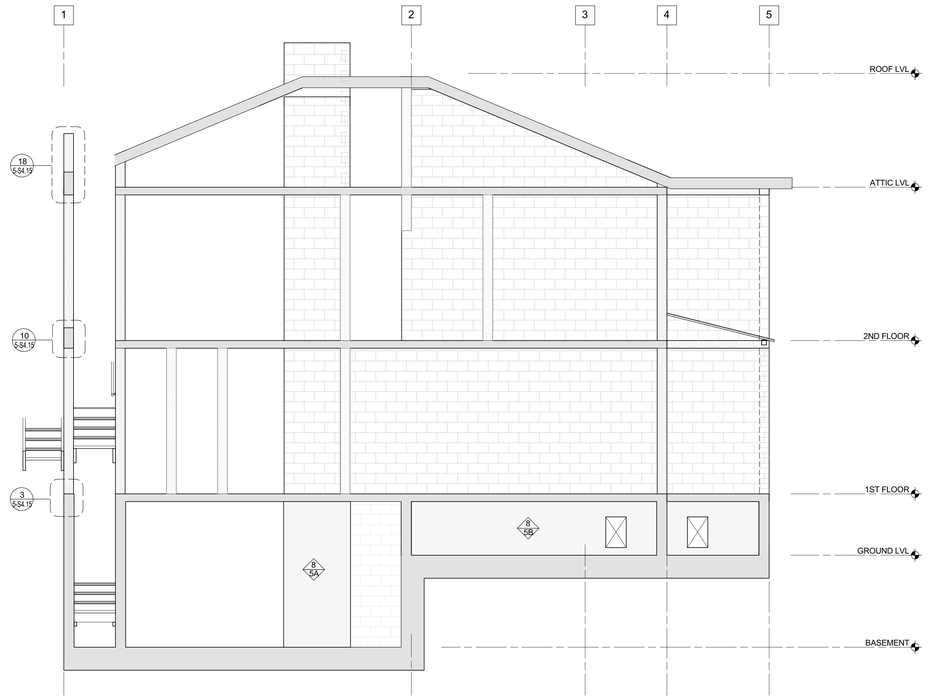
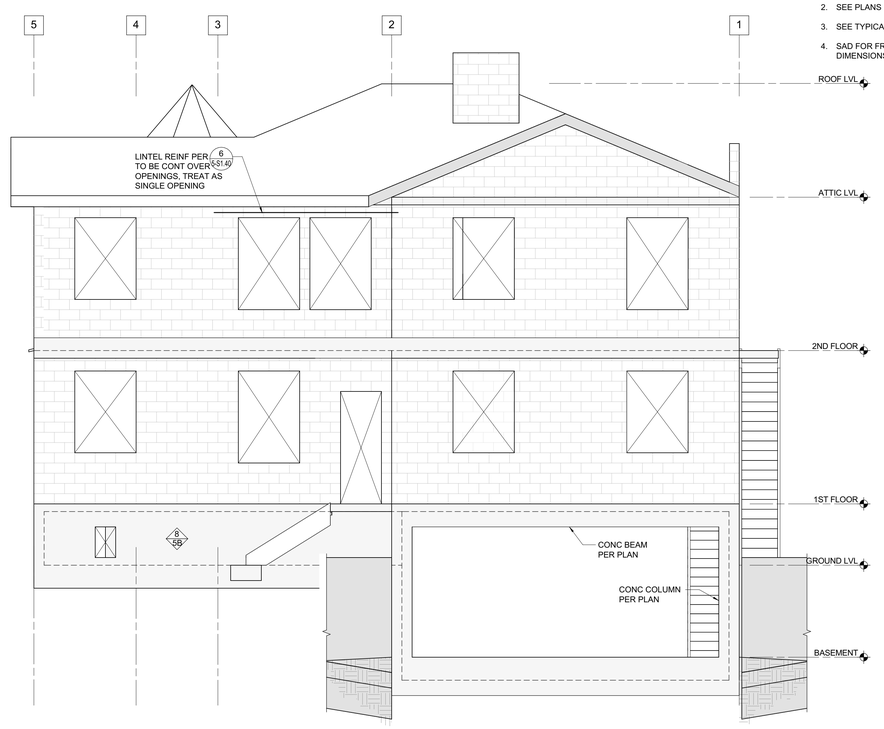


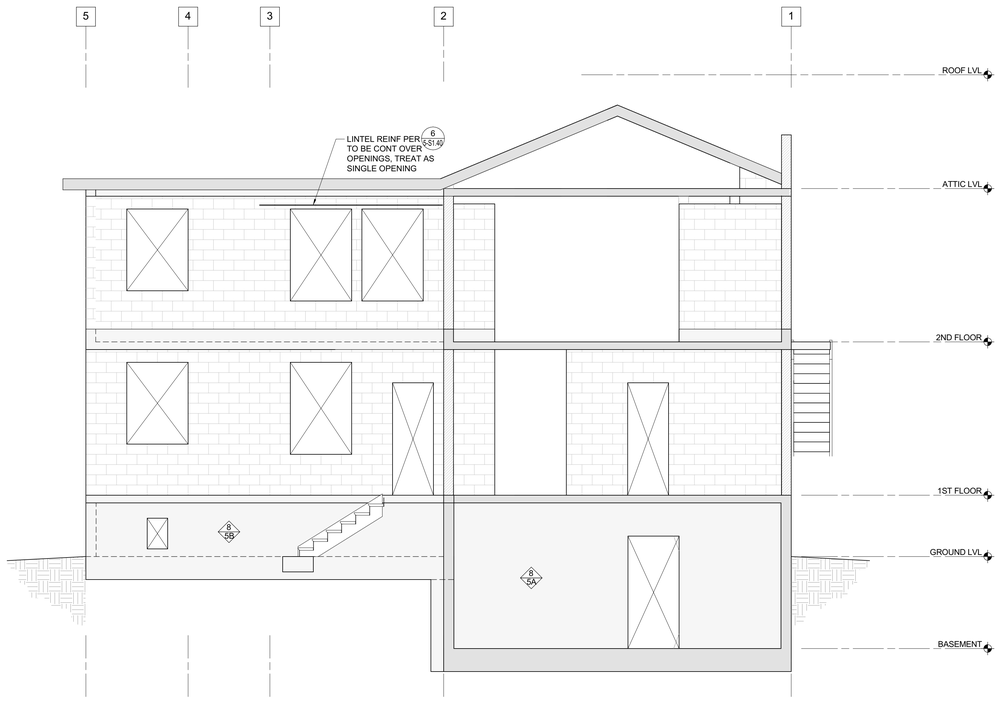
3 SECTION AT GRID D
1/4" = 1'-0"

WALL ELEVATION NOTES:

1. ELEVATIONS ARE SCHEMATIC. SEE PLANS FOR ADDITIONAL INFORMATION.
2. SEE PLANS FOR ALL COLUMN AND BEAM SIZES.
3. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION
4. SAD FOR FRAMING HEIGHTS, BEAM SLOPES AND ALL DIMENSIONS.



1 ELEVATION AT GRID A
1/4" = 1'-0"



2 SECTION AT GRID B
1/4" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
No. 4861
STRUCTURAL
STATE OF CALIFORNIA

Sheet Title

BUILDING 5 ELEVATIONS AND SECTIONS

Drawn By: LS Checked By: SRP

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

5-S3.20
Drawing No.

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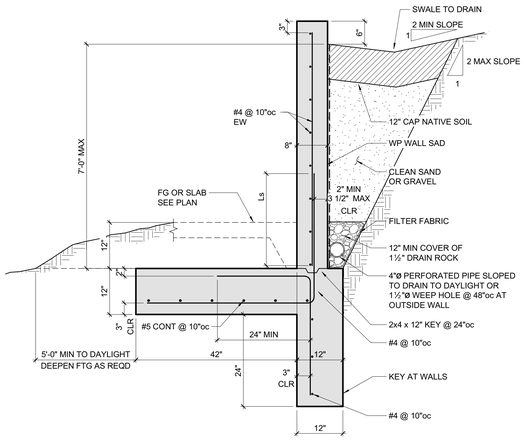
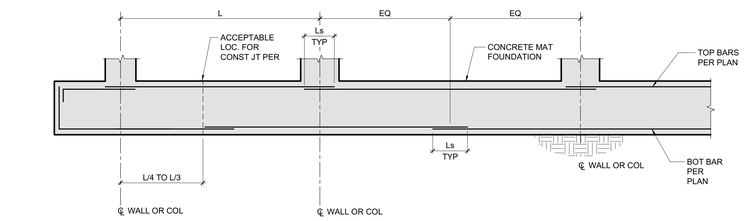


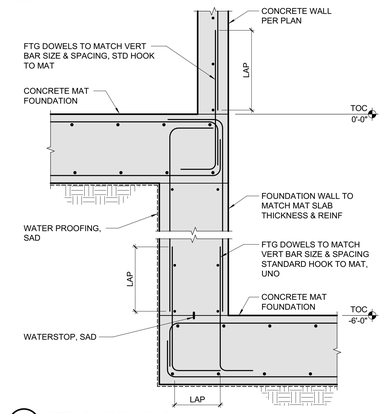
NOTES:
1. PROVIDE FORMED DOWELED CONSTRUCTION JOINTS AT 100'-0"oc MAX.
2. PROVIDE VERTICAL CONTROL JOINTS AT 12'-0" ON CENTER MAX. COORDINATE LOCATIONS W/ ARCH AND ENGINEER.

11 RETAINING WALL
3/4" = 1'-0"

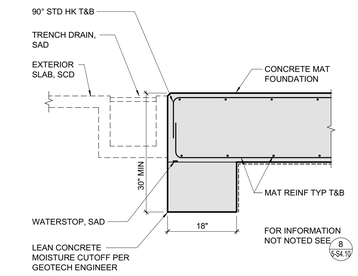


NOTES:
1. ADDITIONAL BARS PER PLAN SHALL BE EQUALLY SPACED. MAX SPACING SHALL BE 12"
2. NO SPLICES PERMITTED, UNO.
3. LAP BOTTOM BARS AT MIDSPAN & TOP BARS UNDER WALL/COL. SEE **1/S1.10** FOR LAP LENGTHS.
4. WHERE BAR LENGTHS OR EXTENSIONS ARE NOTED PER PLAN THIS LENGTH GOVERNS.

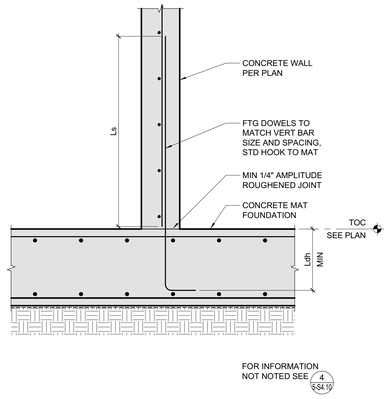
8 TYPICAL CONCRETE MAT FOUNDATION REINFORCEMENT
3/4" = 1'-0"



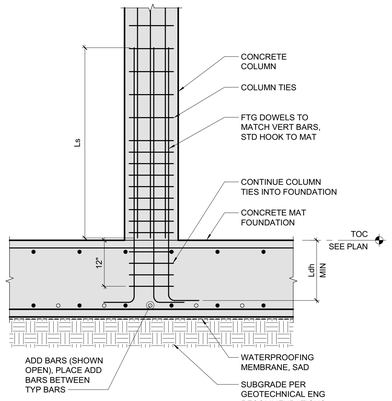
9 STEP AT MAT FOUNDATION
3/4" = 1'-0"



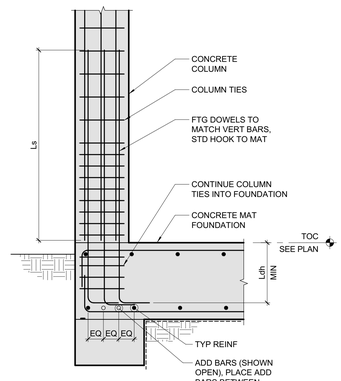
10 EDGE OF MAT FOUNDATION AT ENTRY
3/4" = 1'-0"



5 TYPICAL WALL TO MAT FOUNDATION
3/4" = 1'-0"



6 TYPICAL COLUMN TO MAT FOUNDATION
3/4" = 1'-0"

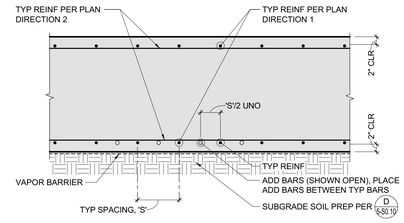


7 EXTERIOR COLUMN TO MAT FOUNDATION
3/4" = 1'-0"

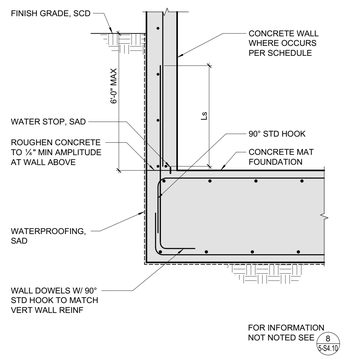
CONCRETE MAT FOUNDATION SCHEDULE						
MAT MARK	MAT THICKNESS	TOP BAR SPAN [1] DIRECTION	TOP BAR SPAN [2] DIRECTION	BOTTOM BAR SPAN [1] DIRECTION	BOTTOM BAR SPAN [2] DIRECTION	REMARKS
5M1	24"	#7 @ 8"oc	#7 @ 8"oc	#7 @ 8"oc	#7 @ 8"oc	REINF - A615 GR 80

NOTES:
1. SEE OTHER DETAILS THIS SHEET FOR TYP SLAB DETAILS.
2. REFER TO PLANS FOR ADDITIONAL REINFORCING (ADD BARS).
3. SEE **2/S-S4.10** FOR REBAR LAYERING AND COVER. SEE **8/S-S4.10** FOR TYPICAL MAT REINFORCING LAYOUT.
4. WHERE MATS ARE SLOPED, MAT THICKNESS NOTED IS MINIMUM.

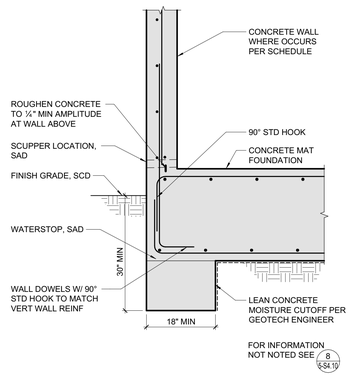
1 CONCRETE MAT FOUNDATION SCHEDULE
NOT TO SCALE



2 TYPICAL MAT SLAB SECTION
3/4" = 1'-0"



3 MAT FOUNDATION SECTION AT PERIMETER
3/4" = 1'-0"



4 MAT FOUNDATION SECTION AT PERIMETER
3/4" = 1'-0"

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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Sheet Title

BUILDING 5 FOUNDATION DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S4.10
Drawing No.

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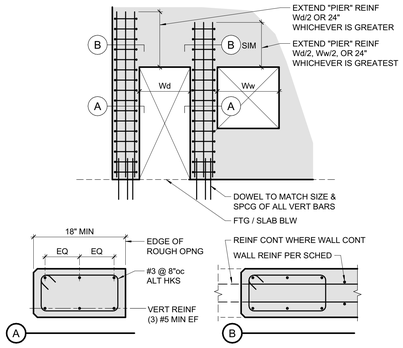
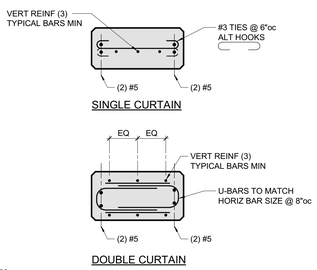
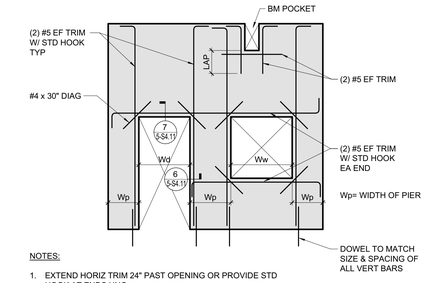


8 WALL PIER REINFORCING AT DOORS AND WINDOWS
1" = 1'-0"



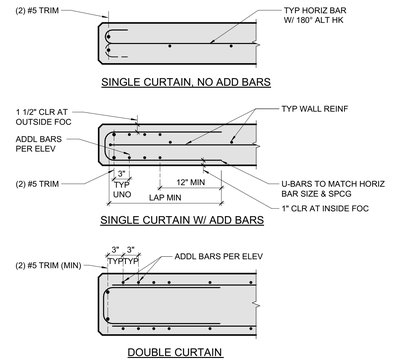
NOTES:
1. EXTEND U-BARS OR TIES 24" MIN PAST OPENINGS

9 WALL PIER REINFORCING
1" = 1'-0"



NOTES:
1. EXTEND HORIZ TRIM 24" PAST OPENING OR PROVIDE STD HOOK AT ENDS UNO.
2. WALL SEGMENTS LESS THAN 36" ARE PIERS.
3. WHERE Wd > 4'-0" OR Ww > 4'-0", Wp MUST BE ≥ 27", UNO.
4. Wp ≤ 24" SEE **8/5-S4.11** , UNO.
5. 24" < Wp TO 36" SEE **9/5-S4.11** , UNO.
6. OMIT STD HOOK AT U-BAR.

5 TYPICAL TRIM STEEL AT OPENINGS
1" = 1'-0"

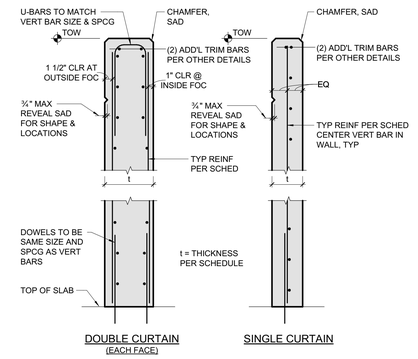


6 REINFORCEMENT AT EDGE OF WALL OPENING
1" = 1'-0"

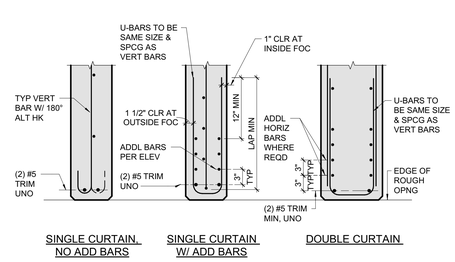
CONCRETE WALL REINFORCING SCHEDULE						
WALL TYPE	THICKNESS (N)	# OF CURTAINS	HORIZONTAL REINFORCING	VERTICAL REINFORCING	REFERENCE DETAIL	REMARKS
8 S-S4.1	8"	1	#5 @ 16"oc	#5 @ 16"oc, CENTERED		
8 S-S4.1	8"	1	#5 @ 8"oc, EF	#5 @ 8"oc, CENTERED		ARCH EXPOSED

NOTES:
1. SEE CONCRETE WALL ELEVATIONS FOR ADDITIONAL WALL REINFORCEMENT. REINFORCEMENT SHOWN ON WALL ELEVATIONS SHALL GOVERN OTHER DETAILS.
2. FOR WALL SECTION SEE **2/5-S4.11** .
3. FOR TYPICAL WALL REINFORCEMENT SEE **3/5-S4.11** .
4. FOR TYPICAL TRIM STEEL AT OPENINGS SEE **5/5-S4.11** .
5. FOR TYPICAL CORNER, INTERSECTION, AND END REINFORCING SEE **7/5-S1.10** .

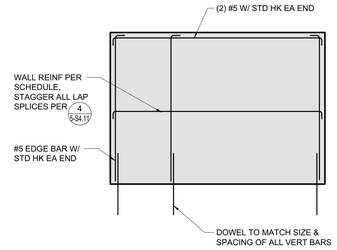
1 CONCRETE WALL SCHEDULE
1/2" = 1'-0"



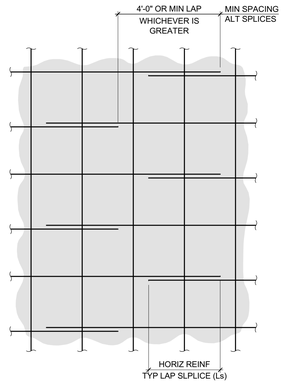
2 SOLID WALL SECTION
1" = 1'-0"



7 REINFORCEMENT AT DOOR/WINDOW HEADER
1" = 1'-0"



3 TYPICAL WALL REINFORCING
1" = 1'-0"



4 TYPICAL WALL REINFORCING SPLICES
1" = 1'-0"

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Sheet Title

BUILDING 5
CONCRETE WALL DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S4.11
Drawing No.

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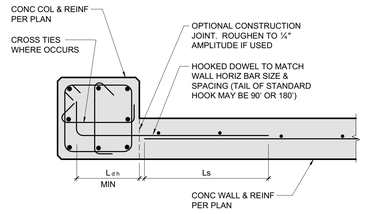
CONCRETE COLUMN SCHEDULE							
TYPE MARK	SIZE	VERT REINF	LENGTH "L1"	HORIZONTAL REINF (TIES & CROSS TIES WHERE OCCURS)		DETAIL	REMARKS
				S1	S2		
5C1	16" x 16"	(8) #6	24"	#4 TIE w/ #4 CROSSTIE @ 3½"oc	#4 TIE w/ #4 CROSSTIE @ 4½"oc	6/5-S4.12	

NOTES:

1. ALL CONC REINF SHALL BE ASTM A706.
2. REFER TO DETAILS 2/5-S4.12 & 3/5-S4.12 FOR TYPICAL DEFENITION OF TERMS USED IN THIS TABLE.
3. REFER TO DETAILS 4/5-S4.12 & 5/5-S4.12 FOR CONCRETE WALL TO COLUMN CONNECTION.

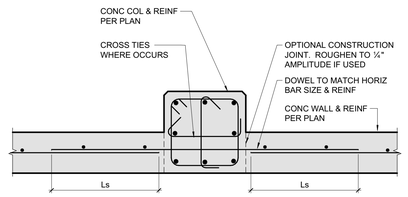
1 CONCRETE COLUMN SCHEDULE
1/2" = 1'-0"



PLAN VIEW

NOTE: SIMILAR AT WALLS WITH (2) CURTAINS OF REINF.

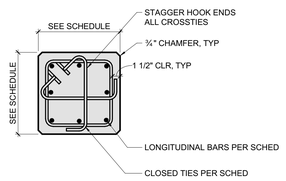
4 END OF WALL AT CONCRETE COLUMN CONNECTION
1" = 1'-0"



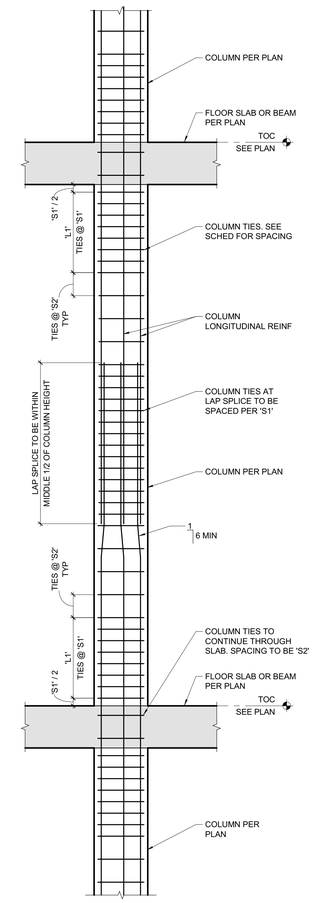
PLAN VIEW

NOTE: SIMILAR AT WALLS WITH (2) CURTAINS OF REINF.

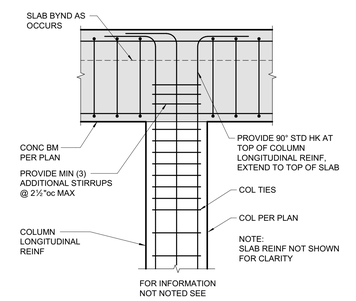
5 WALL AT CONCRETE COLUMN CONNECTION
1" = 1'-0"



6 COLUMN SECTION
1" = 1'-0"



2 TYPICAL COLUMN ELEVATION
3/4" = 1'-0"



3 TOP OF INTERIOR COLUMNS
3/4" = 1'-0"

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Sheet Title

BUILDING 5 CONCRETE COLUMN DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S4.12
Drawing No.

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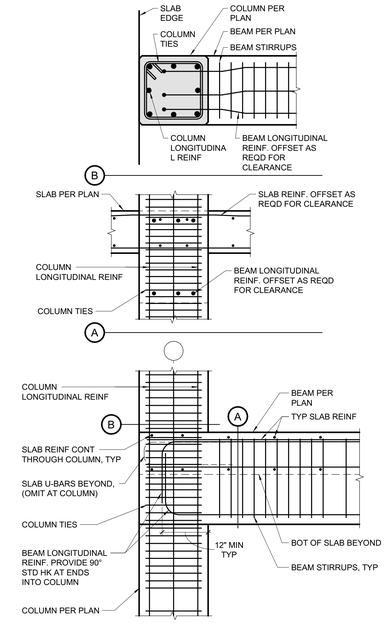


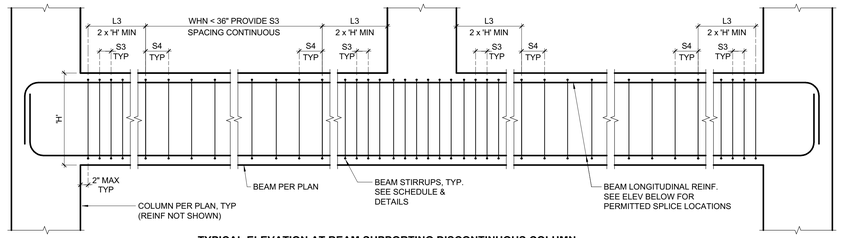
6 TYPICAL BEAM/COLUMN INTERSECTION
3/4" = 1'-0"

CONCRETE BEAM SCHEDULE																
						LONGITUDINAL REINFORCEMENT					STIRRUPS AND TIES					
						BOTTOM		TOP					SPACING			
MARK	REFERENCE LEVEL	B (in)	H (in)	REF ELEV	REF SECT	TYP	ADD	TYP	ADD "A"	SIDE BARS	TYP	SIZE	S3	S4	LENGTH L_3	REMARKS
5BM-1		16"	16"			3-#6	-	3-#6	-	-	T1	#4	4"	8"	4'-0"	

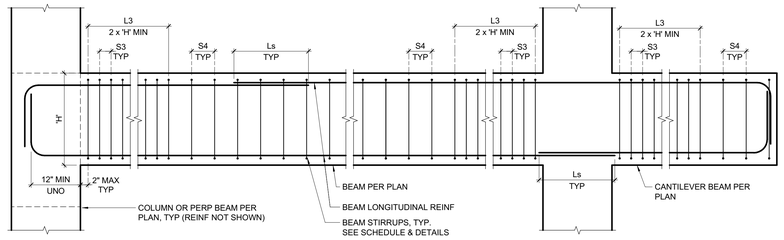
NOTES:

1. REFER TO DETAILS **2/5-S4.13** , **4/5-S4.13** & **5/5-S4.13** FOR TYPICAL DEFENITION OF TERMS USED IN THIS TABLE.
2. ALL BEAM LONGITUDINAL REINF TO BE ASTM A706.
3. FOR TYPICAL BEAM COLUMN INTERSECTION, SEE **6/5-S4.13** .
4. FOR TYPICAL BEAM TO BEAM INTERSECTION, SEE **7/5-S4.13** .

1 CONCRETE BEAM SCHEDULE
12" = 1'-0"



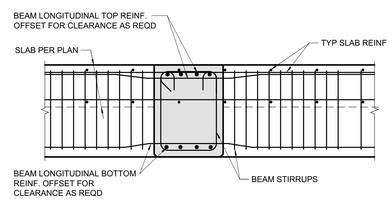
TYPICAL ELEVATION AT BEAM SUPPORTING DISCONTINUOUS COLUMN



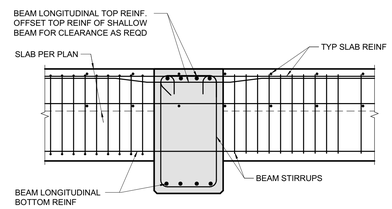
TYPICAL BEAM ELEVATION

NOTES:

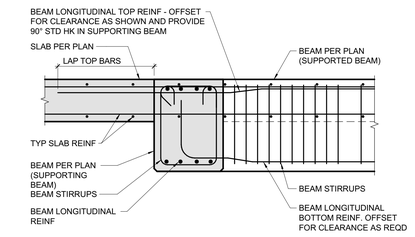
1. LAP TOP BEAM LONGITUDINAL BARS AT MIDSPAN & BOTTOM BARS OVER SUPPORTS. SEE **1/5-S1.10** FOR LAP LENGTHS.
2. BEAM LONGITUDINAL BARS TO BE TERMINATED WITH 90° STANDARD HOOK UNLESS DETAILED OTHERWISE.
3. WHERE BAR EXTENSIONS ARE NOTED IN PLAN OR IN OTHER SPECIFIC DETAILS THIS LENGTH GOVERNS.
4. COLUMN TIES AND LONGITUDINAL REINF TO EXTEND THROUGH BEAM COLUMN JOINT.



TWO-SIDED EQUAL DEPTH BEAM TO BEAM CONNECTIONS



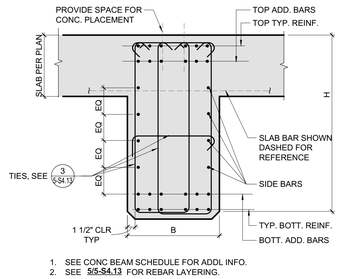
TWO-SIDED BEAM TO BEAM CONNECTIONS



ONE-SIDED BEAM TO BEAM CONNECTIONS

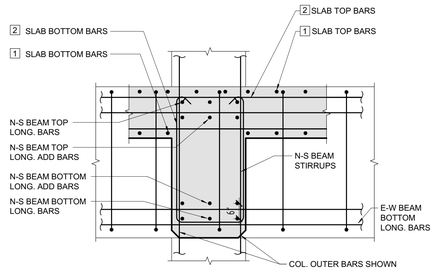
7 TYPICAL BEAM TO BEAM CONNECTION
3/4" = 1'-0"

2 TYPICAL BEAM TRANVERSE REINFORCING
3/4" = 1'-0"

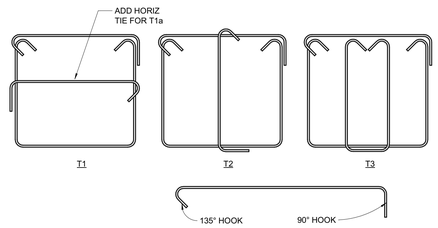


1. SEE CONC BEAM SCHEDULE FOR ADDL INFO.
2. SEE **5/5-S4.13** FOR REBAR LAYERING.

4 TYPICAL BEAM SECTION DETAIL
1/2" = 1'-0"



5 BEAM REBAR LAYERING DETAIL
1/2" = 1'-0"



TYPICAL CROSSTIE

CROSSTIE NOTES

A. SIZE AND SPACING TO MATCH STIRRUPS OR TIES, TYP, UNO
B. FOR BEAMS AND GIRDERS WHERE SLAB OCCURS ON BOTH SIDES OF MEMBER, ALTERNATE PLACEMENT OF 135° HOOK AT EACH CONSECUTIVE CROSSTIE. WHERE SLAB OCCURS ON ONE SIDE ONLY, PLACE THE 135° HOOK ON THE SIDE WITHOUT SLAB AT EACH CONSECUTIVE CROSSTIE.

NOTES:

1. FOR SIZE AND SPACING OF STIRRUPS SEE SCHEDULE.
2. FOR TYPICAL BAR HOOKS AND BENDS SEE TYPICAL DETAILS.
3. SERPENTINE TIES OF EQUIVALENT CONFIGURATION ARE STRUCTURALLY ACCEPTABLE.

3 STIRRUPS TYPES DETAIL
3/4" = 1'-0"

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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 5 CONCRETE BEAM DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S4.13
Drawing No.

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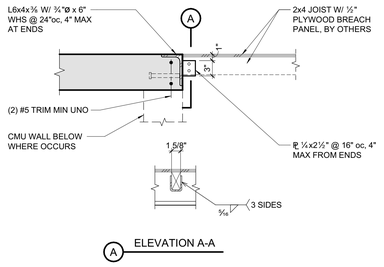
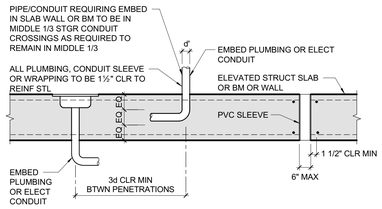


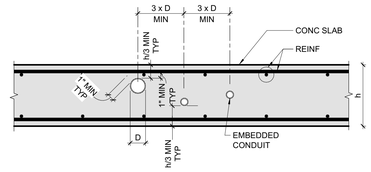
A ELEVATION A-A

14 BREACH PANEL AT CONCRETE SLAB
1" = 1'-0"

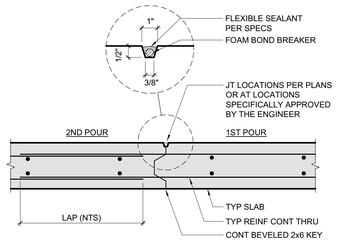


9 PIPE PENETRATIONS IN STRUCTURAL SLAB
3/4" = 1'-0"

NOTES:
1. WHERE MORE THAN ONE SIZE CONDUIT IS USED, D, IS THE OUTSIDE DIAMETER OF THE LARGEST CONDUIT.
2. ALUMINUM CONDUIT IS NOT PERMITTED.
3. PRESSURIZED PIPE SHALL NOT BE USED WITHOUT SEOR WRITTEN APPROVAL.
4. CONDUITS SHALL BE PLACED BETWEEN TOP AND BOTTOM LAYERS OF REINFORCING. WHERE ONLY ONE LAYER IS SPECIFIED IN PLAN AN ADDITIONAL LAYER SHALL BE PLACED NORMAL TO THE EMBEDDED CONDUIT WITH IDENTICAL SIZE AND SPACING TO THE SPECIFIED LAYER

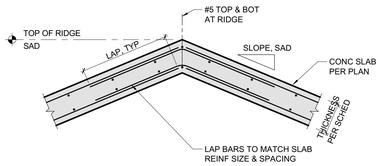


10 TYPICAL DETAIL AT EMBEDDED CONDUITS IN STRUCTURAL SLAB
1" = 1'-0"

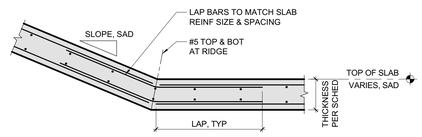


STRUCT SLAB CONSTRUCTION JOINT

11 STRUCTURAL SLAB CONSTRUCTION JOINT
1 1/2" = 1'-0"



12 CONCRETE ROOF SLAB AT RIDGE
3/4" = 1'-0"

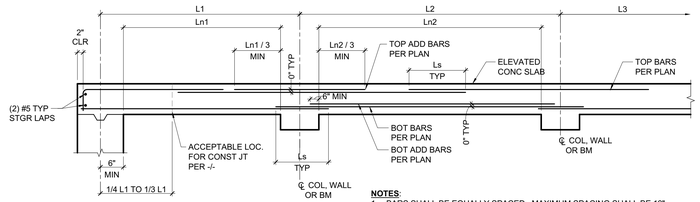


13 CONCRETE ROOF SLAB AT VALLEY
3/4" = 1'-0"

CONCRETE SUSPENDED SLAB SCHEDULE							
SLAB MARK	LEVEL	MIN SLAB THICKNESS	TOP BAR SPAN [1] DIRECTION	TOP BAR SPAN [2] DIRECTION	BOTTOM BAR SPAN [1] DIRECTION	BOTTOM BAR SPAN [2] DIRECTION	REMARKS
5S1	ALL	7"	#5 @ 8"oc	#5 @ 8"oc	#5 @ 8"oc	#5 @ 8"oc	

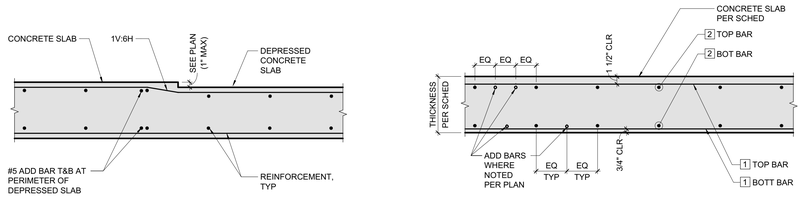
NOTES:
1. SEE OTHER DETAILS THIS SHEET FOR TYP SLAB DETAILS.
2. REFER TO PLANS FOR ADDITIONAL REINFORCING (ADD BARS).
3. SEE **3/5-S4.14** FOR REBAR LAYERING AND COVER.
   SEE **2/5-S4.14** FOR TYPICAL SLAB REINFORCING LAYOUT.
4. PLACE SPAN DIRECTION REINFORCING AT MID DEPTH OF SLAB FOR SINGLE LAYER CONDITIONS, UNO.
5. WHERE SLABS ARE SLOPED, SLAB THICKNESS NOTED IS MINIMUM.
6. SEE PLANS FOR NON-TYPICAL ADD BAR REINFORCING.

1 CONCRETE SUSPENDED SLAB SCHEDULE
NOT TO SCALE



NOTES:
1. BARS SHALL BE EQUALLY SPACED. MAXIMUM SPACING SHALL BE 18"
2. NO SPLICES PERMITTED, UNO.
3. LAP TOP BARS AT MIDSPAN & BOTTOM BARS OVER SUPPORTS. SEE **1/5-S1.10** FOR LAP LENGTHS.
4. REINFORCING TO MAINTAIN CLEARANCE FROM TOP OF SLAB AT SLOPING CONDITIONS.
5. WHERE BAR LENGTHS OR EXTENSIONS ARE NOTED PER PLAN THIS LENGTH GOVERNS.
6. ALL REINF IS LOCATED FROM ℄ OF BEAM OR COLUMN AT ℄ COLUMN STRIP.
7. SEE **5/5-S4.14** FOR TYP SLAB CORNER REINFORCING.
8. SEE **11/5-S4.14** FOR CONSTRUCTION JOINT DETAIL
9. SEE **9/5-S4.14** FOR PIPES
10. CONCRETE TO REMAIN SHORED 28 DAYS MINIMUM.
11. REINF ONLY SHOWN ONE WAY, OPP DIRECTION SIM.
12. PROVIDE MIN 2 - #5 CONT BOTT BARS THRU EA COL, EA WAY.

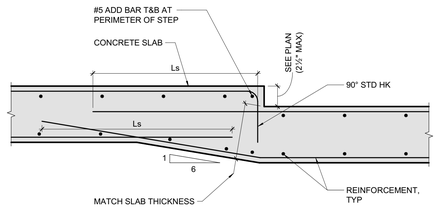
2 TYPICAL ELEVATED CONCRETE SLAB REINFORCEMENT
3/4" = 1'-0"



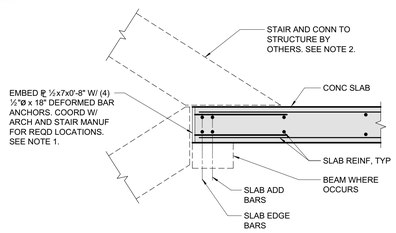
NOTE:
THIS DETAIL IS ONLY PERMITTED WHERE EXPLICITY NOTED ON PLANS.

[1] = PRIMARY LAYER (LONGITUDINAL) PER PLAN
[2] = PRIMARY LAYER (TRANSVERSE) PER PLAN

6 DEPRESSION AT SUSPENDED SLAB
1" = 1'-0"



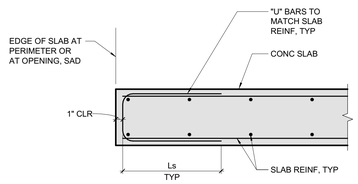
7 TYPICAL STEP IN SUSPENDED SLAB DETAIL
1" = 1'-0"



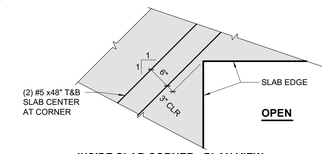
NOTES:
1. CONNECTION DESIGN LOADS: Vu = 2.43 K, Nu = 1.07 K
2. PROVIDE HORIZONTAL SLOTTED CONNECTION FROM UPPER STRINGER TO STRUCTURE TO ALLOW FOR ANTICIPATED STORY DRIFT.

8 STAIR TO EDGE OF SLAB CONNECTION
1" = 1'-0"

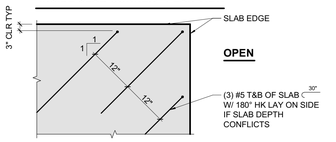
3 TYPICAL SUSPENDED SLAB DETAIL
1" = 1'-0"



4 TYPICAL EDGE OF SLAB DETAIL
1" = 1'-0"



INSIDE SLAB CORNER - PLAN VIEW



5 OUTSIDE & INSIDE SLAB CORNER - PLAN VIEW
3/4" = 1'-0"

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVED REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO No. 4861 STRUCTURAL STATE OF CALIFORNIA

Sheet Title

BUILDING 5
CONCRETE SLAB DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

5-S4.14
Drawing No.

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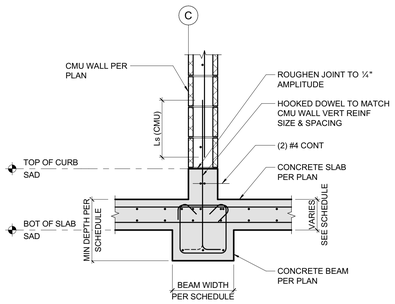
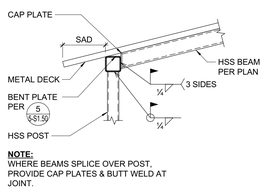
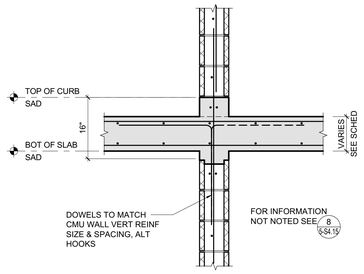


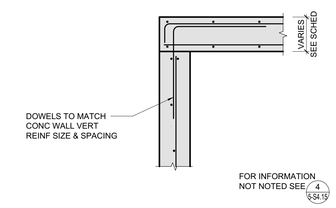
21 CMU WALL TO INTERIOR CONCRETE BEAM
3/4" = 1'-0"



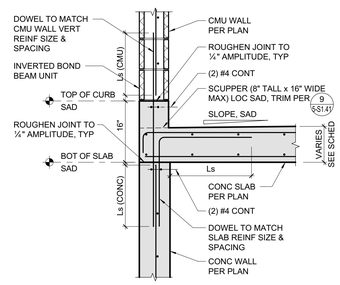
16 HSS BEAM TO POST
3/4" = 1'-0"



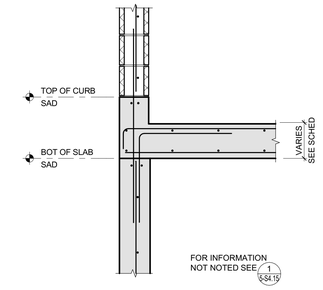
11 INTERIOR CMU WALL TO SLAB
3/4" = 1'-0"



6 EXTERIOR CONCRETE WALL TO SLAB AT PORCH
3/4" = 1'-0"



1 EXTERIOR CONCRETE WALL TO SLAB PERPENDICULAR TO SLOPE
3/4" = 1'-0"



22 CMU WALL TO EXTERIOR CONCRETE BEAM
3/4" = 1'-0"

17 EXTERIOR CMU WALL TO ROOF AND ATTIC SLAB
3/4" = 1'-0"

12 INTERIOR CMU WALL TO SLAB
3/4" = 1'-0"

7 POST TO SLAB CONNECTION
3/4" = 1'-0"

2 EXTERIOR CONCRETE WALL TO SLAB PARALLEL TO SLOPE
3/4" = 1'-0"

23 EXTERIOR CMU WALL TO SLAB PERPENDICULAR TO SLOPE AT STEP
3/4" = 1'-0"

18 EXTERIOR CMU WALL TO ROOF SLAB AT PARAPET
3/4" = 1'-0"

13 EXTERIOR OFFSET CMU WALL TO SLAB
3/4" = 1'-0"

8 EXTERIOR CMU WALL TO SLAB PERPENDICULAR TO SLOPE
3/4" = 1'-0"

3 EXTERIOR CONCRETE WALL AT STAIR SHAFT
3/4" = 1'-0"

24 EXTERIOR CMU WALL TO SLAB PARALLEL TO SLOPE AT STEP
3/4" = 1'-0"

19 EXTERIOR CONCRETE WALL TO SLAB PERP TO SLOPE AT STEP
3/4" = 1'-0"

14 EXTERIOR CMU WALL TO ROOF SLAB
3/4" = 1'-0"

9 EXTERIOR CMU WALL TO SLAB PARALLEL TO SLOPE
3/4" = 1'-0"

4 INTERIOR CONCRETE WALL TO SLAB
3/4" = 1'-0"

25 INTERIOR CMU WALL TO ATTIC SLAB AT STEP
3/4" = 1'-0"

20 INTERIOR CMU WALL TO SLAB
3/4" = 1'-0"

15 STEEL LEDGER TO CMU WALL
3/4" = 1'-0"

10 EXTERIOR CMU WALL AT STAIR SHAFT
3/4" = 1'-0"

5 INTERIOR CONCRETE WALL TO SLAB
3/4" = 1'-0"

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ARCHITECTURE

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HEART OF THE BAY

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4961 STATE OF CALIFORNIA

Sheet Title

BUILDING 5
CMU WALL DETAILS

Drawn By: LS
Checked By: SRP

Scale: **3/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 17143

5-S4.15
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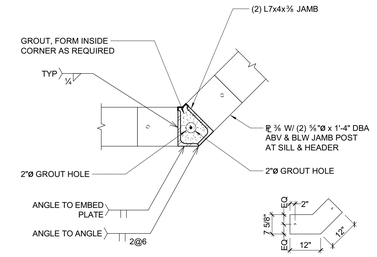
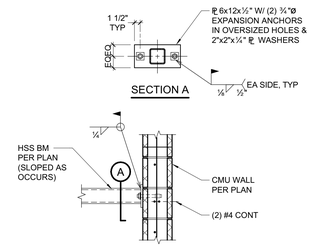


1 JAMB POST CONNECTION AT BAY WINDOW
1" = 1'-0"



2 HSS BEAM TO CMU WALL
3/4" = 1'-0"

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Sheet Title

BUILDING 5
CMU WALL DETAILS

Drawn By: LS Checked By: SRP

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

5-S4.16
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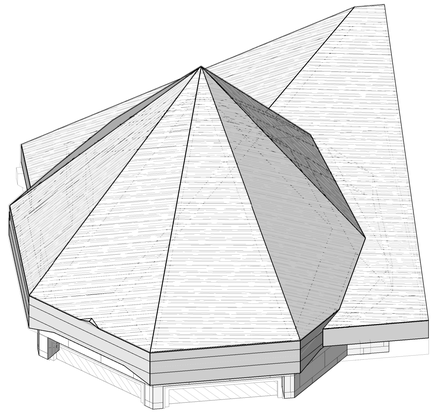
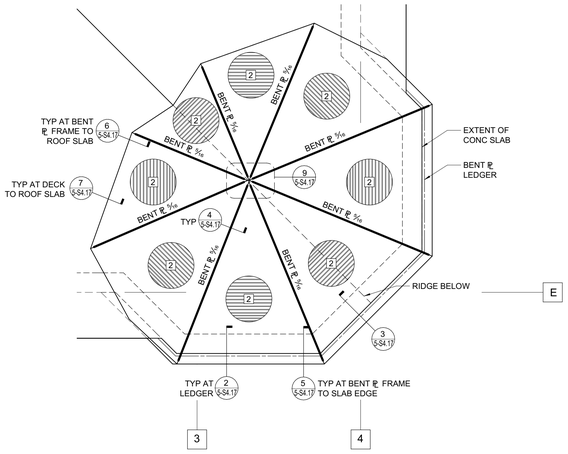
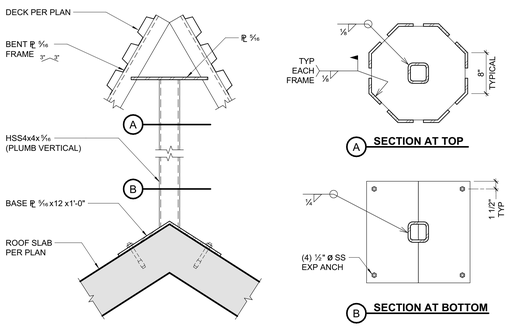


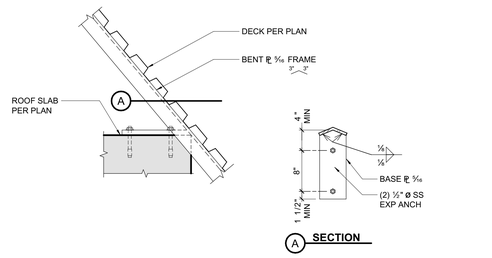
8 3D VIEW (FOR REFERENCE ONLY)



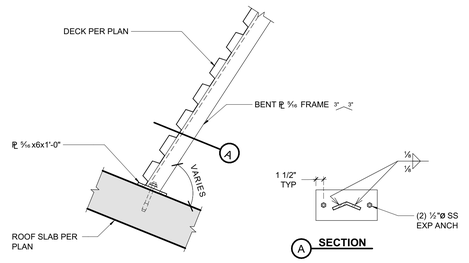
1 TURRET FRAMING PLAN
1/2" = 1'-0"



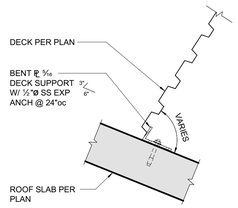
9 TURRET FRAMING SUPPORT AT CENTER
1" = 1'-0"



5 TURRET FRAMING SUPPORT AT SLAB EDGE
1" = 1'-0"

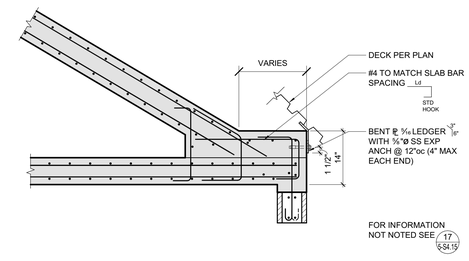


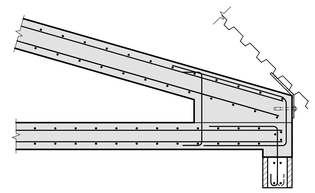
6 TURRET FRAMING SUPPORT AT ROOF SLAB
1" = 1'-0"



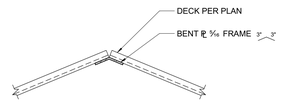
7 TURRET DECK SUPPORT AT ROOF SLAB
1" = 1'-0"

2 TURRET LEDGER AT EXTERIOR WALL
3/4" = 1'-0"





3 TURRET LEDGER AT ROOF RIDGE
3/4" = 1'-0"



4 TYPICAL TURRET FRAMING
1" = 1'-0"

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APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

ZFA STRUCTURAL ENGINEERS
1390 el camino real | suite 100 **zfa.com**
san carlos ca 94070 **650.394.8869**
zfa job no.17143 **copyright © 2017**

REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 5 TURRET FRAMING PLAN AND DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

5-S4.17
Drawing No.

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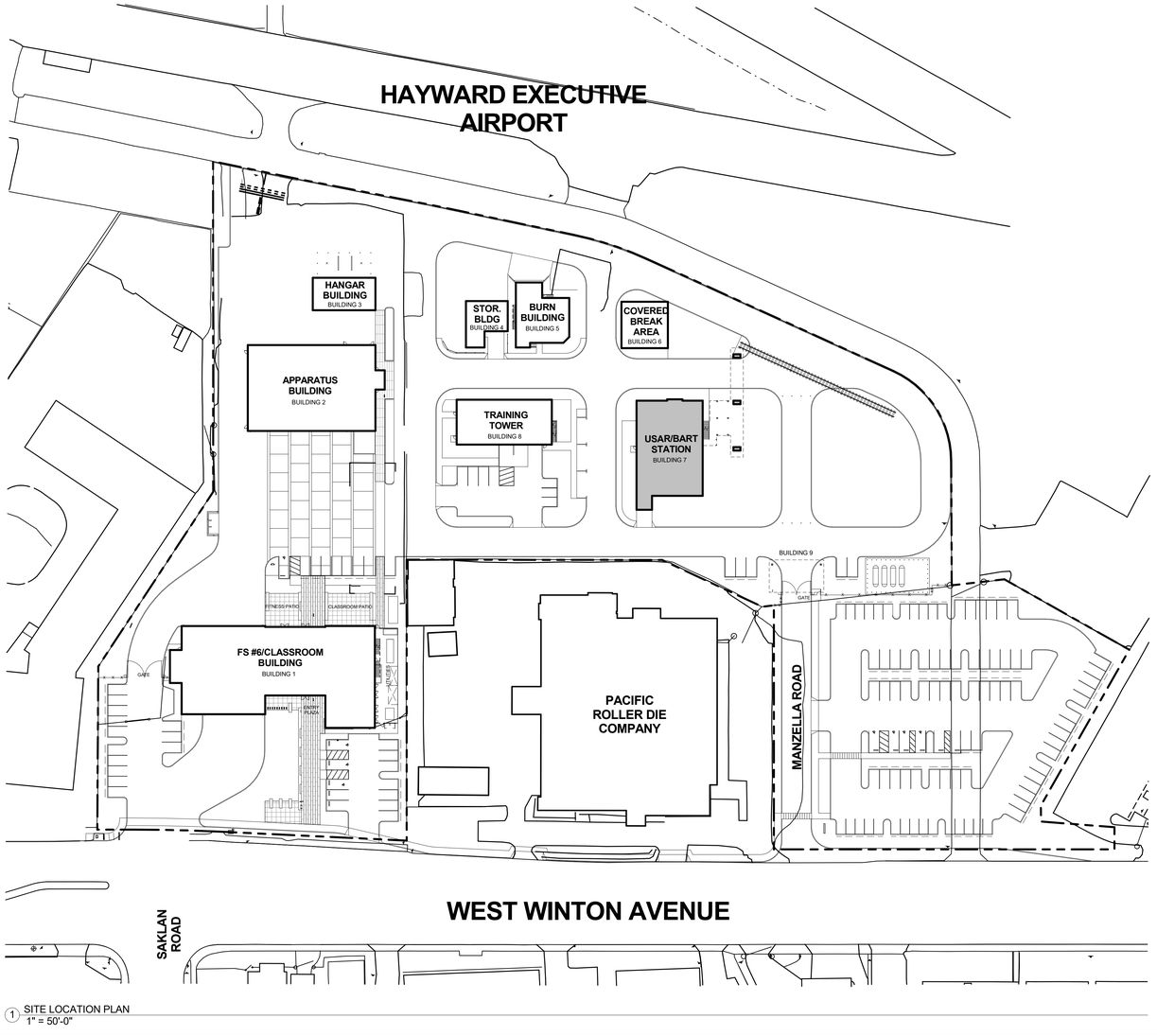
HAYWARD FIRE STATION #6
& FIRE TRAINING CENTER

BUILDING 7

PERMIT SUBMITTAL



1 SITE LOCATION PLAN
1" = 50'-0"

PROJECT INFORMATION

APN:	432-124-1-4 (PORTION)
PROJECT:	HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER BUILDING 7 1401 WEST WINTON AVENUE, HAYWARD, CA 94545
DESCRIPTION:	CONFINED SPACE / ELEVATED BART PLATFORM TRAINING STRUCTURE (BUILDING 7)
BUILDING AREAS:	39,156 SF SITE COVERAGE 66,278 SF GROSS FLOOR AREA
TOTAL BUILDING AREA FOR THIS PERMIT:	13,715 SF
SITE:	293,364 SF (6.73 ACRES) SITE DEVELOPMENT AREA 13% LOT COVERAGE (TOTAL DEVELOPMENT)
BUILDING FLOOR AREA RATIO:	23% (TOTAL DEVELOPMENT)
FIRE SPRINKLERED:	NO (BUILDING 7)
BUILDING USE/OCCUPANCY:	NFPA 1402 LIVE FIRE TRAINING STRUCTURE THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.
CONSTRUCTION TYPE:	II-B
ZONING:	AT/AC
TOTAL BUILDING STORIES:	3
DEFERRED SUBMITTALS:	STEEL STAIRS. PRE-MANUFACTURED TRANSIT SHELTER. SHOP DRAWINGS FOR INSTALLATION OF OFCI LIGHT RAIL TRACK, THIRD RAIL, AND BART CAR. SHOP DRAWINGS TO INCLUDE ANCHORAGE OF TRACK & RAIL TO STRUCTURE, METHOD OF ELEVATING CAR ONTO TRACK, AND SECURING CAR TO TRACK IN MANNER ACCEPTABLE TO OWNER.

BUILDING 7 SCOPE OF WORK

The general scope of work covered under this contract includes but is not limited to:

Structure
- New concrete slabs, concrete columns, and concrete beams.
- New non-bearing CMU walls.
- New pipe guards (fixed and removable).
- New storage room with man-door and overhead coiling door.
- New LPG burn prop training space with thermal lining at walls and ceiling.
- New confined space, shoring, breaching, and bracing training spaces - including pre-cast concrete crawl pipes.
- New elevated passenger platform with access stairs and pre-fabricated passenger enclosure with bench.
- New elevated light-rail track section with non-electrified third rail (OFCI BART car, track, and rail).
- Required signage.

Plumbing
- New domestic cold water and compressed air piping.
- New "false" utility piping for training exercises.

Electrical
- New power, data, and lighting systems.
- New audio-visual equipment and points of connection.

SHEET INDEX

NUMBER	NAME
ARCHITECTURAL	
7-A0.10	BUILDING 7 SHEET INDEX, PROJECT INFORMATION
7-A0.11	BUILDING 7 EXTERIOR AXOMETRIC VIEWS
7-A2.10	BUILDING 7 FIRST LEVEL FLOOR SLAB DRAINAGE PLAN
7-A2.11	BUILDING 7 FIRST LEVEL FLOOR PLAN
7-A2.20	BUILDING 7 SECOND LEVEL FLOOR PLAN
7-A2.30	BUILDING 7 THIRD LEVEL FLOOR PLAN
7-A3.10	BUILDING 7 EXTERIOR ELEVATIONS
7-A3.11	BUILDING 7 EXTERIOR ELEVATIONS
7-A3.40	BUILDING 7 BUILDING CROSS SECTIONS
7-A3.41	BUILDING 7 BUILDING CROSS SECTIONS
7-A3.50	BUILDING 7 WALL SECTIONS
7-A4.10	BUILDING 7 ENLARGED PLANS AND ELEVATIONS
7-A5.11	BUILDING 7 INTERIOR ELEVATIONS
7-A8.10	BUILDING 7 ARCHITECTURAL DETAILS
7-A8.11	BUILDING 7 ARCHITECTURAL DETAILS
STRUCTURAL	
7-S0.10	BUILDING 7 GENERAL NOTES AND
7-S1.10	BUILDING 7 TYPICAL CONCRETE DETAILS
7-S1.40	BUILDING 7 TYPICAL CMU DETAILS
7-S1.41	BUILDING 7 TYPICAL CMU DETAILS
7-S2.10	BUILDING 7 FOUNDATION PLAN
7-S2.20	BUILDING 7 SECOND FLOOR PLAN
7-S2.30	BUILDING 7 THIRD LEVEL PLAN
7-S3.10	BUILDING 7 ELEVATIONS
7-S3.20	BUILDING 7 ELEVATIONS AND SECTIONS
7-S3.30	BUILDING 7 WALL ELEVATIONS
7-S4.10	BUILDING 7 DETAILS AND SECTIONS
7-S4.11	BUILDING 7 FOUNDATION DETAILS
7-S4.12	BUILDING 7 CONCRETE WALL DETAILS
7-S4.13	BUILDING 7 CONCRETE COLUMN DETAILS
7-S4.14	BUILDING 7 CONCRETE BEAM DETAILS
7-S4.15	BUILDING 7 CONCRETE SLAB DETAILS
PLUMBING	
7-P0.01	BUILDING 7 PLUMBING LEGEND AND ABBREVATION, DRAWING LIST
7-P2.01	BUILDING 7 PLUMBING USAR-BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN
ELECTRICAL	
7-E0.01	BUILDING 7 ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST
7-E0.02	BUILDING 7 ELECTRICAL SCHEDULES
7-E2.01	BUILDING 7 ELECTRICAL USAR-BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN
7-E2.02	BUILDING 7 ELECTRICAL USAR-BART TRAINING STRUCTURE SECOND LEVEL FLOOR PLAN
7-E5.01	BUILDING 7 ELECTRICAL RISER DIAGRAM
TECHNOLOGY	
7-T0.01	BUILDING 7 TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST
7-T2.01	BUILDING 7 TECHNOLOGY USAR-BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN
7-T2.02	BUILDING 7 TECHNOLOGY USAR-BART TRAINING STRUCTURE SECOND LEVEL FLOOR PLAN
7-T7.01	BUILDING 7 TECHNOLOGY DETAILS
7-T7.02	BUILDING 7 TECHNOLOGY DETAILS

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 8/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
SHEET INDEX, PROJECT INFORMATION

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

7-A0.10
Drawing No.

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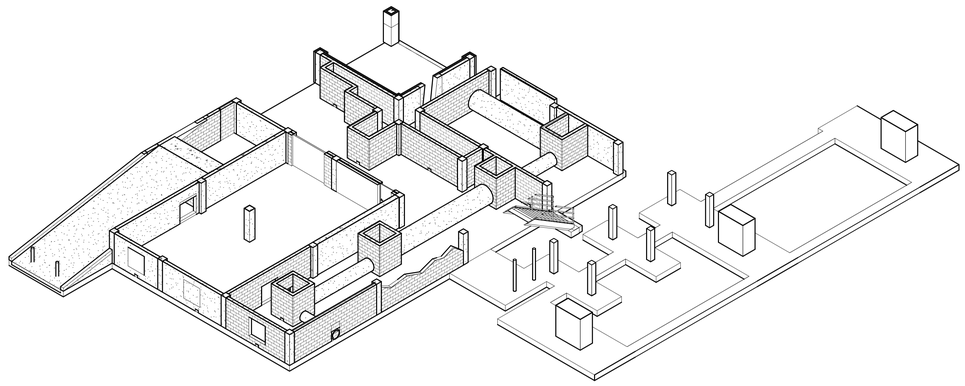
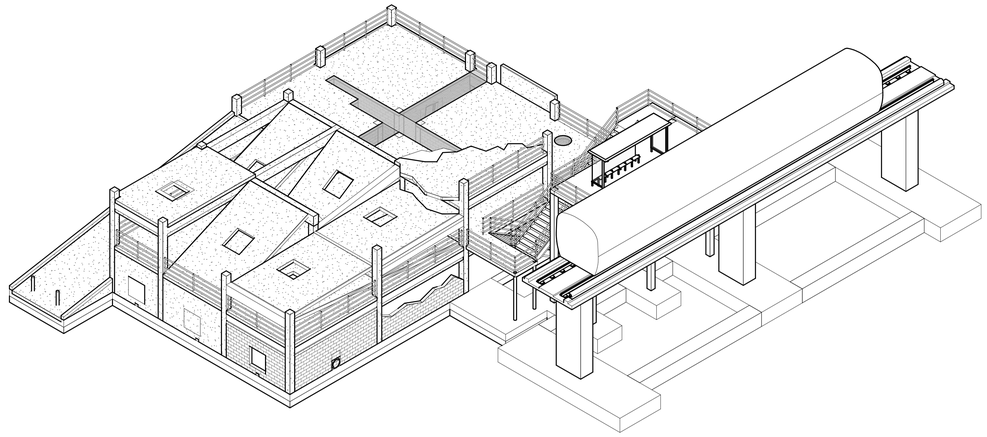
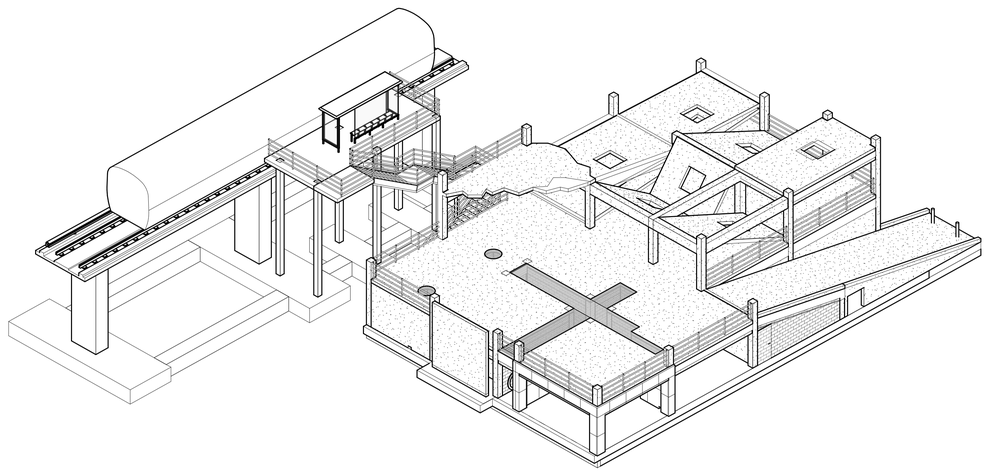


1 SOUTHEAST AXONOMETRIC VIEW AT FIRST FLOOR LEVEL



2 SOUTHEAST AXONOMETRIC VIEW



3 NORTHWEST AXONOMETRIC VIEW

GRAPHIC FOR REFERENCE ONLY

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 EXTERIOR AXONOMETRIC VIEWS

Drawn By: EW Checked By: EW

Scale:

Date:
October 4, 2019

Project No. 2016039

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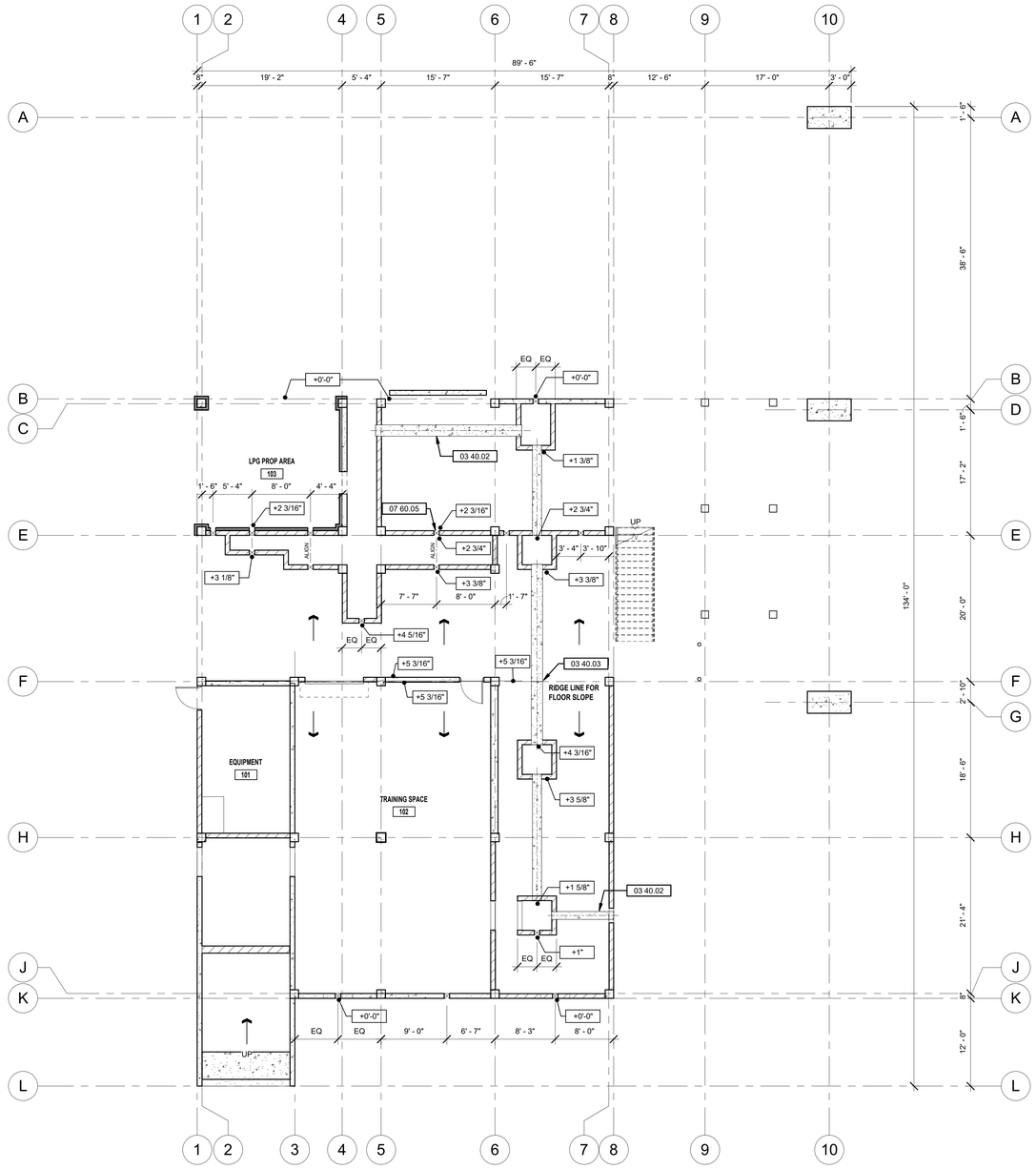

1 FIRST LEVEL SLAB DRAINAGE PLAN
1/8" = 1'-0"

0' 2' 4' 8' 16'

GENERAL SHEET NOTES

1. DURING TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING LARGE AMOUNTS OF WATER FOR THE EXTINGUISHING OF FIRE SIMULATIONS. THEREFORE, ALL FLOORS WITHIN THE USAR BUILDING ARE TO BE SLOPED AT A MINIMUM OF 1% FOR DRAINAGE, UNLESS OTHERWISE NOTED.
2. THE INTENT OF WATER DRAINAGE WITHIN THE USAR BUILDING IS THROUGH THE SHOWN OPENINGS IN THE PERIMETER AND INTERIOR CMU WALLS. REFER TO NOTED DETAILS. FLOORS SHALL BE SLOPED AS SHOWN TO THESE LOCATIONS.
3. THE ELEVATIONS SHOWN ON THE DRAINAGE PLANS INDICATE ELEVATION ABOVE THE 0'-0" DATUM POINT ON EACH FLOOR LEVEL TO ACHIEVE SLOPE FOR DRAINAGE. THE MINIMUM AND MAXIMUM FLOOR SLAB THICKNESS SHALL BE AS ESTABLISHED ON THE STRUCTURAL DRAWINGS.
4. THE SURFACE OF ALL INTERIOR EXPOSED CONCRETE FLOORS SHALL BE A LIGHT BROOM FINISH SO AS NOT TO RESTRICT THE FLOW OF WATER TO THE SHOWN DRAINAGE POINTS. CONTRACTOR TO PROVIDE MOCK-UP OF FLOOR FINISH FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF CONCRETE FLOORS.
5. INTERIOR FLOOR SLABS SHALL BE FLOOD TESTED FOR PROPER DRAINAGE. CONTRACTOR SHALL FLOOD THE FLOOR AREAS IN OBSERVATION BY THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL TO DEMONSTRATE POSITIVE DRAINAGE. ANY AREAS OF PONDING OR STANDING WATER SHALL BE REPAIRED TO THE SATISFACTION OF THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL.
6. UPON COMPLETION OF WATER DRAINAGE TESTING, ALL INTERIOR FLOOR SLABS SHALL BE SEALED WITH AN APPLIED SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 40.02	CORE DRILL CONCRETE PIPE AT SLAB SURFACE TO PROVIDE DRAINAGE THROUGH PIPE WITH (3) 4" DIA. HOLES @ 8" O.C. ALIGNED AT EACH SIDE OF PIPE
03 40.03	PROVIDE JOINT IN PIPE ALIGNING WITH FLOOR RIDGE
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
FIRST LEVEL SLAB DRAINAGE PLAN

Drawn By: NM Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

7-A2.10
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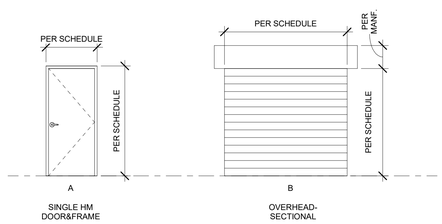
DOOR AND FRAME SCHEDULE

DOOR MARK	DOOR TYPE	ROOM NAME	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICKNESS	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	FIRE RATING	HARDWARE GROUP	REMARKS
101	A	EQUIPMENT	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	4/7-A8.10	5 & 6/7-A8.10	7/7-A8.10		7-02	
102.1	A	TRAINING SPACE	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	6/7-A8.10	6/7-A8.10	7/7-A8.10		7-01	
102.2	B	TRAINING SPACE	8' - 0"	7' - 0"	2"	MTL	FF	MTL	FF	1/7-A8.10	2/7-A8.10	3/7-A8.10		7-03	

DOOR TYPE ELEVATIONS



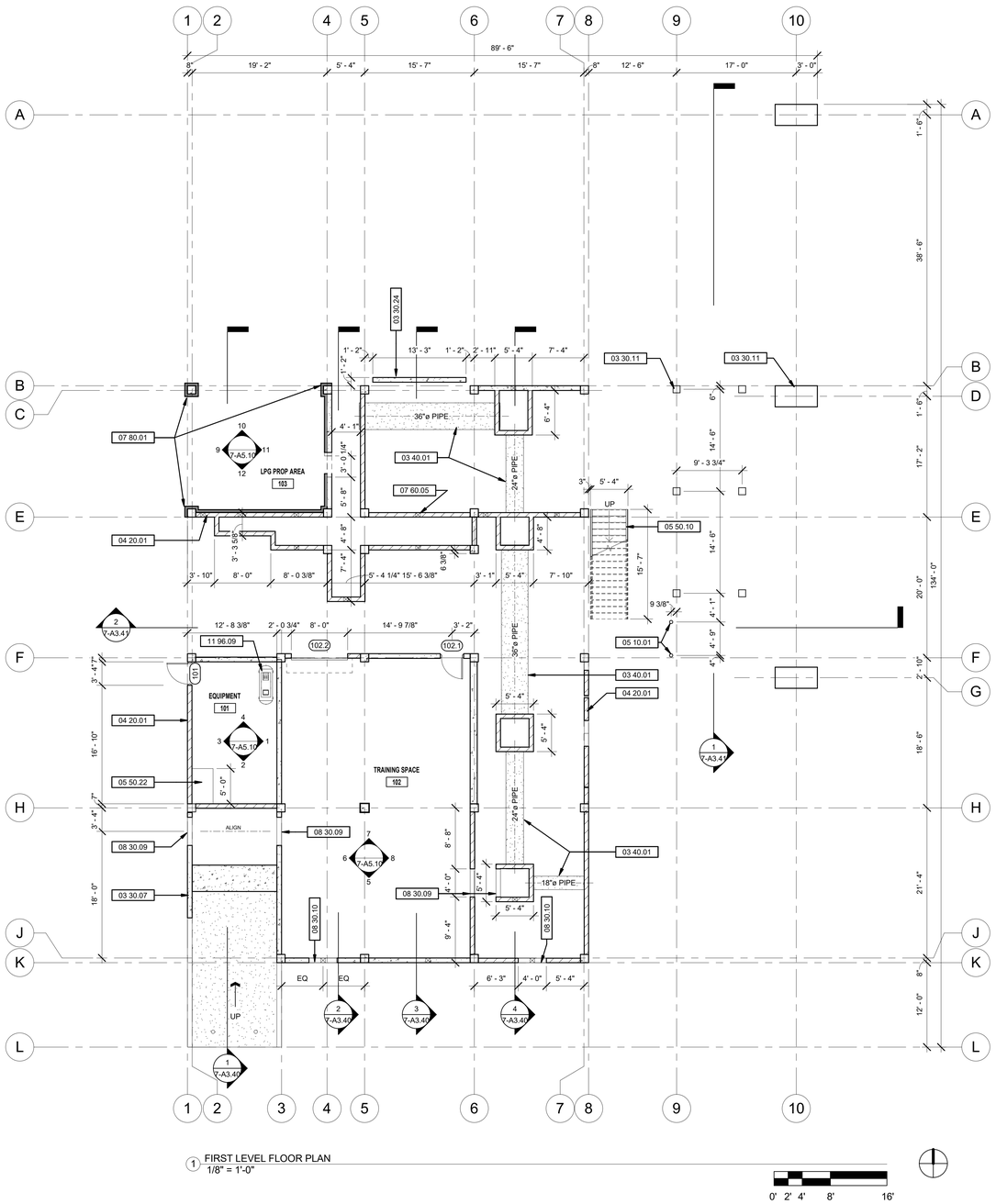
DOOR SCHEDULE LEGEND

DOOR CONSTRUCTION:
AL = ALUMINUM
FAB = FABRIC
GL = TEMPERED GLASS
HC = HOLLOW CORE
SC = SOLID CORE
HM = HOLLOW METAL
MTL = METAL

DOOR FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

FRAME MATERIAL:
AL = ALUMINUM
HM = HOLLOW METAL
MTL = METAL
WD = WOOD

FRAME FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN



1 FIRST LEVEL FLOOR PLAN
1/8" = 1'-0"

0' 2' 4' 8' 16'

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.
2. CONTRACTOR SHALL THOROUGHLY REVIEW THE PROJECT SPECIFICATIONS AND EQUIPMENT SPECIFIED THEREIN FOR REQUIRED COORDINATION AND INSTALLATION REQUIREMENTS.
3. FOR ADDITIONAL INFORMATION AND COORDINATION, REFER TO STRUCTURAL DRAWINGS.
4. REFER TO CIVIL DRAWINGS FOR SITE AND UTILITY INFRASTRUCTURE WORK.
5. DURING THE VARIOUS TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING WATER THROUGHOUT THE BUILDING. INASMUCH, **ALL** INTERIOR AND EXTERIOR EXPOSED METAL SURFACES MUST BE PROTECTED FROM RUST AND CORROSION WITH EITHER FACTORY FINISHES, GALVANIZED METAL FINISH, OR HIGH TEMPERATURE PAINT FINISH.
6. UPON COMPLETION OF CONCRETE & CMU, ALL WALL SURFACES SHALL BE SEALED WITH THE APPROVED SEALER. REFER TO PROJECT SPECIFICATIONS.
7. CONTRACTOR SHALL COORDINATE ALL INTERIOR CONSTRUCTION, INCLUDING WALLS AND DOORS WITH THE INTERIOR FLOOR SLOPE PLANS AND STRUCTURAL ELEMENTS PRIOR TO COMMENCING CONSTRUCTION.
8. THIS BUILDING WILL BE SUBJECT TO HIGH HEAT LEVELS DUE TO THE USE OF LIVE FIRE DURING TRAINING SCENARIOS. ALL EXPOSED METAL SURFACES SHALL BE PROTECTED WITH EITHER GALVANIZED FINISHES WHERE NOTED, OR HIGH TEMPERATURE PAINT FINISH PER PROJECT SPECIFICATIONS.
9. UPON FINAL CLEANING OF EXPOSED CONCRETE FLOORS, SURFACES SHALL BE PREPPED FOR APPLICATION OF SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING

CMU WALL, S.S.D. FOR THICKNESS & REINFORCING

THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.11	CAST-IN-PLACE CONCRETE COLUMN, S.S.D.
03 30.24	6" THICK CAST-IN-PLACE CONCRETE WALL WITH HINGED CONNECTION AT FLOOR SLAB & CHAIN RESTRAINTS TO ADJACENT COLUMNS, S.S.D.
03 40.01	HORIZONTAL PRECAST CONCRETE PIPE IN NOTED DIAMETER TO PENETRATE THROUGH CMU WALL AT EACH END
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 50.10	FABRICATED METAL STAIR WITH HANDRAIL EACH SIDE, S.S.D.
05 50.22	EQUIPMENT BENCH
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 30.09	4' X 4' BREACH PANEL OPENING AT FLOOR LEVEL
08 30.10	50" SQUARE BREACH PANEL OPENING IN EXTERIOR WALL. SEE EXTERIOR ELEVATIONS AND STRUCTURAL DRAWINGS
11 96.09	AIR COMPRESSOR, S.P.D.

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 2/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
FIRST LEVEL FLOOR PLAN

Drawn By: EW Checked By: EW

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 2016039

7-A2.11
Drawing No.

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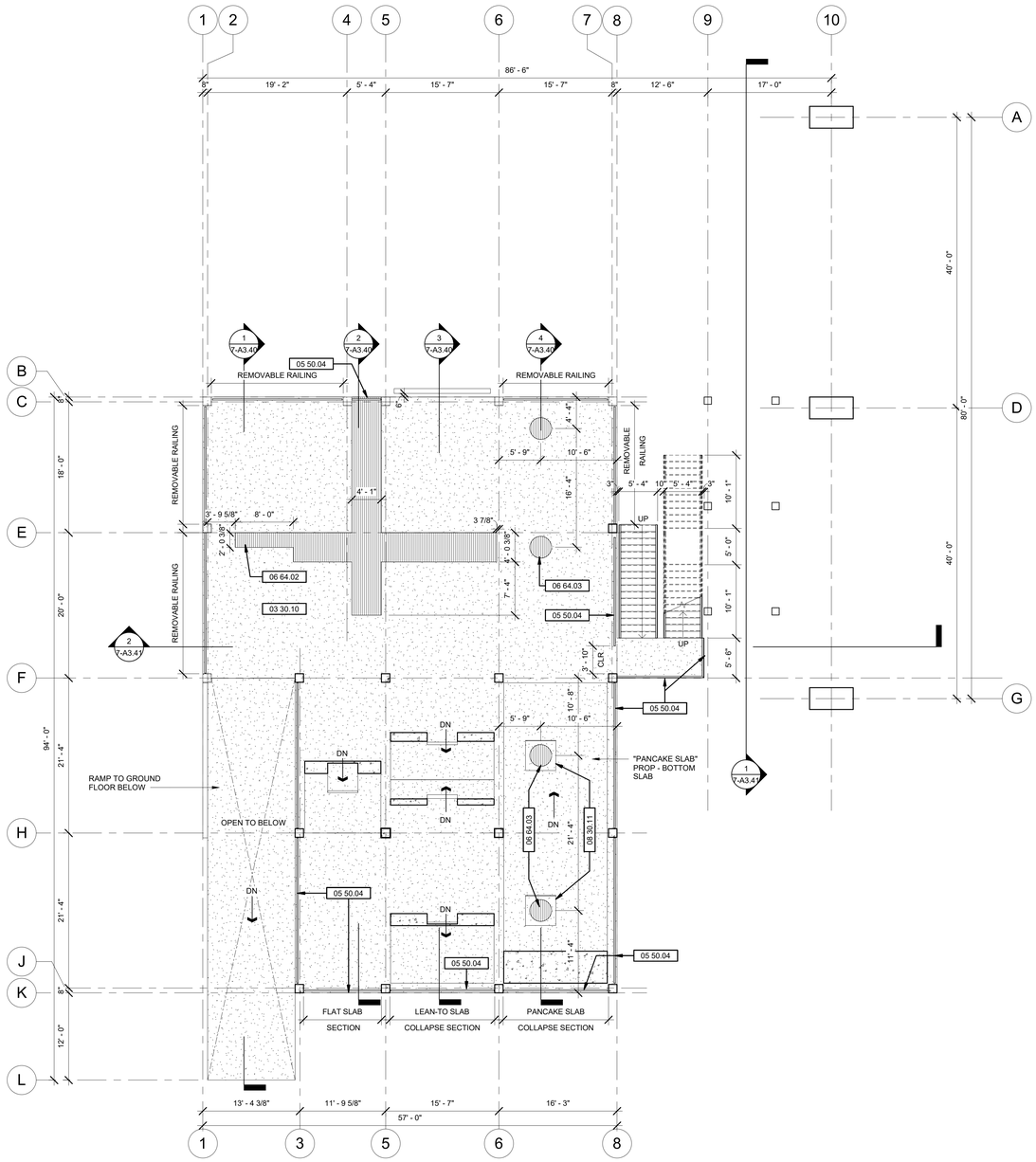

1 SECOND LEVEL FLOOR PLAN
1/8" = 1'-0"

0' 2' 4' 8' 16'

GENERAL SHEET NOTES

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2. CONTRACTOR SHALL THOROUGHLY REVIEW THE PROJECT SPECIFICATIONS AND EQUIPMENT SPECIFIED THEREIN FOR REQUIRED COORDINATION AND INSTALLATION REQUIREMENTS.
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6. UPON COMPLETION OF CONCRETE & CMU, ALL WALL SURFACES SHALL BE SEALED WITH THE APPROVED SEALER. REFER TO PROJECT SPECIFICATIONS.
7. CONTRACTOR SHALL COORDINATE ALL INTERIOR CONSTRUCTION, INCLUDING WALLS AND DOORS WITH THE INTERIOR FLOOR SLOPE PLANS AND STRUCTURAL ELEMENTS PRIOR TO COMMENCING CONSTRUCTION.
8. THIS BUILDING WILL BE SUBJECT TO HIGH HEAT LEVELS DUE TO THE USE OF LIVE FIRE DURING TRAINING SCENARIOS. ALL EXPOSED METAL SURFACES SHALL BE PROTECTED WITH EITHER GALVANIZED FINISHES WHERE NOTED, OR HIGH TEMPERATURE PAINT FINISH PER PROJECT SPECIFICATIONS.
9. UPON FINAL CLEANING OF EXPOSED CONCRETE FLOORS, SURFACES SHALL BE PREPPED FOR APPLICATION OF SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.10	CONCRETE FLOOR SLAB, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
06 64.02	REMOVABLE FIBERGLASS GRATE SECTIONS ON STEEL ANGLE SUPPORT LEDGER
06 64.03	36-INCH DIAMETER REMOVABLE FIBERGLASS GRATE SECTION CENTERED ON CHASE BELOW. SEE DETAIL 12/7-A8.10
08 30.11	50" SQUARE BREACH PANEL OPENING IN CONCRETE SLAB PER DTL 11/7-A8.10. CENTER OPENING ON MANHOLE COVER BELOW.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
8/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
SECOND LEVEL FLOOR PLAN

Drawn By: EW Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

7-A2.20
Drawing No.

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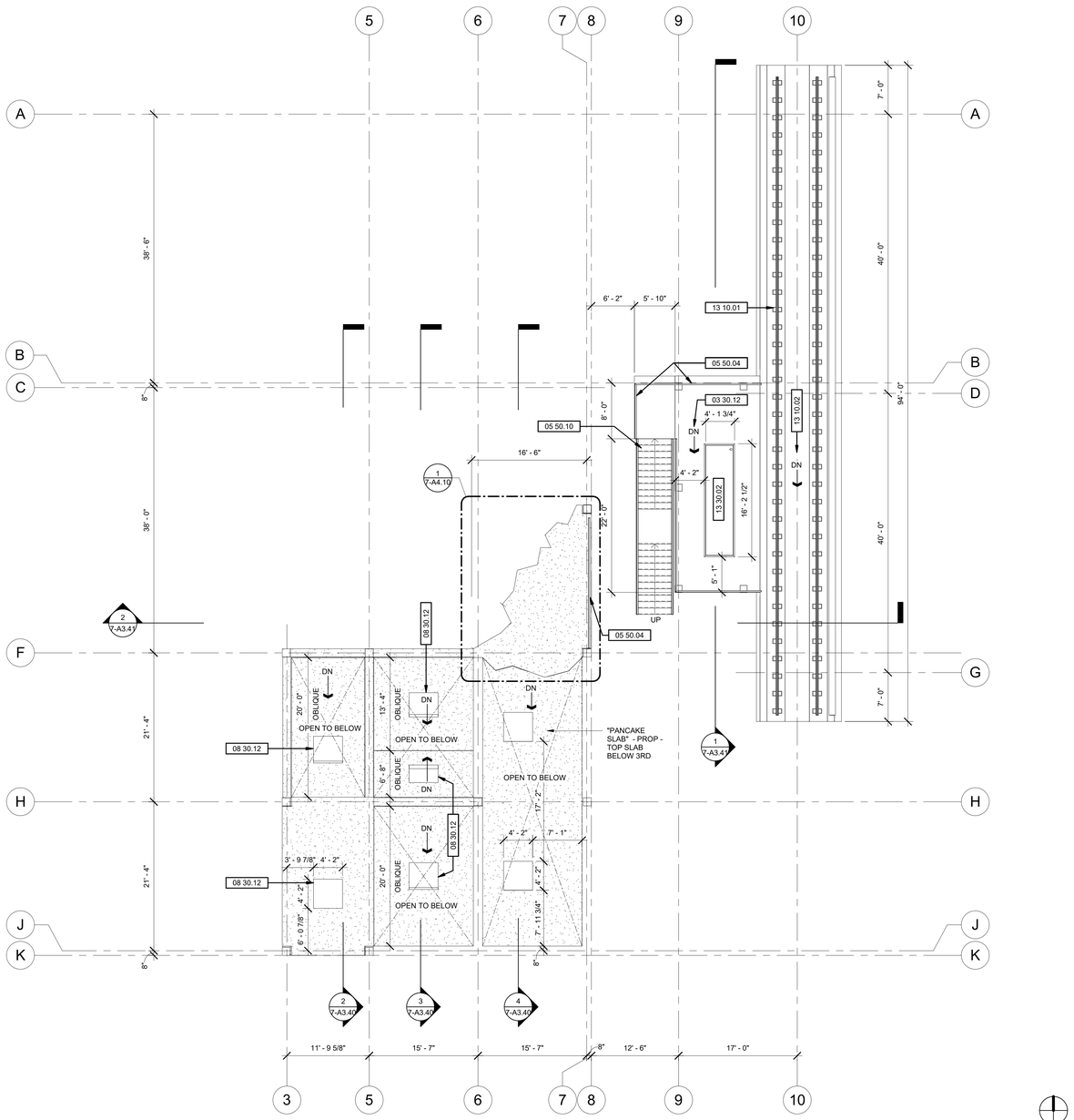

1 THIRD LEVEL FLOOR PLAN
1/8" = 1'-0"

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR INSTALLATION OF OFCI LIGHT RAIL TRACK, THIRD RAIL, AND BART CAR. SHOP DRAWINGS TO INCLUDE ANCHORAGE OF TRACK & RAIL TO STRUCTURE, METHOD OF ELEVATING CAR ONTO TRACK, AND SECURING CAR TO TRACK IN MANNER ACCEPTABLE TO OWNER.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER

SHEET KEYNOTE LEGEND

03 30.12	ARROW INDICATES DOWNWARD DIRECTION OF FLOOR SLOPE, TYPICAL
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.10	FABRICATED METAL STAIR WITH HANDRAIL EACH SIDE, S.S.D.
08 30.12	50" SQUARE BREACH PANEL OPENING IN CONCRETE SLAB PER DTL 11/7-A8.10.
13 10.01	BART RAIL TRACK (OFCI) WITH NON-ELECTRIFIED THIRD RAIL (OFCI) SUPPORTED ON ELEVATED STRUCTURE. REFER TO DEFERRED SUBMITTAL LIST ON SHEET 7-A0.10.
13 10.02	SLOPE TRACK STRUCTURE 1/4"/FT
13 30.02	PRE-MANUFACTURED 3-SIDED TRANSIT PASSENGER SHELTER WITH SOLID ROOF, GLAZED SIDES, AND INTERNAL BENCH. INSTALLATION & ANCHORAGE PER MANUFACTURER'S INSTRUCTIONS

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CITY OF HAYWARD
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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
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REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
THIRD LEVEL FLOOR PLAN

Drawn By: EW Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

7-A2.30
Drawing No.

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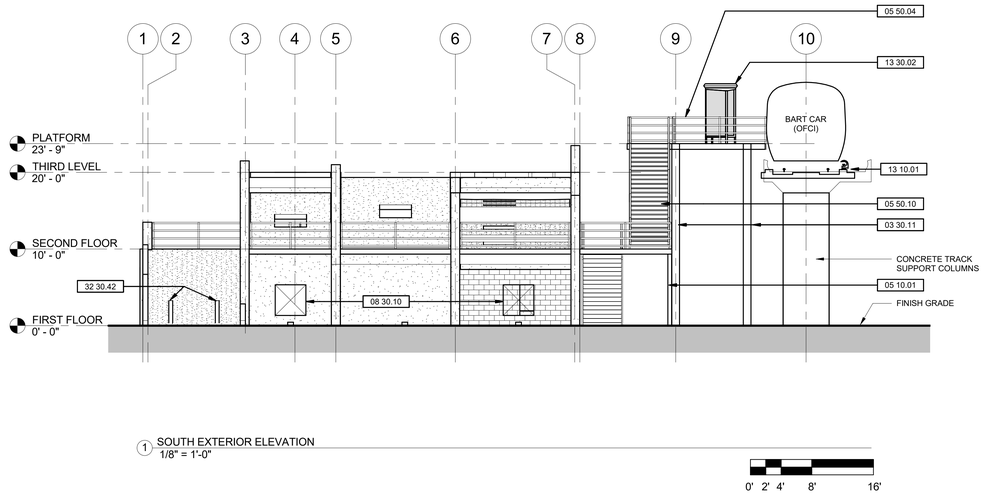
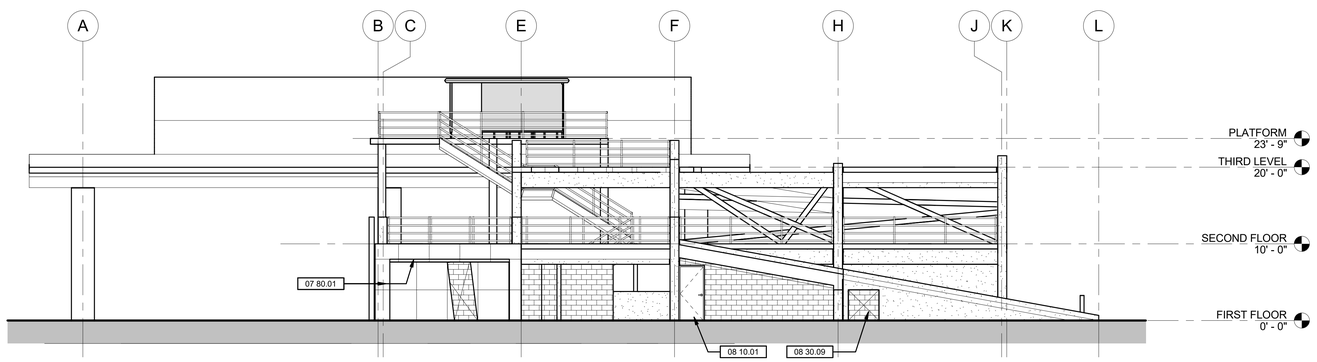


1 SOUTH EXTERIOR ELEVATION
1/8" = 1'-0"

0' 2' 4' 8' 16'



2 WEST EXTERIOR ELEVATION
1/8" = 1'-0"

0' 2' 4' 8' 16'

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

03 30.11	CAST-IN-PLACE CONCRETE COLUMN, S.S.D.
05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.10	FABRICATED METAL STAIR WITH HANDRAIL EACH SIDE, S.S.D.
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 30.09	4' X 4' BREACH PANEL OPENING AT FLOOR LEVEL
08 30.10	50" SQUARE BREACH PANEL OPENING IN EXTERIOR WALL. SEE EXTERIOR ELEVATIONS AND STRUCTURAL DRAWINGS
13 10.01	BART RAIL TRACK (OFCI) WITH NON-ELECTRIFIED THIRD RAIL (OFCI) SUPPORTED ON ELEVATED STRUCTURE. REFER TO DEFERRED SUBMITTAL LIST ON SHEET 7-A0.10.
13 30.02	PRE-MANUFACTURED 3-SIDED TRANSIT PASSENGER SHELTER WITH SOLID ROOF, GLAZED SIDES, AND INTERNAL BENCH. INSTALLATION & ANCHORAGE PER MANUFACTURER'S INSTRUCTIONS
32 30.42	48" TALL PAINTED PROTECTIVE PIPE BOLLARDS AT BOTTOM OF SLOPED DRIVE

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 EXTERIOR ELEVATIONS

Drawn By: EW Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

7-A3.10
Drawing No.

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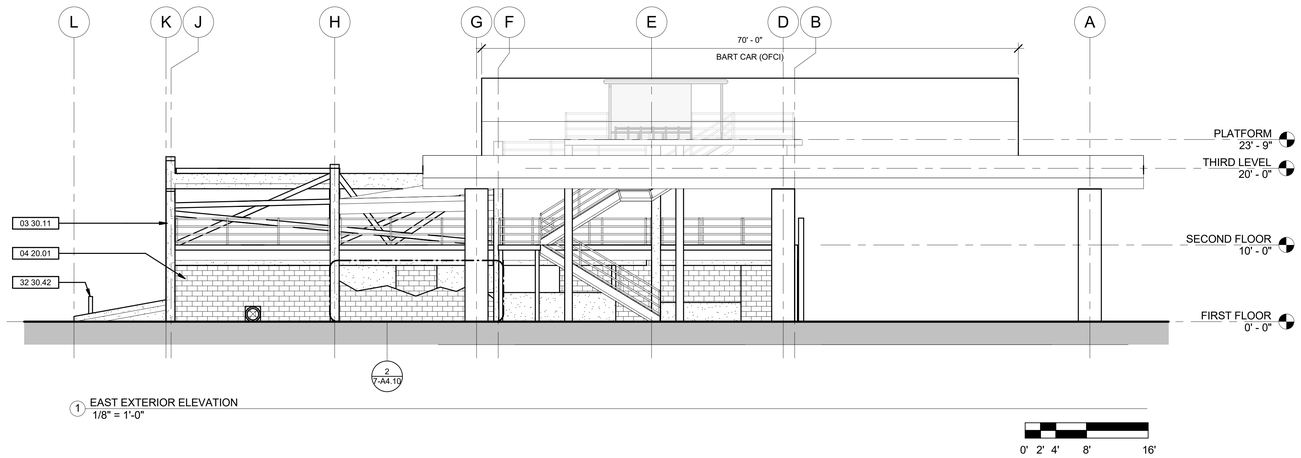
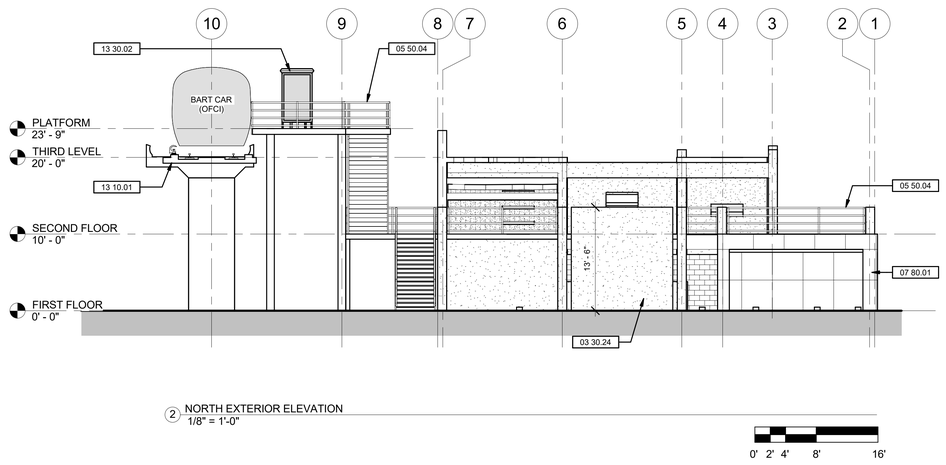


1 EAST EXTERIOR ELEVATION
1/8" = 1'-0"



2 NORTH EXTERIOR ELEVATION
1/8" = 1'-0"

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

03 30.11	CAST-IN-PLACE CONCRETE COLUMN, S.S.D.
03 30.24	6" THICK CAST-IN-PLACE CONCRETE WALL WITH HINGED CONNECTION AT FLOOR SLAB & CHAIN RESTRAINTS TO ADJACENT COLUMNS, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
13 10.01	BART RAIL TRACK (OFCI) WITH NON-ELECTRIFIED THIRD RAIL (OFCI) SUPPORTED ON ELEVATED STRUCTURE. REFER TO DEFERRED SUBMITTAL LIST ON SHEET 7-A0.10.
13 30.02	PRE-MANUFACTURED 3-SIDED TRANSIT PASSENGER SHELTER WITH SOLID ROOF, GLAZED SIDES, AND INTERNAL BENCH. INSTALLATION & ANCHORAGE PER MANUFACTURER'S INSTRUCTIONS
32 30.42	48" TALL PAINTED PROTECTIVE PIPE BOLLARDS AT BOTTOM OF SLOPED DRIVE

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
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REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 EXTERIOR ELEVATIONS

Drawn By: EW
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

7-A3.11
Drawing No.

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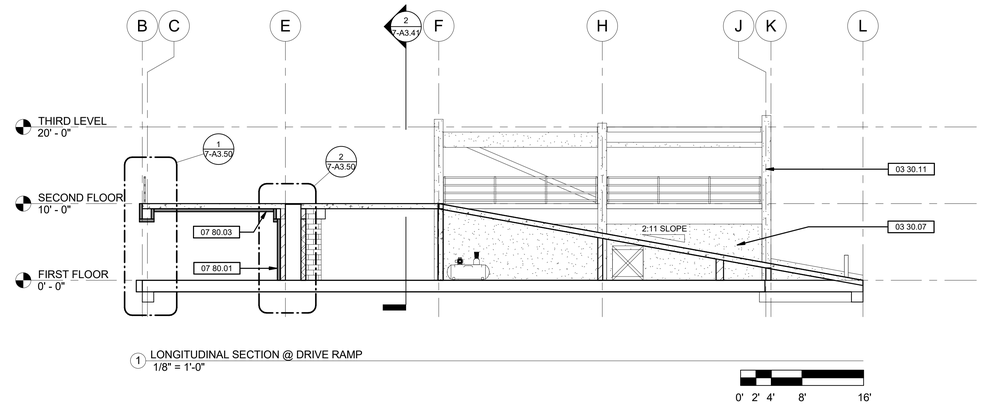
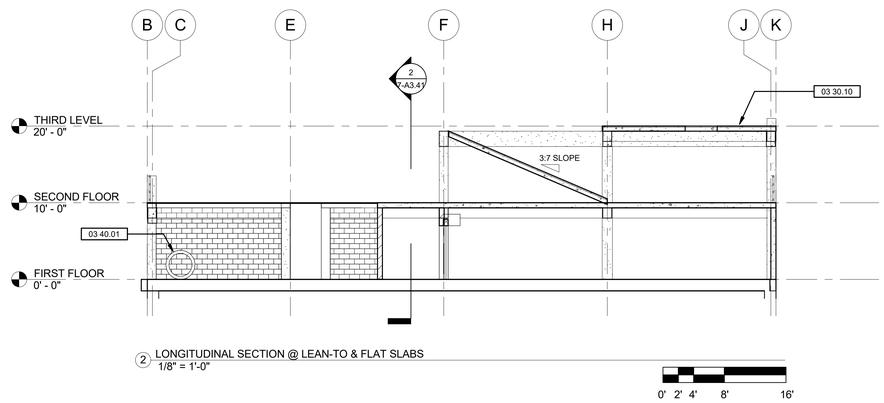


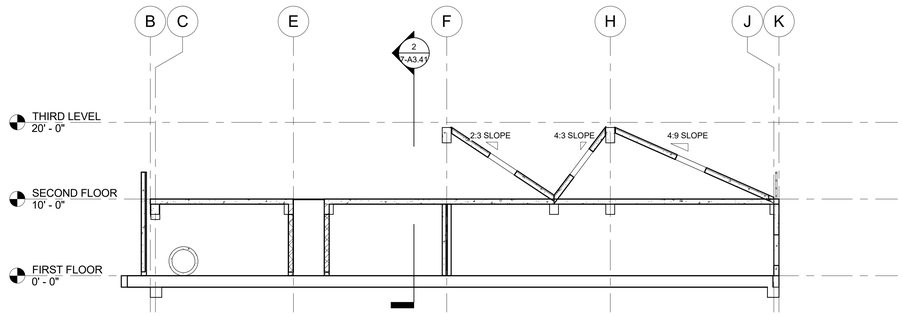
1 LONGITUDINAL SECTION @ DRIVE RAMP
1/8" = 1'-0"

0' 2' 4' 8' 16'



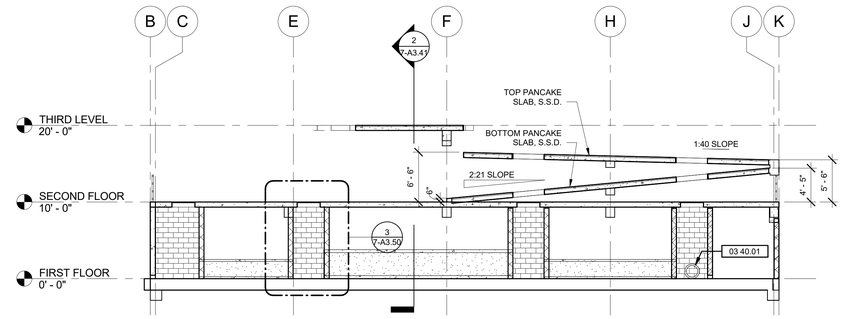
2 LONGITUDINAL SECTION @ LEAN-TO & FLAT SLABS
1/8" = 1'-0"

0' 2' 4' 8' 16'



3 LONGITUDINAL SECTION @ V-COLLAPSE & LEAN-TO SLABS
1/8" = 1'-0"

0' 2' 4' 8' 16'



4 LONGITUDINAL SECTION @ PANCAKE SLABS
1/8" = 1'-0"

0' 2' 4' 8' 16'

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.10	CONCRETE FLOOR SLAB, S.S.D.
03 30.11	CAST-IN-PLACE CONCRETE COLUMN, S.S.D.
03 40.01	HORIZONTAL PRECAST CONCRETE PIPE IN NOTED DIAMETER TO PENETRATE THROUGH CMU WALL AT EACH END
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.03	PROVIDE THERMAL LINING AT CEILING, EXTENT OF ENCLOSED AREA INDICATED

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
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DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
BUILDING CROSS SECTIONS

Drawn By: EW
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

7-A3.40
Drawing No.

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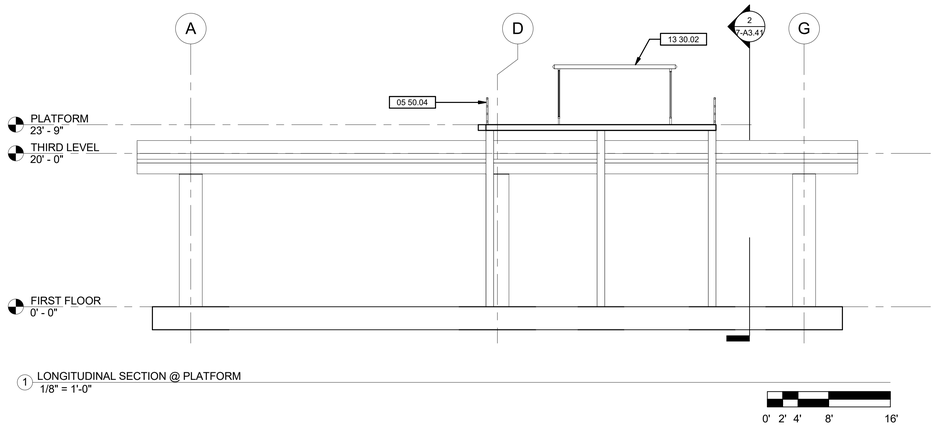
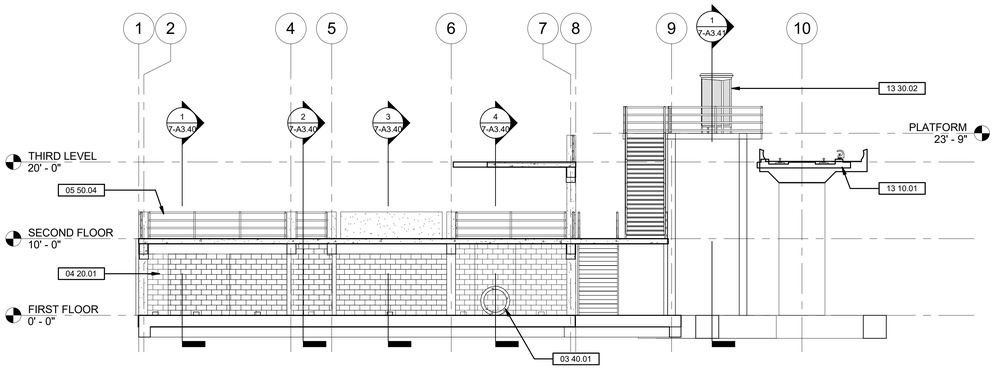


1 LONGITUDINAL SECTION @ PLATFORM
1/8" = 1'-0"

0' 2' 4' 8' 16'



2 TRANSVERSE SECTION
1/8" = 1'-0"

0' 2' 4' 8' 16'

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SHEET KEYNOTE LEGEND

03 40.01	HORIZONTAL PRECAST CONCRETE PIPE IN NOTED DIAMETER TO PENETRATE THROUGH CMU WALL AT EACH END
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
13 10.01	BART RAIL TRACK (OFCI) WITH NON-ELECTRIFIED THIRD RAIL (OFCI) SUPPORTED ON ELEVATED STRUCTURE. REFER TO DEFERRED SUBMITTAL LIST ON SHEET 7-A0.10.
13 30.02	PRE-MANUFACTURED 3-SIDED TRANSIT PASSENGER SHELTER WITH SOLID ROOF, GLAZED SIDES, AND INTERNAL BENCH. INSTALLATION & ANCHORAGE PER MANUFACTURER'S INSTRUCTIONS

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ARCHITECTURE

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
3/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
BUILDING CROSS SECTIONS

Drawn By: EW Checked By: EW

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

Date:
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Project No. 2016039

7-A3.41
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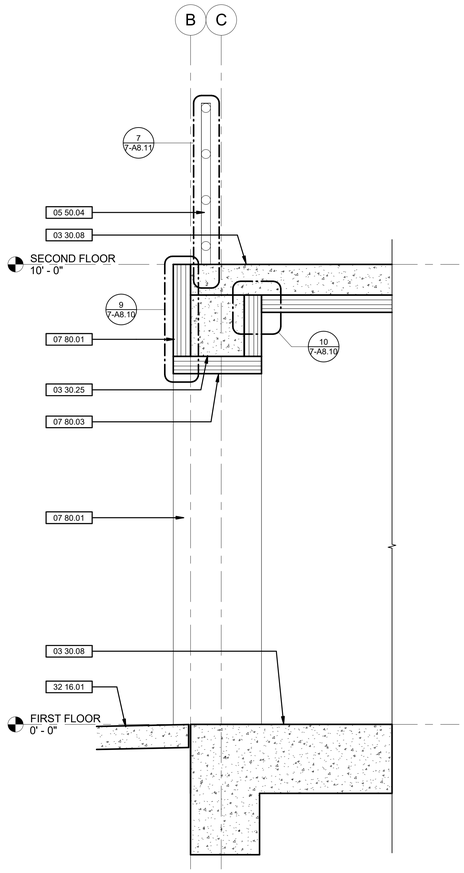
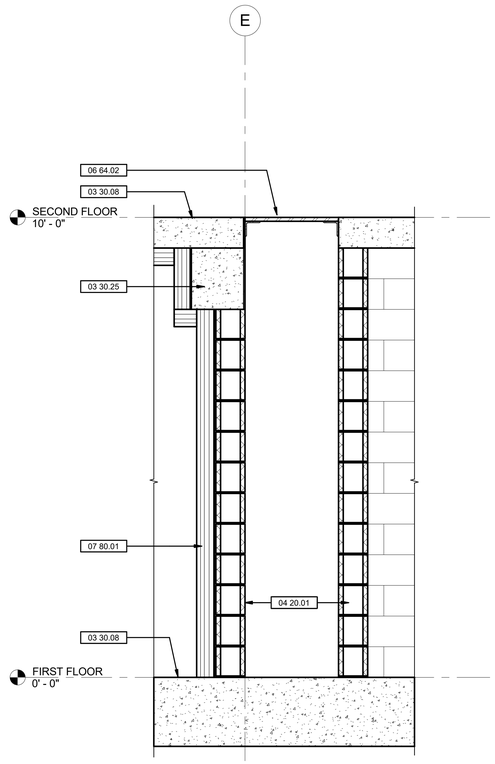
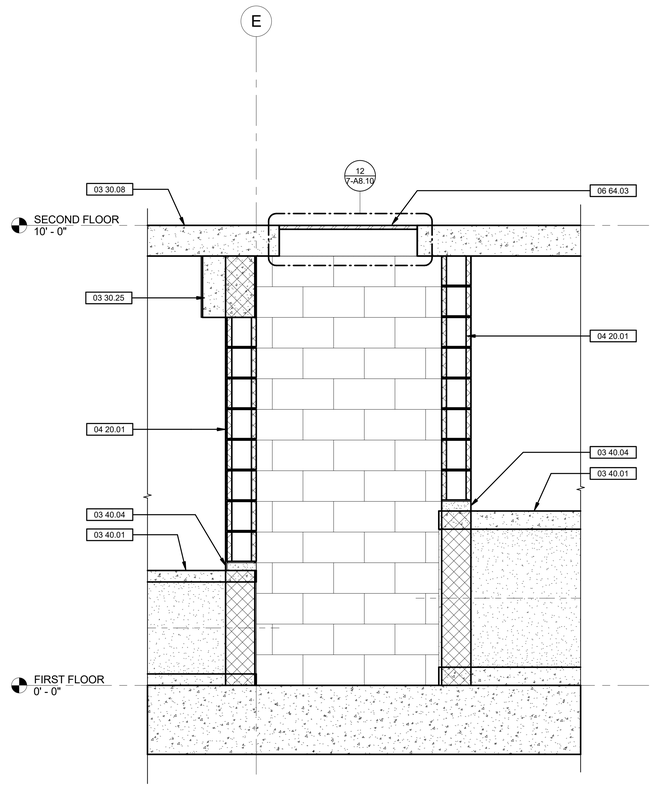


1 LONGITUDINAL SECTION @ DRIVE RAMP - Callout 1
3/4" = 1'-0"



2 LONGITUDINAL SECTION @ DRIVE RAMP - Callout 2
3/4" = 1'-0"



3 LONGITUDINAL SECTION @ PANCAKE SLABS - Callout 1
3/4" = 1'-0"

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SHEET KEYNOTE LEGEND

03 30.08	CAST-IN-PLACE (CIP) CONCRETE SLAB WITH PENETRATING SEALER
03 30.25	CAST-IN-PLACE CONCRETE BEAM, S.S.D.
03 40.01	HORIZONTAL PRECAST CONCRETE PIPE IN NOTED DIAMETER TO PENETRATE THROUGH CMU WALL AT EACH END
03 40.04	NON-SHRINK GROUT AROUND PERIMETER OF CONCRETE PIPE, FULL DEPTH OF CMU
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
06 64.02	REMOVABLE FIBERGLASS GRATE SECTIONS ON STEEL ANGLE SUPPORT LEDGER
06 64.03	36-INCH DIAMETER REMOVABLE FIBERGLASS GRATE SECTION CENTERED ON CHASE BELOW. SEE DETAIL 12/7-A8.10
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.03	PROVIDE THERMAL LINING AT CEILING, EXTENT OF ENCLOSED AREA INDICATED
32 16.01	NEW CONCRETE SIDEWALK, SEE CIVIL PLANS

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
WALL SECTIONS

Drawn By: EW
Checked By: EW

Scale:
3/4" = 1'-0"

Date:
October 4, 2019

Project No. 2016039

7-A3.50
Drawing No.

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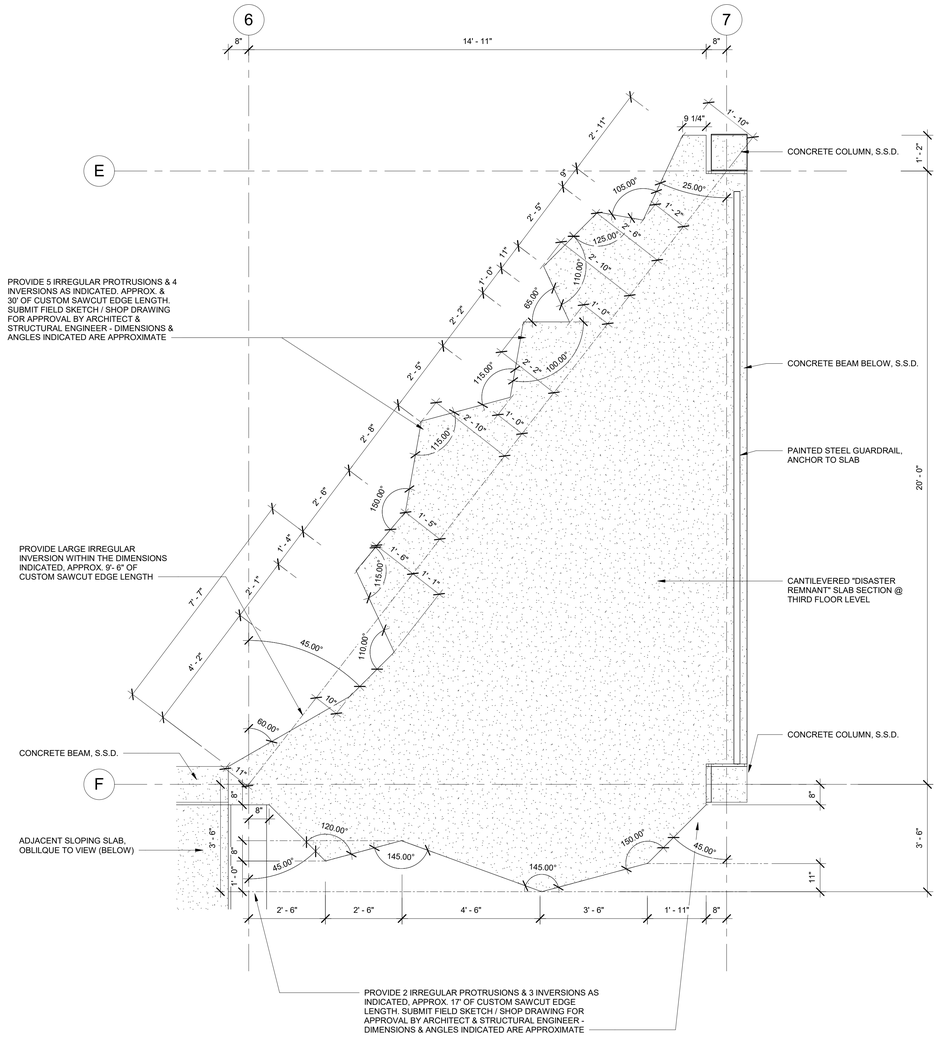
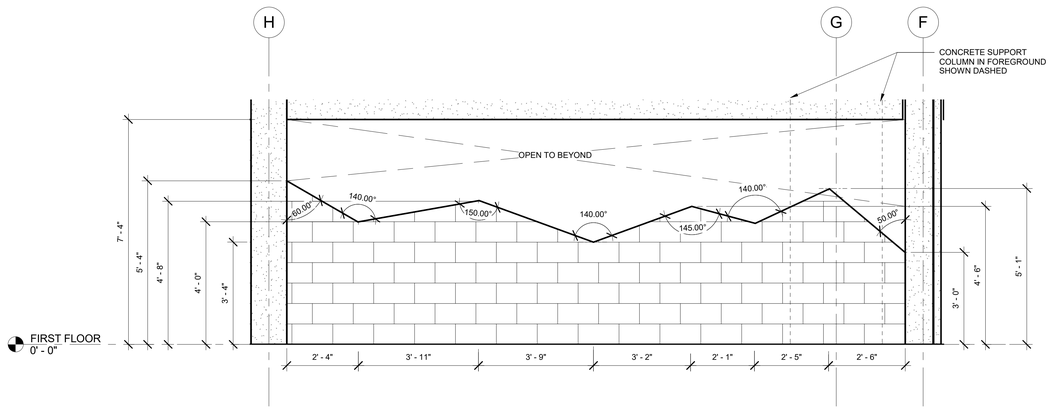


1 ENLARGED-SCALE FLOOR PLAN - THIRD LEVEL REMNANT SLAB
1/2" = 1'-0"



2 ENLARGED-SCALE EAST ELEVATION - PARTIAL
1/2" = 1'-0"

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 8/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 ENLARGED PLANS & ELEVATIONS

Drawn By: NM
Checked By: EW

Scale: **1/2" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

7-A4.10
Drawing No.

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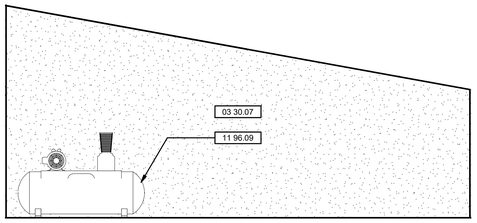
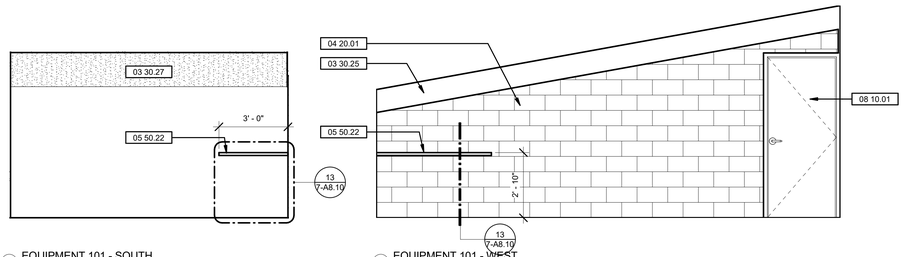
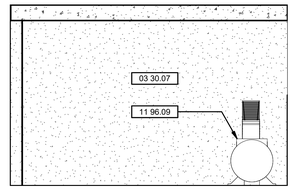


1 EQUIPMENT 101 - EAST
3/8" = 1'-0"

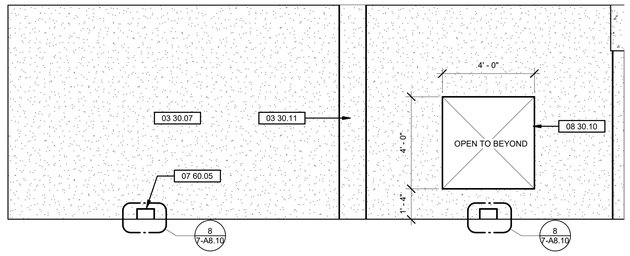


2 EQUIPMENT 101 - SOUTH
3/8" = 1'-0"

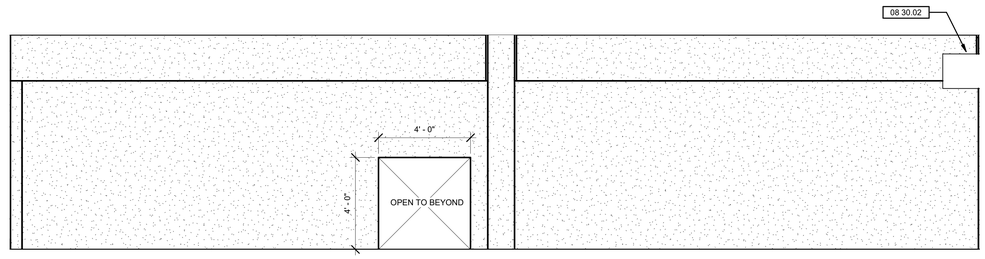
3 EQUIPMENT 101 - WEST
3/8" = 1'-0"



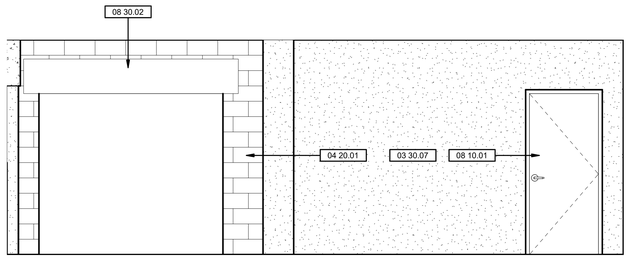
4 EQUIPMENT 101 - NORTH
3/8" = 1'-0"



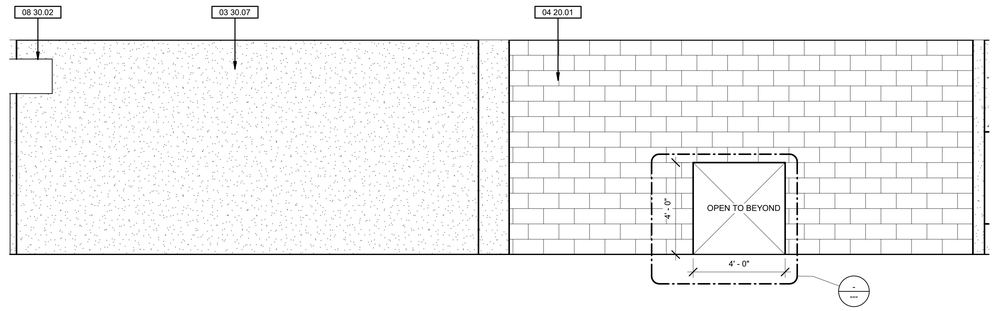
5 TRAINING SPACE 102 - SOUTH
3/8" = 1'-0"



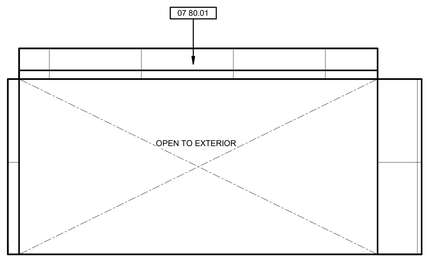
6 TRAINING SPACE 102 - WEST
3/8" = 1'-0"



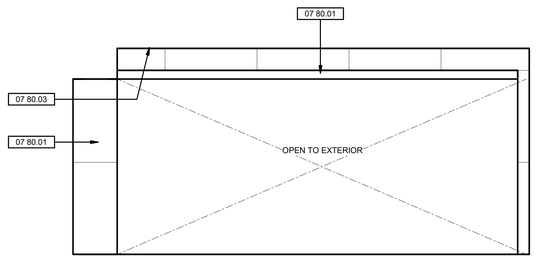
7 TRAINING SPACE 102 - NORTH
3/8" = 1'-0"



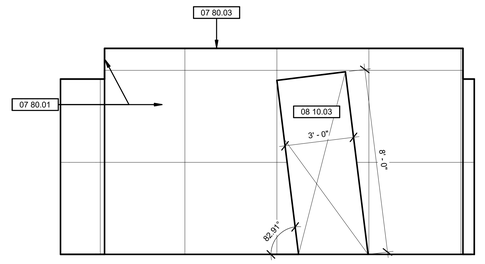
8 TRAINING SPACE 102 - EAST
3/8" = 1'-0"



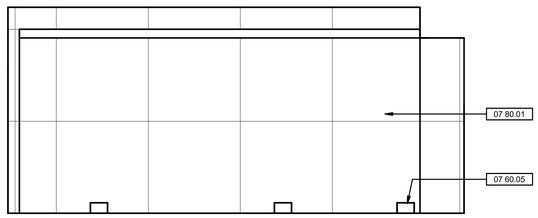
9 LPG PROP AREA 103 - WEST
3/8" = 1'-0"



10 LPG PROP AREA 103 - NORTH
3/8" = 1'-0"



11 LPG PROP AREA 103 - EAST
3/8" = 1'-0"



12 LPG PROP AREA 103 - SOUTH
3/8" = 1'-0"

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.11	CAST-IN-PLACE CONCRETE COLUMN, S.S.D.
03 30.25	CAST-IN-PLACE CONCRETE BEAM, S.S.D.
03 30.27	UNDERSIDE OF SLOPING CONCRETE CEILING, PER PLAN
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.22	EQUIPMENT BENCH
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.03	PROVIDE THERMAL LINING AT CEILING, EXTENT OF ENCLOSED AREA INDICATED
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 10.03	CASED SKEWED OPENING THROUGH WALL WITH H.M. FRAME
08 30.02	PAINTED METAL OVERHEAD COILING DOOR
08 30.10	50" SQUARE BREACH PANEL OPENING IN EXTERIOR WALL. SEE EXTERIOR ELEVATIONS AND STRUCTURAL DRAWINGS
11 96.09	AIR COMPRESSOR, S.P.D.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/30/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7
INTERIOR ELEVATIONS

Drawn By: EW
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

7-A5.10
Drawing No.

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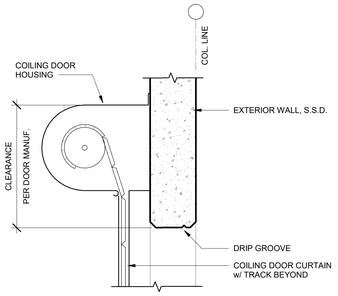
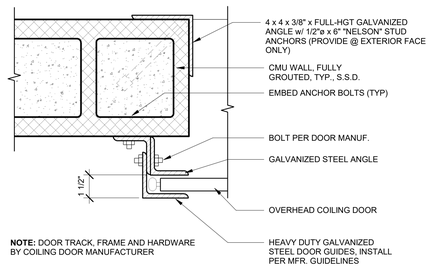
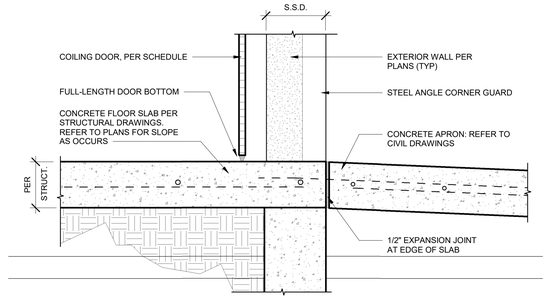


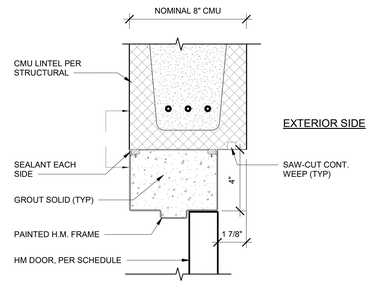
1 OVERHEAD COILING DOOR HEAD
1 1/2" = 1'-0"



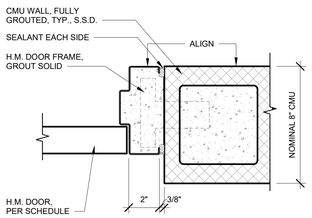
2 DR- EXTERIOR COILING DOOR JAMB
3" = 1'-0"



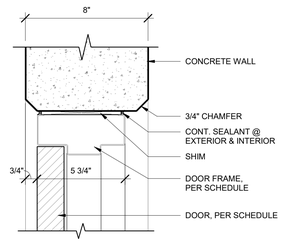
3 EXTERIOR COILING DOOR SILL
1 1/2" = 1'-0"



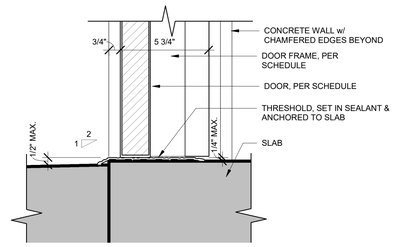
4 HOLLOW METAL DOOR HEAD AT 8" CMU WALL DETAIL
3" = 1'-0"



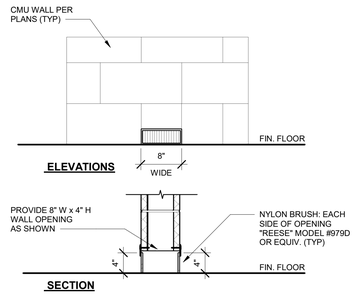
5 DR-EXTERIOR DOOR JAMB - 8" CMU
3" = 1'-0"



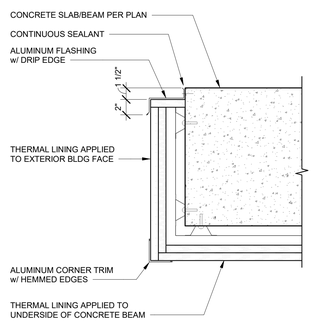
6 HOLLOW METAL DOOR HEAD AT 8" CONC. WALL, JAMB SIM.
3" = 1'-0"



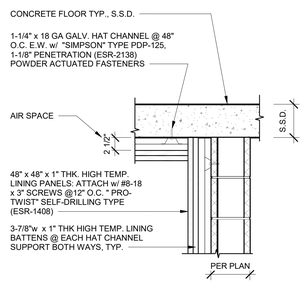
7 HOLLOW METAL DOOR THRESHOLD AT 8" CONC. WALL, CMU SIM.
3" = 1'-0"



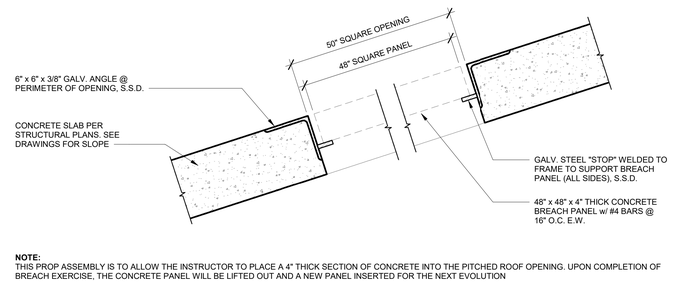
8 WALL THROUGH SCUPPER
1" = 1'-0"



9 THERMAL LINING @ EXTERIOR WALL
1 1/2" = 1'-0"

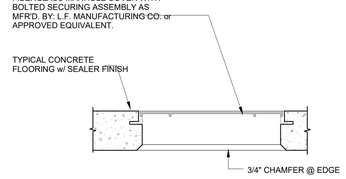


10 THERMAL LINING INSTALLATION
1" = 1'-0"

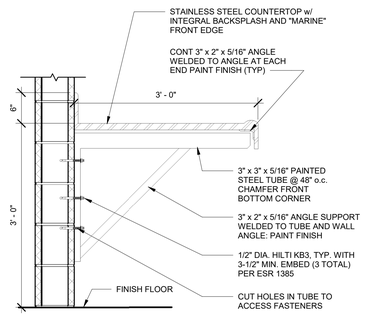


NOTE:
THIS PROP ASSEMBLY IS TO ALLOW THE INSTRUCTOR TO PLACE A 4" THICK SECTION OF CONCRETE INTO THE PITCHED ROOF OPENING. UPON COMPLETION OF BREACH EXERCISE, THE CONCRETE PANEL WILL BE LIFTED OUT AND A NEW PANEL INSERTED FOR THE NEXT EVOLUTION

11 PITCHED ROOF BREACH OPENING
1 1/2" = 1'-0"



12 FIBERGLASS MANHOLE ASSEMBLY
3/4" = 1'-0"



13 EQUIPMENT BENCH
1" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 ARCHITECTURAL DETAILS

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

7-A8.10
Drawing No.

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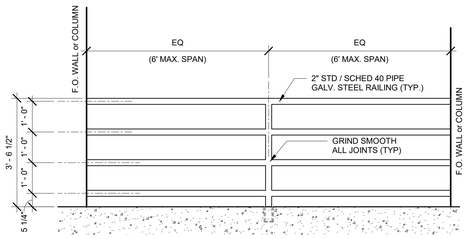
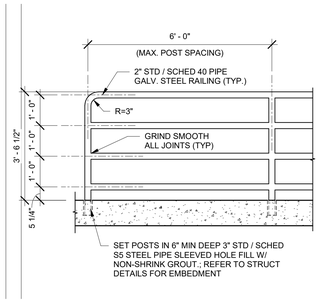
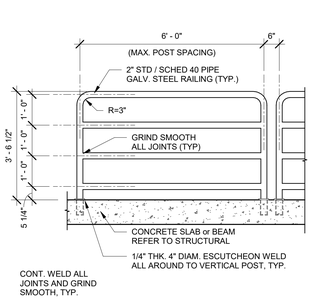


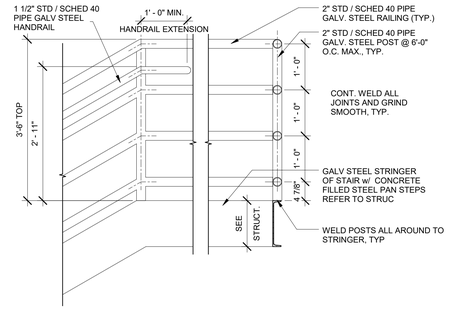
1 GUARDRAIL AT SLAB EDGE
1/2" = 1'-0"



2 FIXED EXTERIOR GUARDRAIL
1/2" = 1'-0"



3 REMOVABLE EXTERIOR GUARDRAIL
1/2" = 1'-0"



5 GUARDRAIL / HANDRAIL AT TOP OF STAIRS
3/4" = 1'-0"

6 FIXED GUARDRAIL SECTION DETAIL
3/4" = 1'-0"

7 REMOVABLE GUARDRAIL SECTION DETAIL
3/4" = 1'-0"

8 FIXED GUARDRAIL WALL PLATE ATTACHMENT
1" = 1'-0"

9 HANDRAIL ANCHOR TO CMU WALL
1 1/2" = 1'-0"

10 SLEEVED GUARDRAIL WALL PLATE ATTACHMENT
1" = 1'-0"

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ARCHITECTURE

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 ARCHITECTURAL DETAILS

Drawn By: Author
Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

7-A8.11
Drawing No.

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ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	AIR CONDITIONING
ADJ	ADJACENT
ADDL	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
ARCH	ARCHITECT
@	AT
BLDG	BUILDING
BLK/BLKG	BLOCK/BLOCKING
BLW	BELOW
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
BU	BUILT-UP
BYND	BEYOND
C	AMERICAN STANDARD CHANNEL
CANT	CANTILEVER
CB	CARRIAGE BOLT
CIP	CAST IN PLACE
CGL	CERTIFIED GLUED LUMBER
CJ	CONTROL JOINT
℄	CENTERLINE
CJP	COMPLETE JOINT PENETRATION
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COLL	COLLECTOR
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE/ COORDINATION
CMU	CONCRETE MASONRY UNIT
CSK	COUNTERSINK
CW	CUT WASHER
DBL	DOUBLE
DCW	DEMAND CRITICAL WELD
DF	DOUGLAS FIR
DIA or Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DJ	DOWEL JOINT
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DWG	DRAWING
DWL	DOWEL
EA	EACH
EE	EACH END
EF	EACH FACE
ELEC	ELECTRICAL
ELEV	ELEVATOR/ELEVATION
EMBED	EMBEDMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST or (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FIN	FINISH
FG	FINISH GRADE
FLI	FERRULE LOOP INSERT
FLR	FLOOR
FN	FACE NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FRMG	FRAMING
FS	FAR SIDE
FTG	FOOTING
GA	GAGE or GAUGE
GALV	GALVANIZED

GB	GRADE BEAM
GLB	GLUE LAMINATED BEAM
GR	GRADE
HD	HOLD DOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HGR	HANGER
HK	HOOK
HORIZ	HORIZONTAL
HS	HIGH STRENGTH
HSB	HIGH STRENGTH BOLT
HSFB	HIGH STRENGTH FRICTION BOLT
HSG	HIGH STRENGTH GROUT
HSH	HORIZONTAL SLOTTED HOLE
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
ID	INSIDE DIAMETER
IJ	I SHAPED WOOD BUILT UP TRUSS
INT	INTERIOR
JST	JOIST
JT	JOINT
KP	KING POST
	STEEL ANGLE
Lb or #	POUND(s)
LGMF	LIGHT GAGE METAL FRAMING
LGMFC	LIGHT GAGE METAL FRAMING CONTRACTOR
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LS	LAG SCREW
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
MAX	MAXIMUM
MB	MACHINE BOLT
MBM	METAL BUILDING MANUFACTURER
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MEZZ	MEZZANINE
MF	MOMENT FRAME
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MIW	MALLEABLE IRON WASHER
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NO or #	NUMBER
NS	NEAR SIDE
NSG	NON-SHRINK GROUT
NTS	NOT TO SCALE
O/	OVER
oc	ON CENTER
OD	OUTSIDE DIAMETER
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OW	OTHERWISE
OWT	OPEN WEB TRUSS
PL	PLATE or PROPERTY LINE
PA	POST ABOVE
PDP	POWDER DRIVEN PINS
PEN	PANEL EDGE NAIL
PERP	PERPENDICULAR
PES	PANEL EDGE SCREWS
PJP	PARTIAL JOINT PENETRATION
PLF	POUNDS PER LINEAR FOOT
PNL	PANEL
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PTB	PANEL TIE BAR

PTDF	PRESSURE TREATED DOUGLAS FIR
PT	POINT
R	RADIUS
RBS	REDUCED BEAM SECTION
RFTR	RAFTER
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISION
RF	ROOF
RWD	REDWOOD
S	AMERICAN STANDARD BEAM
SAD	SEE ARCHITECTURAL DRAWINGS
SB	SOLID BLOCK
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACED FRAME
SCD	SEE CIVIL DRAWINGS
SCHED	SCHEDULE
SED	SEE ELECTRICAL DRAWINGS
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHTG	SHEATHING
SIM	SIMILAR
SKYLT	SKYLIGHT
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SMD	SEE MECHANICAL DRAWINGS
SOG	SLAB ON GRADE
SPCG	SPACING
SPD	SEE PLUMBING DRAWINGS
SPEC	SPECIFICATION
SQ	SQUARE
SS	SELECT STRUCTURAL or STAINLESS STEEL
STGR	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THK	THICK
THRD	THREADED
THRU	THROUGH
TL	TOTAL LOAD
TN	TOE NAIL
TOC	TOP OF CONCRETE
TOF	TOP OF FRAMING
TOM	TOP OF MASONRY
TOP	TOP OF PLYWOOD
TOS	TOP OF STEEL
TOT	TOTAL
TU	TILT UP
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VSH	VERTICAL SLOTTED HOLE
W	WIDE FLANGE STEEL BEAM
W/	WITH
W/O	WITHOUT
WD	WOOD
WHS	WELDED HEADED STUD
WLD	WELDED
WP	WORK POINT/WATERPROOF
WS	WOOD SCREW
WT	WEIGHT
WTS	WELDED THREADED STUD
WWR	WELDED WIRE REINFORCEMENT

G PNEUMATICALLY PLACED CONCRETE NOTES

12" = 1'-0"

1. SHOTCRETE MAY BE USED ONLY WHERE SPECIFICALLY NOTED AND SHALL COMPLY WITH THE PROVISIONS OF CBC SECTION 1908.
2. PRE-CONSTRUCTION TESTS PER CBC SECTION 1908.5 SHALL BE REQUIRED. CONTRACTOR SHALL SUBMIT TEST PLAN FOR REVIEW PRIOR TO COMMENCING WITH TEST PANELS. SHOTCRETE TEST PANELS SHALL BE CONSTRUCTED ON-SITE AND EXECUTED BY THE PROJECT-SPECIFIED NOZZLE OPERATORS UNDER REPRESENTATIVE JOB-SITE CONDITIONS USING THE SPECIFIED SHOTCRETE MIXES. WHERE SHOTCRETE WALLS WILL BE EXPOSED, FACE OF TEST PANELS SHALL BE FINISHED. ALL TEST PANELS SHALL BE CORED AND SAW-CUT FOR EXAMINATION. APPROVED TEST PANELS SHALL BE CONSIDERED THE STANDARD FOR THE PROJECT.
3. REVIEW BY INSPECTOR: NOTICE SHALL BE GIVEN 48-HOURS (2 WORKING DAYS) BEFORE EACH CONCRETE PLACEMENT IN ORDER THAT REVIEW OF REINFORCING, FORMS, ETC. CAN BE MADE PRIOR TO PLACING CONCRETE. TESTING LABORATORY: CONTRACTOR SHALL NOTIFY 24 HOURS BEFORE EACH PLACEMENT DATE.
4. PREPARATION OF SURFACES: CONCRETE TO RECEIVE SHOTCRETE SHALL HAVE THE ENTIRE SURFACE THOROUGHLY CLEANED AND ROUGHENED BY SAND BLASTING, AND PRIOR TO RECEIVING CONCRETE SHALL BE THOROUGHLY CLEANED OF ALL DEBRIS, DIRT AND DUST. CONCRETE AND MASONRY SHALL BE WETTED BEFORE CONCRETE IS DEPOSITED, BUT NOT SO WET AS TO OVERCOME SUCTION.
5. WATER: THE PROPORTION OF WATER TO CEMENT SHALL BE ACCURATELY CONTROLLED SO AS TO PRODUCE THOROUGH AND UNIFORM HYDRATION OF THE CONCRETE WHICH, WHEN SHOT, WILL FORM A HOMOGENOUS MASS CONTAINING NEITHER SAGS NOR DRY SAND FORMATIONS.
6. REBOUND: ANY REBOUND OR ACCUMULATED LOOSE AGGREGATE SHALL BE REMOVED FROM THE SURFACE TO BE COVERED PRIOR TO PLACING THE INITIAL OR ANY SUCCEEDING LAYERS OF CONCRETE.
7. JOINTS: THE FILM OF LAITANCE WHICH FORMS ON THE SURFACE OF THE CONCRETE SHALL BE REMOVED AFTER APPLICATION. CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED WITH AIR AND WATER PRIOR TO RECEIVING CONCRETE.
8. DAMAGE: ANY CONCRETE WHICH SUBSIDES AFTER PLACEMENT SHALL BE REMOVED. SHOULD REBOUND POCKETS, SAGS, SLOUGHING OR OTHER DEFECTS OCCUR IN THE WORK THEY SHALL BE CUT AND REPLACED.
9. HOSE DIAMETER SHALL BE SUFFICIENT TO PLACE CONCRETE WITH THE AGGREGATE GRADATION SPECIFIED.
10. CONSTRUCTION JOINT LOCATION SHALL BE WHERE SHOWN AND IN COMPLIANCE WITH CBC SECTION 1908.7. JOINTS SHALL NOT BE ADDED WITHOUT REVIEW AND APPROVAL BY THE ENGINEER.
11. CONCRETE IS TO BE CURED PER CBC SECTION 1908.9.
12. LAP SPLICES OF REINFORCING BARS SHALL BE THE NON-CONTACT LAP SPLICE METHOD, WITH AT LEAST 2" CLEARANCE BETWEEN BARS. STAGGER ADJACENT LAPS WITHIN A MAT. STAGGER ADJACENT LAPS BETWEEN FRONT AND REAR MATS WHERE OCCURS.
13. LAPS AT VERTICAL REINFORCING ARE ALLOWED ONLY WHERE SHOWN. DO NOT LAP HORIZONTAL REINFORCING WITHIN 18" OF A WALL OPENING.
14. CONDUIT EMBEDDED IN WALLS SHALL CONFORM TO THE SPACING REQUIREMENTS OF THE CBC. CONDUIT OF 1" MAXIMUM OUTSIDE DIAMETER SHALL BE SPACED AT 6"oc IF LOCATED NEAR THE FARTHEST REINFORCING CURTAIN FROM THE NOZZLE, AND AT 12"oc OTHERWISE.
15. WHERE TWO LAYERS OF REINFORCEMENT ARE SPECIFIED, STAGGER HORIZONTAL AND VERTICAL BARS FRONT AND REAR MATS TO PREVENT "SHADOWING".
16. ALL EXPOSED CORNERS OR EDGES OF COLUMNS, PIERS, WALLS, BEAMS, ETC, SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE NOTED ON DRAWINGS. FOR FEATURES, DRIP EDGES, REGLETS, REVEALS, ETC, SEE ARCHITECTURAL DRAWINGS.
17. RELATED REQUIREMENTS FOR CAST IN PLACE CONCRETE SHALL BE ADHERED TO WHEREVER SHOTCRETE IS USED.

E MATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY ULTIMATE COMPRESSIVE STRENGTH:
F'_c = 5,000 PSI FOOTINGS, MAT FOUNDATIONS, WALLS, COLUMNS, ELEVATED SLABS

REINFORCING STEEL YIELD STRENGTH:
ALL SPECIAL CONCRETE SHEARWALL REINFORCING SHALL BE A706 GR. 60.
MAT SLAB AND PLATFORM REINFORCING SHALL BE A615 GR 80, UNO
F_y = 40,000 PSI AT #3 AND SMALLER
F_y = 60,000 PSI AT #4 AND LARGER

STEEL YIELD STRENGTH (UNO):
F_y = 50,000 PSI W SHAPES
F_y = 36,000 PSI ANGLES, CHANNELS, AND PLATES
F_y = 50,000 PSI PLATES AT MOMENT FRAME CONNECTIONS
F_y = 46,000 PSI RECTANGULAR HSS
F_y = 42,000 PSI ROUND HSS
F_y = 35,000 PSI PIPES

FASTENERS:
MACHINE BOLTS SHALL BE ASTM A307
HIGH STRENGTH BOLTS SHALL BE ASTM F3125 GRADE A325 OR F1852 UNO
ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNO
ARC-WELDING ELECTRODES SHALL BE E70

COLD FORMED METAL FRAMING YIELD STRENGTH:
F_y = 33,000 PSI 33 & 43 MILS (20 & 18 GAUGE)
F_y = 50,000 PSI 54, 68, & 97 MILS (16, 14, & 12 GAUGE)

MASONRY COMPRESSIVE STRENGTH:
F'_m = 2,000 PSI

F CONCRETE MASONRY UNIT NOTES

1. CONCRETE MASONRY UNIT CONSTRUCTION SHALL BE PER **7-S1.40** & **7-S1.41** UNO. USE DOUBLE OPEN END WHERE POSSIBLE AND SINGLE OPEN END OTHERWISE. ALL CELLS TO BE GROUTED SOLID. ALL CMU TO BE LAID IN RUNNING BOND.
2. PROVIDE INVERTED BOND BEAM UNITS AT FOUNDATION LEVEL. SEE SPECIFICATIONS FOR CLEANOUT AND GROUTING REQUIREMENTS.
3. DOWELS FROM FOUNDATION ARE TO MATCH SIZE AND ALIGNMENT WITH THE WALL VERTICAL REINFORCEMENT. EXTEND DOWELS FROM FOUNDATION INTO WALL TO PROVIDE MINIMUM LAP WITH WALL VERTICAL REINFORCEMENT. INSTALL DOWEL BARS PER PLAN AND **4/7-S1.40**. ALL DOWELS TO EXTEND TO THE LOWEST FOUNDATION REINFORCEMENT AND END WITH A STANDARD HOOK.
4. WALL REINFORCING SHALL BE PER **1/7-S1.40** UNO.
5. PROVIDE (2) #5 IN BOND BEAM UNITS AT THE TOPS OF ALL WALLS AND AT EACH FLOOR AND ROOF ELEVATION, UNO.
6. PROVIDE SASH UNITS AT ALL OPENINGS TYPICAL UNO.
7. SET ALL LEDGER AND CONNECTOR BOLTS PER **12/7-S1.40**. 1" GROUT AROUND BOLT REQUIRED.
8. SAD FOR TYPE OF FINISH, LOCATION, COLOR, ETC. SEE SPECIFICATIONS OTHERWISE.
9. VERTICAL CONTROL JOINTS SHALL BE SPACED NO GREATER THAN 25'-0"oc. SEE **15/7-S1.40** CONTRACTOR TO SUBMIT VERTICAL JOINT LAYOUT FOR REVIEW PRIOR TO CONSTRUCTION.

C FOUNDATION NOTES

1. FOUNDATION DESIGN PRESSURES ARE:

   SHALLOW FOOTINGS:
   DEAD LOAD + LIVE LOAD = 3,000 PSF
   DEAD LOAD + LIVE LOAD + LATERAL = 4,000 PSF

2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW, AND CHAPTER 18 OF THE CBC. ALL FOUNDATIONS SHALL BEAR ON FIRM ENGINEERED FILL AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. ENGINEERED FILL TO BE COMPACTED PER GEOTECHNICAL REPORT. INCREASE FILL AND OR FOOTING DEPTH AS REQUIRED BY GEOTECHNICAL ENGINEER. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. MAXIMUM OVER EXCAVATION IN WIDTH SHALL BE LESS THAN 12 INCHES OR 25% OF FOOTING WIDTH, WHICH EVER IS LESS. 6 INCHES MAXIMUM PER SIDE. LARGER OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH ADDITIONAL REINFORCED CONCRETE AS DIRECTED BY THE ENGINEER, OR FORMWORK SHALL BE PROVIDED. OVER-EXCAVATIONS IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE. GEOTECHNICAL REPORT BY:

   ROCKRIDGE GEOTECHNICAL
   REPORT NO. 15-919B
   DATED: SEPT 21, 2018

3. ALL SLAB ON GRADES AND MAT FOUNDATIONS PER PLAN SHALL BEAR ON VAPOR RETARDER OVER 12" MINIMUM OF NON-EXPANSIVE SOIL CONSISTING OF COMPACTED IMPORTED SELECT FILL OR LIME TREATED ON-SITE SOIL PER GEOTECHNICAL RECOMMENDATIONS, AND AS APPROVED BY THE GEOTECHNICAL ENGINEER. DO NOT DRIVE CONCRETE TRUCKS OR LARGE SCREED MACHINES ON VAPOR BARRIER WITHOUT ADDITIONAL BUFFER MATERIAL AND APPROVAL FROM THE STRUCTURAL ENGINEER.
4. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DEPRESSED SLABS FOR ARCHITECTURAL FLOORING OR INSERTS, SLOPED SLABS TO DRAIN AND PIPES OR CONDUITS AT SLAB. SEE **6/7-S1.10** AND **7/7-S1.10** FOR PIPES AND CONDUITS.
5. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, ETC.

D SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH CBC CHAPTER 17 AND THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY CBC SECTIONS 1704.2.3 AND 1704.3 FOR BUILDING STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. **SHOP FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES** PER CBC SECTION 1704.2.5 OR ALTERNATIVELY, APPROVED FABRICATORS SHALL SUBMIT A CERTIFICATE OF COMPLIANCE PER CBC SECTION 1704.2.5.1 INCLUDING GLULAM BEAM INSPECTION CERTIFICATES.
2. **STRUCTURAL STEEL CONSTRUCTION** PER CBC SECTIONS 1705.2, 1705.12.1, 1705.13.1, AND TABLE 1705.2.3 INCLUDING MATERIAL IDENTIFICATION, SHOP AND FIELD WELDING, AND INSTALLATION OF HIGH-STRENGTH BOLTS.
3. **CONCRETE CONSTRUCTION** PER CBC SECTIONS 1705.3, AND TABLE 1705.3 INCLUDING FORMWORK, REINFORCING STEEL, CAST-IN-PLACE BOLTS, MIX DESIGNS, CONCRETE SAMPLES, AND PLACEMENT FOR ALL CONCRETE. REINFORCING DOWELS FROM FOOTINGS TO RETAINING WALLS SHALL BE INSPECTED PRIOR TO PLACEMENT OF FOOTING CONCRETE AND WALL GROUT OR CONCRETE. CONTINUOUS OR ISOLATED SPREAD FOOTINGS WITH DESIGN STRENGTH NO GREATER THAN 2500 PSI, NON-STRUCTURAL SLABS ON GRADE, AND EXTERIOR FLATWORK DO NOT REQUIRE SPECIAL INSPECTION PER CBC SECTION 1705.3.
4. **MASONRY CONSTRUCTION** PER CBC SECTION 1705.4 INCLUDING COMPRESSIVE STRENGTH, BLOCK LAYING PROCEDURES, MORTAR PREPARATION, REINFORCEMENT SIZE AND GRADE, REINFORCEMENT PLACEMENT, GROUT PREPARATION AND GROUT PLACEMENT, AND ANCHOR BOLT TYPE, SIZE AND PLACEMENT.
5. **SOILS** PER CBC SECTION 1705.6, TABLE 1705.6, AND THE APPROVED SOILS REPORT INCLUDING SUBGRADE PREPARATION, FOUNDATION BEARING MATERIALS AND DEPTH OF EXCAVATIONS, AND VERIFICATION, PLACEMENT AND TESTING OF CONTROLLED FILL.
6. **SPECIAL CASES** PER CBC SECTION 1705.1.1 AND PRODUCT ICC REPORTS FOR ALL STRUCTURAL MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE CBC OR REFERENCED STANDARDS INCLUDING POST-INSTALLED ANCHOR BOLTS IN CONCRETE AND CMU.

A DESIGN CRITERIA

DESIGN CRITERIA: 2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
FLOOR LIVE LOAD: 100 PSF (REDUCIBLE)
ROOF LIVE LOAD: 40 PSF (REDUCIBLE) (AT BART PLATFORM ROOF ONLY)
FUTURE SOLAR: N/A
RISK CATEGORY: I
WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110
WIND EXPOSURE: C
INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18
COMPONENTS AND CLADDING DESIGN PRESSURES FOR SYSTEMS DESIGNED BY OTHERS SHALL COMPLY WITH THE "ASCE 7" DESIGN STANDARD
EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_e: 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS:
S_S = 1.923; S_1 = 0.777
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS:
S_{DS} = 1.282; S_{D1} = 0.777
SEISMIC DESIGN CATEGORY: E
SEISMIC FORCE RESISTING SYSTEM(S):
SPECIAL REINFORCED CONCRETE SHEAR WALLS (PARKING)
SPECIAL REINFORCED CONCRETE MOMENT FRAMES & CANTILEVERED COLUMNS (BART PLATFORM)
RESPONSE MODIFICATION FACTOR(S):
R = 5 (PARKING)
R = 8 (BART: MF), 2.5 (BART: CANT COLS)
DESIGN BASE SHEAR:
SEISMIC RESPONSE COEFFICIENT(S):
C_S = 0.256 (LRFD) PARKING
C_S = 0.641 BART CANT COLS (LRFD)
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

MAXIMUM ANTICIPATED STORY DRIFT = 0.020 X HEIGHT
PROVIDE DEFORMATION COMPATIBILITY PER ASCE 7 SECTION 12.12.5 FOR NON-STRUCTURAL ITEMS, INCLUDING CLADDING, STAIRS, GLAZING, ETC.

BUILDING #7: PARKING STRUCTURE & BART PLATFORM

GENERAL DESCRIPTION: 3 STORY, CAST IN PLACE (CIP) STRUCTURAL CONCRETE WALLS AND NON-STRUCTURAL CMU BLOCK INFILL PARTITIONS.

THE STRUCTURE IS NOT INTENDED TO BE DESIGNED AS ESSENTIAL SERVICE FACILITY AND WILL NOT BE USED FOR THAT PURPOSE.

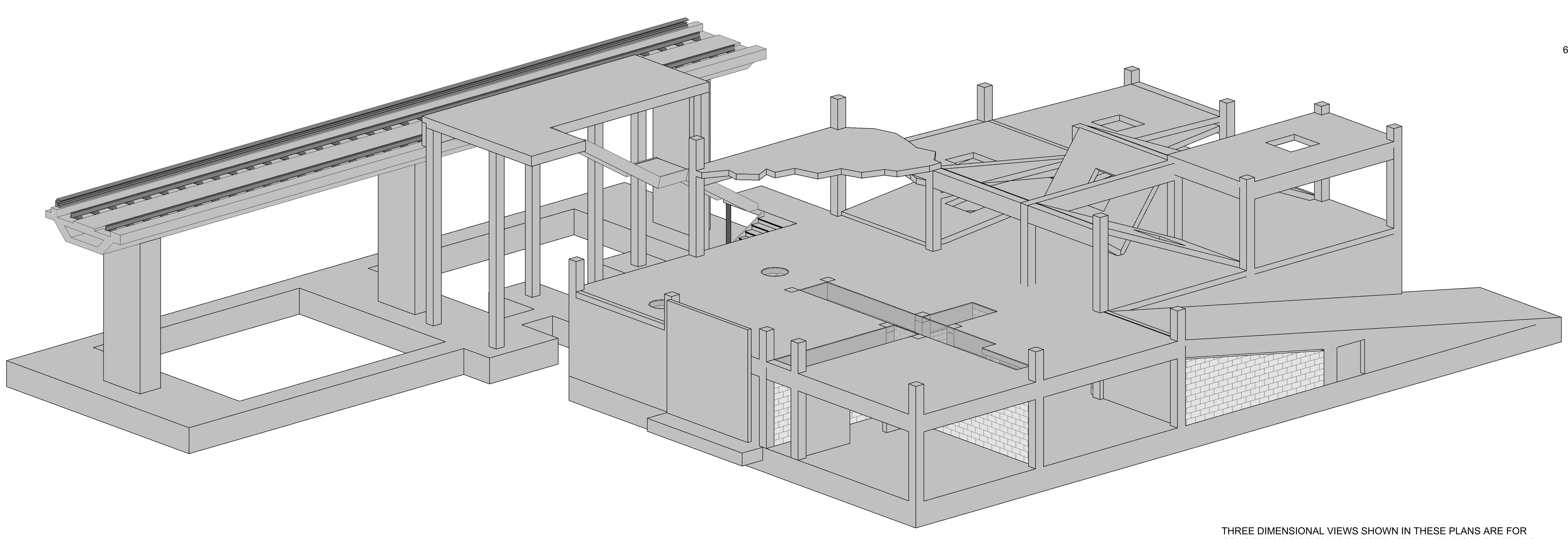
BUILDING WILL BE USED FOR USAR - UNDERGROUND SEARCH AND RESCUE BUILDING AND BART PLATFORM TRAINING. STRUCTURE DESIGNED FOR TRAINING IN TRENCHES AND CONFINED SPACES, WILL HAVE REPLACEABLE BREACH WALLS AND SLOPED FLOORS TO SIMULATE A PARTIALLY COLLAPSED SINGLE LEVEL OF A PARKING GARAGE.
- USED FOR URBAN SEARCH AND RESCUE (USAR) AND CONFINED ACCESS, SHORING, BREACHING, AND BRACING TRAINING
- IRREGULAR SHAPED CAST-IN-PLACE CONCRETE STRUCTURE WITH CMU INFILL WALLS SIMULATING A CONFINED SPACE, PARKING STRUCTURE WITH SLOPED FLOORS
- SIMULATING COLLAPSED PARKING RAMPS
- MOCKUP OF ELEVATED RAIL TRANSIT PASSENGER PLATFORM
- ELEVATED LIGHT-RAIL TRACK WITH FUNCTIONAL SAFETY TRAINING COMPONENTS (ARTICULATING BART TRAIN ANCHORED TO TRACKS IS TO BE OWNER SUPPLIED)
- NON-SPRINKLERED BUILDING

B GENERAL NOTES

1. REFER TO SHEETS **7-S1.10** THROUGH **7-S1.41** FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.
2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.
6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. USE DETAILS **3/7-S1.10**, **6/7-S1.10**, **7/7-S1.10**, **10/7-S1.10** AND **11/7-S1.10** AT CONDITIONS WHERE THESE DETAILS DO NOT APPEAR TO APPLY, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
7. VERIFY WEIGHTS AND LOCATIONS OF MECHANICAL UNITS WITH MECHANICAL ENGINEER PRIOR TO PLACEMENT. UNITS VARYING OVER 10% IN WEIGHT SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION (MECHANICAL WEIGHTS SHOWN ARE MAXIMUM). CONTRACTOR TO VERIFY MECHANICAL UNIT SIZES AND WEIGHTS AS INSTALLED PRIOR TO INSTALLATION OF SPECIAL FRAMING TO ENSURE CORRECT PLACEMENT UNDER CURBS, ETC.
8. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL ENGAGE A LICENSED CIVIL OR STRUCTURAL ENGINEER TO PROVIDE SHORING.
9. SPECIAL INSPECTIONS ARE REQUIRED PER **D/7-S0.10** AND THE TESTING AND INSPECTION FORM.
10. VEHICULAR TRAFFIC, HEAVY EQUIPMENT AND MATERIAL STAGING SHALL NOT BE ALLOWED ADJACENT TO ANY RETAINING/BASEMENT WALL, NEW OR EXISTING WITHIN A HORIZONTAL DISTANCE EQUAL TO THE WALL HEIGHT MEASURED FROM THE BOTTOM OF FOOTING OR 5'-0" WHICHEVER IS GREATER, UNLESS APPROVED BY THE STRUCTURAL ENGINEER OR NOTED OTHERWISE. WITHIN THIS ZONE, ONLY HAND-OPERATED EQUIPMENT ("WHACKERS", VIBRATORY PLATES, OR PNEUMATIC COMPACTORS) SHALL BE USED TO COMPACT THE BACKFILL SOILS.
11. STRUCTURAL OBSERVATION PER CBC SECTION 1704.6 IS NOT REQUIRED. NOTIFY ZFA FOR GENERAL REVIEW OF:
    - MINIMUM FOOTING SIZE, MAT FOUNDATION THICKNESS AND REINFORCING STEEL.
    - STRUCTURAL BEAM AND COLUMN SIZE AND REINFORCING
    - CONCRETE SHEAR WALL REINFORCING STEEL AND CONNECTIONS TO OTHER COMPONENTS OF THE SEISMIC FORCE RESISTING SYSTEM.
    - STRUCTURAL SLAB THICKNESS AND REINFORCING STEEL.
12. CMU WALL REINFORCING STEEL

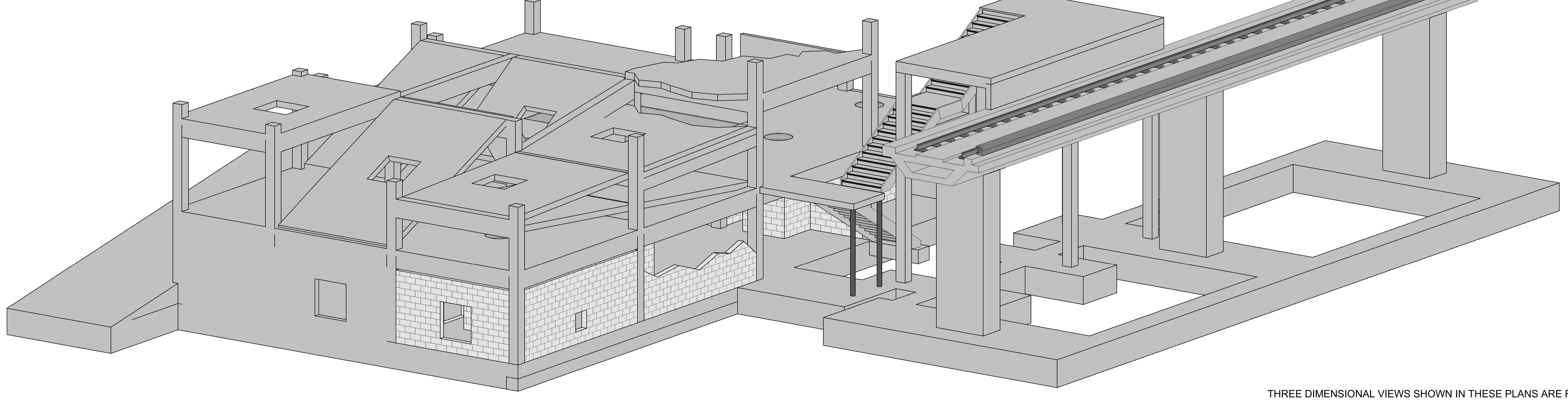
    NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE.
13. SUBMIT ENGINEERING FOR DEFERRED APPROVAL ITEMS TO ARCHITECT/ENGINEER FOR REVIEW AND SUBMITTAL TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO FABRICATION. DEFERRED APPROVAL ITEMS SHALL BE DESIGNED AND DETAILED BY MANUFACTURER TO ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS AS NOTED IN STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL REVIEW AND APPROVE DIMENSIONS AND DETAILS SHOWN ON THE SHOP DRAWINGS PRIOR TO SUBMITTAL. MANUFACTURER TO PROVIDE DRAWINGS AND CALCULATIONS DESIGNED IN ACCORDANCE WITH THE CBC AND SPECIFICATIONS, PREPARED AND SIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER FOR THE FOLLOWING ITEMS, UNLESS NOTED OTHERWISE:

    A. STAIR STRINGERS, LANDINGS, CONCRETE/METAL PAN STAIR TREADS AND LANDINGS, HAND RAILS, INCLUDE ATTACHMENTS TO STRUCTURE.



THREE DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREEDIMENSIONAL VIEWS.

1 3D REFERENCE VIEW



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2 3D REFERENCE VIEW

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

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san carlos ca 94070 650.394.8869
zfa job no.17143

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title
BUILDING 7 GENERAL NOTES

Drawn By: LS Checked By: SRP

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

7-S0.10
Drawing No.

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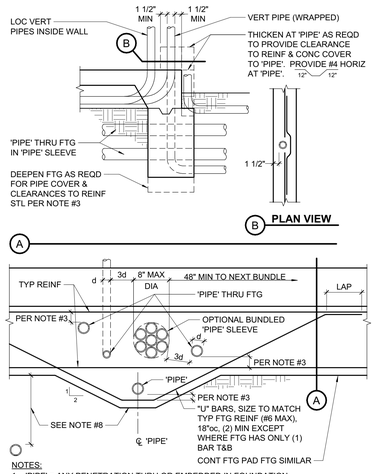
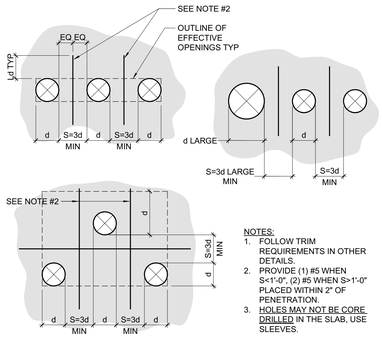
2/26/2020 11:23:44 AM



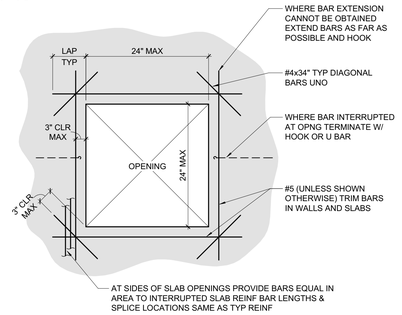
NOTES:
1. 'PIPE' = ANY PENETRATION THRU OR EMBEDDED IN FOUNDATION.
2. ALL PIPES THROUGH FOOTINGS TO BE WRAPPED OR SLEEVED AS FOLLOWS:
   a. SLEEVES: PROVIDE 1" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE, UNO. SEAL SLEEVE ENDS W/ MASTIC OR PLASTIC BITUMINOUS CEMENT.
   b. WRAPPED VERTICAL PIPES: PROVIDE ¼" NOMINAL SHEET FOAM W/ (3) WRAPS MINIMUM, UNO.
   c. WRAPPED HORIZONTAL PIPES: PROVIDE ¼" NOMINAL SHEET FOAM W/ (8) WRAPS MINIMUM, UNO.
   d. UNDERGROUND FIRE LINES 4" AND LARGER:
      1. SLEEVES: PROVIDE 2" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE. SEAL ENDS PER ABOVE.
      2. WRAPPED: PROVIDE ¼" NOMINAL SHEET FOAM W/ (16) WRAPS MINIMUM.
3. WRAPPED AND SLEEVED PIPES SHALL HAVE 1½" MIN CLEAR TO REINF STEEL. MINIMUM CONCRETE COVER AT PIPES TO BE 3".
4. CLEARANCE BETWEEN 'PIPES' TO BE 3d MIN TYP W/ A MAXIMUM OF (8) PIPES PER 48". GROUPS OF PIPES MAY BE BUNDLED AS SHOWN, EXCEPT IN PAD FOOTINGS.
5. NO 'PIPE' TO RUN PARALLEL IN FOOTINGS, STEM OR CURB.
6. PVC CONDUIT ('PIPE') EMBEDDED IN CURB/STEM MAY BE WIRE TIED TO HORIZONTAL REINF.
7. NO HORIZONTAL PIPES ALLOWED THROUGH FOOTING WITHIN 2'-0" EACH SIDE OF HOLDOWNS OR STEEL COLUMNS. NO VERTICAL PIPES ALLOWED IN FOOTINGS AT BRACED FRAMES.
8. PROVIDE 18" MIN OF COMPACTED FILL ABOVE PIPES UP TO 12"ø, FOR LARGER PIPES INCREASE COMPACTED FILL DEPTH 1'-0" OF FOR EACH 6" INCREASE IN PIPE DIAMETER. OTHERWISE DEEPEN FOOTING AS SHOWN.

13 PIPES THRU FOOTING
3/4" = 1'-0"

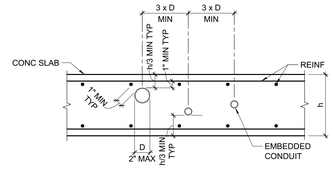


NOTES:
1. FOLLOW TRIM REQUIREMENTS IN OTHER DETAILS.
2. PROVIDE (1) #5 WHEN S<1'-0", (2) #5 WHEN S>1'-0" PLACED WITHIN 2" OF PENETRATION.
3. HOLES MAY NOT BE CORE DRILLED IN THE SLAB, USE SLEEVES.

10 MULTIPLE SLAB AND WALL PENETRATIONS
1" = 1'-0"

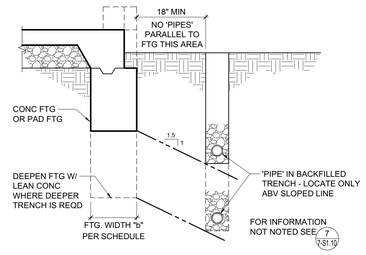


6 TYPICAL DETAIL AT EMBEDDED CONDUITS IN WALLS AND SLABS
1" = 1'-0"



NOTES:
1. 'PIPE' = ANY PIEP OR CONDUIT EMBEDED IN CONCRETE
2. WHERE MORE THAN ONE SIZE PIPE IS USED, D, IS THE OUTSIDE DIAMETER OF THE LARGEST PIPE.
3. ALUMINIUM CONDUIT IS NOT PERMITTED.
4. PRESSURIZED PIPE SHALL NOT BE USED WITHOUT SEOR WRITTEN APPROVAL.
5. PIPE SHALL BE PLACED BETWEEN TOP AND BOTTOM LAYERS OF REINFORCING WHERE ONLY ONE LAYER IS SPECIFIED IN PLAN AN ADDITIONAL LAYER SHALL BE PLACED NORMAL TO THE EMBEDDED CONDUIT WITH IDENTICAL SIZE AND SPACING TO THE SPECIFIED LAYER.
6. PIPE EMBEDED IN CONCRETE MAT FOUNDATION TO BE PROVIDED W/ FLEXIBLE COUPLINGS AT ENTRY/EXIT POINTS

2 TRENCHING ADJACENT TO FOOTING
3/4" = 1'-0"



	LOCATION	DEVELOPMENT LENGTHS (ld) GR60* SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE fc = 3000 PSI AT 28 DAYS	TOP	12"	22"	32"	43"	69"	86"	103"	122"	141"
	OTHER	12"	17"	25"	33"	53"	66"	80"	94"	109"
CONCRETE fc = 4000 PSI AT 28 DAYS	TOP	12"	19"	28"	37"	60"	74"	90"	106"	122"
	OTHER	12"	15"	21"	29"	46"	57"	69"	81"	94"
CONCRETE fc = 5000 PSI AT 28 DAYS	TOP	12"	17"	25"	34"	54"	67"	80"	95"	109"
	OTHER	12"	13"	19"	26"	42"	51"	62"	73"	84"

*= INCREASE DEVELOPMENT LENGTHS BY 1/3 FOR GRADE 80 REINF

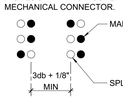
	LOCATION	HOOKED DEVELOPMENT LENGTHS (Ldh) GR60* SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE fc = 3000 PSI AT 28 DAYS	ANY	9"	11"	14"	17"	20"	22"	25"	28"	-
CONCRETE fc = 4000 PSI AT 28 DAYS	ANY	8"	10"	12"	15"	17"	19"	22"	24"	-
CONCRETE fc = 5000 PSI AT 28 DAYS	ANY	7"	9"	11"	13"	15"	17"	20"	22"	-

*= INCREASE HOOKED DEVELOPMENT LENGTHS BY 1/3 FOR GRADE 80 REINF

	LOCATION	LAP SPLICE LENGTHS (Ls) GR60* SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE fc = 3000 PSI AT 28 DAYS	TOP	17"	28"	41"	56"	90"	112"	134"	158"	183"
	OTHER	13"	22"	32"	43"	69"	86"	103"	122"	141"
CONCRETE fc = 4000 PSI AT 28 DAYS	TOP	15"	25"	36"	49"	78"	97"	116"	137"	159"
	OTHER	12"	19"	28"	37"	60"	74"	90"	106"	122"
CONCRETE fc = 5000 PSI AT 28 DAYS	TOP	13"	22"	32"	44"	70"	87"	104"	123"	142"
	OTHER	12"	17"	25"	34"	54"	67"	80"	95"	109"

*= INCREASE LAP SPLICE LENGTHS BY 1/3 FOR GRADE 80 REINF

NOTES:
1. TOP REINFORCING IS HORIZONTAL REINFORCEMENT WITH MORE THAN TWELVE INCHES (12") OF CONCRETE PLACED BELOW IT.
2. IF THE LAP SPLICE REINFORCEMENT DOES NOT HAVE A MINIMUM SPACING 3db + 1/8 INCHES & A MINIMUM COVER OF db + 1/8 INCHES, USE WELDED SPLICE OR MECHANICAL CONNECTOR.



3. HOOKED DEVELOPMENT LENGTHS (Ldh) MAY BE USED IN LIEU OF DEVELOPMENT LENGTH (Ld) IF STANDARD HOOK IS PROVIDED AT END OF BAR.
4. MECHANICAL CONNECTORS SHALL BE TENSION-COMPRESSION TYPE WITH THE ABILITY TO DEVELOP 125% OF THE YIELD STRENGTH FOR THE SPLICED REINFORCEMENT (75 KSI). MECHANICAL CONNECTORS SHALL HAVE & BE INSTALLED PER AN ICC EVALUATION REPORT.
5. WWR SHALL LAP MINIMUM (3) BAR CROSSINGS.

CONCRETE COVER FOR REINFORCING STEEL **'CLR'**

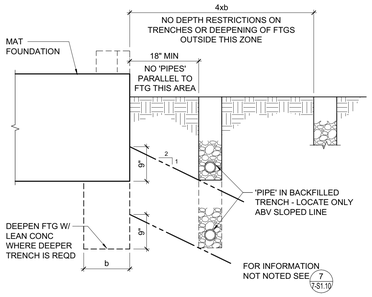
CAST AGAINST EARTH OR GRADE . . . . . 3"

EXPOSED TO EARTH (FORMED) OR WEATHER;
#5 AND SMALLER . . . . . 1½"
#6 AND LARGER . . . . . 2"

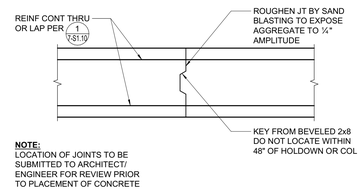
NOT EXPOSED TO EARTH OR WEATHER;
#5 AND SMALLER . . . . . 1"
#6 AND LARGER, AND ALL BEAM STIRRUPS, COLUMN TIES AND SPIRALS . . . . 1½"

ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN A STANDARD 90° OR 180° HOOK UNLESS DETAILED OTHERWISE.

3 TRENCHING ADJACENT TO FOOTING
3/4" = 1'-0"



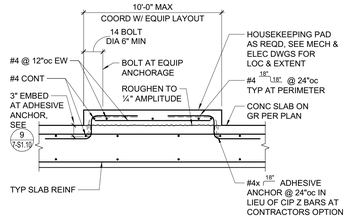
11 SMALL SLAB AND WALL PENTRATIONS
1" = 1'-0"



NOTE:
LOCATION OF JOINTS TO BE SUBMITTED TO ARCHITECT/ ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE

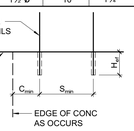
12 FOOTING CONSTRUCTION JOINT
3/4" = 1'-0"

7 PIPE PENETRATIONS IN STRUCTURAL SLAB
3/4" = 1'-0"



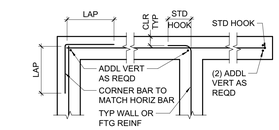
8 TYPICAL HOUSEKEEPING PAD AT STRUCTURAL SLAB
3/4" = 1'-0"

ADHESIVE TYPE	ANCHOR: THRD ROD	ANCHOR: REBAR	PILOT HOLE	MIN EMBED UNO H_{ef}	MIN EDGE DISTANCE C_{min}	MIN SPCG S_{min}	MIN CONC DEPTH H_{min}
ADHESIVE ANCHOR IN 2500 PSI MIN CONCRETE							
SIMPSON SET-XP (ICC-ESR 2508)	⅜"ø	#3	½"ø	3"	1¾"	3"	5"
	½"ø	#4	⅝"ø	4"	1¾"	3"	6½"
	⅝"ø	#5	¾"ø	5"	1¾"	3"	8¼"
	¾"ø	#6	⅞"ø	6"	1¾"	3"	9¼"
	⅞"ø	#7	1"ø	7"	1¾"	3"	11½"
	1"ø	#8	1⅛"ø	8"	1¾"	3"	13"
	1¼"ø	#10	1⅜"ø	10"	2¾"	6"	16¼"
HILTI HIT-HY 200R (ICC-ESR 3187)	⅜"ø	N/A	⅝"ø	3"	1¾"	1⅞"	4¼"
	N/A	#3	½"ø	3"	1¾"	1⅞"	4¼"
	½"ø	N/A	⅝"ø	4"	1¾"	2½"	5¼"
	N/A	#4	⅝"ø	4"	1¾"	2½"	5¼"
	⅝"ø	#5	¾"ø	5"	1¾"	3⅛"	6½"
	¾"ø	#6	⅞"ø	6"	1¾"	3¾"	7⅞"
	⅞"ø	#7	1"ø	7"	1¾"	4⅜"	9"
	1"ø	#8	1⅛"ø	8"	1¾"	5"	10¼"
	N/A	#9	1⅜"ø	9"	1¾"	5⅝"	11⅜"
	1¼"ø	N/A	1⅜"ø	10"	1¾"	6¼"	12⅜"
	N/A	#10	1½"ø	10"	1¾"	6¼"	13"

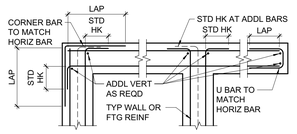


NOTES:
1. INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING, AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORTS. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND ADHESIVE INJECTION. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 . SEE DRAWINGS FOR SPECIFIC TENSION TEST LOADS FOR ANCHORS.

9 ADHESIVE ANCHOR IN CONCRETE
3/4" = 1'-0"



PLAN VIEW - SINGLE LAYER

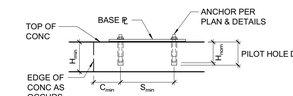


PLAN VIEW - 2 OR MORE LAYERS

NOTE:
FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

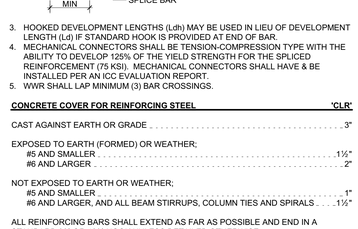
4 TYPICAL CORNER, INTERSECTION AND END REINFORCING
3/4" = 1'-0"

ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MIN NOMINAL EMBED H_{nom}	MIN EDGE DISTANCE C_{min}	MIN SPACING S_{min}	MIN CONC THICKNESS H_{min}	INSTALL TORQUE (FT-LB)
STAINLESS STL EXPANSION ANCHORS IN 2500 PSI MIN CONC						
SIMPSON STRONG-BOLT 2 (ICC-ESR 3037)	⅜"	1⅞"	6"	10"	3½"	30
	½"	2¾"	6½"	8"	4½"	65
	⅝"	3⅜"	4"	8"	5½"	80
	¾"	4⅛"	6"	6½"	6¾"	150
HILTI KWIK BOLT TZ (ICC-ESR 1917)	⅜"	2⅜"	2½"	5"	4"	25
	½"	2⅜"	2½"	5¾"	4"	40
	⅝"	3⅜"	3½"	5½"	5"	60
	¾"	4⅜"	4½"	10"	6"	110



NOTES:
1. INSTALL EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORTS.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.

5 EXPANSION ANCHOR IN CONCRETE
3/4" = 1'-0"



PRINCIPAL REINF

REINF	Dmin
#3 TO #8	6 db
#9 TO #11	8 db
#14 TO #18	10 db

CROSSTIES, HOOPS & STIRRUPS

REINF	Dmin
#3	1 1/2"
#4	2"
#5	2 1/2"

NOTE:
1. ALL BENDS SHALL BE MADE COLD.

1 REINFORCING LAPS AND SPLICES AND BENDS
1" = 1'-0"

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HEART OF THE BAY

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 7 TYPICAL CONCRETE DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

7-S1.10
Drawing No.

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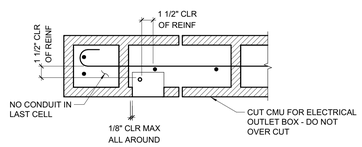
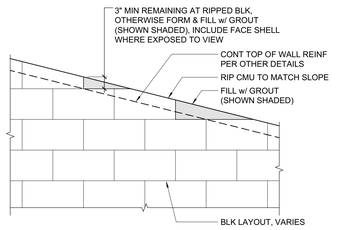
NOTES:

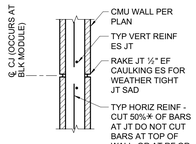
1. DO NOT TIE CONDUIT TO REINFORCING.
2. PLACE CONDUIT IN CELLS W/O REINF WHERE POSSIBLE.



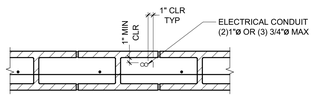
13 CONDUIT BOX IN CMU
1 1/2" = 1'-0"



14 SLOPED TOP OF MASONRY WALL
3/4" = 1'-0"



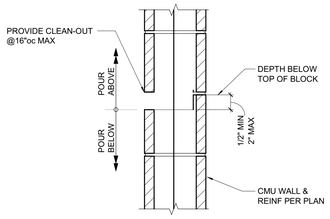
PLAN VIEW



w/o VERT REINFORCING

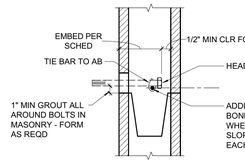
NOTES:
1. DETAILS SHOWN ARE FOR WALLS ONLY.
2. CONDUITS SHALL NOT BE LOCATED IN WALL PIERS OR UNDER BEAMS. WALL PIERS SHALL BE DEFINED AS ANY WALL SEGMENT 32" OR LESS IN LENGTH.
3. CONDUIT LOCATIONS SHALL BE SPACED 24"oc MIN.
4. DO NOT TIE CONDUIT TO REINFORCING.
5. PLACE CONDUIT IN CELLS w/ OUT REINFORCING WHERE POSSIBLE.
6. DO NOT PLACE CONDUITS IN JAMB CELLS

10 PIPES AND CONDUITS
1" = 1'-0"



NOTE:
1. POUR HEIGHT 10'-0" MAX.

11 HORIZONTAL CONSTRUCTION JOINT
1 1/2" = 1'-0"

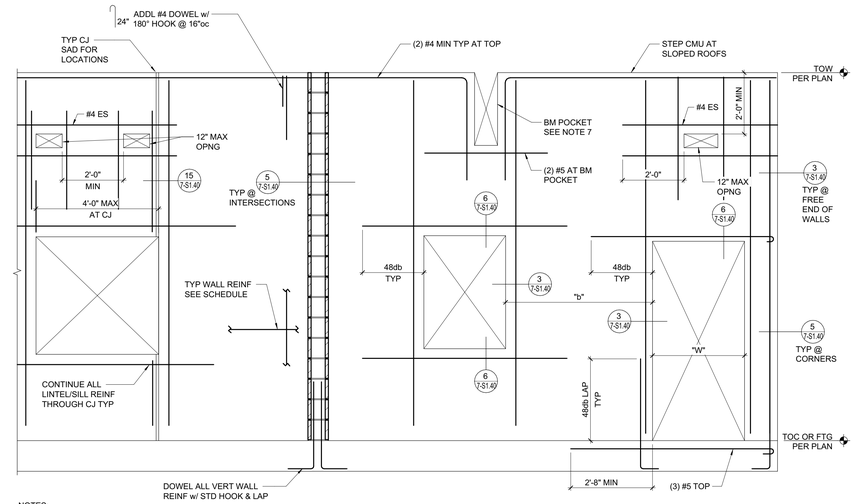


8" CMU WALL EMBEDMENT	12" CMU WALL EMBEDMENT	16" MIN PILASTER EMBEDMENT
5½"	9½"	12"

NOTE:
1. USE TEMPLATE TO SET ALL BOLTS.
2. BEDMENT TOLERANCE IS ±½" AND AS REQUIRED FOR CLEARANCE TO CMU.
3. AB SHALL PROJECT NOT LESS THAN ¼" OR MORE THAN 1" BEYOND NUT. REMOVE EXCESS THREADS WHERE NUT IS TO BE COUNTERSUNK FLUSH

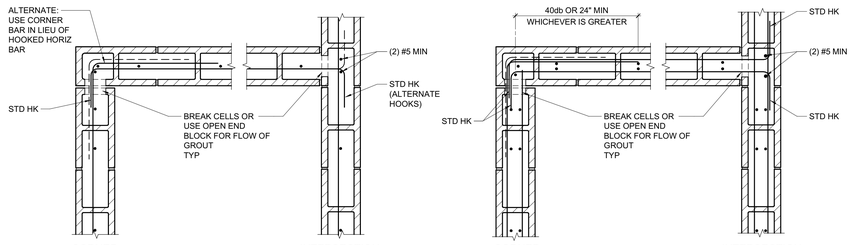
15 CMU WALL CONTROL JOINT
3/4" = 1'-0"

12 BOLT EMBEDMENT SCHEDULE
3/4" = 1'-0"

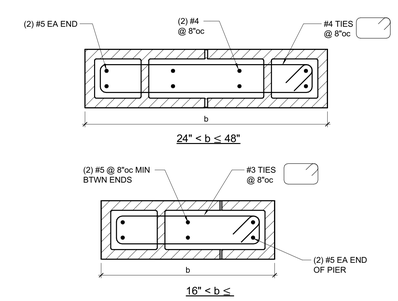


NOTES:
1. "W" DENOTES WIDTH OF OPENINGS. SEE ARCH DWGS FOR SIZE & LOCATION.
   "b" DENOTES DIMENSION BETWEEN OPENINGS. SEE ARCH DWGS.
2. DO NOT PLACE ELECTRICAL CONDUIT IN THE SAME CELL AS VERTICAL JAMB BARS. SEE **10/7-S1.40** & **13/7-S1.40** .
3. MASONRY WALL PIERS SHALL NOT BE LESS THAN 15⅛" WIDE.
4. FOR 12" CMU WALLS, REINFORCING SHOWN OCCURS AT EACH FACE.
5. ALL HORIZONTAL REINFORCING IN CMU BEARING WALLS SHALL TERMINATE WITH 90° OR 180° STANDARD HOOK.
6. FOR SLOPED TOP OF WALL, SEE **14/7-S1.40** .
7. FOR TYPE 1 WALLS PROVIDE 2" MIN 3" MAX CLEARANCE FROM UNDERSIDE OF BEAMS, SLAB & ALL SIDES OF BEAM.

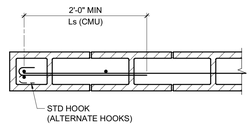
4 TYPICAL CMU WALL REINFORCING
1/2" = 1'-0"



5 REINFORCING AT WALL INTERSECTIONS
1" = 1'-0"

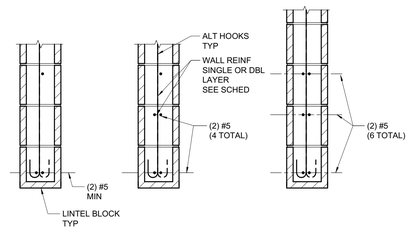


8 REINFORCING AT PIERS
1 1/2" = 1'-0"



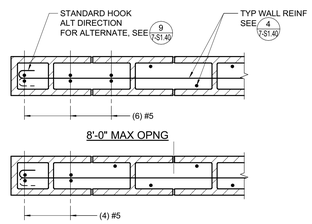
NOTES:
1. WHERE WALL IS NOT DESIGNATED AS A SHEAR WALL, STD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS.
2. HOOK AROUND END BARS AT NARROW PIERS.

9 ALTERNATE REINFORCING TERMINATION
1" = 1'-0"



NOTE:
LINTELS WILL BE SHORED FOR 28 DAYS MIN AFTER GROUT PLACEMENT.

6 REINFORCING AT LINTELS
1" = 1'-0"



FOR INFORMATION NOT NOTED SEE 3/7-S1.40

7 REINFORCING AT JAMB OR END OF CANTILEVERED WALLS
1" = 1'-0"

REINFORCING SCHEDULE					
TYPE	NOMINAL WALL THICKNESS "t"	HORIZ	VERT	JAMB AND END OF WALL	NOTES
1A	8"	#4 @ 24"oc CENTERED	#4 @ 24"oc	3/7-S1.40	NON-STRUCTURAL FULLY GROUTED
1B	8"	#4 @ 24"oc	#4 @ 24"oc CENTERED	3/7-S1.40	NON-STRUCTURAL FULLY GROUTED
1C	8"	#4 @ 24"oc	#5 @ 8"oc STAGGERED	7/7-S1.40	NON-STRUCTURAL FULLY GROUTED
2A	8"	#4 @ 16"oc	#4 @ 16"oc	3/7-S1.40	BEARING SHEAR WALL FULLY GROUTED
2B	8"	#5 @ 16"oc	#5 @ 16"oc	3/7-S1.40	BEARING SHEAR WALL FULLY GROUTED

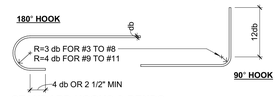
NOTES:
1. USE THIS SCHEDULE WHERE SIZE OF CMU AND REINFORCING IS NOT SHOWN OTHERWISE ON PLANS, DETAILS, OR WALL ELEVATIONS.
2. FOR TYPICAL CMU WALL ELEVATION, SEE **4/7-S1.40** .
3. FOR FOUNDATION CONNECTION AT TYPE 1C WALLS SEE **1/7-S1.41** .
4. FOR FOUNDATION OR SLAB CONNECTION AT TYPE 1A & 1B WALLS SEE **2/7-S1.41** .
5. FOR TYP 1B WALLS PROVIDE TOP OF WALL CONNECTION TO UNDERSIDE OF STRUCTURE ABOVE PER **2/7-S1.41** OR **6/7-S1.41** .
6. VERTICAL REINF FOR WALLS SHALL BE CONTINUOUS FROM TOP OF SLAB TO TOP OF WALL OR FLOOR TO FLOOR WITHOUT SPLICE.
7. USE OPEN END BLOCK AT VERTICAL REINFORCING BARS.
8. USE SPECIAL BOND BEAM OR LINTEL BLOCK AT ALL HORIZONTAL BARS.
9. THE TERM "STANDARD HOOK" SHALL MEAN EITHER:
   --180 HOOK PLUS AN EXTENSION OF 4 BAR DIAMETERS OR 2.5".
   --90 HOOK PLUS AN EXTENSION OF 12 BAR DIAMETERS.
10. FOR LAP SPLICES & MIN CLEARANCES SEE **2/7-S1.40** .
11. FOR REINF AT PIERS WITH b ≤ 6t SEE **8/7-S1.40** .
12. USE 9 GA. WIRE POSITIONERS FOR ALL VERTICAL WALL REINFORCING. SPACE VERT TIES MAX 192 x (BAR DIA) oc OR 120".
13. FOR ATTACHMENT TO CONC COLUMNS OR WALLS SEE **4/7-S1.41** .

1 CMU REINFORCING SCHEDULE
1" = 1'-0"

MINIMUM BAR LAPS, Ls (CMU), FOR REINFORCING STEEL MASONRY STRENGTH: 2000 PSI OR GREATER (STAGGER SPLICES)					
SIZE	LAP LENGTH	SIZE	LAP LENGTH	SIZE	LAP LENGTH
#3	12"	#6	54"	#9	82"
#4	24"	#7	64"		
#5	36"	#8	72"		

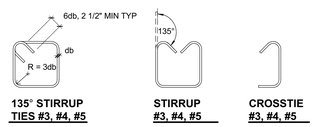
MINIMUM CLEARANCES 'CLR'

CMU TO BAR ½"
BAR TO BAR 2"
ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE

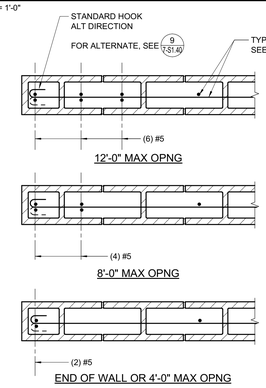


STANDARD HOOKS & BENDS

COL BAR & STRUCT OFFSET **SPLICE**



2 TYPICAL LAP SPLICES IN MASONRY WALLS
3/4" = 1'-0"



NOTES:
1. ALL JAMB BARS SHALL BE FULL HEIGHT OF WALL.
2. ELECTRICAL CONDUIT REQUIRED NEAR THE EDGE OF ANY OPENING GREATER THAN 4'-0" SHALL BE ROUTED VERTICALLY IN FIRST OPEN ADJACENT CELL, THEN HORIZONTALLY TO DESIRED LOCATION.
3. TAIL OF STANDARD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS WHERE WALL IS NOT DESIGNATED ON PLAN AS A SHEAR WALL. HOOK AROUND END BARS AT NARROW PIERS.

3 REINFORCING AT JAMB OR END OF WALL
1" = 1'-0"

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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No.	Description	Date

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 7
TYPICAL CMU DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

7-S1.40
Drawing No.

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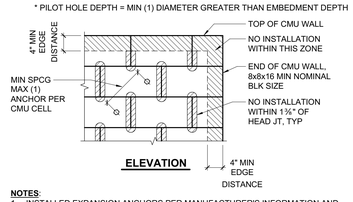
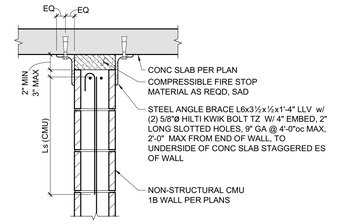
CARBON STL EXP ANCHORS IN 1500 PSI MIN CMU				
ANCHOR TYPE	ANCHOR & PILOT HOLE DIA.	MINIMUM EMBEDMENT DEPTH*	MIN SPCG S_{min}	INSTALL TORQUE (FT-LB)
SIMPSON STRONG-BOLT 2 (IAPMO ES-0240)	⅜"	2⅝"	4"	30
	½"	3½"	4"	35
	⅝"	4⅜"	4"	55
	¾"	5¼"	4"	120
HILTI KWIK BOLT 3 (ICC-ESR 1385)	⅜"	2½"	8"	15
	½"	3½"	8"	25
	⅝"	4"	8"	65
	¾"	4⅜"	8"	120

* PILOT HOLE DEPTH = MIN (1) DIAMETER GREATER THAN EMBEDMENT DEPTH



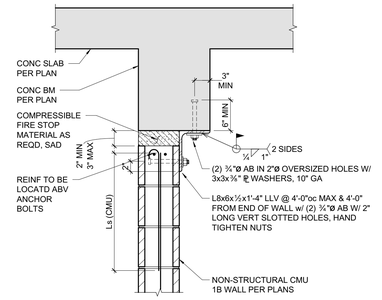
NOTES:
1. INSTALLED EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND EVALUATION REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR AND SHALL CONSIDER BOLT SPACING WHEN SELECTING ANCHOR TYPE.
3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING CMU, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. USE ROTARY DRILL ONLY. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND ANCHOR. WHEN REINFORCEMENT IS PRESENT IN DRILLED HOLE ABANDON THE HOLE. FILL ABANDONED HOLES W/ DRY PACK AND FINISH TO MATCH CMU. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, MASONRY TYPE, MASONRY COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), MASONRY THICKNESS, AND TIGHTENING TORQUE.
5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTIONS 1705.4 AND 1913.7.

7 EXPANSION ANCHORS IN CMU
3/4" = 1'-0"

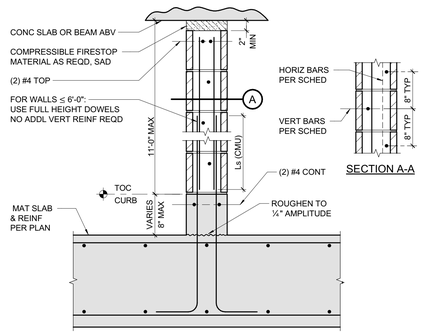


NOTES:
1. WHERE BM INTERSECTS TOP OF WALL, PROVIDE BM POCKET W/ MIN 2" CLR TO BM ALL AROUND WITH STEEL ANGLE BRACES AT EA SIDE OF WALL W/ IN 2'-0" ℄ OF BM.
2. LONG SLOTTED HOLES IN STEEL ANGLE SHALL BE INLINE W/ WALL.
3. IF REINF IS ENCOUNTERED DURING ANCHOR INSTALLATION, DRY PACK ABANDONED HOLE W/ NON-SHRINK GROUT AND ADJUST ANCHOR LOCATION AS REQD. IF ENCOUNTERED REINFORCING STEEL IS INLNE WITH WALL, USE L6x6x½x1'-4" STEEL BRACING ANGLE TO AVOID CONFLICT.

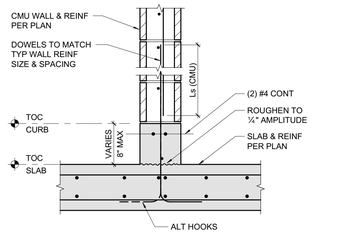
5 TOP OF WALL BRACE - CMU WALL TO SLAB
1" = 1'-0"



6 TOP OF WALL BRACE - CMU WALL TO BEAM
1" = 1'-0"

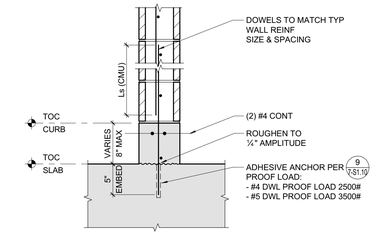


1 CANTILEVER CMU WALL AT MAT SLAB
1" = 1'-0"



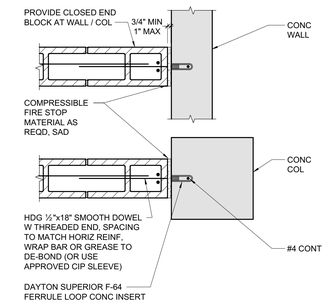
NOTES:
1. FOR ALT ANCHORAGE SEE **3/7-S1.41** .

2 CMU WALL AT SLAB
1" = 1'-0"



NOTES:
1. LOCATE SLAB REINF PRIOR TO DRILLING.
2. DO NOT DAMAGE SLAB REINFORCING.
3. IF HOLE CONFLICTS w/ SLAB REINF, FILL ABANDONED HOLE WITH ADHESIVE.

3 ALTERNATE ANCHORAGE FOR TYPE 1A AND TYPE 1B WALLS
1" = 1'-0"



4 NON-STRUCTURAL CMU WALL ANCHORAGE TO CONCRETE WALL OR COLUMN
1" = 1'-0"

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HEART OF THE BAY

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

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Sheet Title

BUILDING 7
TYPICAL CMU DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

7-S1.41
Drawing No.

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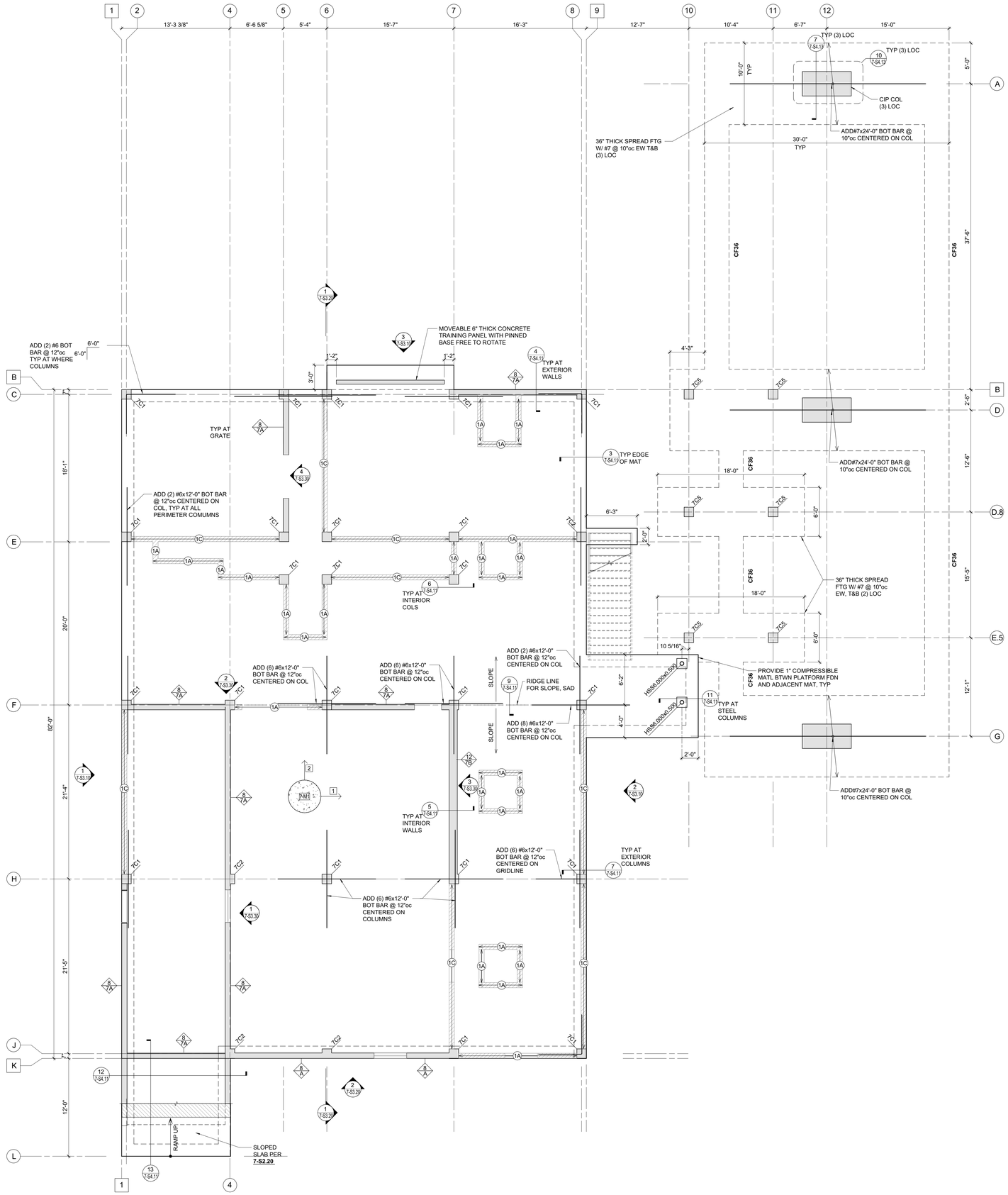

NORTH

FOUNDATION PLAN

3/16" = 1'-0"

FOUNDATION PLAN NOTES:

1. REFER TO SHEETS **7-S0.10** THROUGH **7-S1.41** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. SEE DETAILS OR CURB PLAN FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
4. PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO PIPES OR CONDUITS THRU SILL PLATES SHALL BE WITHIN 12" OF HOLDOWN BOLTS. NO MECHANICAL, ELECTRICAL, OR PLUMBING OPENINGS SHALL BE LOCATED IN SHEAR WALLS UNLESS SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

   PIPES THROUGH FOOTINGS SHALL BE PER **13/7-S1.10** .

   PIPES PARALLEL TO FOOTINGS SHALL BE PER **2/7-S1.10** .

   PIPES PARALLEL TO MAT SLAB SHALL BE PER **3/7-S1.10** .
5. ELEVATION OF THE TOP OF FINISHED SLAB = 0'-0", UNLESS NOTED OTHERWISE.
6. SEISMIC GAPS WHERE NOTED ARE DIMENSIONED CLEAR BETWEEN WALL FINISHES. THIS GAP TO BE MAINTAINED ENTIRELY CLEAR TO ALLOW FOR DIFFERENTIAL BUILDING MOVEMENT. NO PIPES, CONDUITS, ETCETERA SHALL BE LOCATED WITHIN THE GAP. PROVIDE FLEXIBLE COUPLINGS AT ALL UTILITIES CROSSING SEISMIC GAPS.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
88		INDICATES GRIDLINE AT FACE OF WALL.
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
4 S3.1		INDICATES ELEVATION.
DS		INDICATES DEPRESSED SLAB, SEE ARCHITECTURAL AND PLUMBING DRAWINGS FOR COMPLETE LOCATIONS, DEPTH AND SLOPE INFORMATION.
		INDICATES FOUNDATION.
CF36	14/7-S4.11	INDICATES CONTINUOUS FOOTING SIZE AND REINFORCING PER SCHEDULE.
F2		INDICATES PAD FOOTING SIZE AND REINFORCING PER SCHEDULE.
		INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
1 7-M1 2	1/7-S4.11	INDICATES CONCRETE MAT FOUNDATION TYPE "M1" PER SCHEDULE AND REINF LAYER DIRECTIONS. INCREASE SLAB THICKNESS AS REQUIRED TO SLOPE TOP OF SLAB TO DRAINS PER ARCH. MAT TO BE PLACED OVER VAPOR BARRIER OVER 12" OF NON-EXPANSIVE SOIL CONSISTING OF COMPACTED IMPORTED SELECT FILL OR LIME TREATED ON-SITE SOIL.
7A	1/7-S4.12	INDICATES CAST IN PLACE CONCRETE WALL PANEL W/ THICKNESS "t" AND REINFORCING TYPE "7A" PER SCHEDULE TYP, UNO.
1A	1/7-S1.40	INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A", SIZE AND REINFORCING PER SCHEDULE TYP, UNO.
7C1	1/7-S4.13	INDICATES CONCRETE COLUMN AND TYPE "7C1" PER SCHEDULE TYP, UNO.

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 7
FOUNDATION PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

7-S2.10
Drawing No.

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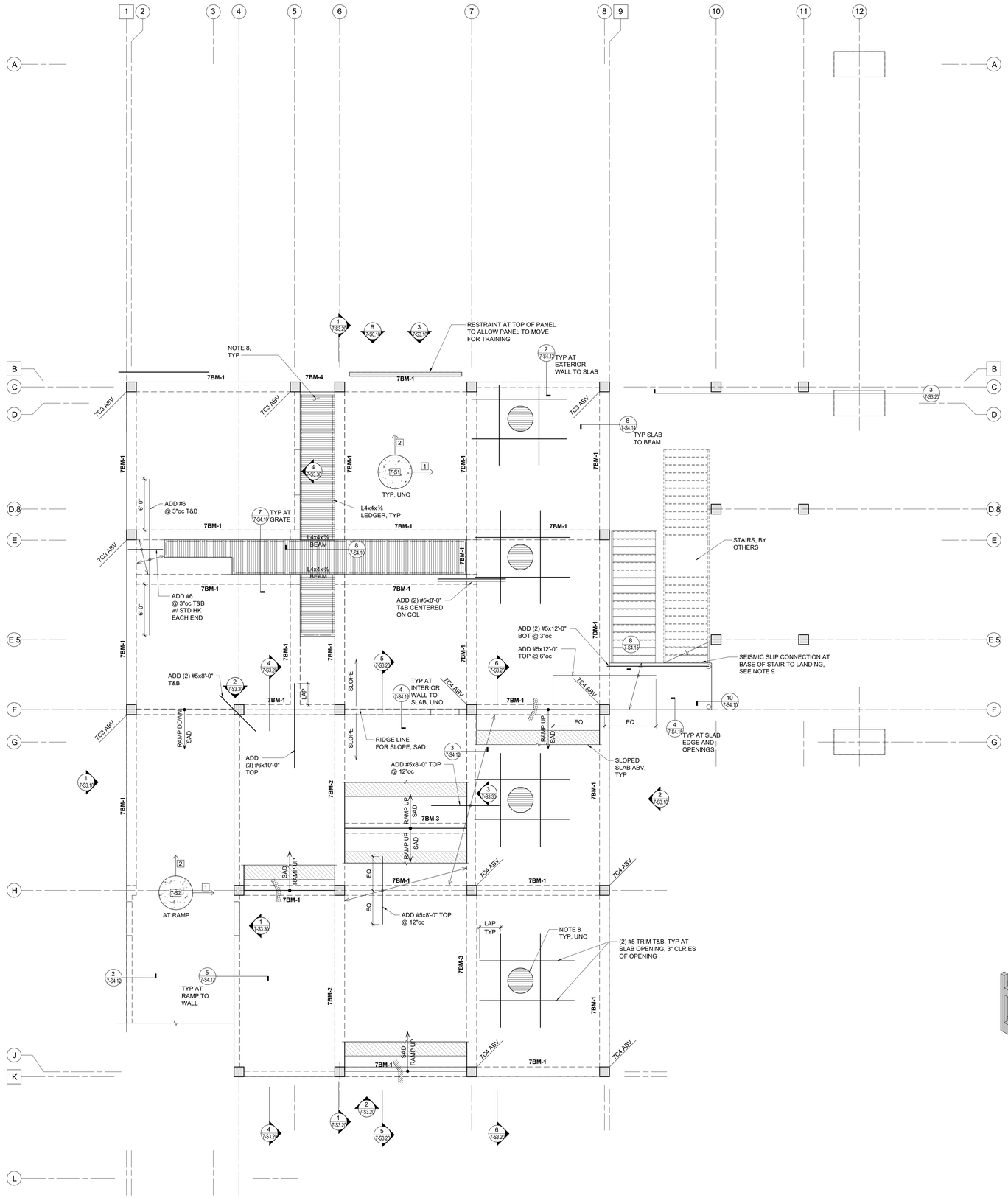


NORTH

SECOND FLOOR FRAMING PLAN

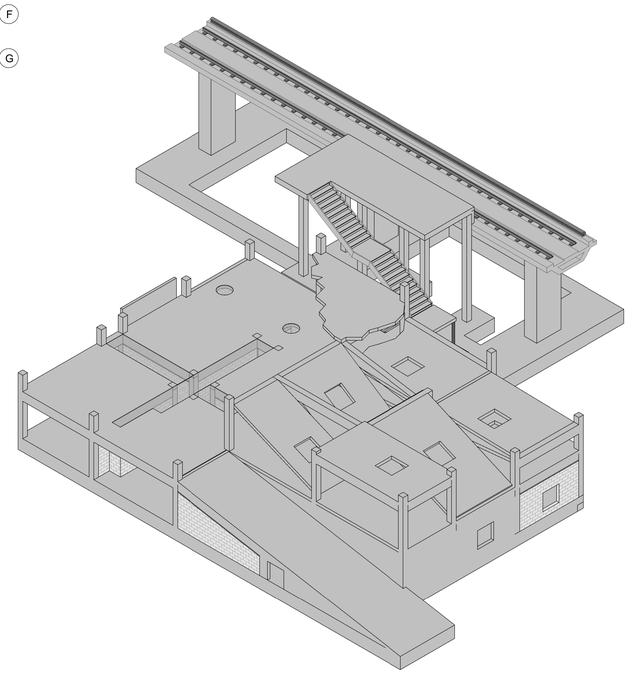
3/16" = 1'-0"

FRAMING PLAN NOTES:

1. REFER TO SHEETS **7-S0.10** THROUGH **7-S1.41** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMING, COLUMNS, OR BASE PLATES. CONDUIT OR PLUMBING NOT ALLOWED WITHIN CONCRETE FILL ON METAL DECK. PROVIDE FURRING WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE RESTRICTIONS.
4. SEE ARCHITECTURAL DRAWINGS FOR EDGE OF SLAB, FACE OF WALL, ETCETERA.
5. SEE ARCHITECTURAL DRAWINGS FOR TOP OF CONC SLAB OR TO TOP OF COLUMN ELEVATIONS.
6. BEAM CENTERLINES TO ALIGN WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.
7. SEISMIC GAPS WHERE NOTED ARE DIMENSIONED CLEAR BETWEEN WALL FINISHES. THIS GAP TO BE MAINTAINED ENTIRELY CLEAR TO ALLOW FOR DIFFERENTIAL BUILDING MOVEMENT. NO PIPES, CONDUITS, ETCETERA SHALL BE LOCATED WITHIN THE GAP. PROVIDE FLEXIBLE COUPLINGS AT ALL UTILITIES CROSSING SEISMIC GAPS.
8. REMOVABLE FIBERGLASS GRATING, SAD.
9. STAIR CONNECTION SHALL ACCOMODATE A MINIMUM OF 2" OF MOVEMENT IN ALL HORIZONTAL DIRECTIONS.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
88		INDICATES GRIDLINE AT FACE OF WALL.
1 / S3.1		INDICATES ELEVATION.
1 / 7-S1 / 2	1/7-S4.15	INDICATES SUSPENDED STRUCTURAL SLAB, TYPE "S1" PER SCHEDULE AND REINF LAYER DIRECTIONS.
DS		INDICATES DEPRESSED SLAB, SEE ARCHITECTURAL AND PLUMBING DRAWINGS FOR COMPLETE LOCATIONS, DEPTH AND SLOPE INFORMATION.
		INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
7A	1/7-S4.12	INDICATES CONCRETE WALL, UNO.
7C1 ABV	1/7-S4.13	INDICATES CONCRETE COLUMN ABOVE OF SAME SIZE BELOW, UNO ON PLAN.
		INDICATES CONCRETE WALL BELOW.
		INDICATES CONCRETE COLUMN BELOW.
7BM-1	1/7-S4.14	INDICATES CONCRETE BEAM AND TYPE "7BM-1" PER SCHEDULE TYP, UNO.



THREE-DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREE-DIMENSIONAL VIEWS.

2 3D - VIEW FOR REFERENCE ONLY

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
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No.	Description	Date

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO No. 4861 STRUCTURAL STATE OF CALIFORNIA

Sheet Title

BUILDING 7
SECOND FLOOR PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

7-S2.20
Drawing No.

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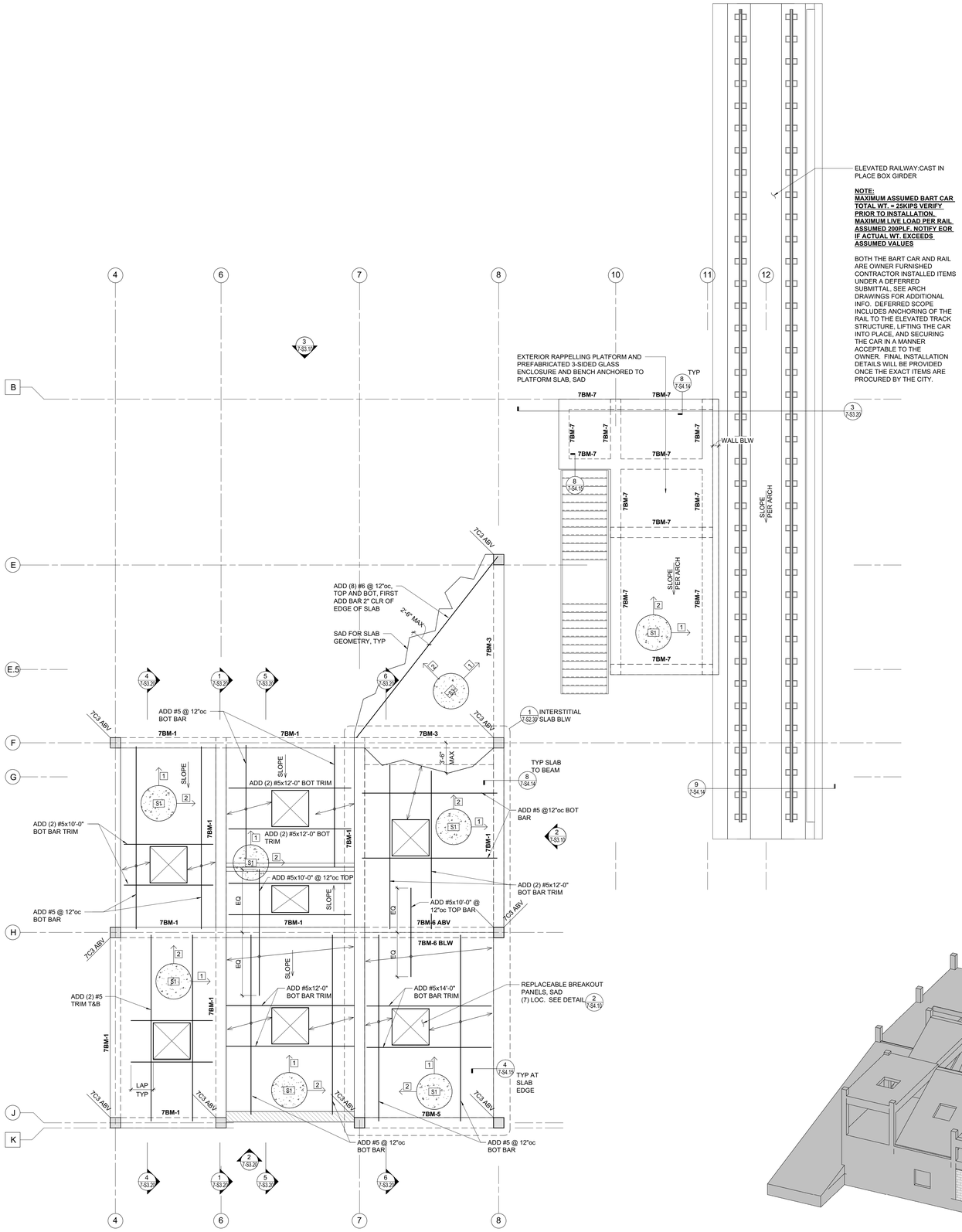


NORTH

THIRD LEVEL

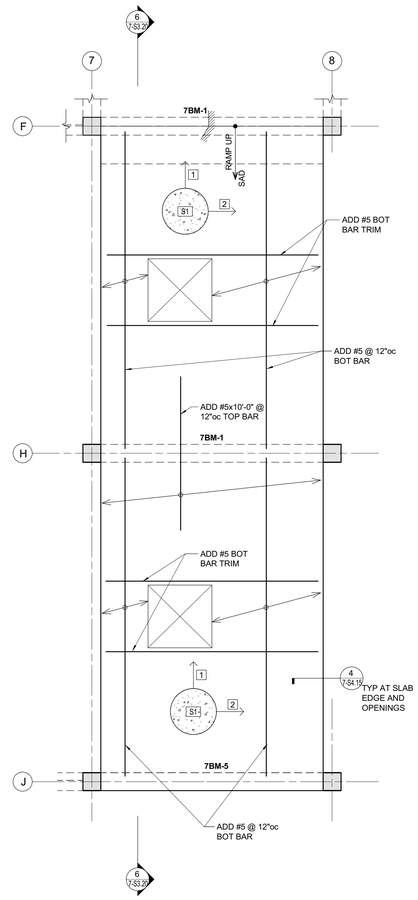
3/16" = 1'-0"

FRAMING PLAN NOTES:

1. SEE SHEET 7-S2.20 FOR PLAN NOTES AND LEGEND.

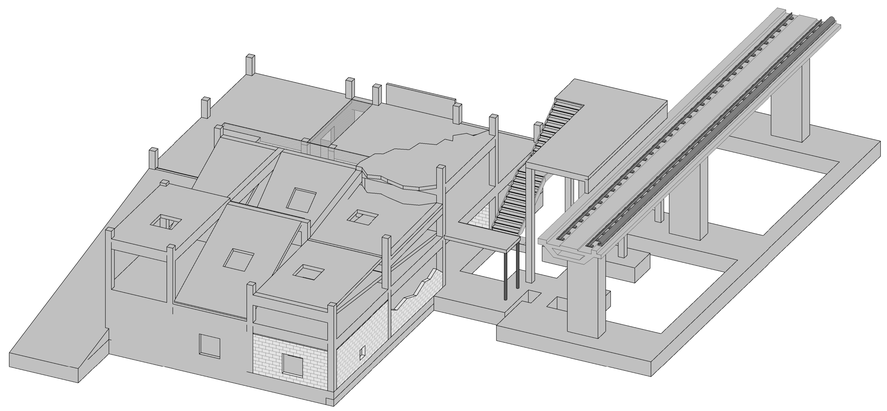
NOTE:
MAXIMUM ASSUMED BART CAR TOTAL WT. = 25KIPS VERIFY PRIOR TO INSTALLATION. MAXIMUM LIVE LOAD PER RAIL ASSUMED 200PLF. NOTIFY EOR IF ACTUAL WT. EXCEEDS ASSUMED VALUES

BOTH THE BART CAR AND RAIL ARE OWNER FURNISHED CONTRACTOR INSTALLED ITEMS UNDER A DEFERRED SUBMITTAL, SEE ARCH DRAWINGS FOR ADDITIONAL INFO. DEFERRED SCOPE INCLUDES ANCHORING OF THE RAIL TO THE ELEVATED TRACK STRUCTURE, LIFTING THE CAR INTO PLACE, AND SECURING THE CAR IN A MANNER ACCEPTABLE TO THE OWNER. FINAL INSTALLATION DETAILS WILL BE PROVIDED ONCE THE EXACT ITEMS ARE PROCURED BY THE CITY.



1 PARTIAL PLAN AT INTERSTITIAL SALB

1/4" = 1'-0"



THREE-DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREE-DIMENSIONAL VIEWS.

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ARCHITECTURE

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HEART OF THE BAY

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ENGINEERING DIVISION

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 7 THIRD LEVEL PLAN

Drawn By: LS Checked By: SRP

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

7-S2.30
Drawing No.

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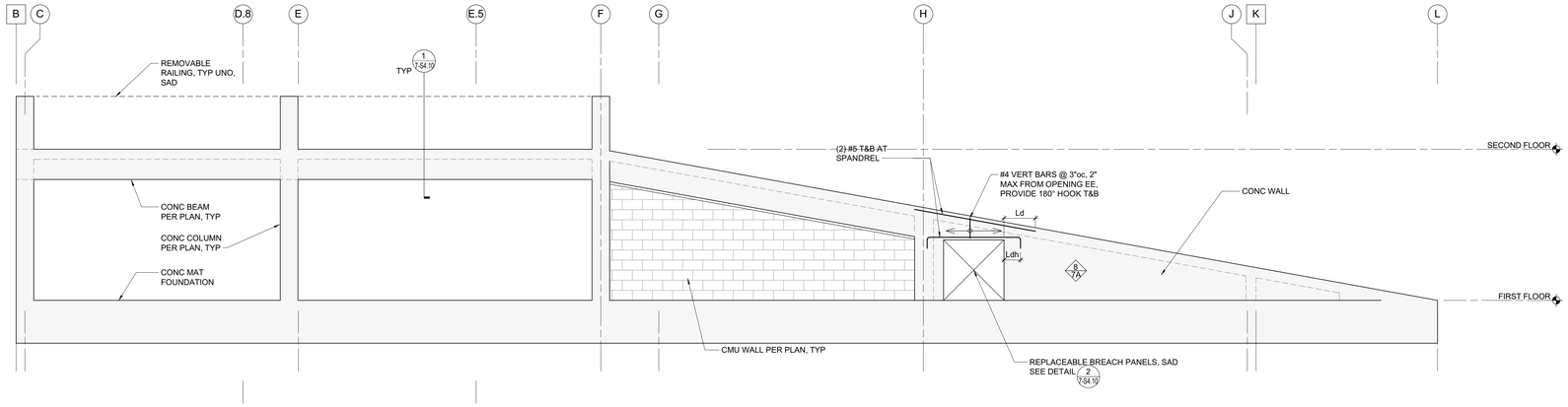
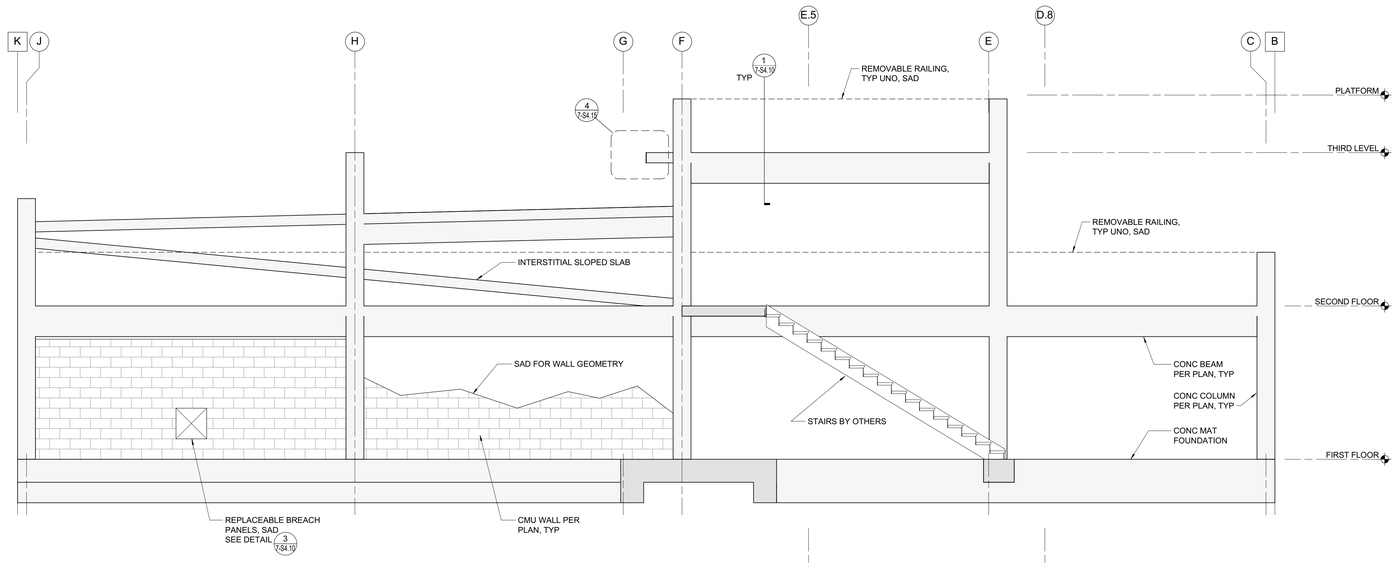
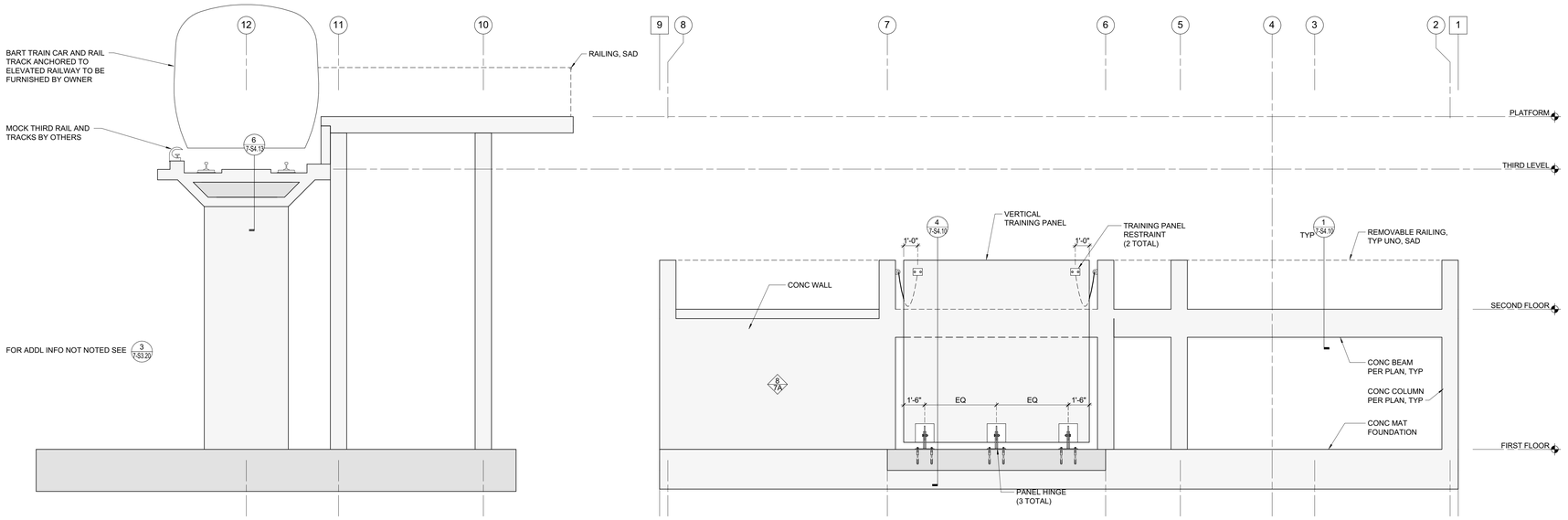


1 EXTERIOR ELEVATION AT GRID 1
1/4" = 1'-0"



2 EXTERIOR ELEVATION AT GRID 9
1/4" = 1'-0"



3 EXTERIOR ELEVATION AT GRID B
1/4" = 1'-0"

FRAME ELEVATION NOTES:

1. ELEVATION VIEWS SHOWN IN THESE PLANS ARE SCHEMATIC. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER ELEVATION VIEWS.
2. SEE PLANS FOR ALL COLUMN AND BEAM SIZES.
3. SAD FOR FRAMING HEIGHTS, BEAM SLOPES AND ALL DIMENSIONS.
4. NO COLUMN SPLICES PERMITTED EXCEPT WHERE NOTED.

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 ELEVATIONS

Drawn By: - Checked By: -

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

7-S3.10
Drawing No.

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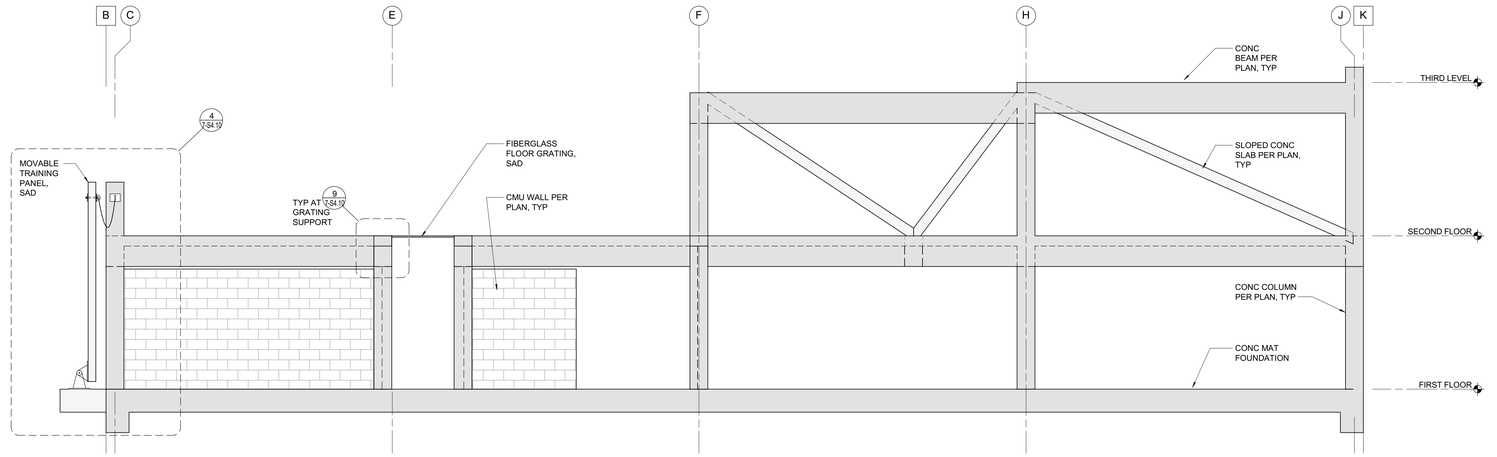
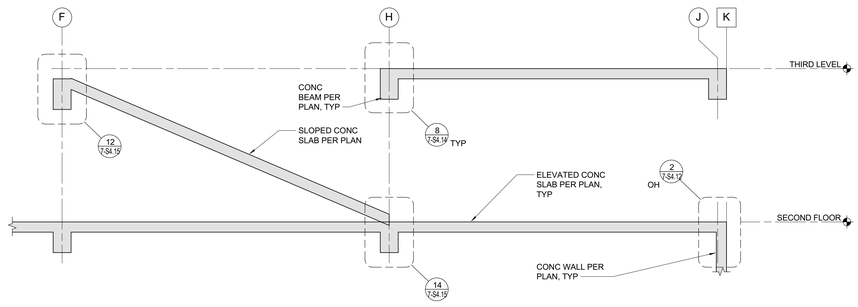
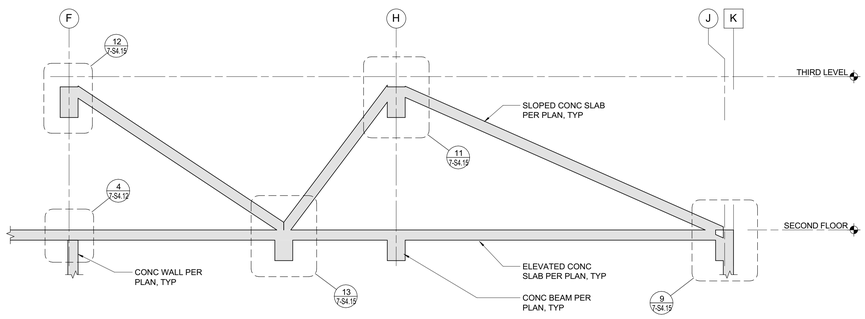


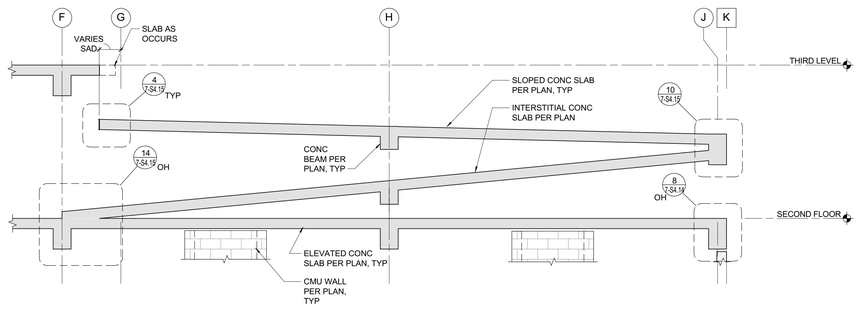
1 ELEVATION AT GRID 6
1/4" = 1'-0"



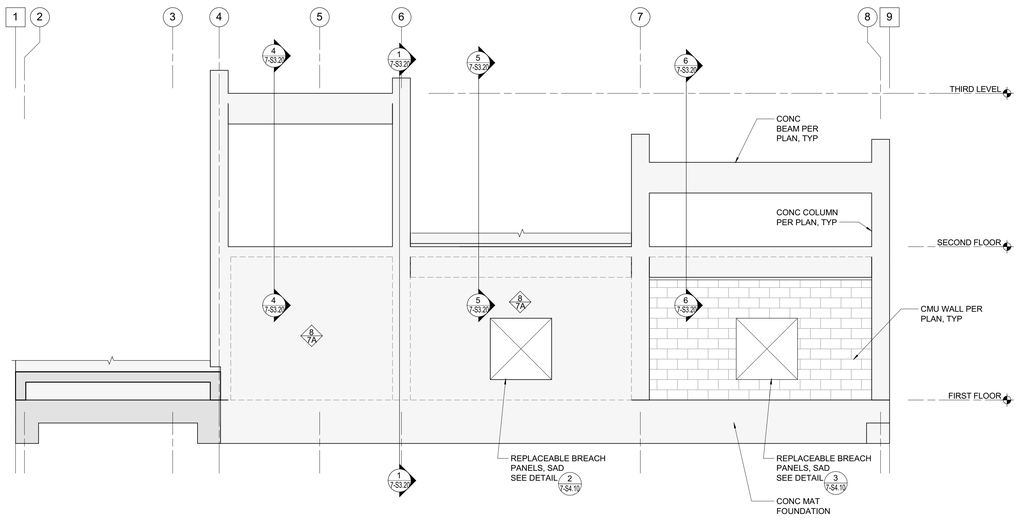
4 BUILDING SECTION AT GRID 5
1/4" = 1'-0"



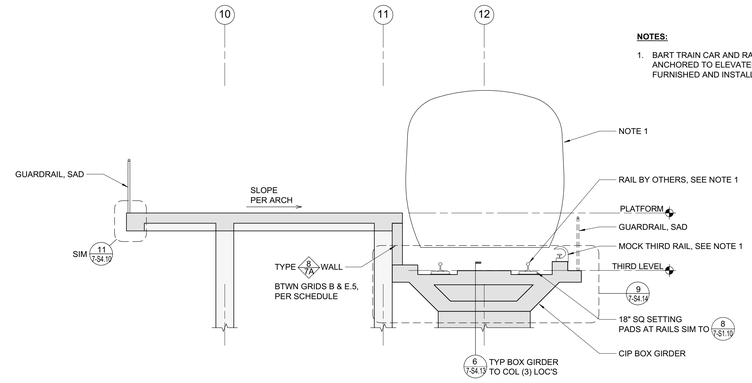
5 BUILDING SECTION AT LINE 6.5
1/4" = 1'-0"



6 BUILDING SECTION AT LINE 7.5
1/4" = 1'-0"



2 EXTERIOR ELEVATION AT GRID K
1/4" = 1'-0"



3 SECTION AT PLATFORM
1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 7 ELEVATIONS AND SECTIONS

Drawn By: Author Checked By: Checker

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 17143

7-S3.20
Drawing No.

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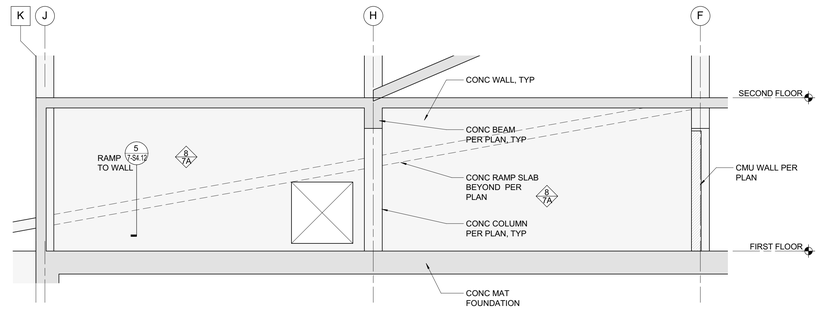
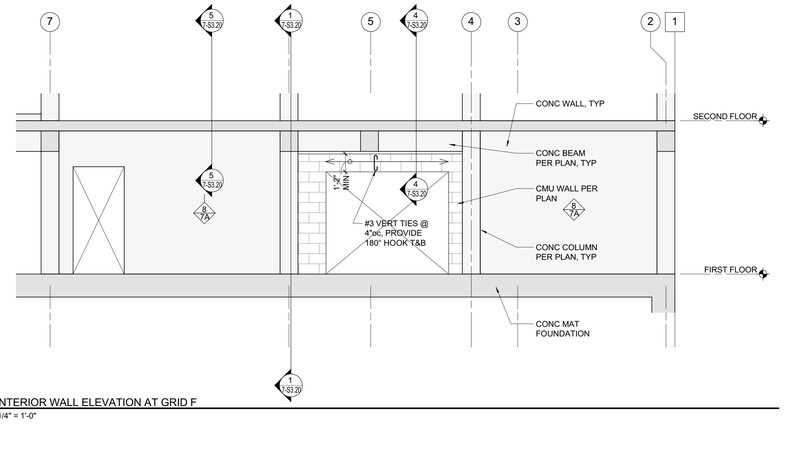
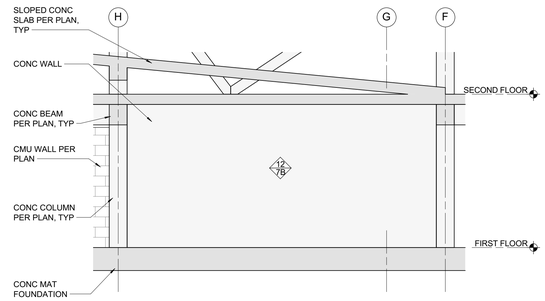


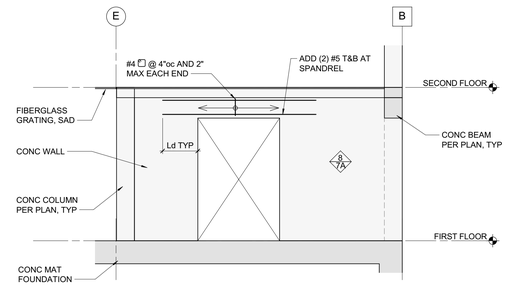
1 INTERIOR WALL ELEVATION AT GRID 4
1/4" = 1'-0"



2 INTERIOR WALL ELEVATION AT GRID F
1/4" = 1'-0"



3 INTERIOR WALL ELEVATION AT GRID 7
1/4" = 1'-0"



4 INTERIOR WALL ELEVATION AT GRID 5
1/4" = 1'-0"

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ENGINEERING DIVISION

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KEVIN G. ZUCCO
No. 4861
STRUCTURAL
STATE OF CALIFORNIA

Sheet Title

BUILDING 7 WALL ELEVATIONS

Drawn By: LS Checked By: SRP

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 17143

7-S3.30
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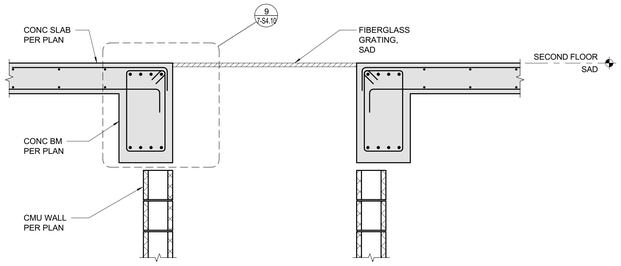
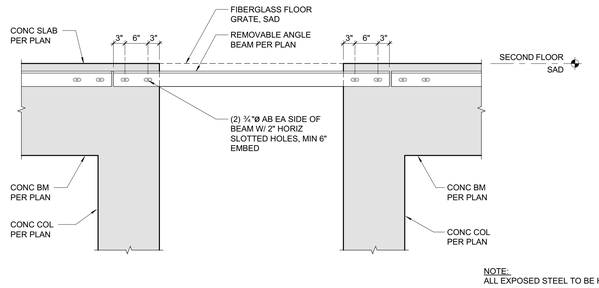
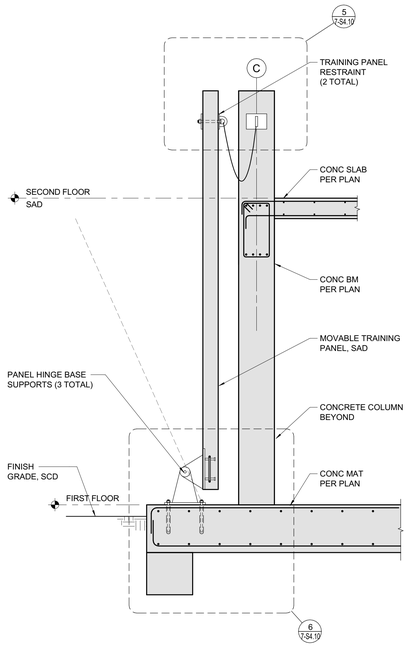


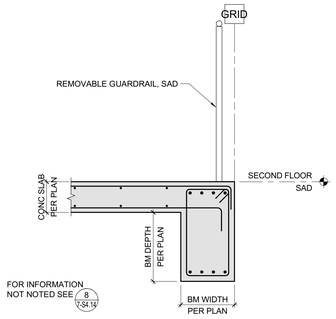
7 DETAIL AT GRATING
3/4" = 1'-0"



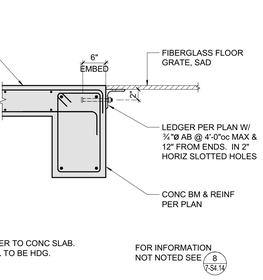
8 REMOVABLE GRATE SUPPORT BEAM
3/4" = 1'-0"



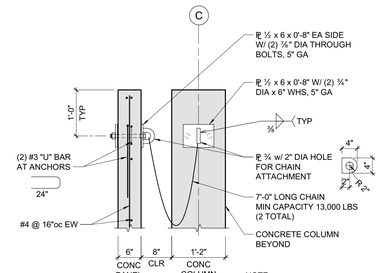
4 SECTION AT MOVABLE PANEL
1/2" = 1'-0"



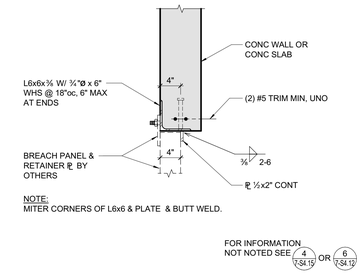
1 CONCRETE SLAB AT CONCRETE BEAM
3/4" = 1'-0"



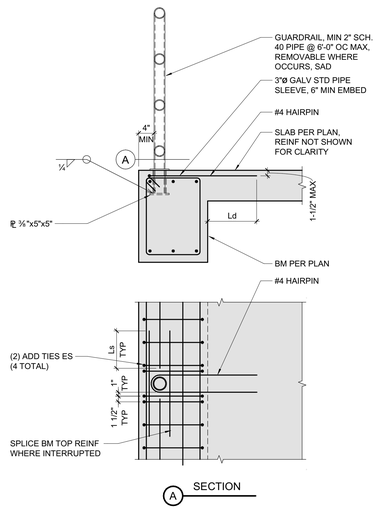
9 TYPICAL GRATE LEDGER SUPPORT
3/4" = 1'-0"



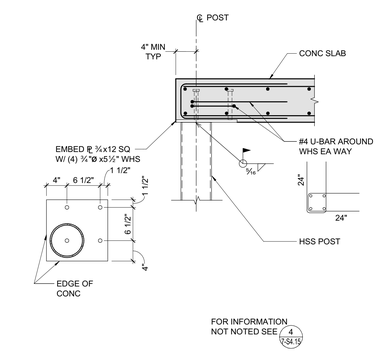
5 TRAINING WALL PANEL RESTRAINT
3/4" = 1'-0"



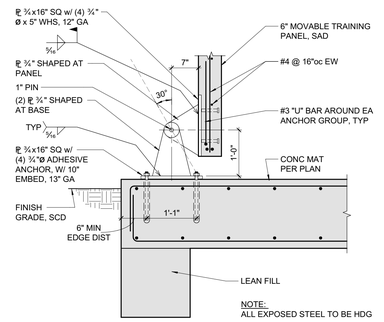
2 BREACH PANEL AT CONCRETE WALL OR SLAB
1" = 1'-0"



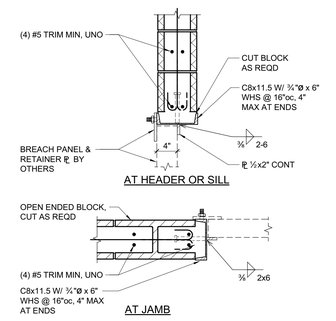
11 REMOVABLE GUARDRAIL
3/4" = 1'-0"



10 HSS POST TO CONCRETE SLAB AT CORNER
1" = 1'-0"



6 PANEL HINGE DETAIL
3/4" = 1'-0"



3 BREACH PANEL AT CMU WALL
1" = 1'-0"

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date
1	INC 01_ADD 01_V1	12/6/2019

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KEVIN G. ZUCCO — No. 4861 — STRUCTURAL — STATE OF CALIFORNIA — PROFESSIONAL ENGINEER

Sheet Title

BUILDING 7
DETAILS AND SECTIONS

Drawn By: -
Checked By: -

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

7-S4.10
Drawing No.

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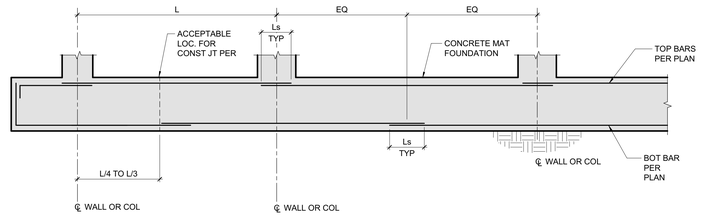


NOTES:
1. ADDITIONAL BARS PER PLAN SHALL BE EQUALLY SPACED. MAX SPACING SHALL BE 12"
2. NO SPLICES PERMITTED, UNO.
3. LAP BOTTOM BARS AT MIDSPAN & TOP BARS UNDER WALL/COL. SEE **1/S1.10** FOR LAP LENGTHS.
4. WHERE BAR LENGTHS OR EXTENSIONS ARE NOTED PER PLAN THIS LENGTH GOVERNS.

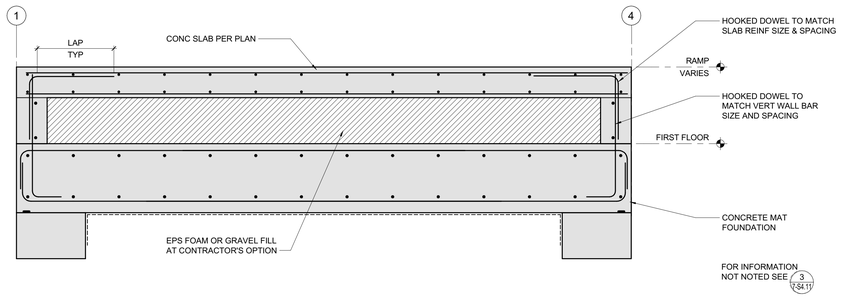
8 TYPICAL CONCRETE MAT FOUNDATION REINFORCEMENT
3/4" = 1'-0"

CONCRETE MAT FOUNDATION SCHEDULE

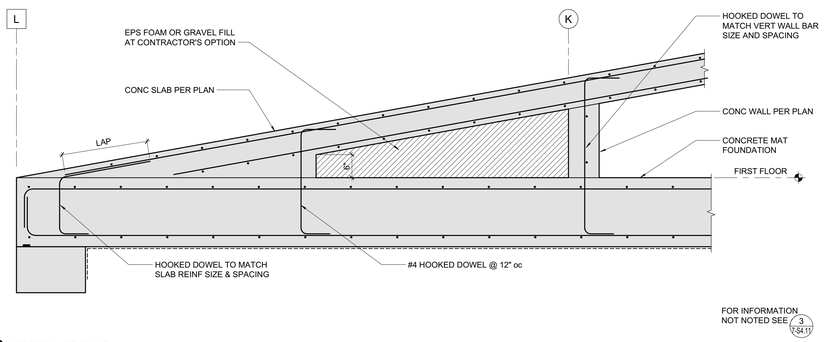
MAT MARK	MAT THICKNESS	TOP BAR SPAN 1 DIRECTION	TOP BAR SPAN 2 DIRECTION	BOTTOM BAR SPAN 1 DIRECTION	BOTTOM BAR SPAN 2 DIRECTION	REMARKS
7-M1	18"	#6 @ 12"oc	#6 @ 12"oc	#6 @ 12"oc	#6 @ 12"oc	REINF - A615 GR 80

NOTES:
1. SEE OTHER DETAILS THIS SHEET FOR TYP MAT SLAB DETAILS.
2. REFER TO PLANS FOR ADDITIONAL REINFORCING (ADD BARS).
3. SEE **2/7-S4.11** FOR REBAR LAYERING AND COVER. SEE **8/7-S4.11** FOR TYPICAL SLAB REINFORCING LAYOUT.
4. PLACE SPAN DIRECTION REINFORCING AT MID DEPTH OF SLAB FOR SINGLE LAYER CONDITIONS, UNO.
5. WHERE SLABS ARE SLOPED, SLAB THICKNESS NOTED IS MINIMUM.
6. SEE SHEETS **7-S1.40** & **7-S1.41** FOR DETAILS AT CMU WALL TO SLAB ATTACHMENTS.
7. SEE PLANS FOR NON-TYPICAL ADD BAR REINFORCING.

1 CONCRETE MAT FOUNDATION SCHEDULE
12" = 1'-0"



12 SECTION AT RAMP
3/4" = 1'-0"

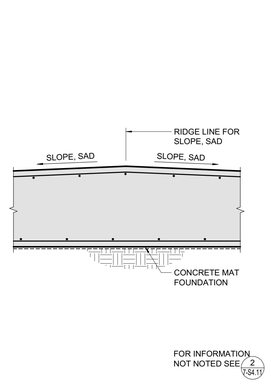


13 SECTION AT RAMP
3/4" = 1'-0"

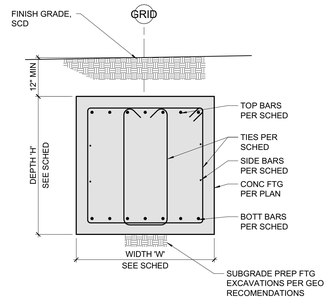
GRADE BEAM SCHEDULE

MARK	H	W	LONGITUDINAL BARS		TRANSVERSE TIES	ADDITIONAL BARS		SIDE BARS	REMARKS	SECTION DETAIL
			BOTTOM	TOP		ZONE 1	ZONE 2			
CF36	36"	36"	(7) - #7	(7) - #7	#5 AT 9" OC	-	-	#4 @ 12" OC	-	**10/7-S4.11**

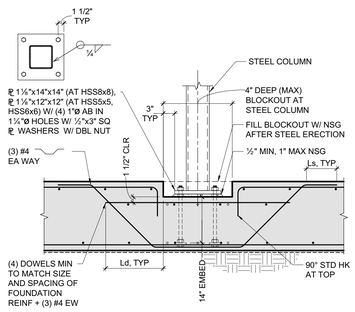
14 GRADE BEAM SCHEDULE
12" = 1'-0"



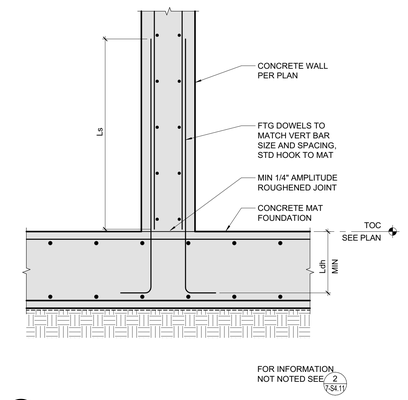
9 RIDGE LINE FOR SLOPE AT MAT FOUNDATION
3/4" = 1'-0"



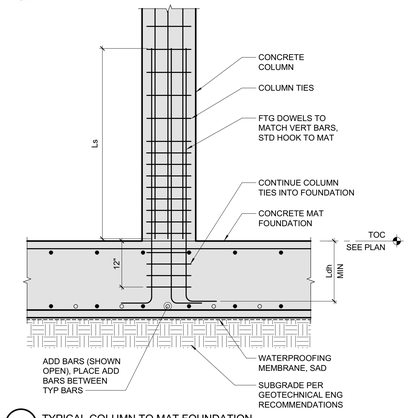
10 TYPICAL FOUNDATION DETAIL
3/4" = 1'-0"



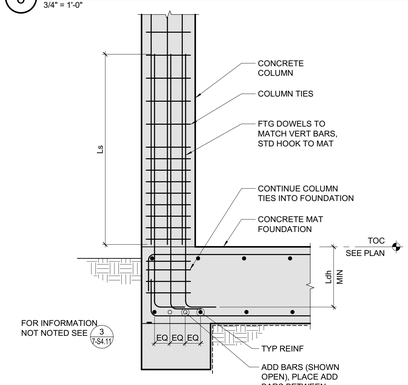
11 STEEL COLUMN AT ENTRY MAT FOUNDATION AT ENTRY
3/4" = 1'-0"



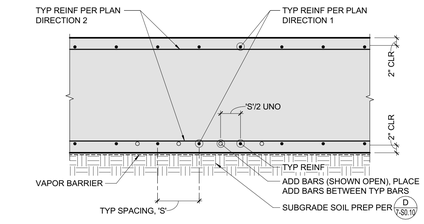
5 MAT FOUNDATION SECTION AT INTERIOR WALL
3/4" = 1'-0"



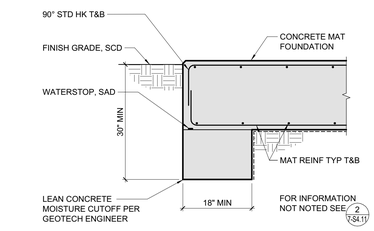
6 TYPICAL COLUMN TO MAT FOUNDATION
3/4" = 1'-0"



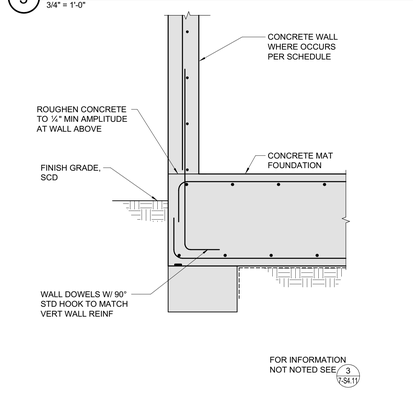
7 EXTERIOR COLUMN TO MAT FOUNDATION
3/4" = 1'-0"



2 TYPICAL MAT SLAB SECTION
3/4" = 1'-0"



3 EDGE OF MAT FOUNDATION AT EXTERIOR
3/4" = 1'-0"



4 MAT FOUNDATION SECTION AT EXTERIOR WALL
3/4" = 1'-0"

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HEART OF THE BAY

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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Sheet Title

BUILDING 7 FOUNDATION DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

7-S4.11
Drawing No.

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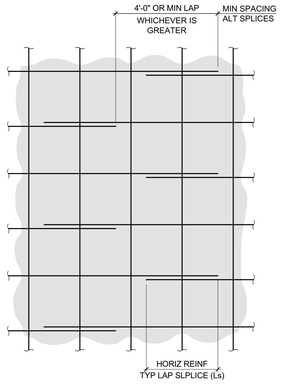
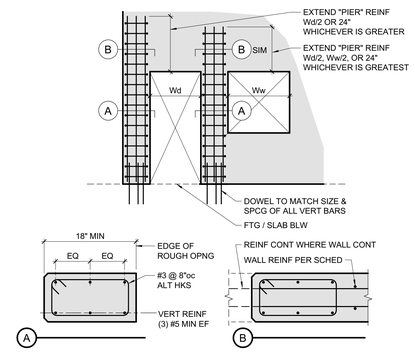
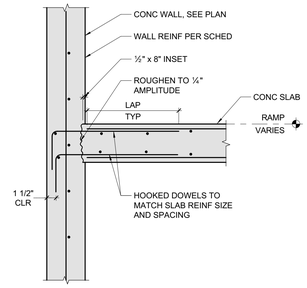


13 TYPICAL WALL REINFORCING SPLICES
1" = 1'-0"



9 WALL PIER REINFORCING AT DOORS AND WINDOWS
1" = 1'-0"



5 SHEAR WALL (SINGLE CURTAIN) AT RAMP SLAB
3/4" = 1'-0"

CONCRETE WALL REINFORCING SCHEDULE

WALL TYPE	THICKNESS (N)	# OF CURTAINS	HORIZONTAL REINFORCING	VERTICAL REINFORCING	REFERENCE DETAIL	REMARKS
8/7/A	8"	1	#5 @ 12"oc	#5 @ 12"oc, CENTERED		
12/7/B	12"	2	#4 @ 12"oc, EF	#4 @ 12"oc, EF		

NOTES:

1. SEE CONCRETE WALL ELEVATIONS FOR ADD BAR EXTENTS, UNO.
2. FOR SOLID WALL SECTION SEE **7/7-S4.12** .
3. FOR TYPICAL WALL REINFORCEMENT SEE **12/7-S4.12** .
4. FOR TYPICAL TRIM STEEL SEE **6/7-S4.12**.
5. FOR TYPICAL DOOR / WINDOW HEADER OR JAMB SEE **8/7-S4.12** & **11/7-S4.12** .
6. FOR END CONDITION SEE **4/7-S1.10** .

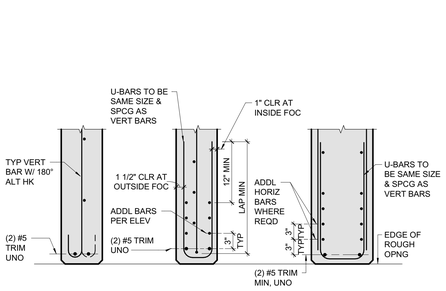
1 CONCRETE WALL SCHEDULE
1/2" = 1'-0"

SINGLE CURTAIN

DOUBLE CURTAIN

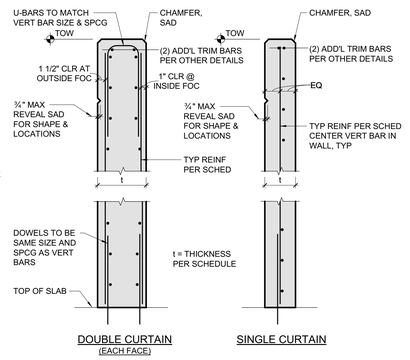
NOTES:
1. EXTEND U-BARS OR TIES 24" MIN PAST OPENINGS

10 WALL PIER REINFORCING
1" = 1'-0"



NOTES:
1. EXTEND HORIZ TRIM 24" PAST OPENING OR PROVIDE STD HOOK AT ENDS UNO.
2. WALL SEGMENTS LESS THAN 36" ARE PIERS.
3. WHERE Wd > 4'-0" OR Ww > 4'-0", Wp MUST BE ≥ 27", UNO.
4. Wp ≤ 24" SEE **9/7-S4.12** , UNO.
5. 24" < Wp TO 36" SEE **10/7-S4.12** UNO.
6. OMIT STD HOOK AT U-BAR.

6 TYPICAL TRIM STEEL AT OPENINGS
1" = 1'-0"

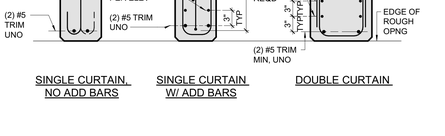


2 EXTERIOR SHEAR WALL (SINGLE CURTAIN) SECTION AT SLAB
3/4" = 1'-0"

DOUBLE CURTAIN (EACH FACE) SINGLE CURTAIN

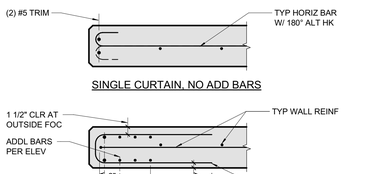
8 ADDITIONAL REINFORCEMENT AT EDGE OF WALL OPENINGS
1" = 1'-0"

3 INTERIOR SHEAR WALL SECTION AT SLAB
3/4" = 1'-0"

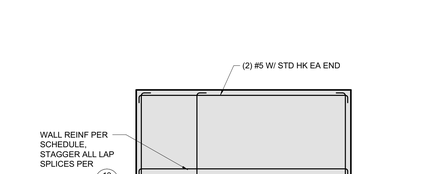


SINGLE CURTAIN, NO ADD BARS SINGLE CURTAIN W/ ADD BARS DOUBLE CURTAIN

11 DOOR/WINDOW HEADER
1" = 1'-0"



7 SOLID WALL SECTION
1" = 1'-0"



12 TYPICAL WALL REINFORCING
1" = 1'-0"

4 INTERIOR SHEAR WALL (SINGLE CURTAIN) SECTION AT SLAB
3/4" = 1'-0"

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No.	Description	Date

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Sheet Title

BUILDING 7 CONCRETE WALL DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

7-S4.12
Drawing No.

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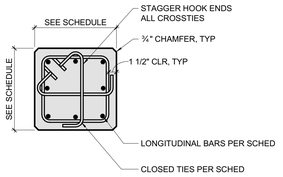


CONCRETE COLUMN SCHEDULE

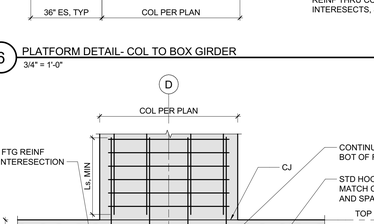
TYPE MARK	SIZE	VERT REINF	LENGTH "L1"	HORIZONTAL REINF (TIES & CROSS TIES WHERE OCCURS) S1	HORIZONTAL REINF (TIES & CROSS TIES WHERE OCCURS) S2	DETAIL	REMARKS
7C1	14" x 14"	(8) #6	18"	#4 TIE w/ #3 CROSS TIE @ 3"oc	#4 TIE w/ #3 CROSS TIE @ 6"oc	8/7-S4.13	
7C2	14" x 14"	(8) #7	18"	#4 TIE w/ #3 CROSS TIE @ 3"oc	#4 TIE w/ #3 CROSS TIE @ 5"oc	8/7-S4.13	
7C3	14" x 14"	(8) #6	18"	#4 @6"oc	#4 @ 6"oc	9/7-S4.13	
7C4	14" x 14"	(8) #6	18"	#4 TIE w/ #3 CROSS TIE @ 2½"oc	#4 TIE w/ #3 CROSS TIE @ 2½"oc	8/7-S4.13	
7C5	14" x 14"	(8) #6	48"	#4 TIE w/ #3 CROSS TIE @ 2½"oc	#4 TIE w/ #3 CROSS TIE @ 4½"oc	8/7-S4.13	

NOTES:

1. ALL CONC REINF SHALL BE ASTM A706.
2. REFER TO DETAIL 2/7-S4.13 & 3/7-S4.13 FOR TYPICAL DEFENITION OF TERMS USED IN THIS TABLE.

8 COLUMN SECTION
1" = 1'-0"

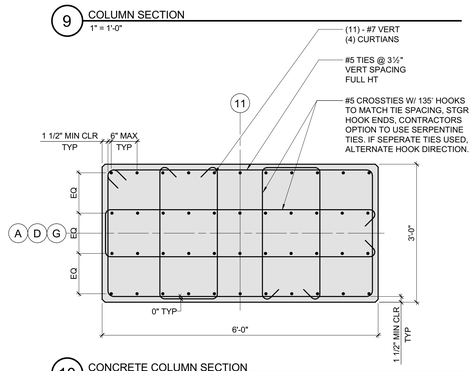
1 CONCRETE COLUMN SCHEDULE
12" = 1'-0"



PLAN VIEW

NOTE: SIMILAR AT WALLS WITH (2) CURTAINS OF REINF.

9 COLUMN SECTION
1" = 1'-0"



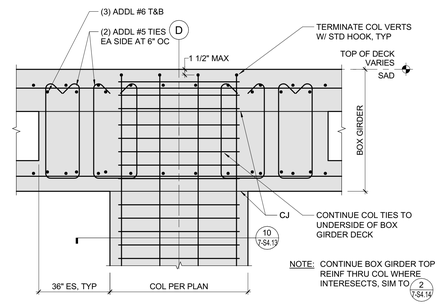
4 END OF WALL AT CONCRETE COLUMN CONNECTION
1" = 1'-0"

PLAN VIEW

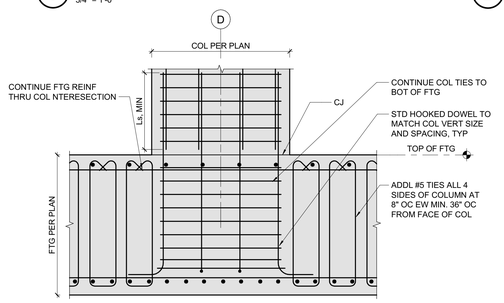
NOTE: SIMILAR AT WALLS WITH (2) CURTAINS OF REINF.

10 CONCRETE COLUMN SECTION
3/4" = 1'-0"

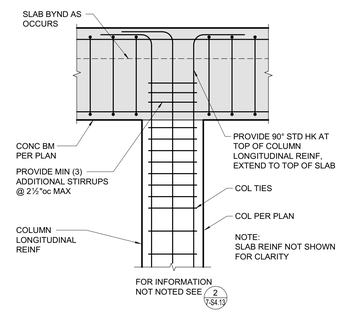
5 WALL AT CONCRETE COLUMN CONNECTION
1" = 1'-0"



6 PLATFORM DETAIL- COL TO BOX GIRDER
3/4" = 1'-0"



2 TYPICAL COLUMN ELEVATION
3/4" = 1'-0"



7 PLATFORM DETAIL- COL TO FOUNDATION
3/4" = 1'-0"

3 TOP OF INTERIOR COLUMNS
3/4" = 1'-0"

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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zfa job no.17143

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Sheet Title

BUILDING 7 CONCRETE COLUMN DETAILS

Drawn By: Author Checked By: Checker

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

7-S4.13
Drawing No.

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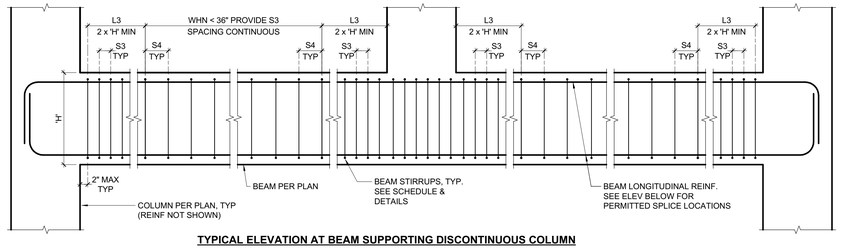
CONCRETE BEAM SCHEDULE

MARK	REFERENCE LEVEL	B (in)	H (in)	REF ELEV	REF SECT	LONGITUDINAL REINFORCEMENT				STIRRUPS AND TIES				LENGTH L_3	REMARKS
						BOTTOM		TOP				SPACING			
						TYP	ADD	TYP	ADD "A"	SIDE BARS	TYP	SIZE	S3	S4	
7BM-1		14"	24"	2/7-S4.14	4/7-S4.14	3-#6	-	3-#6	-	-	T1	#4	6"	10"	4'-0"	
7BM-2		14"	24"	2/7-S4.14	4/7-S4.14	3-#6	-	4-#7	-	-	T1	#4	6"	10"	6'-0"	
7BM-3		14"	24"	2/7-S4.14	4/7-S4.14	3-#7	-	3-#7	-	-	T1	#4	6"	10"	6'-0"	
7BM-4		14"	24"	2/7-S4.14	4/7-S4.14	3-#6	-	3-#6	-	1-#4	T1a	#4	2.5"	2.5"	n/a	
7BM-5		14"	24"	2/7-S4.14	4/7-S4.14	3-#7	-	3-#6	-	-	T1	#4	6"	10"	4'-0"	
7BM-6		14"	18"	2/7-S4.14	4/7-S4.14	3-#7	-	3-#7	-	-	T1	#4	6"	8"	4'-0"	
7BM-7		14"	18"	2/7-S4.14	4/7-S4.14	3-#6	-	3-#6	-	-	T1	#4	6"	8"	4'-0"	

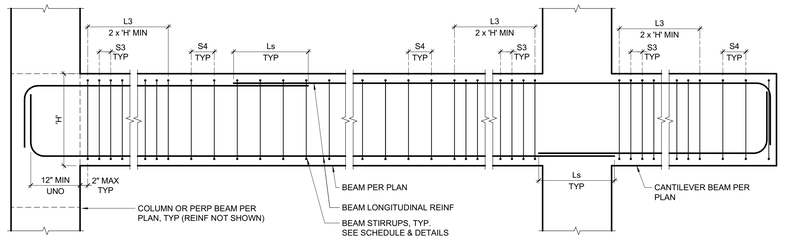
NOTES:

1. REFER TO DETAIL **2/7-S4.14** & **4/7-S4.14** FOR TYPICAL DEFENITION OF TERMS USED IN THIS TABLE.
2. SEE **6/7-S1.41** FOR DETAILS WHERE CMU WALLS OCCUR BELOW BEAMS.
3. ALL BEAM LONGITUDINAL REINF TO BE ASTM A706.
4. FOR TYPICAL BEAM COLUMN INTERSECTION, SEE **6/7-S4.14** .
5. FOR TYPICAL BEAM TO BEAM INTERSECTION, SEE **7/7-S4.14** .
6. WHERE BEAMS ARE SLOPED, BEAM DEPTH NOTED SHALL BE MAINTAINED. SEE ARCHITECTURAL DRAWINGS FOR SLOPE REQUIREMENTS.

1 CONCRETE BEAM SCHEDULE
12" = 1'-0"



TYPICAL ELEVATION AT BEAM SUPPORTING DISCONTINUOUS COLUMN

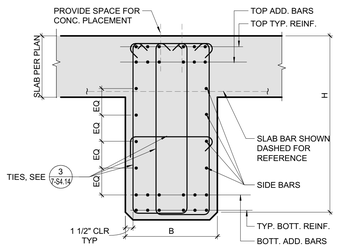


TYPICAL BEAM ELEVATION

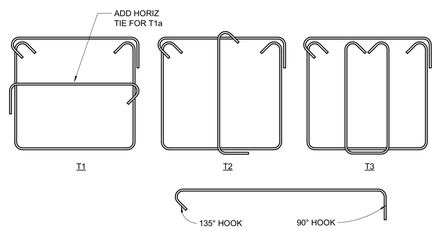
NOTES:

1. LAP TOP BEAM LONGITUDINAL BARS AT MIDSPAN & BOTTOM BARS OVER SUPPORTS. SEE **1/7-S1.10** FOR LAP LENGTHS.
2. BEAM LONGITUDINAL BARS TO BE TERMINATED WITH 90° STANDARD HOOK UNLESS DETAILED OTHERWISE.
3. WHERE BAR EXTENSIONS ARE NOTED IN PLAN OR IN OTHER SPECIFIC DETAILS THIS LENGTH GOVERNS.
4. COLUMN TIES AND LONGITUDINAL REINF TO EXTEND THROUGH BEAM COLUMN JOINT.

2 TYPICAL BEAM TRANVERSE REINFORCING
3/4" = 1'-0"



1. SEE CONC BEAM SCHEDULE FOR ADDL INFO.
2. SEE **5/7-S4.14** FOR REBAR LAYERING.



TYPICAL CROSSTIE

CROSSTIE NOTES

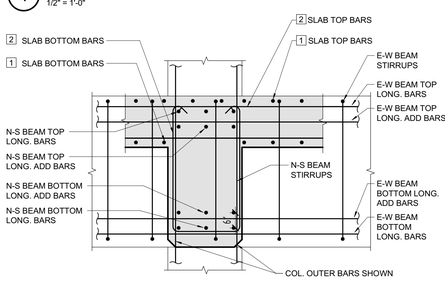
A. SIZE AND SPACING TO MATCH STIRRUPS OR TIES, TYP, UNO
B. FOR BEAMS AND GIRDERS WHERE SLAB OCCURS ON BOTH SIDES OF MEMBER, ALTERNATE PLACEMENT OF 135° HOOK AT EACH CONSECUTIVE CROSSTIE. WHERE SLAB OCCURS ON ONE SIDE ONLY, PLACE THE 135° HOOK ON THE SIDE WITHOUT SLAB AT EACH CONSECUTIVE CROSSTIE.

NOTES:

1. FOR SIZE AND SPACING OF STIRRUPS SEE SCHEDULE.
2. FOR TYPICAL BAR HOOKS AND BENDS SEE TYPICAL DETAILS.
3. SERPENTINE TIES OF EQUIVALENT CONFIGURATION ARE STRUCTURALLY ACCEPTABLE.

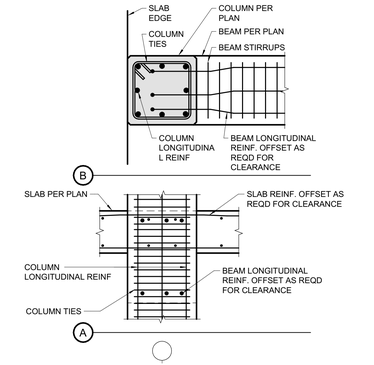
3 STIRRUPS TYPES DETAIL
3/4" = 1'-0"

4 TYPICAL BEAM SECTION DETAIL
1/2" = 1'-0"



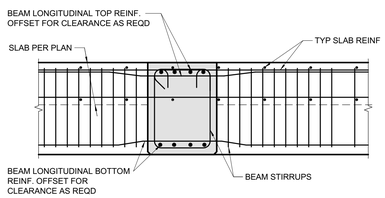
5 BEAM REBAR LAYERING DETAIL
1/2" = 1'-0"

6 TYPICAL BEAM/COLUMN INTERSECTION
3/4" = 1'-0"

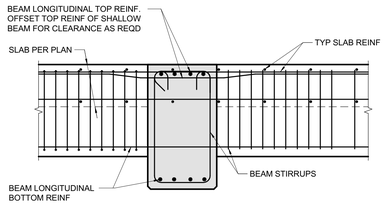


NOTES FOR EQUAL DEPTH BEAM CONNECTIONS:

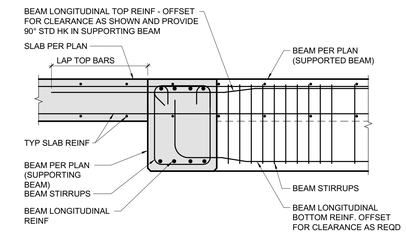
1. WHERE BEAM LONGITUDINAL TOP REINF CONFLICTS, OFFSET GROUP OF BARS CLOSEST TO MIDSPAN OF BEAM.
2. WHERE BEAM BOTTOM LONGITUDINAL REINF CONFLICTS, OFFSET GROUP OF BARS CLOSEST TO SUPPORT.
3. IF BEAM INTERSECTION OCCURS AT SAME LOCATION IN BOTH BEAMS OFFSET GROUP OF BARS WITH LESS TOTAL AREA OF STEEL.



TWO-SIDED EQUAL DEPTH BEAM TO BEAM CONNECTIONS

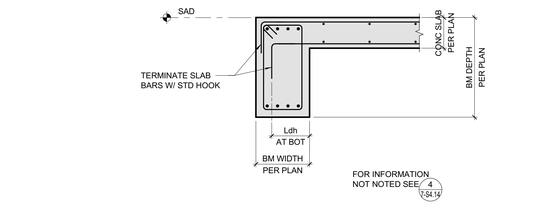


TWO-SIDED BEAM TO BEAM CONNECTIONS

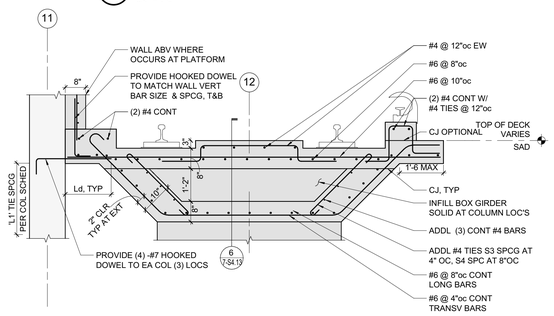


ONE-SIDED BEAM TO BEAM CONNECTIONS

7 TYPICAL BEAM TO BEAM CONNECTION
3/4" = 1'-0"



8 BEAM AT EDGE OF SLAB
3/4" = 1'-0"



9 PLATFORM DETAIL
1/2" = 1'-0"

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ARCHITECTURE

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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Sheet Title

BUILDING 7
CONCRETE BEAM DETAILS

Drawn By: Author Checked By: Checker

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

7-S4.14
Drawing No.

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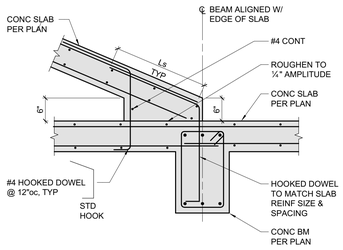
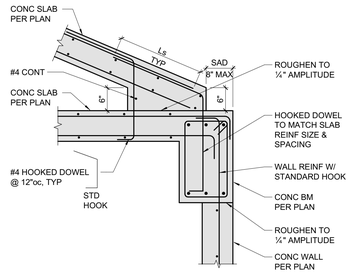


14 SLOPED SLAB AT CONCRETE BEAM
3/4" = 1'-0"

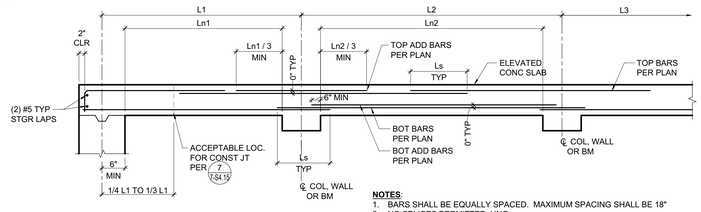


9 SLOPED SLAB AT CONCRETE BEAM AND CONCRETE WALL
3/4" = 1'-0"

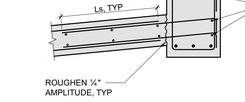
CONCRETE SUSPENDED SLAB SCHEDULE							
SLAB MARK	LEVEL	SLAB THICKNESS	TOP BAR SPAN 1 DIRECTION	TOP BAR SPAN 2 DIRECTION	BOTTOM BAR SPAN 1 DIRECTION	BOTTOM BAR SPAN 2 DIRECTION	REMARKS
7-S1	2ND & 3RD	8"	#5 @ 12"oc	#5 @ 12"oc	#5 @ 12"oc	#5 @ 12"oc	6/7-S4.15
7-S2	RAMP SLAB	8"	#5 @ 12"oc	#4 @ 12"oc	#5 @ 12"oc	#4 @ 12"oc	
7-S3	3RD	8"	#6 @ 12"oc	#6 @ 12"oc	#6 @ 12"oc	#6 @ 12"oc	6/7-S4.15

NOTES:
1. SEE OTHER DETAILS THIS SHEET FOR TYP SLAB DETAILS.
2. REFER TO PLANS FOR ADDITIONAL REINFORCING (ADD BARS).
3. SEE 3/7-S4.15 FOR REBAR LAYERING AND COVER. SEE 2/7-S4.15 FOR TYPICAL SLAB REINFORCING LAYOUT.
4. WHERE SLABS ARE SLOPED, SLAB THICKNESS NOTED SHALL BE MAINTAINED. SEE ARCHITECTURAL DRAWINGS FOR SLOPE REQUIREMENTS.
5. SEE PLANS FOR NON-TYPICAL ADD BAR REINFORCING.

1 CONCRETE SUSPENDED SLAB SCHEDULE
12" = 1'-0"

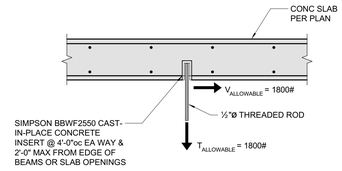


NOTES:
1. BARS SHALL BE EQUALLY SPACED. MAXIMUM SPACING SHALL BE 18"
2. NO SPLICES PERMITTED, UNO.
3. LAP TOP BARS AT MIDSPAN & BOTTOM BARS OVER SUPPORTS. SEE 1/7-S1.10 FOR LAP LENGTHS.
4. REINFORCING TO MAINTAIN CLEARANCE FROM TOP OF SLAB AT SLOPING CONDITIONS.
5. WHERE BAR LENGTHS OR EXTENSIONS ARE NOTED PER PLAN THIS LENGTH GOVERNS.
6. ALL REINF IS LOCATED FROM ℄ OF BEAM OR COLUMN AT ℄ COLUMN STRIP.
7. SEE 5/7-S4.15 FOR TYP SLAB CORNER REINFORCING.
8. SEE7/7-S4.15 FOR CONSTRUCTION JOINT DETAIL
9. SEE 7/7-S1.10 FOR PIPES
10. CONCRETE TO REMAIN SHORED 28 DAYS MINIMUM.
11. REINF ONLY SHOWN ONE WAY, OPP DIRECTION SIM.
12. PROVIDE MIN 2 - #5 CONT BOTT BARS THRU EA COL, EA WAY.

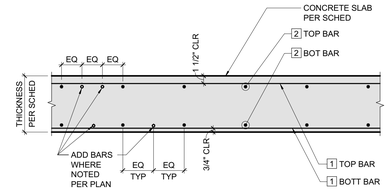


10 SLOPED SLABS AT CONC BEAM
3/4" = 1'-0"

2 TYPICAL ELEVATED CONCRETE SLAB REINFORCEMENT
3/4" = 1'-0"

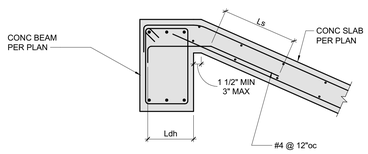


NOTE:
PROVIDE ANCHORS AT UNDERSIDE OF ALL CONCRETE SLABS EXCEPT AT LPG PROP AREA & EQUIPMENT ROOMS SAD.

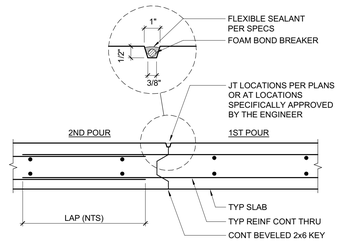


1 = PRIMARY LAYER (LONGITUDINAL) PER PLAN
2 = PRIMARY LAYER (TRANSVERSE) PER PLAN

11 SLOPED SLABS AT INTERIOR CONC BEAM
3/4" = 1'-0"

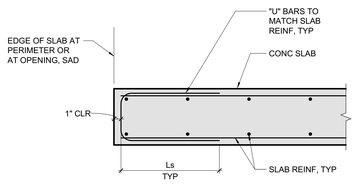


6 TYPICAL CONCRETE INSERT AT UNDERSIDE OF SLAB
1" = 1'-0"

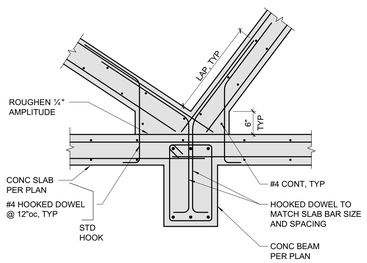


STRUCT SLAB CONSTRUCTION JOINT

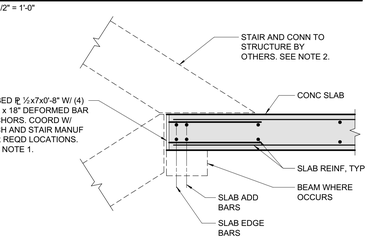
3 TYPICAL SUSPENDED SLAB DETAIL
1" = 1'-0"



12 CONCRETE BEAM AT SLOPED SLAB
3/4" = 1'-0"

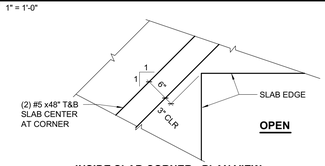


7 STRUCTURAL SLAB CONSTRUCTION JOINT
1 1/2" = 1'-0"

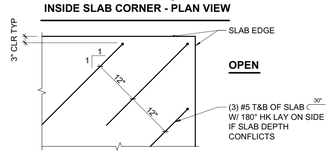


NOTES:
1. CONNECTION DESIGN LOADS:
2. PROVIDE HORIZONTAL SLOTTED CONNECTION FROM UPPER STRINGER TO STRUCTURE TO ALLOW FOR ANTICIPATED STORY DRIFT.

4 TYPICAL EDGE OF SLAB DETAIL
1" = 1'-0"



INSIDE SLAB CORNER - PLAN VIEW



13 SLOPED SLABS AT INTERIOR CONC BEAM
3/4" = 1'-0"

8 STAIR TO EDGE OF SLAB CONNECTION
1" = 1'-0"

5 OUTSIDE & INSIDE SLAB CORNER - PLAN VIEW
3/4" = 1'-0"

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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CONCRETE SLAB DETAILS

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PLUMBING AND FIRE PROTECTION LEGEND AND ABBREVIATIONS

ABBREVIATIONS - PLUMBING

ABD	AUTOMATIC BALL DRIP
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BLDG	BUILDING
BOB	BOTTOM OF BEAM
BOP	BOTTOM OF PIPE
BT	BATH TUB
BV	BALANCING VALVE
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CLG	CEILING
CLNA	CLEAN AGENT
CO	CLEANOUT
COTG	CLEANOUT TO GRADE
CONN	CONNECTION
CONT	CONTINUATION
CP	CIRCULATING PUMP
CV	CHECK VALVE
CW	COLD WATER
DF	DRINKING FOUNTAIN
DI	DEIONIZED WATER
DIA	DIAMETER
DER	DEIONIZED WATER RETURN
DN	DOWN
DR	DRAIN
DROP	DROP (WITHIN FLOOR)
DSP	DRY SPRINKLER
DFS	DRY FIRE STANDPIPE
DWP	DOMESTIC WATER PUMP
DWG	DRAWING
EEW	EMERGENCY EYE WASH
EL	ELEVATION
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FHVC	FIRE HOSE VALVE CABINET
FL	FLOOR
FLH	FLOOR HYDRANT
FS	FLOW SWITCH
FSK	FLOOR SINK
FSP	FIRE STANDPIPE
FT	FEET
FU	FIXTURE UNIT
GAL	GALLONS
GD	GARAGE DRAIN
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HB	HOSE BIBB
HD	HUB DRAIN
HT	HEAT TRACING
HW	HOT WATER
HWR	HOT WATER RETURN
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
IW	INDIRECT WASTER

ABBREVIATIONS - PLUMBING

JP	JOCKEY PUMP
JS	JANITOR SINK
L	LAVATORY
LDR	LEADER
MAX	MAXIMUM
MG	MEDIUM PRESSURE GAS
MGA	MEDICAL GAS ALARM
MH	MANHOLE
MIN	MINIMUM
MS	MOP SINK
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NPW	NON-POTABLE WATER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OSD	OVERFLOW STORM PIPING
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
PDR	PLANTER DRAIN
PD	PUMP DISCHARGE
P/FT	PITCH PER FOOT
PIV	POST INDICATING VALVE
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RC	ROOF RECEPTOR
RD	ROOF DRAIN
RISE	RISE (WITH IN FLOOR)
RW	RECLAIMED WATER
SA	SHOCK ABSORBER
SAN	SANITARY
SD	SMOKE DETECTOR
SE	SEWAGE EJECTOR
SED	SEWAGE EJECTOR DISCHARGE
SF	SQUARE FEET
SH	SHOWER
SK	SINK
SPD	SUMP PUMP DISCHARGE
SP	SUMP PUMP
SPKR	SPRINKLER
SSD	SUB SOIL DRAIN
ST	STORM PIPING
TD	TRENCH DRAIN
TDH	TOTAL DISCHARGE HEAD
TMV	TEMPERATURE MIXING VALVE
TOP	TOP OF PIPE
TOS	TOP OF SLAB
TP	TRAP PRIMER
TPV	TRAP PRIMER VALVE
TS	TAMPER SWITCH
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP (PENETRATES FLOOR SLAB)
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VP	VACUUM PUMP
VR	VENT RISE
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WH	WALL HYDRANT
W&T	WASTE AND TRAP
Z	ZONE

SYMBOL LEGEND

	Y STRAINER WITH BLOW OFF VALVE
	FLEXIBLE CONNECTION
(H) (X) (L)	EXPANSION LOOP SIZE
	SEISMIC JOINT
PIV	POST INDICATOR VALVE
	SHOCK ABSORBER
	VACUUM BREAKER
M	MANUAL AIR VENT
A	AUTOMATIC AIR VENT
	PRESSURE GAUGE AND COCK
	THERMOMETER
	WATER FLOW SWITCH
	RUNNING TRAP
	VALVE (SPECIFICATION FOR TYPE)
	CHECK VALVE
	CHECK VALVE WITH ABD
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	OS&Y (OUTSIDE SCREW & YOKE) VALVE
	AUTOMATIC FLOW CONTROL VALVE
	BUTTERFLY VALVE (MANUAL)
	GLOBE VALVE
	BALANCING VALVE
	VALVE WITH TAMPER SWITCH
	RELIEF VALVE
	ANGLE RELIEF VALVE
	TEMPERATURE MIXING VALVE
	UNION
	REDUCER
	ECCENTRIC REDUCER (E.R.)
	SLEEVE
	PUMP
M	METER
	HOSE BIBB
	WATER HAMMER ARRESTER
	FLOOR DRAIN, AREA DRAIN, PLANT DRAIN, GARAGE DRAIN
	FLOOR SINK
	ROOF RECEPTOR
	ROOF DRAIN
	OVERFLOW ROOF DRAIN

SYMBOL LEGEND

	POINT OF CONNECTION (NEW TO EXISTING)
	FIRE DEPARTMENT CONNECTION
	FIRE DEPARTMENT TEST HEADER
	FIRE HOSE VALVE
	FIRE HOSE VALVE CABINET
	FIRE DEPT. HOSE VALVE W/ CAP & CHAIN
	ROOF MANIFOLD
	SPRINKLER FLOOR CONTROL VALVE ASSEMBLY
	NEW FIRE HYDRANT
T	TAMPER SWITCH
ACV	ALARM CHECK VALVE W/ ALL RELATED APPURTENANCES
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DDCA	DOUBLE DETECTOR CHECK ASSEMBLY
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY
	UPRIGHT SPRINKLER HEAD
	PENDANT SPRINKLER HEAD
	CONCEALED PENDANT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	EXTENDED COVERAGE SPRINKLER HEAD
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	VALVE IN VERTICAL
	P-TRAP
	UP TO CLEANOUT
	WALL CLEANOUT
	END OF PIPE CLEANOUT / PLUG
	FLOOR CLEANOUT
	GRADE CLEANOUT
	PIPE DROP UNLESS OTHERWISE NOTED
	PIPE UP UNLESS OTHERWISE NOTED
	CAP FOR FUTURE (CFF)
	CHANGE IN PIPE ELEVATION
	ARROW INDICATES DIRECTION OF FLOW
	PITCH PIPE DOWN IN DIRECTION OF ARROW
	INSULATED AND HEAT TRACED PIPING
	FRESH AIR INLET
	WALL HYDRANT

PIPING LEGEND

GAS

NG	NATURAL GAS
CA	COMPRESSED AIR PIPING
PG	PROPANE GAS PIPING

WASTE / VENT / STORM

SAN	SANITARY (ABOVE FLOOR)
SAN	SANITARY (BELOW FLOOR)
V	VENT PIPING
ST	STORM DRAIN PIPING
OST	OVERFLOW STORM PIPING
CD	CONDENSATE DRAIN PIPING
GD	GARAGE DRAIN PIPING (ABOVE FLOOR)
GD	GARAGE DRAIN PIPING (BELOW FLOOR)

POTABLE WATER

	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING (120°F)
	DOMESTIC HOT WATER RETURN PIPING (120°F)

FIRE PROTECTION

F	FIRE WATER SUPPLY
SP	SPRINKLER PIPING
FSP	FIRE STANDPIPE
DR	SPRINKLER DRAIN PIPING

MISCELLANEOUS

P / 1	P = SAN, VENT STACK OR DOMESTIC WATER RISER ST = STORM DRAIN LEADER RISER F = FIRE STANDPIPE RISER RISER / RISER NO.
CP / 1	EQUIPMENT DESIGNATION EQUIPMENT / EQUIPMENT NO.
1 / P2.1	DETAIL DESIGNATION DETAIL NUMBER / DWG. SHEET NO.
1	SHEET NOTE NUMBER
1	REVISION NUMBER

PLBG_DRAWING LIST Bldg 7	
SHEET NUMBER	SHEET NAME
7-P0.01	PLUMBING AND FIRE PROTECTION LEGEND, ABBREVATION, AND DRAWING LIST
7-P2.01	PLUMBING AND FIRE PROTECTION USAR/BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN

MISC EQUIPMENT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL NO.	CAPACITY						ELECTRICAL					OPERATING WEIGHT	REMARKS
				GAL	FT HD	PSI	GPM	CFM	CFH	HP	V	PH	HZ	EM PWR		
7-AC-1-1	AIR COMPRESSOR	KAESER	SX 5 AIRCENTER		-	125	-	21.5	-	5	460	3	60	N	320	INTEGRAL REFRIGERATED AIR DRYER, RECIEVE...

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
TODD M SEE
No. M30765
MECHANICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

PLUMBING AND FIRE PROTECTION LEGEND, ABBREVATION, AND DRAWING LIST

Drawn By: Author
Checked By: Checker

Scale:
12" = 1'-0"

Date:
October 4, 2019

Project No. B17.07369

7-P0.01
Drawing No.

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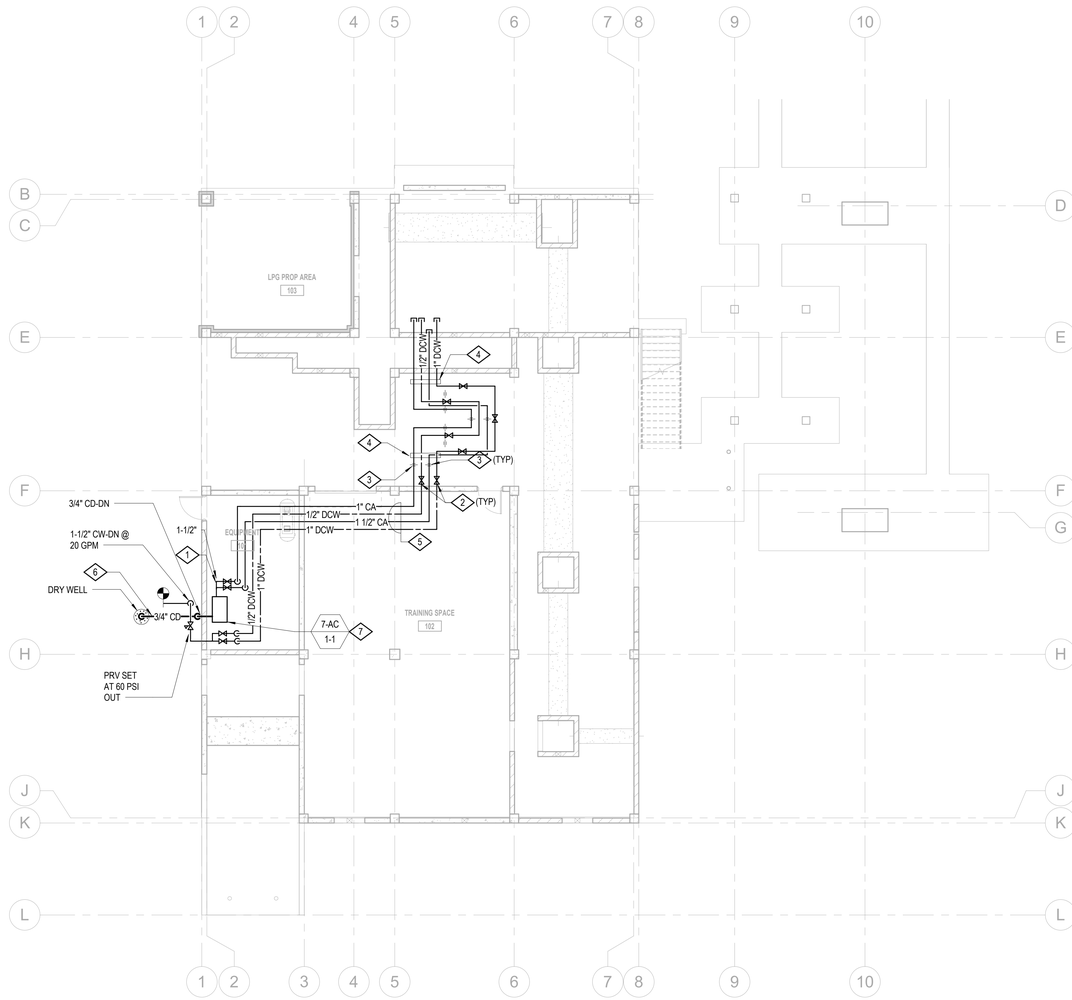
NUMBERED NOTES:

A

SHEET NOTES:

1. (E) AIR COMPRESSOR PROVIDED BY OTHERS. CONFIRM TYPE, CONDITION, SIZE, DRYER, FILTER, RECEIVER, AND PRESSURE BEFORE COMMENCING WITH PIPE WORK.
2. THREADED VALVES LOOSELY INSTALLED (LEAKS) AND THREADED UNIONS. SOLDERED COPPER TYPE L PIPE.
3. THREADED GALVANIZED STEEL, SCHEDULE 40, LOOSELY ASSEMBLED (LEAKS).
4. UNISTRUT SUPPORT, LOOSELY SECURE PIPING
5. ROUTE PIPING TIGHT TO STUCTURE
6. SPILL CD TO DRYWELL. 12" DIA X 18" DEEP. FILLED WITH 3/4" PEA GRAVEL.
7. LOCATE AIR COMPRESSOR ON 5"MIN CONCRETE SLAB. PROVIDE 3/8"DIA SCREW ANCHORS AT EACH CORNER (4 TOTAL).



1 07-PLBG USAR BLDG-01-FIRST FLOOR
1/8" = 1'-0"

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No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
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No. M30765
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STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

PLUMBING AND FIRE PROTECTION USAR/BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. B17.07369

7-P2.01

Drawing No.

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ELECTRICAL LEGEND AND ABBREVIATIONS

EQUIPMENT NAMING LEGEND

EOUS - B 2 A / 1,3,5

- 1,3,5 = CIRCUIT NUMBER(S)
- A = FIRST OF THIS TYPE ON FLOOR
- 2 = BUILDING NUMBER
- B = BUILDING

EOUS:
- ATS AUTOMATIC TRANSFER SWITCH
- BUS BUSWAY
- DPH DISTRIBUTION PANEL 277/480V
- DPL DISTRIBUTION PANEL 120/208V
- DSH DISTRIBUTION SWITCHBOARD 277/480V
- DSL DISTRIBUTION SWITCHBOARD 120/208V
- LP BRANCH CIRCUIT PANELBOARD 120/208V
- LPH BRANCH CIRCUIT PANELBOARD 277/480V
- LRC LIGHTING RELAY CABINET
- MCC MOTOR CONTROL CENTER
- MP MECHANICAL EQUIPMENT PANELBOARD
- MS MAIN SWITCHBOARD
- PDU POWER DISTRIBUTION UNIT
- T TRANSFORMER
- TB TELECOM BACKBOARD
- TC TELECOM CABINET

EOUS:
- E EMERGENCY LIFE SAFETY
- O POWER OPTIONAL STANDBY
- U UPS POWER
- S LEGALLY REQUIRED STANDBY

WIRING DEVICE LEGEND

	DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V, DEDICATED; WALL MOUNTED
	DOUBLE DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
	SPECIAL PURPOSE RECEPTACLE OUTLET: RATING AS INDICATED; WALL MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V; CEILING MOUNTED
	DOUBLE DUPLEX RECEPTACLE OUTLET: 125V; CEILING MOUNTED
	SPECIAL PURPOSE RECEPTACLE OUTLET: RATING AS INDICATED; CEILING MOUNTED
	PUSH BUTTON
	TELECOM OUTLET
TV	TELEVISION OUTLET
$	SINGLE POLE SWITCH
$ 3	THREE WAY SWITCH
$ F	FAN SWITCH
$ H	ILLUMINATED HANDLE SWITCH
D	WALL DIMMER
LV	LOW VOLTAGE SWITCH
PC	PHOTOCELL
OS	OCCUPANCY SENSOR; WALL MOUNTED
OS	2 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	1 WAY OCCUPANCY SENSOR; CEILING MOUNTED

WIRING DEVICE SUBSCRIPT LEGEND

AC	AC = ABOVE COUNTER
GFI	GFI = GROUND FAULT INTERRUPTER
IG	IG = ISOLATED GROUND
WP	WP = WEATHERPROOF
a	a = LOWER CASE LETTER INDICATES SWITCH CONTROL
6	6 = NUMBER INDICATES CIRCUIT NUMBER
IG	IG = ISOLATED GROUND (ONE OF DOUBLE DUPLEX)
$ a	a = LOWER CASE INDICATES SWITCH CONTROL

FIRE ALARM LEGEND

FCIP	FIREFIGHTER'S CONTROL AND INDICATING PANEL
FPSP	FIRE PUMP REMOTE STATUS PANEL
GSP	GENERATOR REMOTE STATUS PANEL

SECURITY LEGEND

	FIXED CCTV CAMERA
DC	DOOR CONTACT
RTE	REQUEST TO EXIT DEVICE
MS	MOTION SENSOR
ML	MAGNETIC LOCK
PD	PRESSURE DETECTOR (PRESSURE PAD)
KP	KEYPAD
DA	ELECTRONIC SOUNDER FOR DOOR BREACH (DOOR ALARM)
DR	REMOTE DOOR RELEASE
PB	PUSH BUTTON REQUEST TO EXIT DEVICE
CR	CARD READER
EL	ELECTRIC LOCK
ES	ELECTRIC STRIKE
IC	REMOTE VIDEO INTERCOM SYSTEM
IC M	INTERCOM MASTER STATION
IC V	VIDEO INTERCOM

PROGRAMMABLE LIGHTING & RECEPTACLE CONTROL SYSTEM DEVICE LEGEND

$	SWITCH
D	DIMMER
PC	PHOTOCELL
OS	OCCUPANCY SENSOR; WALL MOUNTED
OS	2 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	1 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	CORRIDOR OCCUPANCY SENSOR; CEILING MOUNTED
KP	MULTI-BUTTON KEYPAD, # INDICATES QTY OF BUTTONS
KS	MULTI-BUTTON PRESET SCENE CONTROLLER WITH MASTER RAISE/LOWER, # INDICATES QTY OF SCENE BUTTONS
G	GRAPHICAL INTERFACE CONTROLLER

POWER LEGEND

	ATS, CPC, DPH, DPL, DSH, DSL, MCC OR MS; SIZE APPROXIMATELY AS SHOWN. DOUBLE LINE INDICATES FRONT.
	SURFACE MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	SURFACE MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	TB: LENGTH APPROXIMATELY AS SHOWN
T F	STEP DOWN TRANSFORMER
G	GENERATOR IN WP ENCLOSURE
	AUTOMATIC TRANSFER SWITCH
	HEAVY DUTY DISCONNECT SWITCH
	HEAVY DUTY DISCONNECT SWITCH WITH FUSE
	MOTOR STARTER
MCP	MOTOR STARTER, NOT PROVIDED UNDER ELECTRICAL SCOPE
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH
MDF	COMBINATION MOTOR STARTER/DISCONNECT SWITCH, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITH DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITHOUT DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
EPO	EMERGENCY POWER OFF BUTTON
$ MD	MOTORIZED DOOR CONTROLLER (FURNISHED WITH DOOR)
$ MS	MOTORIZED SHADE CONTROLLER (FURNISHED WITH SHADES)
$ PS	PROJECTION SCREEN CONTROLLER (FURNISHED WITH SCREEN)
$ T	THERMAL OVERLOAD/DISCONNECT SWITCH
M	MOTOR CONNECTION
J	JUNCTION BOX, CEILING MOUNTED
J	JUNCTION BOX, WALL MOUNTED
P B	PULL BOX
S B	SPLICE BOX
G	GROUND BUS CABINET
	GROUND ROD
	GROUND TEST WELL
	CIRCUIT BREAKER
	SWITCH AND FUSE
	CIRCUIT BREAKER IN ENCLOSURE
M	CURRENT TRANSFORMER COMPARTMENT AND KWH METER
GFR	GROUND FAULT RELAY
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	TRANSFORMER
CT 1-1	EQUIPMENT DESIGNATION: EQUIPMENT TYPE; NUMERICAL DESIGNATION. REFER TO EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION DETAILS

LIGHTING LEGEND

	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; CEILING MOUNTED
	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; WALL MOUNTED
	LIGHTING FIXTURE CONNECTED TO EMERGENCY POWER SYSTEM
2 a / A	LIGHTING FIXTURE SUBSCRIPTIONS: NUMBER INDICATES CIRCUIT, LOWERCASE LETTER INDICATES SWITCH CONTROL UPPERCASE LETTER INDICATES FIXTURE TYPE
EXIT SIGNS	ARROWS AS SHOWN, ILLUMINATED FACE AS INDICATED BY SHADING, CONNECT TO EMERGENCY POWER SYSTEM
	EXIT SIGN; WALL MOUNTED
	EXIT SIGN; CEILING MOUNTED
R	EXIT SIGN; RECESSED IN WALL
P	EXIT SIGN; PENDENT MOUNTED
L	EXIT SIGN, LOW LEVEL; RECESSED IN WALL

ABBREVIATIONS

	CENTER LINE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AF/AS	AMPERE RATING OF FUSE/SWITCH
AT/AF	AMPERE RATING OF CIRCUIT, BREAKER TRIP/FRAME
A/V	AUDIO/VISUAL
BMS	BUILDING MANAGEMENT SYSTEM
CKT	CIRCUIT
COPS	CRITICAL OPERATIONS POWER SYSTEM
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EC	EMPTY CONDUIT
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
FCC	FIRE CONTROL CENTER
GFI	GROUND FAULT INTERRUPTOR
GND	GROUND
IDF	INTERMEDIATE DISTRIBUTION FRAME ROOM
IG	ISOLATED GROUND
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME ROOM
MIC	MINERAL INSULATED CABLE
MS	MAIN SWITCHBOARD
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PVC	POLYVINYL CHLORIDE CONDUIT
RAC	RIGID ALUMINUM CONDUIT
RSC	RIGID STEEL CONDUIT
SCC	SECURITY CONTROL CENTER
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
TEL	TELECOM
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
WP	WEATHERPROOF
WT	WATERTIGHT
XP	EXPLOSION PROOF

HAYWARD FIRE TRAINING FACILITY
BUILDING 7 - ELECTRICAL DRAWING LIST
7/19/2019
WSP PROJECT: B17.07369.000

DRAWING NUMBER	DRAWING NAME	SCALE	50%CD	90%CD	100%CD
			1/17/2018	11/2/2018	7/19/2019
7-E0.01	ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST	NTS	X	X	X
7-E0.02	ELECTRICAL SCHEDULES	NTS	X	X	X
7-E2.01	ELECTRICAL USAR/BART TRAINING STRUCTURE FIRST LEVEL PLAN	1/8" = 1'-0"	X	X	X
7-E2.02	ELECTRICAL USAR/BART TRAINING STRUCTURE SECOND LEVEL PLAN	1/8" = 1'-0"	X	X	X
7-E5.01	ELECTRICAL RISER DIAGRAM	NTS	X	X	X

RACEWAY LEGEND

	CONDUIT CONCEALED ABOVE CEILING OR WITHIN WALL
	CONDUIT BELOW GRADE OR EMBEDDED WITHIN SLAB
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT STUBBED OUT WITH BUSHING NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
E	CONDUIT STUBBED OUT AND CAPPED NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
AV	AUDIO/VISUAL SYSTEM RACEWAY
E	ELECTRICAL SYSTEM RACEWAY
G	GROUNDING SYSTEM RACEWAY
FA	FIRE ALARM SYSTEM RACEWAY
S	SECURITY SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
T	TELECOM SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
	CONDUIT HOMERUN, MAXIMUM OF (3) BRANCH CIRCUITS, UON NOTE: MAXIMUM OF THREE BRANCH CIRCUITS FOR EACH HOMERUN, UON
	PHASE CONDUCTOR(S); GROUNDING CONDUCTOR; ISOLATED GROUNDING CONDUCTOR; NEUTRAL CONDUCTOR

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HEART OF THE BAY

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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER — AMANDA J. BROWNLEE — No. E17287 — ELECTRICAL — STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST

Drawn By: ELW
Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

7-E0.01
Drawing No.

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120V, 1-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE						
	#12	#10	#8	#6	#4	#2	#1
0.4	280ft	446ft	694ft	1,100ft	1,753ft	2,784ft	3,506ft
0.8	140ft	223ft	347ft	550ft	877ft	1,392ft	1,753ft
1.2	93ft	149ft	231ft	367ft	584ft	928ft	1,169ft
1.6	70ft	112ft	174ft	275ft	438ft	696ft	877ft
2.0	56ft	89ft	139ft	220ft	351ft	557ft	701ft
2.4	47ft	74ft	116ft	183ft	292ft	464ft	584ft
2.8	-	64ft	99ft	157ft	250ft	398ft	501ft
3.2	-	56ft	87ft	137ft	219ft	348ft	438ft
3.6	-	50ft	77ft	122ft	195ft	309ft	390ft
4.0	-	-	69ft	110ft	175ft	278ft	351ft
4.4	-	-	63ft	100ft	159ft	253ft	319ft
4.8	-	-	58ft	92ft	146ft	232ft	292ft
5.2	-	-	-	85ft	135ft	214ft	270ft
5.6	-	-	-	79ft	125ft	199ft	250ft
6.0	-	-	-	73ft	117ft	186ft	234ft
6.4	-	-	-	69ft	110ft	174ft	219ft
6.8	-	-	-	-	103ft	164ft	206ft
7.2	-	-	-	-	97ft	155ft	195ft
7.6	-	-	-	-	92ft	147ft	185ft
8.0	-	-	-	-	88ft	139ft	175ft
8.4	-	-	-	-	83ft	133ft	167ft
8.8	-	-	-	-	-	127ft	159ft
9.2	-	-	-	-	-	121ft	152ft
9.6	-	-	-	-	-	116ft	146ft
10.0	-	-	-	-	-	111ft	140ft
10.4	-	-	-	-	-	107ft	135ft
10.8	-	-	-	-	-	103ft	130ft
11.2	-	-	-	-	-	99ft	125ft
11.6	-	-	-	-	-	-	121ft
12.0	-	-	-	-	-	-	117ft
12.4	-	-	-	-	-	-	113ft
12.8	-	-	-	-	-	-	110ft
13.2	-	-	-	-	-	-	106ft
13.6	-	-	-	-	-	-	-
14.0	-	-	-	-	-	-	-
14.4	-	-	-	-	-	-	-
14.8	-	-	-	-	-	-	-
15.2	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-
16.0	-	-	-	-	-	-	-

BASED ON 3% VOLTAGE DROP ALLOWED FOR BRANCH CIRCUITS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 1-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE						
	#12	#10	#8	#6	#4	#2	#1
0.7	480ft	766ft	1,192ft	1,888ft	3,010ft	4,779ft	6,020ft
1.4	240ft	383ft	596ft	944ft	1,505ft	2,389ft	3,010ft
2.1	160ft	255ft	397ft	629ft	1,003ft	1,593ft	2,007ft
2.8	120ft	192ft	298ft	472ft	753ft	1,195ft	1,505ft
3.5	96ft	153ft	238ft	378ft	602ft	956ft	1,204ft
4.2	80ft	128ft	199ft	315ft	502ft	796ft	1,003ft
4.9	-	109ft	170ft	270ft	430ft	683ft	860ft
5.6	-	96ft	149ft	236ft	376ft	597ft	753ft
6.3	-	85ft	132ft	210ft	334ft	531ft	669ft
7.0	-	-	119ft	189ft	301ft	478ft	602ft
7.7	-	-	108ft	172ft	274ft	434ft	547ft
8.4	-	-	99ft	157ft	251ft	398ft	502ft
9.1	-	-	-	145ft	232ft	368ft	463ft
9.8	-	-	-	135ft	215ft	341ft	430ft
10.5	-	-	-	126ft	201ft	319ft	401ft
11.2	-	-	-	118ft	188ft	299ft	376ft
11.9	-	-	-	-	177ft	281ft	354ft
12.6	-	-	-	-	167ft	265ft	334ft
13.3	-	-	-	-	158ft	252ft	317ft
14.0	-	-	-	-	151ft	239ft	301ft
14.7	-	-	-	-	-	228ft	287ft
15.4	-	-	-	-	-	217ft	274ft
16.1	-	-	-	-	-	208ft	262ft
16.8	-	-	-	-	-	199ft	251ft
17.5	-	-	-	-	-	191ft	241ft
18.2	-	-	-	-	-	184ft	232ft
18.9	-	-	-	-	-	177ft	223ft
19.6	-	-	-	-	-	171ft	215ft
20.3	-	-	-	-	-	-	208ft
21.0	-	-	-	-	-	-	201ft
21.7	-	-	-	-	-	-	194ft
22.4	-	-	-	-	-	-	188ft
23.1	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-
24.5	-	-	-	-	-	-	-
25.2	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-
27.3	-	-	-	-	-	-	-
28.0	-	-	-	-	-	-	-

BASED ON 3% VOLTAGE DROP ALLOWED FOR BRANCH CIRCUITS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	1/0	2/0	3/0	4/0	250KCM	300KCM	350KCM	400KCM	500KCM
3.4	1,204ft	1,520ft	1,918ft	2,417ft	2,853ft	3,425ft	4,004ft	4,577ft	5,695ft
6.8	602ft	760ft	959ft	1,208ft	1,427ft	1,713ft	2,002ft	2,289ft	2,848ft
10.2	401ft	507ft	639ft	806ft	951ft	1,142ft	1,335ft	1,526ft	1,898ft
13.6	301ft	380ft	480ft	604ft	713ft	856ft	1,001ft	1,144ft	1,424ft
17.0	241ft	304ft	384ft	483ft	571ft	685ft	801ft	915ft	1,139ft
20.4	201ft	253ft	320ft	403ft	476ft	571ft	667ft	763ft	949ft
23.8	172ft	217ft	274ft	345ft	408ft	489ft	572ft	654ft	814ft
27.2	151ft	190ft	240ft	302ft	357ft	428ft	500ft	572ft	712ft
30.6	134ft	169ft	213ft	269ft	317ft	381ft	445ft	509ft	633ft
34.0	120ft	152ft	192ft	242ft	285ft	343ft	400ft	458ft	570ft
37.4	109ft	138ft	174ft	220ft	259ft	311ft	364ft	416ft	518ft
40.8	100ft	127ft	160ft	201ft	238ft	285ft	334ft	381ft	475ft
44.2	93ft	117ft	148ft	186ft	219ft	263ft	308ft	352ft	438ft
47.6	86ft	109ft	137ft	173ft	204ft	245ft	286ft	327ft	407ft
51.0	80ft	101ft	128ft	161ft	190ft	228ft	267ft	305ft	380ft
54.4	-	95ft	120ft	151ft	178ft	214ft	250ft	286ft	356ft
57.8	-	89ft	113ft	142ft	168ft	201ft	236ft	269ft	335ft
61.2	-	84ft	107ft	134ft	159ft	190ft	222ft	254ft	316ft
64.6	-	-	101ft	127ft	150ft	180ft	211ft	241ft	300ft
68.0	-	-	96ft	121ft	143ft	171ft	200ft	229ft	285ft
71.4	-	-	91ft	115ft	136ft	163ft	191ft	218ft	271ft
74.8	-	-	-	110ft	130ft	156ft	182ft	208ft	259ft
78.2	-	-	-	105ft	124ft	149ft	174ft	199ft	248ft
81.6	-	-	-	101ft	119ft	143ft	167ft	191ft	237ft
85.0	-	-	-	-	114ft	137ft	160ft	183ft	228ft
88.4	-	-	-	-	110ft	132ft	154ft	176ft	219ft
91.8	-	-	-	-	106ft	127ft	148ft	170ft	211ft
95.2	-	-	-	-	-	122ft	143ft	163ft	203ft
98.6	-	-	-	-	-	118ft	138ft	158ft	196ft
102.0	-	-	-	-	-	114ft	133ft	153ft	190ft
105.4	-	-	-	-	-	-	129ft	148ft	184ft
108.8	-	-	-	-	-	-	125ft	143ft	178ft
112.2	-	-	-	-	-	-	-	139ft	173ft
115.6	-	-	-	-	-	-	-	135ft	168ft
119.0	-	-	-	-	-	-	-	131ft	163ft
122.4	-	-	-	-	-	-	-	-	158ft
125.8	-	-	-	-	-	-	-	-	154ft
129.2	-	-	-	-	-	-	-	-	150ft
132.6	-	-	-	-	-	-	-	-	146ft
136.0	-	-	-	-	-	-	-	-	142ft

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

MOTOR CONNECTION SCHEDULE: 208V-3 PHASE

HP	SHORT-CIRCUIT & GROUND FAULT		SWITCH AMPS	OVERLOAD FUSE AMPS	BRANCH CIRCUIT AMPACITY	GROUNDING CONDUCTOR SIZE	STARTER SIZE NEMA
	CIRCUIT BREAKER	FUSE SIZE					
1/2	15A	6A	30	2.5	15	#12	1
3/4	15A	10A	30	3.5	15	#12	1
1	15A	10A	30	5	15	#12	1
1 1/2	15A	15A	30	7	15	#12	1
2	15A	15A	30	9	15	#12	1
3	20A	20A	30	15	20	#12	1
5	35A	30A	30	20	30	#10	1
7 1/2	50A	45A	60	30	40	#10	2
10	60A	60A	60	40	50	#10	3
15	90A	90A	100	60	70	#8	3
20	100A	110A	100	80	80	#6	3
25	125A	150A	100	90	100	#6	4
30	150A	175A	200	110	125	#6	4
40	200A	200A	200	150	175	#6	5
50	250A	300A	200	175	200	#4	5
60	300A	300A	400	200	225	#4	5
75	350A	400A	400	250	300	#2	6
100	450A	500A	400	350	400	#2	6
125	600A	600A	600	450	450	#1	6
150	700A	700A	600	500	600	#1/0	6

REFER TO WIRING SCHEDULE FOR BRANCH CIRCUIT REQUIREMENTS
SIZES BASED ON COPPER CONDUCTORS

EQUIPMENT CONNECTION DESIGNATIONS LEGEND

DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION
AC	AIR CONDITIONING UNIT	FCU	FAN COIL UNIT	P	PUMP
ACC	AIR COOLED CONDENSER	FOA	FUEL OIL ALARM PANEL	PS	PROJECTION SCREEN
AHU	AIR HANDLING UNIT	FOP	FUEL OIL PUMP	REF	REFRIGERATOR
BC	BATTERY CHARGER	FMS	FMS PANEL	RF	RETURN FAN
BMS	BMS PANEL	FP	FIRE PUMP	RTU	ROOF TOP UNIT
CH	CHILLER	FPB	FAN POWER BOX	SD	SMOKE DAMPER
COMP	COMPRESSOR	FSD	FIRE/SMOKE DAMPER	SE	SEWAGE EJECTOR
COP	COPIER	GD	GARBAGE DISPOSAL	SF	SUPPLY FAN
CP	CIRCULATING PUMP	GS	GRAPHIC SIGNAGE	SP	SUMP PUMP
CU	CONDENSING UNIT	HP	HEAT PUMP	UH	UNIT HEATER
DF	DUCT FURNACE	HV	HEATING/VENTILATING UNIT	VAV	VAV BOX ELECTRIC HEAT
DWBP	DOMESTIC WATER BOOSTER PUMP	IH	INSTANT HOT WATER HEATER	VM	VENDING MACHINE
ECH	ELECTRIC CABINET HEATER	JP	JOCKEY PUMP	VFD	VARIABLE FREQUENCY DRIVE
EDH	ELECTRIC DUCT HEATER	JWH	JACKET WATER HEATER	TYPE DP	DUPLEX PUMP
EF	EXHAUST FAN	MCS	MOTOR CONNECTION SCHEDULE	TYPE FR	FRACTIONAL HP MOTOR
EHC	ELECTRIC HEATING COIL	MD	MOTORIZED DOOR OR GATE	TYPE FWS	FURNISHED WITH STARTER
ELEV	ELEVATOR	MS	MOTORIZED SHADE	TYPE M	MOTOR WITH STARTER
EUH	ELECTRIC UNIT HEATER	MUA	MAKE UP AIR UNIT	TYPE SPC	SINGLE POINT CONNECTION
EWC	ELECTRIC WATER COOLER	MW	MICROWAVE OVEN	TYPE VFD	VARIABLE FREQUENCY DRIVE
EWH	ELECTRIC WATER HEATER	OH	OIL HEATER		

BOH LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER/CATALOG NO.	DESCRIPT	WATTS	VOLTS	REMARKS
W1	SURFACE OR PENDANT MOUNTED INDUSTRIAL CORROSION-RESISTANT 4 FOOT LONG FIXTURE. POLYURETHANE GASKET, UV STABILIZED PATTERN ACRYLIC HIGH IMPACT DIFFUSER, ELECTRONIC DRIVER.	WILLIAMS 17-4-L55-835-AF-EM/10W-DIM-UNV PARAMOUNT STARDUSTER C5-2-L-4-3-EMD1-D3-120-277V DAYBRITE: DWAE43L-835-4-UNV-EMLED	LED	40	120	BACK OF HOUSE SPACES
X1	LED EDGE-LIT EXIT SIGN CONNECTED TO EMERGENCY SYSTEM. NUMBER OF FACES AND SURFACE, WALL, CEILING OR PENDANT MOUNTED EXIT SIGN WITH DIRECTIONAL ARROWS AS INDICATED. GREEN LETTERS, WHITE FINISH.	EMERGI-LITE PRESTIGE X40 SERIES EVENLITE TELESIS LITHONIA LRP-EL-N SERIES-120/277	LED	5	120	

EQUIPMENT CONNECTION SCHEDULE

DESIGNATION	HP	FLA	KVA	VOLT-AGE	PH	POWER SOURCE	CONNECTION TYPE	BRANCH CIRCUIT WIRING	REMARKS
CA-7-1	5			208	1	LP-B7A	SPC	2#8, 1#10G, 0.75"C	
DA-7-1	5			208	1	LP-B7A	SPC	2#8, 1#10G, 0.75"C	

LP-B7A

BUSSING: 225A, 10,000 AIC SYMMETRICAL
MAIN CB: 150A/3P
LOCATION: ELECTRICAL ROOM
MOUNTING: SURFACE

120/208V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
L	EQUIP 101 AND TRAINING 102 LTS	80	20/1	1	●			2	40/2	4004	CA-7-1	M
R	BUILDING 7 RECEPTACLE	180	20/1	3		●		4		4004		M
R	BUILDING 7 RECEPTACLE	720	20/1	5			●	6	40/2	4004	DA-7-1	M
	SPARE	0	20/1	7	●			8		4004		M
	SPARE	0	20/1	9		●		10	30/2	2704	TELECOM EQUIP	E
	SPARE	0	20/1	11			●	12		2704		E
	SPARE	0	20/1	13	●			14	20/1	0	SPARE	
	SPARE	0	20/1	15		●		16	20/1	0	SPARE	
	SPARE	0	20/1	17			●	18	20/1	0	SPARE	
	SPARE	0	20/1	19	●			20	20/1	0	SPARE	
	SPARE	0	20/1	21		●		22	20/1	0	SPARE	
	SPARE	0	20/1	23			●	24	20/1	0	SPARE	
	SPARE	0	20/1	25	●			26	20/1	0	SPARE	
	SPARE	0	20/1	27		●		28	20/1	0	SPARE	
	SPARE	0	20/1	29			●	30	20/1	0	SPARE	
	SPARE	0	20/1	31	●			32	20/1	0	SPARE	
	SPARE	0	20/1	33		●		34	20/1	0	SPARE	
	SPARE	0	20/1	35			●	36	20/1	0	SPARE	
	SPACE	0		37	●			38		0	SPACE	
	SPACE	0		39		●		40		0	SPACE	
	SPACE	0		41			●	42		0	SPACE	

TOTAL ALL PHASES (VA)	PHASE A (VA)	PHASE B (VA)	PHASE C (VA)	TOTAL ALL PHASES (AMPS)
22404	8088	6888	7428	62

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	5408 VA	1.00	5408 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	80 VA	1.25	100 VA
M = MOTOR	8008 VA	1.00	8008 VA
M = LARGEST MOTOR	8008 VA	1.25	10010 VA
R = RECEPTACLE	900 VA	NEC DEMAND	900 VA

CONNECTED LOAD SUMMARY
22404 VA
62 AMPS

NEC LOAD SUMMARY
24426 VA
68 AMPS

RossDrulisCusenbery
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Sonoma Highway
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CA 95476
TEL 707 996 8448
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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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425 Market St. 17th Floor
San Francisco, CA 94105
(415) 243-4600
wsp.com

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNFEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL SCHEDULES

Drawn By: ELW
Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

7-E0.02

Drawing No.

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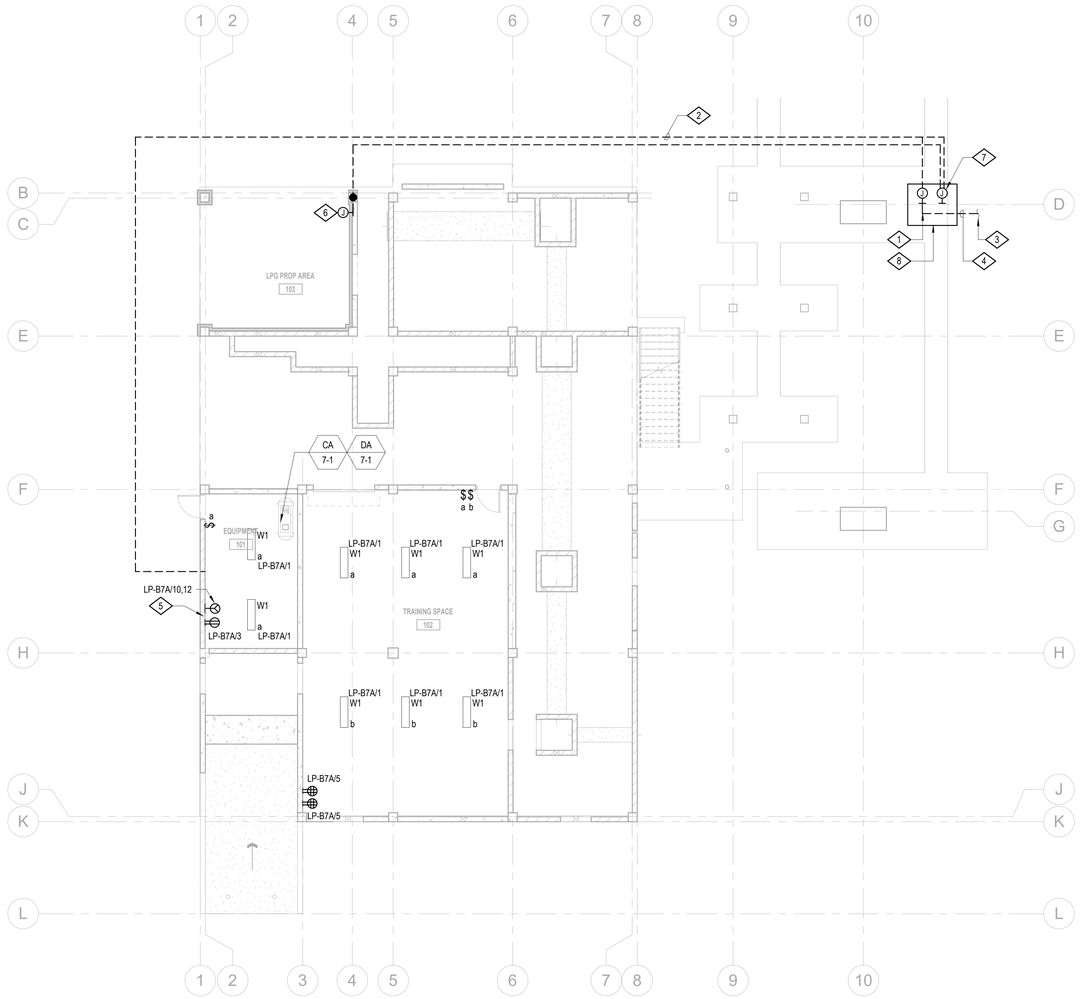

SHEET NOTES:

A. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

B. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

C. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

D. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM.

E. FOR ALL DATA CABLING, PATHWAY INFRASTRUCTURE AND DEVICES REFER TO T SERIES DRAWINGS.

NUMBERED NOTES:

1. PROVIDE 208V, 3Ø, 4W CONNECTION TO OFOI EQUIPMENT CP-001 FROM LP-B7A. COORDINATE EXACT LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
2. PROVIDE (2)1" EMPTY CONDUIT, ROUTED AS INDICATED.
3. TO SITE FIRE PROPS. REFER TO 0-E2.03 FOR MORE INFORMATION.
4. PROVIDE (4)1" EMPTY CONDUIT. REFER TO 0-E2.03 FOR MORE INFORMATION.
5. PROVIDE NEMA TYPE L5-30R RECEPTACLE IN ENCLOSURE WITHIN TELECOM EQUIPMENT CABINET. REFER TO TELECOM DRAWINGS FOR MORE INFORMATION.
6. PROVIDE (1)1" EMPTY CONDUIT FROM CP-002. EMBED JUNCTION BOX IN WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL. COORDINATE CONDUIT ROUTING AND JUNCTION BOX LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
7. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE PAD INFORMATION.

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL USAR/BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN

Drawn By: ELW
Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

7-E2.01
Drawing No.

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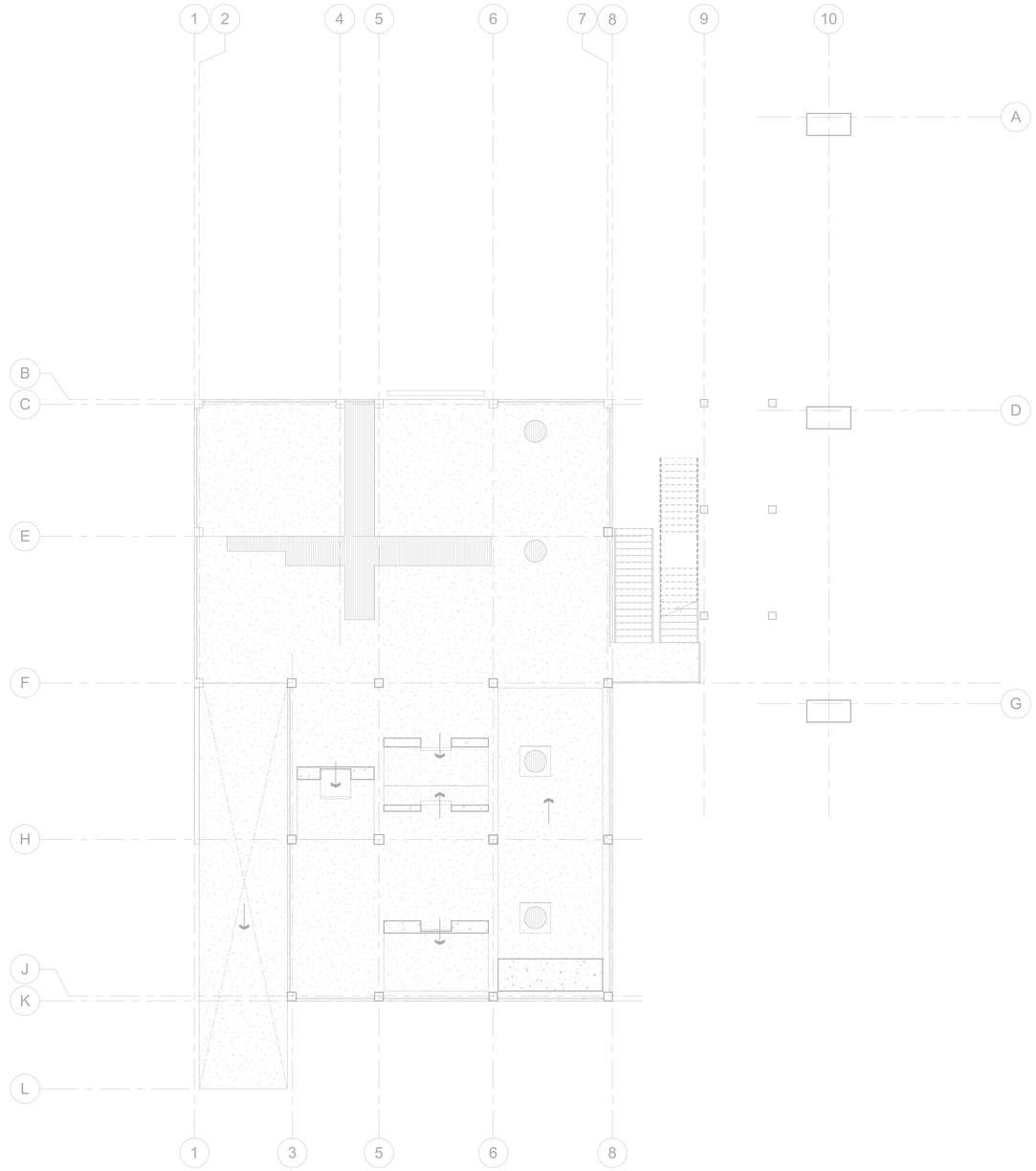
SHEET NOTES:

A. REFER TO FIREBLAST DRAWINGS FOR DETAILS.

B. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

C. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

D. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.



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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL USAR/BART TRAINING STRUCTURE SECOND LEVEL FLOOR PLAN

Drawn By: ELW Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

7-E2.02

Drawing No.

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WIRING SCHEDULE - COPPER CONDUCTORS (0-600V)

CIRCUIT RATING	CONDUIT SIZE (INCHES)							CONDUCTOR SIZE	
	NONE	G	N	NG	NGI	NNG	NNGI	PHASE/ NEUTRAL	GND/* IG
15	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
20	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
30	0.5	0.5	0.5	0.5	0.75	0.75	0.75	10	10
40	0.75	0.75	0.75	1	1	1	1	8	10
50	1	1	1	1.25	1.25	1.25	1.25	6	10
60	1	1.25	1.25	1.25	1.5	1.5	1.5	4	10
70	1	1.25	1.25	1.25	1.5	1.5	1.5	4	8
80	1.25	1.25	1.25	1.5	2	2	2	2	8
90	1.25	1.25	1.25	1.5	2	2	2	2	8
100	1.25	1.5	1.5	2	2	2	2.5	1	8
110	1.25	1.5	1.5	2	2	2	2.5	1	6
125	1.25	1.5	1.5	2	2	2	2.5	1	6
150	1.5	2	2	2	2.5	2.5	2.5	1/0	6
175	1.5	2	2	2	2.5	2.5	2.5	2/0	6
200	2	2	2	2.5	2.5	2.5	3	3/0	6
225	2	2.5	2.5	2.5	3	3	3	4/0	4
250	2.5	2.5	2.5	3	3	3	3.5	250	4
300	2.5	3	3	3.5	3.5	3.5	4	350	4
350	3	3.5	3.5	4	4	4	5	500	2
400	2@2	2@2	2@2	2@2.5	2@2.5	2@2.5	2@3	3/0	2
450	2@2	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	4/0	2
500	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	2@3.5	250	1
600	2@2.5	2@3	2@3	2@3.5	2@3.5	2@3.5	2@4	350	1
700	2@3	2@3.5	2@3.5	2@4	2@4	2@4	2@5	500	1/0
800	3@2.5	3@3	3@3	3@3	3@3.5	3@3.5	3@3.5	300	1/0
1000	3@3	3@3	3@3	3@3.5	3@4	3@4	3@4	400	2/0
1200	4@2.5	4@3	4@3	4@3.5	4@3.5	4@3.5	4@4	350	3/0
1600	5@3	5@3	5@3	5@3.5	5@4	5@4	5@4	400	4/0
2000	6@3.5	6@3.5	6@3.5	6@4	6@4	6@4	6@5	500	250
2500	7@3.5	7@3.5	7@3.5	7@4	7@4	7@4	7@4	500	350
3000	8@3.5	8@3.5	8@3.5	8@4	8@4	8@4	8@4	500	400

SUBSCRIPT KEY

SUBSCRIPT	CONDUCTORS PER CONDUIT
NONE	3 PHASE CONDUCTORS, CONDUIT GROUND
G	3 PHASE CONDUCTORS, 1 GROUNDING CONDUCTOR
N	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, CONDUIT GROUND
NG	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR
NGI	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR
NNG	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR
NNGI	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR

* SINGLE NEUTRAL CONDUCTOR SIZES FOR CIRCUIT RATING 125 AND LESS

PARALLEL CONDUCTORS ARE NOT PERMITTED UNDER 1/0. WHERE DOUBLE NEUTRAL CONDUCTORS ARE INDICATED, PROVIDE AN OVERSIZED NEUTRAL CONDUCTOR IN ACCORDANCE WITH THE FOLLOWING TABLE:

CIRCUIT RATING	15	20	30	40	50	60
SINGLE NEUTRAL CONDUCOTR SIZE	10	8	4	2	1	1/0
CIRCUIT RATING	70	80	90	100	125	
SINGLE NEUTRAL CONDUCTOR SIZE	2/0	3/0	4/0	250	250	

EXAMPLES

NOTES

1. SCHEDULE IS BASED ON 3 CURRENT CARRYING CONDUCTORS IN RACEWAY, CABLE OR EARTH, AT AMBIENT AIR TEMPERATURE OF 30°C (86°F). CONDUIT SIZES BASED ON EMT.
2. MODIFY IF USE OF 600MCM CONDUCTORS ARE DESIRED CONFIRM LUG SIZES ARE AVAILABLE.

TRANSFORMER SCHEDULE

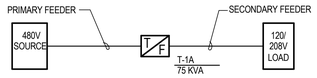
KVA	FEEDER AMPACITY			NEUTRAL GROUNDING ELECTRODE CONDUCTOR**
	PRIMARY 480V 3 PHASE-3 WIRE	SECONDARY 120/208V 3 PHASE-4 WIRE	SUPPLY SIDE BONDING JUMPER**	
3	15	15	#8	1/2"C-1#8
6	15	20	#8	1/2"C-1#8
9	15	30	#8	1/2"C-1#8
15	20	50	#8	1/2"C-1#8
30	50	100	#6	1/2"C-1#6
45	70	150	#6	1/2"C-1#6
75	110	250	#2	1/2"C-1#2
112 1/2	175	400	#1/0	3/4"C-1#3/0
150	225	500	#1/0	3/4"C-1#3/0
225	350	800	#2/0	3/4"C-1#3/0
300	450	1000	#2/0	3/4"C-1#3/0
500	800	1600	#4/0	3/4"C-1#3/0
750	1200	2500	#350	3/4"C-1#3/0

FEEDER KEY

TRANSFORMER IDENTIFICATION PREFIX	FEEDER CONFIGURATION	
	PRIMARY	SECONDARY
T	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 1 NEUTRAL CONDUCTOR 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NG***)
TK	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 2 NEUTRAL CONDUCTORS 1 GROUNDING CONDUCTOR 1 ISOLATED GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NNGI***)

** = CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS
*** = SUBSTITUTE GND/G CONDUCTOR FROM FEEDER SCHEDULE WITH SUPPLY SIDE BONDING JUMPER NOTED ABOVE

EXAMPLES



UNDERGROUND FEEDER CONDUIT SCHEDULE

TAG DESIGNATION	TO	FROM	QUANTITY	SIZE	SPARE	DESIGN FEEDER	ESTIMATED LENGTH	VOLT DROP (%)	BUILDING PACKAGE	REMARKS
F00	PG&E P/B	STREET	2	5"		PER PG&E	66'	N/A	1	
F01	PG&E TRANSF	PG&E P/B	2	5"		PER PG&E	208'	N/A	1	
F02	MS-B1A	PG&E TRANSF	7	5"		PER PG&E	40'	0.60	1	
F03	DPH-B1A	MS-B1A	1	2.5"		225NG	57'	0.12	1	
F04	FP-B1	MS-B1A	1	2.5"		70G	54'	0.29	1	LRA = 302.8A, VD_{all}=1.7%
F05	ATS-E1B	MS-B1A	1	2"		100NG	31'	0.39	1	
F06	FP-B1	EDSH-B1A	1	2.5"		70G	138'	1.24	1	INCLUDE 1°C TO GENERATOR FOR GEN START LRA = 302.8A, VD_{all}=6.4%
F07	ATS-E1A	MS-B1A	1	2"		150NG	33'	0.52	1	
F08	ATS-E1C	MS-B1A	2	3"		500NG	34'	0.47	1	
F09	HBI-B1	MS-B1A	1	4"	2"	300G	60'	0.35	1	
F10	CH-1	EDPH-B1A	1	2.5"		ECS	67'	0.26	1	
F11	ELEV-1	EDPH-B1A	1	1"		ECS	101'	0.18	1	
F12	FUEL	ELP-B1A	1	2"		100NG	102'	0.56	1	
F13	DPH-PV	HBI-B1	1	4"	2"	300G	77'	0.44	1	
F14	PULLBOX	MS-B1A			(2) 4"	37'	37'	N/A	1	SPARE FOR FUTURE USE
F15										NOT USED
F16										NOT USED
F17										NOT USED
F18										NOT USED
F19										NOT USED
F20	LPH-B2A	MS-B1A	2	2.5"	(2) 2.5"	400G	358'	0.86	1 / 2	
F30										NOT USED
F40	LP-B4A	DPL-B2A	1	3"	(1) 2"	250NG	150'	1.85	4	FEEDER OVERSIZED FOR VOLTAGE DROP
F50										NOT USED
F60	LP-B6A	DPL-B9A	1	2.5"		200NG	413'	1.54	6	
F70	LP-B7A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	318'	0.77	7	
F80	LP-B8A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	362'	1.06	8	
F81	LP-B8B	DPL-B9A	2	2.5"	(1) 2.5"	400NG	449'	0.84	8	
F90	LPH-B9A	MS-B1A	2	3.5"	(2) 2.5"	600G	515'	0.66	1 / 9	
F91	T-B9A	LPH-B9A	2	2.5"		450G	22'	0.04	9	
F92	DPL-B9A	T-B9A	3	3.5"		1000NG	10'	0.04	9	
F93	LP-B9A	DPL-B9A	1	2.5"		225NG	17'	0.02	9	
F94	LP-B9B	DPL-B9A	1	2.5"	(1) 2.5"	175NG	19'	0.07	9	
FE1	EDSH-B1A	GEN-B1	2	4"		700NG	20'	0.05	1	
FE2	ATS-E1A	EDSH-B1A	1	2"		150NG	100'	0.61	1	INCLUDE 1°C TO GENERATOR FOR GEN START
FE3	ATS-E1C	EDSH-B1A	2	3"		500NG	102'	0.18	1	INCLUDE 1°C TO GENERATOR FOR GEN START
FE4	ELPH-B1A	ATS-E1A	1	2"		150NG	40'	0.24	1	
FE5	EDPH-B1A	ATS-E1C	2	4"		600NG	29'	0.04	1	
FE6	UPS-B1A	ELPH-B1A	1	1.5"		70NG	70'	0.14	1	
FE7	ELP-B1A	ET-B1A	2	2.5"		400NG	69'	1.15	1	
FE8	ULP-B1A	UPS-B1A	1	1.5"		50NNGI	97'	0.25	1	
FE9	ATS-E1B	EDSH-B1A	1	2"		100NG	90'	0.04	1	INCLUDE 1°C TO GENERATOR FOR GEN START
FE10	ELPH-B1B	ATS-E1B	1	2"		100NG	56'	0.02	1	
FE11	PULLBOX	EDSH-B1A			(1) 4"			N/A	1	SPARE FOR FUTURE USE
FE12	ELPH-B2A	ELPH-B1B	1	2"		100NG	350'	0.08	2	

SHEET NOTES

A. CONFIRM AND COORDINATE ALL PG&E UTILITY ROUTING WITH PG&E PER PG&E STANDARDS AND REQUIREMENTS.

B. REFER TO "0" SERIES OF DRAWINGS FOR SITE UTILITY AND INFRASTRUCTURE INFORMATION.

C. ALL OUTDOOR EQUIPMENT SHALL BE RATED NEMA 4X, UON.

D. ALL OVERCURRENT PROTECTIVE DEVICES ASSOCIATED WITH COPS SHALL BE SELECTIVELY COORDINATED.

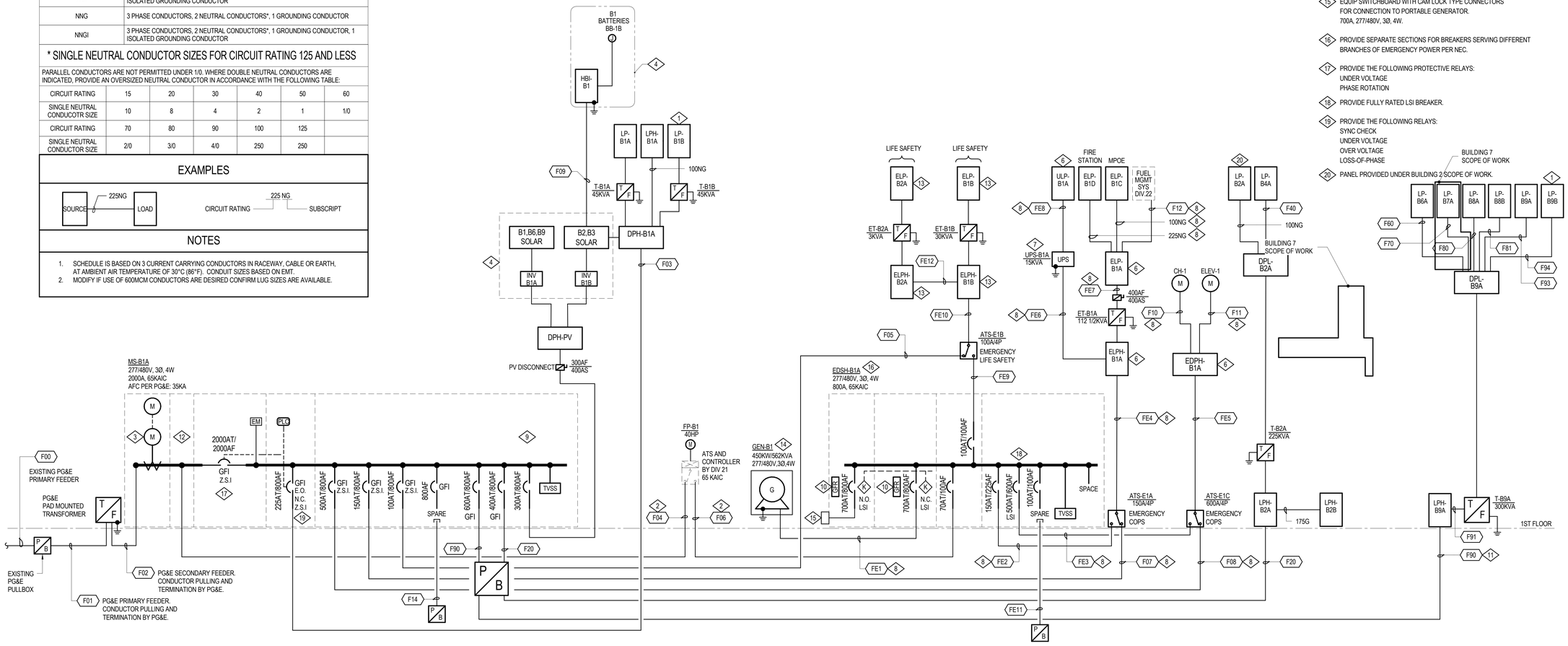
E. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM .

F. WIRING FROM AN EMERGENCY SOURCE OR EMERGENCY SOURCE DISTRIBUTION OVERCURRENT PROTECTION TO EMERGENCY LOADS SHALL BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER CEC ARTICLE 700.10.

G. ARC ENERGY REDUCTION PER CEC ARTICLE 240.87 WITH RESPECT TO DOCUMENTATION & METHOD TO REDUCE CLEARING TIES IS APPLICABLE.

NUMBERED NOTES

1. EQUIPMENT TO SERVE ELECTRIC VEHICLE CHARGERS. PROVIDE PROGRAMMABLE ELECTRONIC CIRCUIT BREAKER LEVEL SUB-METERS FOR OWNER THIRD PARTY MEASUREMENT/METERING IN THIS PANEL. CONNECT WITH 3/4"C TO NEAREST TELECOM ROOM.
2. PROVIDE 2-HR FIRE RATED ASSEMBLY FOR FEEDERS.
3. PROVIDE 2-SOCKET PG&E UTILITY METER, WITH NET METER CAPABILITY PER PG&E REQUIREMENTS.
4. REFER TO HYBRID POWER SYSTEM DRAWINGS FOR MORE INFORMATION.
5. REFER TO PHOTOVOLTAIC SYSTEM DRAWINGS FOR MORE INFORMATION.
6. PROVIDE SURGE PROTECTION DEVICE PER NEC ARTICLE 708.
7. FLOOR MOUNTED UPS WITH INTEGRAL TRANSFORMER. APC OR APPROVED EQUAL.
   INPUT VOLTAGE: 480V, 3Ø, 3W
   OUTPUT VOLTAGE: 120/208V, 3Ø, 4W
   BATTERY RUN TIME (MINIMUM): 20 MINUTES
8. PROTECT FEEDER SERVING DESIGNATED CRITICAL OPERATIONS AREA (DCOA) EQUIPMENT AS REQUIRED BY NEC ARTICLE 708.
9. PROVIDE GROUND FAULT PROTECTION FOR ALL NEXT LEVEL FEEDER DISCONNECTING MEANS IN COMPLIANCE WITH NEC ARTICLE 708.
10. GROUND FAULT INDICATION ONLY.
11. FEEDER OVERSIZED FOR VOLTAGE DROP.
12. SERVICE ENTRANCE SECTION FOR FIRE PUMP CONNECTION.
13. PROVIDE SURGE PROTECTION DEVICE PER NEC 700.
14. PROVIDE WEATHERPROOF SOUND ATTENUATING ENCLOSURE.
15. EQUIP SWITCHBOARD WITH CAM LOCK TYPE CONNECTORS FOR CONNECTION TO PORTABLE GENERATOR. 700A, 277/480V, 3Ø, 4W.
16. PROVIDE SEPARATE SECTIONS FOR BREAKERS SERVING DIFFERENT BRANCHES OF EMERGENCY POWER PER NEC.
17. PROVIDE THE FOLLOWING PROTECTIVE RELAYS:
    UNDER VOLTAGE
    PHASE ROTATION
18. PROVIDE FULLY RATED LSI BREAKER.
19. PROVIDE THE FOLLOWING RELAYS:
    SYNC CHECK
    UNDER VOLTAGE
    OVER VOLTAGE
    LOSS-OF-PHASE
20. PANEL PROVIDED UNDER BUILDING 2 SCOPE OF WORK.



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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL RISER DIAGRAM

Drawn By: ELW
Checked By: AJB

Scale: NTS

Date: October 4, 2019

Project No. B17.07369

7-E5.01
Drawing No.

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TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST

ABBREVIATIONS

AC	ABOVE COUNTER
ADA	AMERICANS WITH DISABILITIES ACT
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AMP, A	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ATR	ALL THREADED ROD
AV	AUDIOVISUAL
AWG	AMERICAN WIRE GAUGE
BDA	BI-DIRECTIONAL ANTENNA
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
BICSI	BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAT	CATEGORY
CATV	COMMUNITY ANTENNA TV (CABLE TV)
CLEC	COMPETITIVE LOCAL EXCHANGE CARRIER
CL	CLOSET
CLG	CEILING
CMP	COMMUNICATIONS PLENUM CABLE
CMR	COMMUNICATIONS RISER CABLE
CO	CENTRAL OFFICE
COAX	COAXIAL
CT	CABLE TRAY
DAS	DISTRIBUTED ANTENNA SYSTEM
DB	DECIBEL
DEMARC	DEMARCATION
DIA	DIAMETER
DWG	DRAWING
(E)	EXISTING TO REMAIN
E.G.	FOR EXAMPLE
EIA	ELECTRONICS INDUSTRY ALLIANCE
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
EP	EXPLOSION PROOF
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FCC	FEDERAL COMMUNICATIONS COMMISSION
FO	FIBER OPTIC
FR	FIRE RATED
FT	FOOT/FEET
GB	GIGABYTE
GBPS	GIGABITS PER SECOND
GC	GENERAL CONTRACTOR
GE	GROUNDING EQUALIZER
GMP	GUARANTEED MAXIMUM PRICE
GND	GROUND
GUI	GRAPHICAL USER INTERFACE
HC	HORIZONTAL CROSS-CONNECT
HVAC	HEATING, VENTILATING, AND AIR-CONDITIONING
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEC	INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT - SEE NEC ARTICLE 342
INT	INTERCOM
IP	INTERNET PROTOCOL
ISO	INTERNATIONAL ORGANIZATION OF STANDARDS
J-BOX, JB	JUNCTION BOX
KCMIL	THOUSANDS OF CIRCULAR MILLS
KM	KILOMETER
KVA	KILOVOLT AMPERES
KW	KILOWATT
LAN	LOCAL AREA NETWORK
LEC	LOCAL EXCHANGE CARRIER (OR SP)
LED	LIGHT-EMITTING DIODE
M	METER
MAG	MAGNETIC
MAN	METROPOLITAN AREA NETWORK
MAX	MAXIMUM
MB	MEGABYTE
MBPS	MEGABITS PER SECOND
MC	MAIN CROSS-CONNECT
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MI	MILE
MIN	MINIMUM
MM	MILLIMETER
MMFO	MULTIMODE FIBER OPTIC
MPOE	MAIN POINT OF ENTRY
NEC	NATIONAL ELECTRIC CODE - NFPA 70
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NETWORK INTERFACE CARD
NID	NETWORK INTERFACE DEVICE
NM	NANOMETER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER

ABBREVIATIONS

OEM	ORIGINAL EQUIPMENT MANUFACTURER
OS	OPERATING SYSTEM
OSP	OUTSIDE PLANT
PA	PUBLIC ADDRESS
PABX	PRIVATE AUTOMATIC BRANCH EXCHANGE
PBX	PRIVATE BRANCH EXCHANGE
PB	PULL-BOX (SIZED PER BICSI TDMM)
PC	PERSONAL COMPUTER
PCN	PERSONAL COMMUNICATIONS NETWORK
PCS	PERSONAL COMMUNICATIONS SYSTEMS
PIR	PASSIVE INFRARED
POTS	PLAIN OLD TELEPHONE SERVICE
PR	PAIRS (NUMBER OF PAIRS IN COPPER CABLE)
PROX	PROXIMITY
PVC	POLYVINYL CHLORIDE
PWR	POWER
RCDD	REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
RFI	RADIO FREQUENCY INTERFACE
RM	ROOM
RMC	RIGID METALLIC CONDUIT
RU	RACK UNIT; UNIT OF PATCH PANEL HEIGHT EQUAL TO 1.75 INCH
SCTP	SCREENED TWISTED PAIR
SMFO	SINGLEMODE FIBER OPTIC
SPOE	SECONDARY POINT OF ENTRY
SP	SERVICE PROVIDER
STD	STANDARD
STP	SHIELDED TWISTED PAIR
SW	SWITCH
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBD	TO BE DETERMINED
TCP/IP	TRANSMISSION CONTROL PROTOCOL W/ INTERNET PROTOCOL
TDMM	TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL
TEL	TELEPHONE
TELCO	TELEPHONE COMPANY (SP)
TELECOM	TELECOMMUNICATIONS
TEMP	TEMPERATURE
TGB	TELECOMMUNICATIONS GROUND BUS BAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUND BUS BAR
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
TYP	TYPICAL
UC	UNDER COUNTER
UG	UNDERGROUND
UL	UNDERWRITER LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
W	WATT
WAN	WIDE AREA NETWORK
WLAN	WIRELESS LOCAL AREA NETWORK
WP	WEATHERPROOF
(X)	EXISTING - TO BE DEMOLISHED

GENERAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION
TC	TELECOMMUNICATIONS CONDUIT CONCEALED
TC	TELECOMMUNICATIONS CONDUIT SURFACE MOUNTED
TC	CONDUITS BELOW GRADE/SLAB OR EMBEDDED IN SLAB
J	J-HOOK PATHWAY
I	INNERDUCT PATHWAY
CAT	COPPER CATEGORY CABLE
FO	FIBER OPTIC CABLE
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT CAPPED
	CONDUIT STUBBED OUT WITH BUSHING
	CONDUIT CROSS-SECTION
	TELECOMMUNICATIONS CABLE TRAY
	VERTICAL WALL MOUNTED CABLE LADDER
	TELECOMMUNICATIONS RACEWAY
	PULL-BOX
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
	TELECOMMUNICATIONS GROUNDING BUSBAR (PLAN VIEW)
	CABLE SERVICE LOOP # DENOTES LENGTH
	COPPER CABLE SPLICE
	FIBER OPTIC CABLE SPLICE
	COPPER CABLE TERMINATION
	FIBER OPTIC CABLE TERMINATION
X Y	DETAIL REFERENCE "X" DENOTES DETAIL NUMBER "Y" DENOTES DRAWING NUMBER
X Y	SECTION REFERENCE "X" DENOTES DETAIL NUMBER "Y" DENOTES DRAWING NUMBER
#	NUMBERED NOTE IDENTIFIER

TELECOMMUNICATIONS DEVICE LEGEND

SYMBOL	DESCRIPTION
	WALL MOUNTED DATA DEVICE WITH (2) CAT.6 U.O.N
TV	TELEVISION LOCATION, (1) SERIES-6 COAX & (2) CAT.6
	RECESSED MOUNTED MULTIMEDIA PANEL (MMP)
W	WALLPHONE OUTLET, (1) CAT.6 CABLE
# E	TELECOMMUNICATIONS OUTLET/ CONNECTIVITY TO ELEVATOR CONTROL PANEL, U.O.N # DENOTES QUANTITY OF CAT.6 CABLES
AP	WALL-MOUNTED WI-FI ACCESS POINT LOCATION , (2) CAT.6 CABLES
#	WALL-MOUNTED TELECOMMUNICATIONS OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
#	RECESSED FLOOR BOX TELECOMMUNICATIONS OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
#	CEILING-MOUNTED TELECOMMUNICATIONS OUTLET MOUNTED WITHIN CEILING SPACE , U.O.N. # DENOTES NUMBER OF CAT.6 CABLES
AP	CEILING-MOUNTED DATA OUTLET AT WI-FI ACCESS POINT LOCATION, (2) CAT.6 CABLES
#	FLOOR POKE-TRU TELECOM DATA OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
P	CEILING-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	CABINET-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	WALL-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	FLOOR-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL TO BE PLACED WITHIN RAISED ACCESS FLOOR U.O.N.
T #	TELECOMMUNICATIONS EQUIPMENT CONNECTION
	RECESSED WALL-MOUNTED SYSTEMS FURNITURE FEEDPOINT
	RECESSED FLOOR BOX SYSTEMS FURNITURE FEEDPOINT
	CEILING-MOUNTED SYSTEMS FURNITURE FEEDPOINT
	POKE-THRU SYSTEMS FURNITURE FEEDPOINT
MH #	UNDERGROUND MANHOLE, (#) DENOTES IDENTIFIER
HH #	UNDERGROUND HANDHOLE, (#) DENOTES IDENTIFIER
P #	PEDESTAL, (#) DENOTES IDENTIFIER
U #	UNDERGROUND PULL BOX, (#) DENOTES IDENTIFIER
	THIS SYMBOL DENOTES A TELECOMMUNICATIONS OUTLET WITH (1) COPPER TWISTED PAIR CABLE.

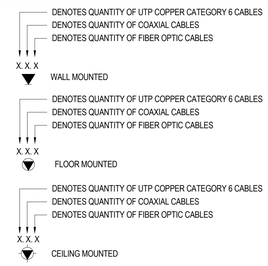
ELECTRONIC SECURITY DEVICE LEGEND

SYMBOL	DESCRIPTION
	FIXED SECURITY CAMERA
	PTZ SECURITY CAMERA
ACX	ACCESS CONTROL PANEL
GE	GUEST ENTRY PHONE
CR	CARD READER
DC	DOOR CONTACT
EL	ELECTRIFIED LOCK
IC	INTERCOM
ICM	INTERCOM MASTER
KP	KEY PAD
MON	LCD DISPLAY MONITOR
MS	MOTION SENSOR, ARROW INDICATES DIRECTION OF SENSOR
NVR	NETWORK VIDEO RECORDER
PB	PANIC BUTTON
PLC	PROGRAMMABLE LOGIC CONTROLLER
REX	REQUEST TO EXIT
RF	RADIO FREQUENCY VEHICLE GATE CONTROLLER
SS	SECURITY SERVER
WR	WIRELESS DURESS REPEATER SECURITY
WS	WORKSTATION

AUDIOVISUAL SYSTEM DEVICE LEGEND

SYMBOL	DESCRIPTION - SEE LINE DIAGRAMS FOR COORDINATION REQUIREMENTS
LS AM	LOUDSPEAKER BACKBOX: PROVIDE 2-GANG JUNCTION BOX WITH CONDUIT TO EQUIPMENT HEADEND

TELECOMMUNICATIONS OUTLET CABLING LEGEND



TECHNOLOGY GENERAL NOTES

1. THE LOCATIONS AND ELEVATIONS OF TECHNOLOGY DEVICES SHOWN ON THESE DRAWINGS ARE SCHEMATIC UNLESS ACTUAL DIMENSIONS ARE SHOWN ON THE DRAWINGS. REFER TO THE ARCHITECTURAL PLANS AND OBTAIN THE APPROVAL OF THE ARCHITECT FOR THE ACTUAL LOCATIONS AND ELEVATIONS OF ALL DEVICES.
2. CONTRACTOR SHALL ENSURE THAT ALL MOUNTING HEIGHTS COMPLY WITH CURRENT ADA REQUIREMENTS.
3. ABOVE CONTER DEVICES SHALL BE MOUNTED 8" ABOVE COUNTER OR A MAXIMUM OF 44" AFF (TO TOP OF DEVICE).
4. PROVIDE SUPPORTS AND ANCHORING FOR PIPING, CONDUIT, DUCTS, EQUIPMENT, AND OTHER NON-STRUCTURAL ELEMENTS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE SOUND PUTTY PADS IN ALL BACK BOXES.
6. FIRESTOPPING: ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS AND CONDUIT/SLEEVE OPENINGS SHALL BE SEALED WITH MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES, HOT GASSES AND SMOKE WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR ALL APPLICABLE CODES.
7. ALL COMMUNICATIONS CONDUIT, CABLE TRAYS, LADDER RACKS AND EQUIPMENT RACKS SHALL BE BONDED TO BUILDING GROUND SYSTEM PER NEC 250 AND ANSI/TIA-607-B.
8. LABEL ALL CLOSETS, RACKS, FRAMES, CABINETS, TERMINATION BLOCKS, CABLES, TERMINATIONS, RACEWAYS, ETC. IN ACCORDANCE WITH ANSI/TIA-606-B.
9. ALL COMMUNICATIONS RACEWAYS AND PATHWAYS SHALL BE INSTALLED TO MINIMIZE UNNECESSARY CABLE LENGTHS AND MAINTAIN INDUSTRY STANDARD LENGTH LIMITATIONS FOR HORIZONTAL CABLE DISTRIBUTION (E.G. CAT.6). BASIC LINK CABLE LENGTH SHALL NOT EXCEED 295-FT (90M) FOR UTP CABLE, 200-FT (60M) FOR SERIES-6 COAXIAL CABLE.
10. ALL COMMUNICATIONS CABLE SHALL BE PLENUM RATED (CMP), RISER RATED (CMR) AND UNDERGROUND RATED (WATERBLOCK) ACCORDING TO USE AND ENVIRONMENTAL CONDITIONS.
11. PROVIDE PROTECTIVE BUSHINGS ON ALL COMMUNICATIONS CONDUITS AND WHERE CABLING ROUTES THROUGH METAL STUDS.
12. ALL NON-ARMORED FIBER OPTIC CABLE SHALL BE INSTALLED IN APPROVED INNERDUCT.
13. ALWAYS INSTALL LOW-VOLTAGE CABLES IN CONDUITS, CABLE TRAYS, WIREWAYS OR OTHER APPROVED CABLE MANAGEMENT DEVICES OR SYSTEMS. NEVER INSTALL CABLES IN SUCH A MANNER THAT THEY ARE SUPPORTED BY CEILING SYSTEMS (CEILING TILE OR GRID, GYPSUM BOARD, LATH & PLASTER), HVAC DUCTS OR PIPES, LIGHTING FIXTURES, ELECTRICAL CONDUITS OR CABLES, PLUMBING/FIRE PROTECTION PIPES, OR ANY OTHER DEVICES NOT INTENDED FOR THE SUPPORT OF LOW-VOLTAGE CABLING.
14. PROVIDE WEATHERPROOF, IN-USE COVER FOR EXTERIOR DATA DEVICES.
15. ALL CABLE TRAY MOUNTING HEIGHTS INDICATED ON FLOOR PLANS ARE TO THE BOTTOM OF CABLE TRAY SUPPORTS.
16. SEISMIC BRACING FOR ALL CABLE TRAYS SHALL BE PROVIDED AS REQUIRED BY CODE, LOCAL GOVERNING JURISDICTION AND CABLE TRAY MANUFACTURER SPECIFICATIONS.
17. ALL CABLE TRAY ROUTING THROUGH ELECTRICAL ROOMS SHALL BE FULLY ENCLOSED. REFER TO CABLE TRAY DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
18. REUSABLE VELCRO TIES SHALL BE USED TO BUNDLE OR MANAGE CABLES. PLASTIC ZIP TIES ARE NOT APPROVED FOR USE.
19. SIZE AND ORIENTATION OF ALL TELECOM PULL-BOXES SHALL MEET OR EXCEED THE PER BICSI TDMM REQUIREMENTS.
20. PROVIDE PROTECTIVE BUSHINGS WHERE CABLING ROUTES THROUGH METAL STUDS.
21. ALL LOW-VOLTAGE CONDUIT LARGER THAN 2" SHALL HAVE A MINIMUM BEND RADIUS OF 10:1 OF THE INSIDE DIAMETER FOR ALL ELBOWS. ALL LOW-VOLTAGE CONDUIT 2" AND SMALLER SHALL HAVE A MINIMUM BEND RADIUS OF 6:1 OF THE INSIDE DIAMETER FOR ALL ELBOWS.
22. ALL CONDUITS SHALL BE INSTALLED WITH PULL-STRINGS.

TECHNOLOGY BUILDING 7 DRAWING LIST

SHEET NUMBER	SHEET NAME	50% DD - 07/05/2017	100% DD - 08/25/2017
7-T0.01	TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST	X	X
7-T2.01	TECHNOLOGY USAR/BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN		
7-T2.02	TECHNOLOGY USAR/BART TRAINING STRUCTURE SECOND LEVEL FLOOR PLAN	X	X
7-T7.01	TECHNOLOGY DETAILS		
7-T7.02	TECHNOLOGY DETAILS		

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REVISIONS

No.	Description	Date

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Sheet Title

TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST

Drawn By: Author
Checked By: Checker

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

7-T0.01
Drawing No.

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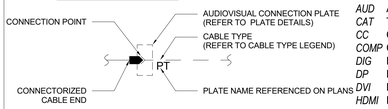
NUMBERED NOTES:

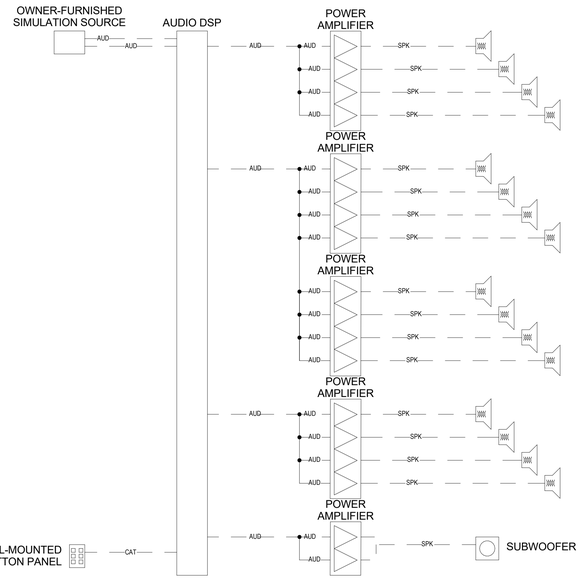
1. AUDIOVISUAL EQUIPMENT RACK

CABLE, CONNECTOR, AND PLATE TERMINATION LEGEND:

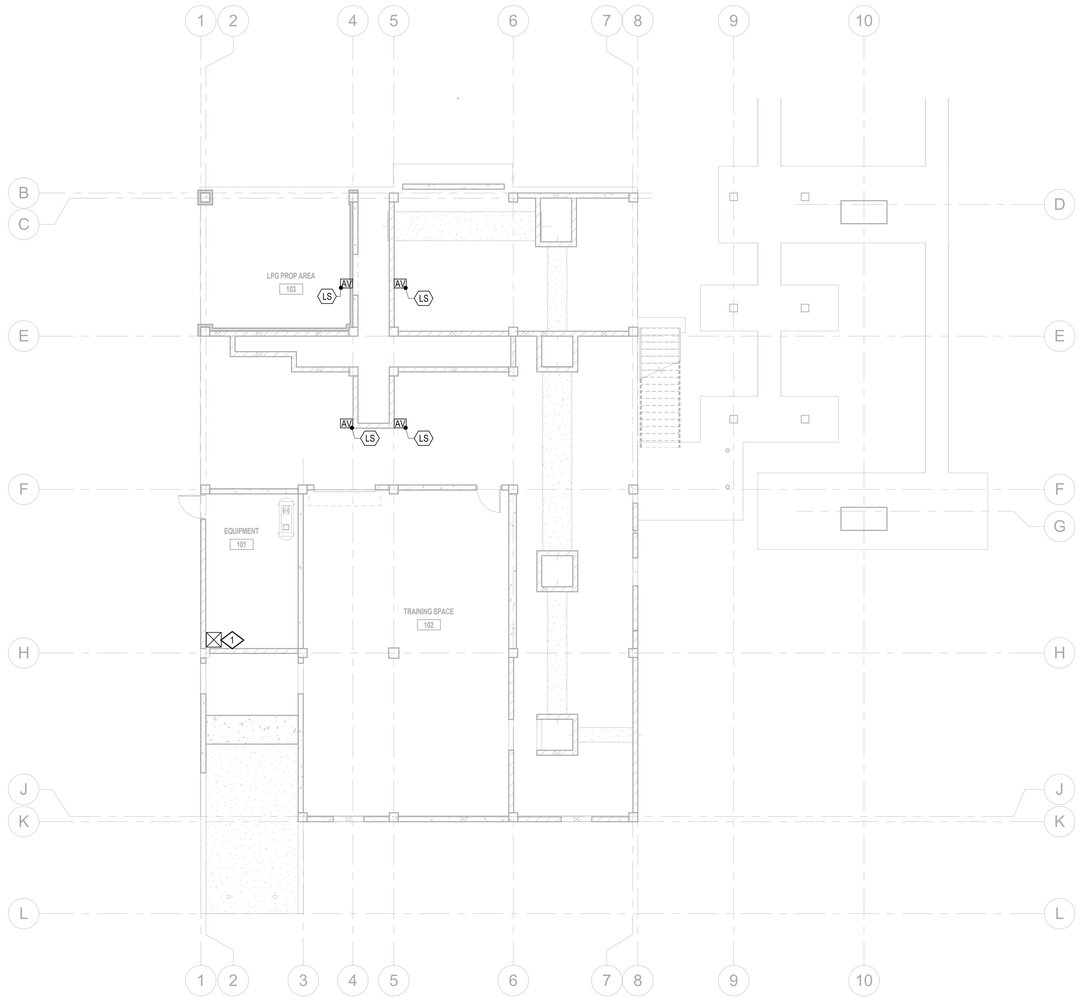


CABLE TYPE LEGEND:

232	SERIAL CONTROL (RS232, RS422, RS485)
AUD	AUDIO (LINE & MIC LEVELS)
CAT	TWISTED-PAIR
CC	CONTACT CLOSURE OR RELAY
COMP	COMPONENT VIDEO
DIG	DIGITAL AUDIO
DP	DISPLAY PORT
DVI	DVI-D OR DVI-I
HDMI	HDMI
IR	INFRARED
MMF	MULTI-MODE FIBER
RF	RADIO FREQUENCY
SDI	SDI, HD-SDI, 4G-SDI
SMF	SINGLE-MODE FIBER
SPK	LOUDSPEAKER AUDIO
SYNC	VIDEO SYNC SIGNAL
USB	USB
VGA	RGBHV / VGA
VID	COMPOSITE VIDEO



2 AUDIOVISUAL FUNCTIONAL DIAGRAM - BUILDING 7
NONE



1 07- TECHNOLOGY - USAR BLDG-FIRST FLOOR
1/8" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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Sheet Title

TECHNOLOGY USAR/BART TRAINING STRUCTURE FIRST LEVEL FLOOR PLAN

Drawn By: Author
Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. B17.07369

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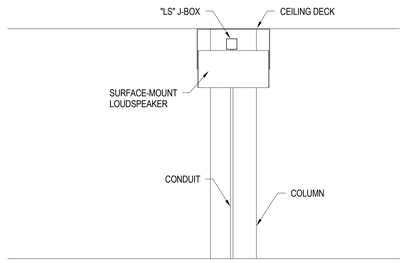
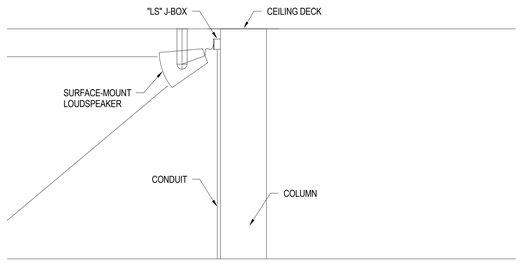
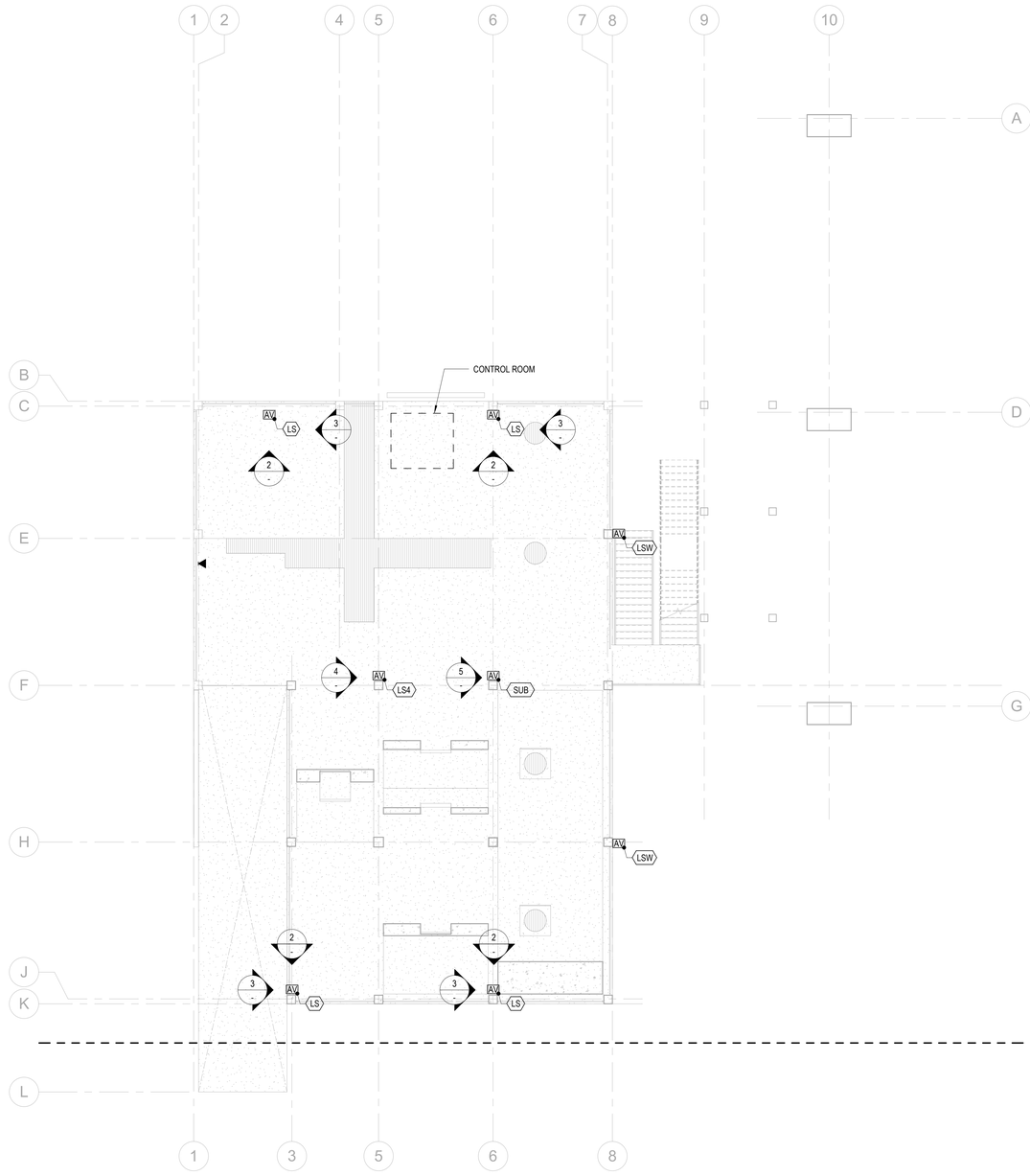


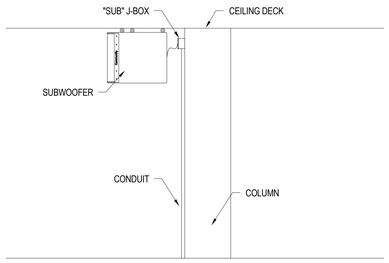
2 LOUDSPEAKER MOUNTING DETAIL
NTS



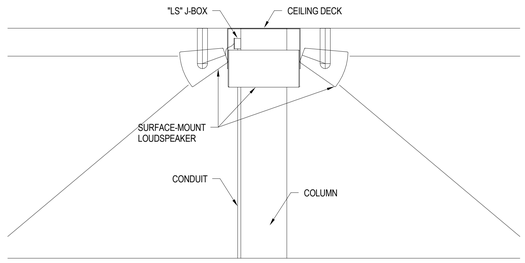
3 LOUDSPEAKER MOUNTING DETAIL
NTS



1 07- TECHNOLOGY - USAR BLDG-SECOND FLOOR
1/8" = 1'-0"



5 SUBWOOFER MOUNTING DETAIL
NTS



4 LOUDSPEAKER MOUNTING DETAIL
NTS

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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No.	Description	Date

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Sheet Title

TECHNOLOGY USAR/BART TRAINING STRUCTURE SECOND LEVEL FLOOR PLAN

Drawn By: Author
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Date:
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7-T2.02
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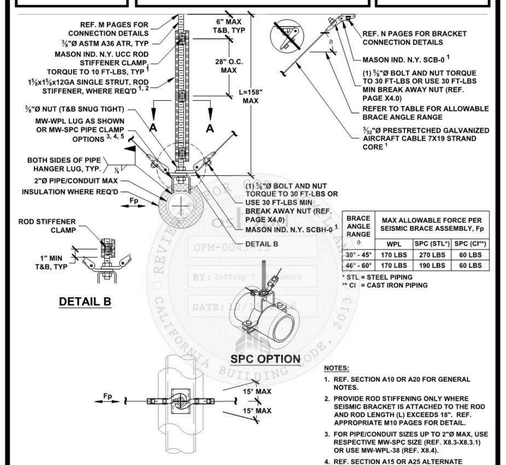
HANGER ROD DIAMETER = ⅜" | PIPING/CONDUIT TRANSVERSE SEISMIC CABLE BRACING SYSTEM 2"Ø PIPE/CONDUIT MAX | KIT OPTIONS C0T



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp		
	WPL	SPC (STL*)	SPC (CI**)
30° - 45°	190 LBS	270 LBS	60 LBS
46° - 60°	170 LBS	190 LBS	60 LBS

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF. X8.3-X8.3.1) OR USE MW-WPL-38 (REF. X8.4).
4. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
5. REF. PAGE A19.1 OR A28.1 FOR PIPE/CONDUIT CLAMP OPTION.

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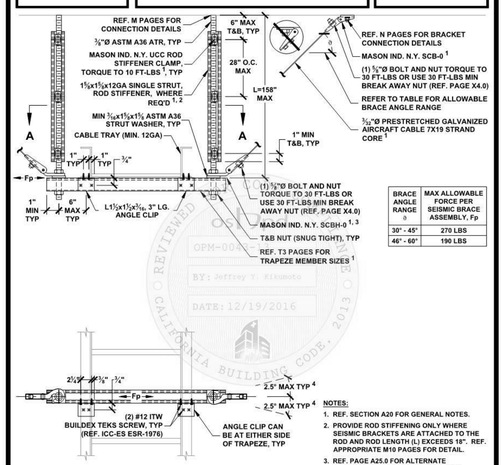
PAGE **C2.10**

HANGER ROD DIAMETER = ⅜" | CABLE TRAY TRANSVERSE TRAPEZE SEISMIC CABLE BRACING SYSTEM 20 PLF MAX | KIT OPTIONS TC0T



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	270 LBS
46° - 60°	190 LBS

NOTES:
1. REF. SECTION A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A25.0 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. TO INCREASE ANGLE UP TO 15°, REF. PAGE A24.1.

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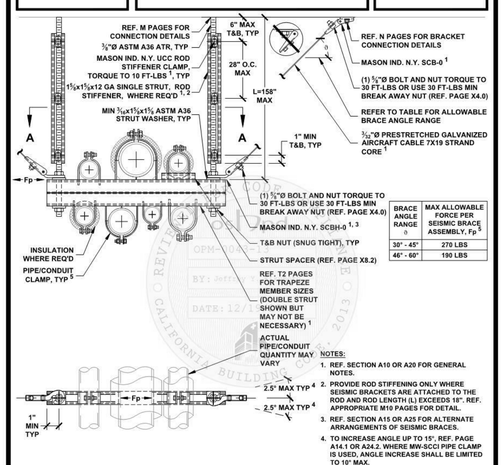
PAGE **E2.10**

HANGER ROD DIAMETER = ⅜" | PIPING/CONDUIT TRANSVERSE TRAPEZE SEISMIC CABLE BRACING SYSTEM 30 PLF MAX | KIT OPTIONS TC0T



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp [5]
30° - 45°	270 LBS
46° - 60°	190 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. TO INCREASE ANGLE UP TO 15°, REF. PAGE A14.1 OR A24.2. WHERE MW-SCCI PIPE CLAMP IS USED, ANGLE INCREASE SHALL BE LIMITED TO 10° MAX.
5. REF. X8.0 - X8.1.1, X8.6 - X8.6.3 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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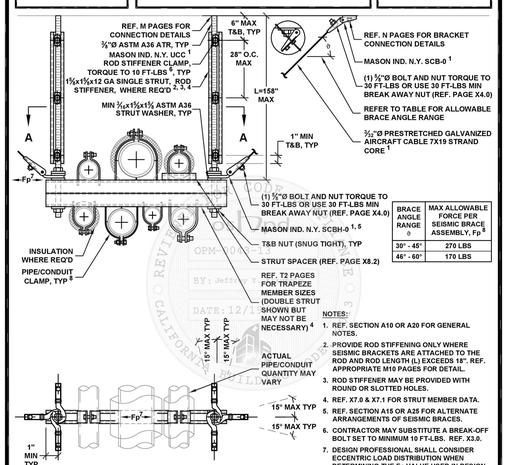
PAGE **F2.10**

HANGER ROD DIAMETER = ⅜" | PIPING/CONDUIT ALL-DIRECTIONAL TRAPEZE SEISMIC CABLE BRACING SYSTEM 30 PLF MAX | KIT OPTIONS TC0A



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp [5]
30° - 45°	270 LBS
46° - 60°	170 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. ROD STIFFENER MAY BE PROVIDED WITH ROUND OR SLOTTED HOLES.
4. REF. X7.0 & X7.1 FOR STRUT MEMBER DATA.
5. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
6. CONTRACTOR MAY SUBSTITUTE A BREAK-OFF BOLT SET TO MINIMUM 10 FT-LBS. REF. X3.0.
7. DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE Fp VALUE USED IN DESIGN.
8. REF. X8.0 - X8.1.1 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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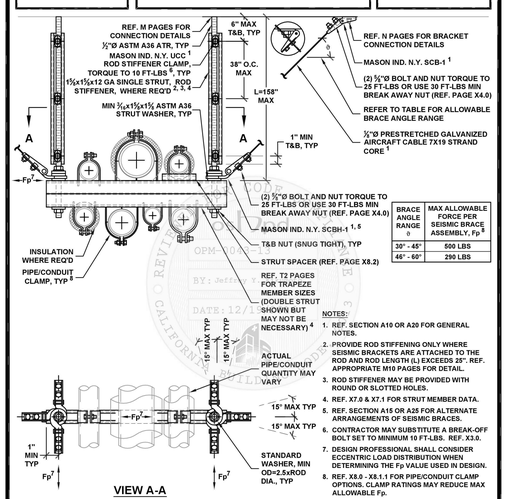
PAGE **F2.12**

HANGER ROD DIAMETER = ½" | PIPING/CONDUIT ALL-DIRECTIONAL TRAPEZE SEISMIC CABLE BRACING SYSTEM 60 PLF MAX | KIT OPTIONS TC1A



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	500 LBS
46° - 60°	290 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. ROD STIFFENER MAY BE PROVIDED WITH ROUND OR SLOTTED HOLES.
4. REF. X7.0 & X7.1 FOR STRUT MEMBER DATA.
5. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
6. CONTRACTOR MAY SUBSTITUTE A BREAK-OFF BOLT SET TO MINIMUM 10 FT-LBS. REF. X3.0.
7. DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE Fp VALUE USED IN DESIGN.
8. REF. X8.0 - X8.1.1 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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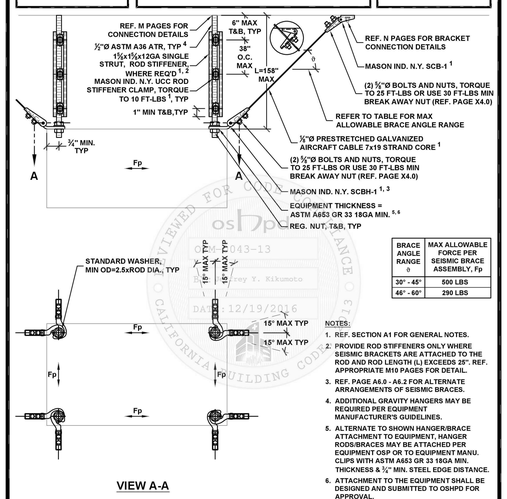
PAGE **F2.22**

HANGER ROD DIAMETER = ½" | SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 375 LB MAX VERTICAL LOAD PER HANGER | KIT OPTIONS C1SE



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	500 LBS
46° - 60°	290 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 18GA MIN. THICKNESS & ½" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

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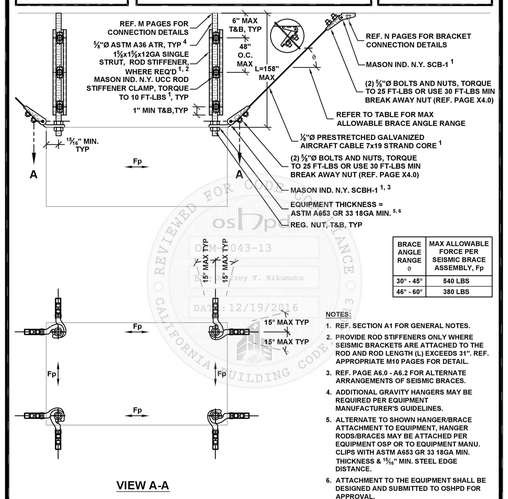
PAGE **D12.11**

HANGER ROD DIAMETER = ⅝" | SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 750 LB MAX VERTICAL LOAD PER HANGER | KIT OPTIONS C1SE



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	540 LBS
46° - 60°	380 LBS

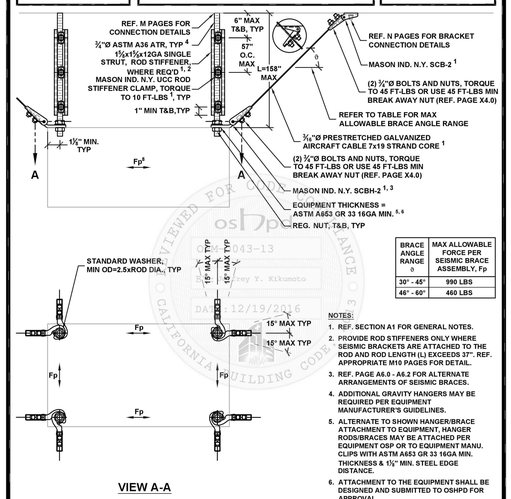
NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 31". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 18GA MIN. THICKNESS & 1⅛" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, www.masonwest.com

Jiefu "Jeff" Zhang, SE
California SE No. S5270

PAGE **D12.12**

HANGER ROD DIAMETER = ¾" | SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 1250 LB MAX VERTICAL LOAD PER HANGER | KIT OPTIONS C2SE



BRACE ANGLE RANGE σ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	990 LBS
46° - 60°	460 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 16GA MIN. THICKNESS & 1⅛" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

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California SE No. S5270

PAGE **D12.13**

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FAX 707 996 8542

CITY OF HAYWARD
HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA (DEP. DIR. PUBLIC WORKS)	ALEX AMERI (INTERIM DIR. PUBLIC WORKS)
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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405 Howard St. Suite 500
San Francisco, CA 94105
(415) 398-3833
wsp.com

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

Sheet Title

TECHNOLOGY DETAILS

Drawn By: Author | Checked By: Checker

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

7-T7.01
Drawing No.

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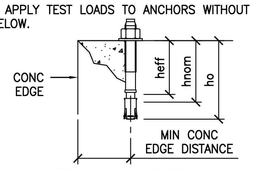
Extron Electronics
INTERFACING, SWITCHING AND CONTROL

GENERAL NOTES CONTINUED:

3E. TEST VALUES: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE, SEE TABLE BELOW.

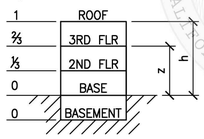


MECHANICAL ANCHOR

ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) heff	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPACING (INCH)	TEST LOAD TORQUE (FT–LBS)	CONDITION OF ANCHORAGE
⅜	2 5/16	2	2⅝	4*	6	6¾	25	CASE 1

* SEE PAGE 11 FOR UNDERSIDE OF METAL DECK DETAIL.

4. A SINGLE CASE OF ANCHORAGE IS SPECIFIED AND PRESENTED IN THIS PRE–APPROVAL:



BUILDING ELEV

CASE 1: ANCHORAGE DETAILS LOCATED AT ANY LEVEL OF A BUILDING (z/h<=1.0), IT IS ASSUMED THAT THE FLOORS ARE BUILT OF A MINIMUM 3¼" SAND–LIGHT WEIGHT CONCRETE OR NORMAL WEIGHT CONCRETE TOPPING OVER METAL DECK OR 4" NORMAL WEIGHT CONCRETE SLAB (f'c = 3000 PSI, MINIMUM).

5. THIS PRE–APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA. WHERE S_{DS} IS LESS THAN OR EQ TO 2.50.

REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBERT No. S4346 STRUCTURAL STATE OF CALIFORNIA

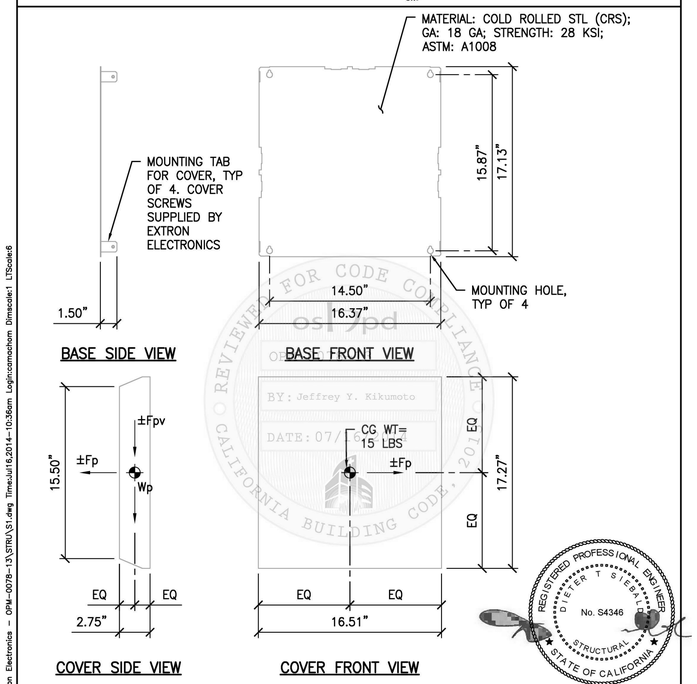
SHEET TITLE: GENERAL NOTES (CONTINUED)

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 3 of 13

L:\Jobs\13\13127 Extron Electronics – OPM–0078–13\STRU\S1.dwg Time:Jul16,2014–10:35am Login:csmoshom Dimscale:1 LTScale:8

Extron Electronics
INTERFACING, SWITCHING AND CONTROL



SHEET TITLE: WMK 160
ELEVATIONS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

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Page: 6 of 13

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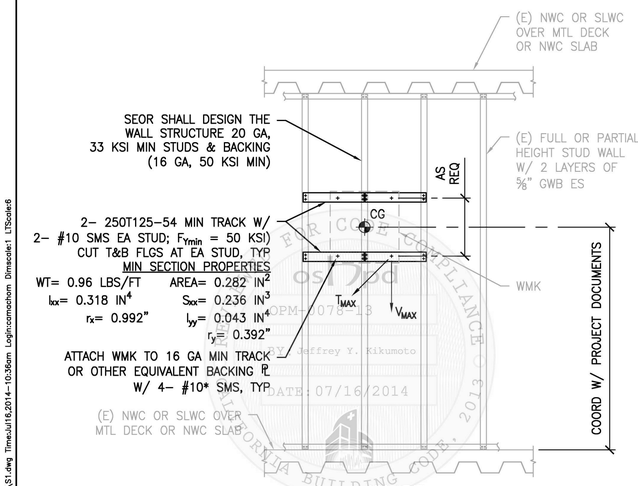
Extron Electronics
INTERFACING, SWITCHING AND CONTROL



NOTE:
AS AN ALTERNATE, THE WMK MAY BE ATTACHED DIRECTLY TO (E) WALL STUDS W/ 4– #10 SMS MIN IF THE UNIT ATTACHMENT HOLES ALIGN W/ THE ℄ OF THE STUD FLG, TYP

REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBERT No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: WMK 160
STUD WALL ATTACHMENT

CYS STRUCTURAL ENGINEERS, INC.
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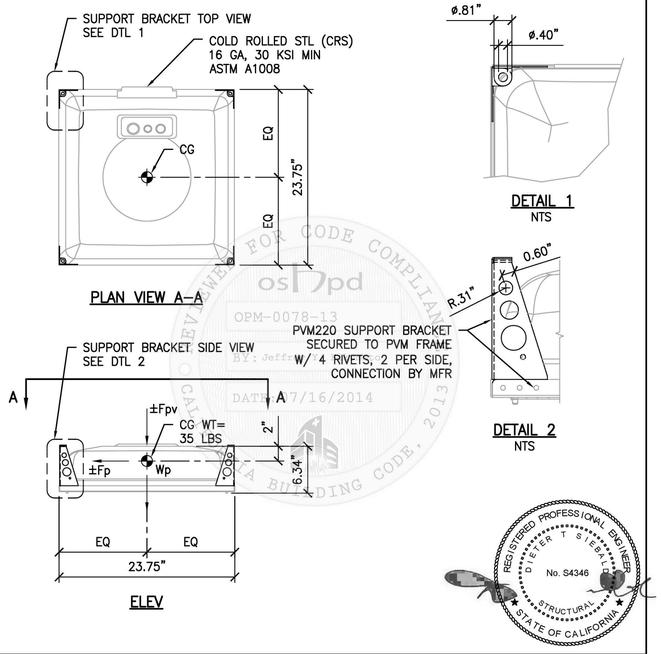
Extron Electronics
INTERFACING, SWITCHING AND CONTROL



REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBERT No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: PVM 220
PLAN & ELEVATIONS

CYS STRUCTURAL ENGINEERS, INC.
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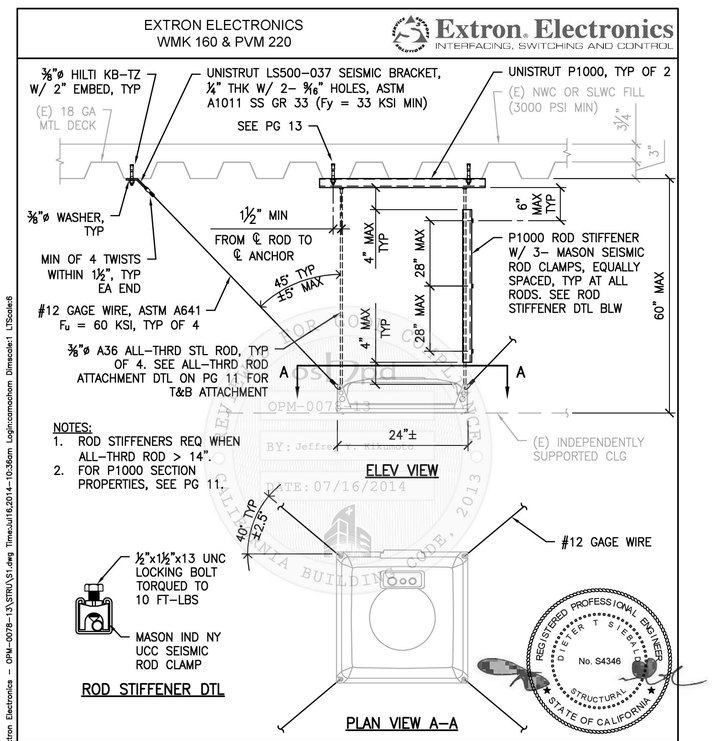
Extron Electronics
INTERFACING, SWITCHING AND CONTROL



REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBERT No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: PVM 220 - OPTION 1:
UNDERSIDE OF METAL DECK SUPPORT & ATTACHMENT

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
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L:\Jobs\13\13127 Extron Electronics – OPM–0078–13\STRU\S1.dwg Time:Jul16,2014–10:36am Login:csmoshom Dimscale:1 LTScale:8

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA (DEP. DIR. PUBLIC WORKS)	ALEX AMERI (INTERIM DIR. PUBLIC WORKS)
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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405 Howard St. Suite 500
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(415) 398-3833
wsp.com

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

**1401 W. WINTON AVE.
HAYWARD, CA 94545**

REVISIONS

No.	Description	Date

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Sheet Title

TECHNOLOGY DETAILS

Drawn By: Author Checked By: Checker

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Date:
October 4, 2019

Project No. B17.07369

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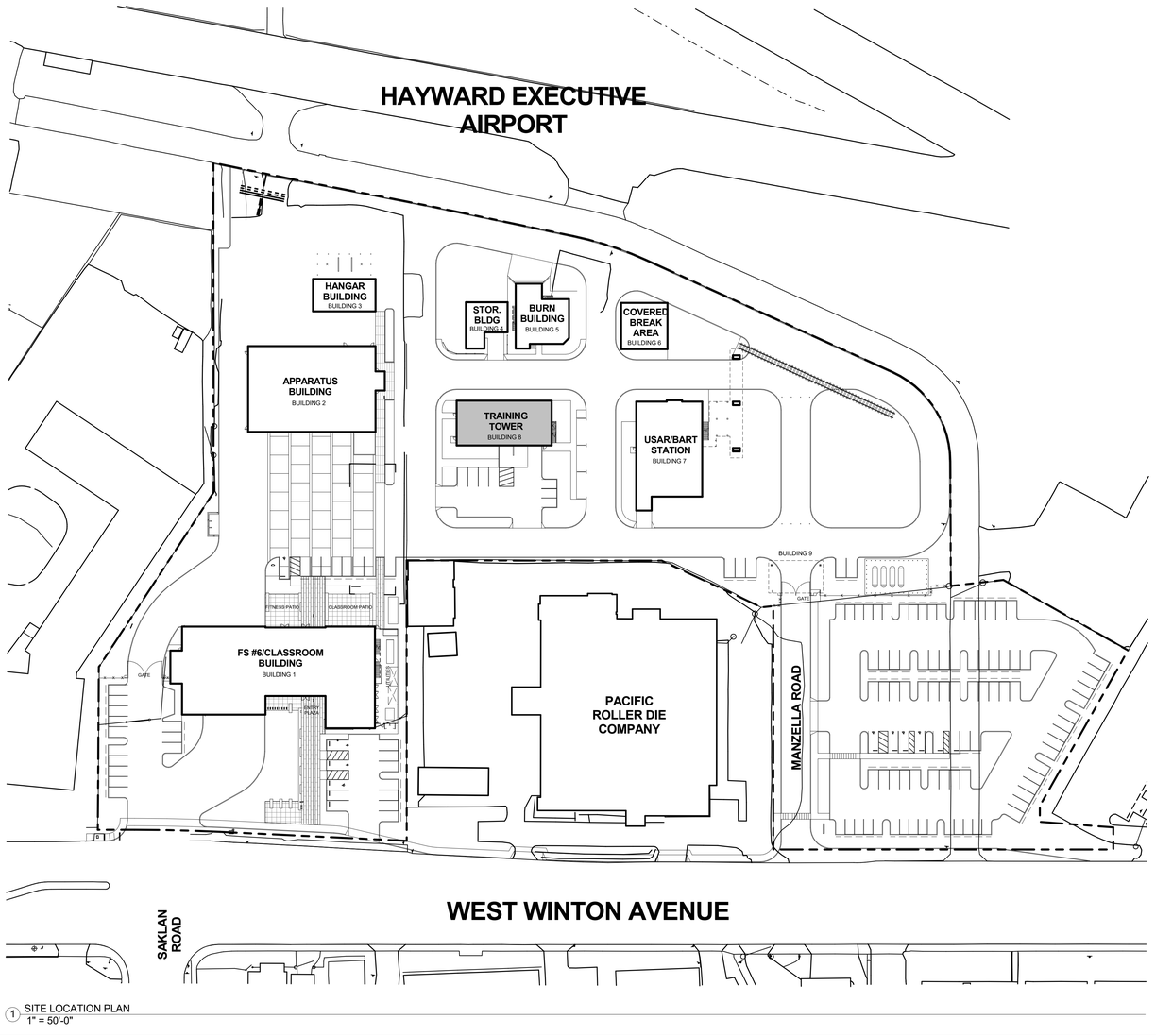
HAYWARD FIRE STATION #6
& FIRE TRAINING CENTER

BUILDING 8

PERMIT SUBMITTAL



1 SITE LOCATION PLAN
1" = 50'-0"

PROJECT INFORMATION

APN:	432-124-1-4 (PORTION)
PROJECT:	HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER BUILDING 8 1401 WEST WINTON AVENUE, HAYWARD, CA 94545
DESCRIPTION:	CLASS "B" BURN BUILDING & TRAINING TOWER (BUILDING 8)
BUILDING AREAS:	39,156 SF SITE COVERAGE 66,278 SF GROSS FLOOR AREA
TOTAL BUILDING AREA FOR THIS PERMIT:	11,513 SF
SITE:	293,364 SF (6.73 ACRES) SITE DEVELOPMENT AREA 13% LOT COVERAGE (TOTAL DEVELOPMENT)
BUILDING FLOOR AREA RATIO:	23% (TOTAL DEVELOPMENT)
FIRE SPRINKLERED:	NO (BUILDING 8)
BUILDING USE/OCCUPANCY:	NFPA 1402 LIVE FIRE TRAINING STRUCTURE THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.
CONSTRUCTION TYPE:	II-B
ZONING:	AT/AC
TOTAL BUILDING STORIES:	4
DEFERRED SUBMITTALS:	STEEL STAIRS

BUILDING 8 SCOPE OF WORK

The general scope of work covered under this contract includes but is not limited to:

Structure
- New concrete slabs, cast-in-place concrete walls, structural steel framing.
- New interior non-bearing CMU walls.
- New fiberglass composition shingle and membrane roofs.
- New Class "B" LPG burn prop training space throughout building with thermal lining at walls and ceiling.
- New rooms for LPG burn prop control panels.
- New "false" elevator cab with operational door for training scenarios.
- New roof level training space with "cut-able" roof area and rappelling anchors.
- Required signage.

Mechanical
- New interior exhaust ductwork.
- New exterior & interior intake and exhaust louvers.

Plumbing
- New LPG gas piping.
- New compressed air piping.
- New "false" fire sprinkler riser with lateral piping and control valves for training scenarios.

Electrical
- New power, data, and lighting systems.
- New audio-visual equipment.

SHEET INDEX

NUMBER	NAME
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8-A0.10	BUILDING 8 SHEET INDEX, PROJECT INFORMATION
8-A0.11	BUILDING 8 EXTERIOR AXOMETRIC VIEWS
8-A2.10	BUILDING 8 FIRST LEVEL FLOOR PLAN
8-A2.11	BUILDING 8 FIRST LEVEL SLAB DRAINAGE PLAN
8-A2.20	BUILDING 8 SECOND LEVEL FLOOR PLAN
8-A2.21	BUILDING 8 SECOND LEVEL SLAB DRAINAGE PLAN
8-A2.30	BUILDING 8 THIRD LEVEL FLOOR PLAN
8-A2.31	BUILDING 8 THIRD LEVEL SLAB DRAINAGE PLAN
8-A2.40	BUILDING 8 FOURTH LEVEL FLOOR PLAN
8-A2.41	BUILDING 8 FOURTH LEVEL SLAB DRAINAGE PLAN
8-A2.60	BUILDING 8 ROOF PLAN
8-A2.70	BUILDING 8 DOOR, WINDOW & ROOM FINISH SCHEDULES
8-A3.10	BUILDING 8 EXTERIOR ELEVATIONS
8-A3.40	BUILDING 8 BUILDING CROSS SECTIONS
8-A3.50	BUILDING 8 WALL SECTIONS
8-A5.10	BUILDING 8 INTERIOR ELEVATIONS
8-A5.11	BUILDING 8 INTERIOR ELEVATIONS
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8-A8.30	BUILDING 8 ARCHITECTURAL DETAILS
8-A8.31	BUILDING 8 ARCHITECTURAL DETAILS
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8-S1.20	BUILDING 8 STEEL FRAMING DETAILS
8-S1.30	BUILDING 8 TYPICAL METAL STUD ELEVATION AND CONNECTION DETAILS
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8-S4.12	BUILDING 8 TYPICAL CONCRETE WALL DETAILS
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8-E2.02	BUILDING 8 ELECTRICAL TRAINING TOWER BUILDING FOURTH LEVEL PLANS
8-E2.03	BUILDING 8 ELECTRICAL TRANING TOWER BUILDING THIRD LEVEL FLOOR PLAN
8-E2.04	BUILDING 8 ELECTRICAL TRANING TOWER BUILDING FOURTH LEVEL FLOOR PLAN
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TECHNOLOGY	
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8-T2.01	BUILDING 8 TECHNOLOGY TOWER BUILDING FIRST, SECOND AND THIRD LEVEL FLOOR PLANS
8-T2.02	BUILDING 8 TECHNOLOGY TRAINING TOWER BUILDING FOURTH LEVEL AND ROOF PLANS
8-T7.01	BUILDING 8 TECHNOLOGY DETAILS
8-T7.02	BUILDING 8 TECHNOLOGY DETAILS

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
SHEET INDEX, PROJECT INFORMATION

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A0.10
Drawing No.

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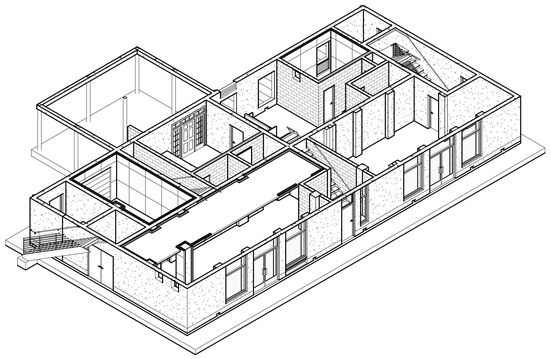
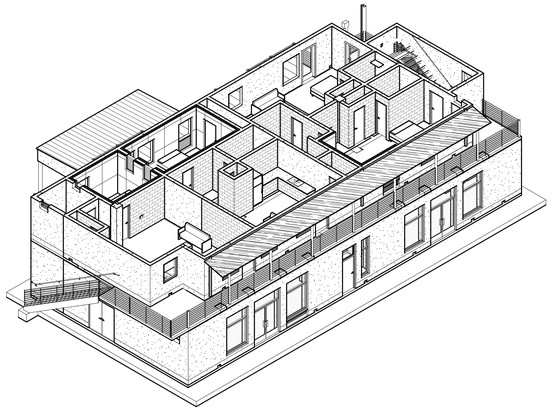
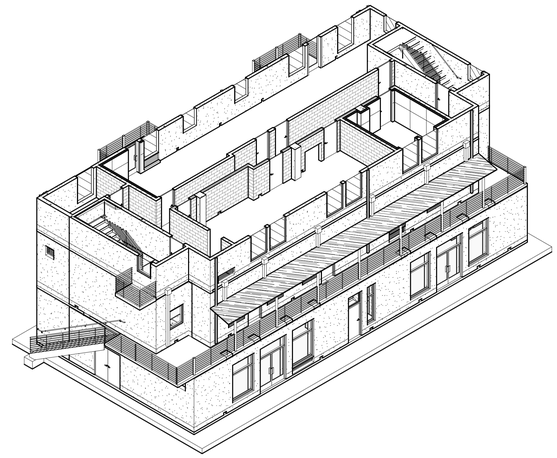


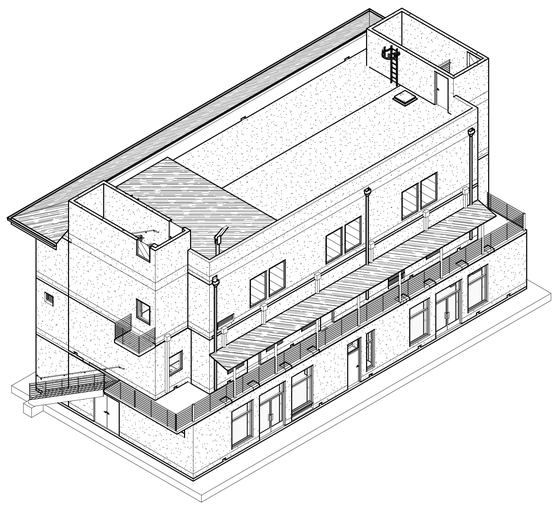
1 NORTHEAST AXONOMETRIC VIEW AT FIRST FLOOR LEVEL



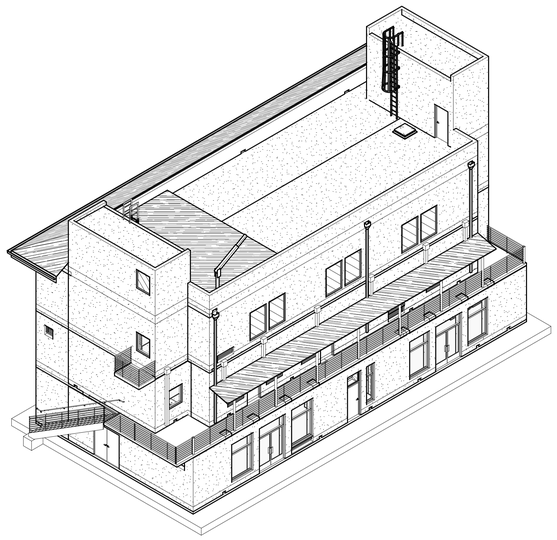
2 NORTHEAST AXONOMETRIC VIEW AT SECOND FLOOR LEVEL



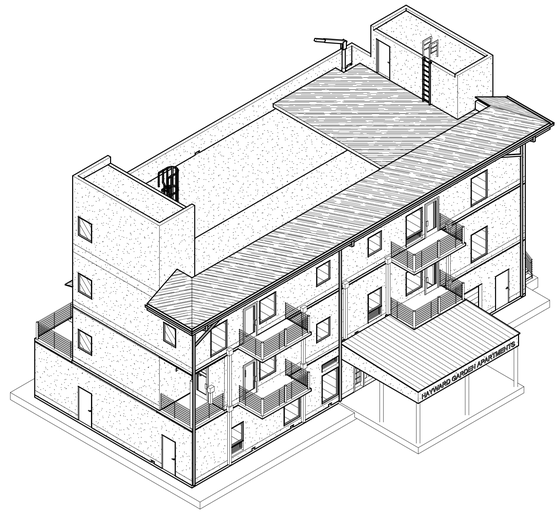
3 NORTHEAST AXONOMETRIC VIEW AT THIRD FLOOR LEVEL



4 NORTHEAST AXONOMETRIC VIEW AT ROOF LEVEL



5 NORTHEAST AXONOMETRIC VIEW



6 SOUTHWEST AXONOMETRIC VIEW

GRAPHIC FOR REFERENCE ONLY

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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STATE OF CALIFORNIA

Sheet Title

BUILDING 8 EXTERIOR AXONOMETRIC VIEWS

Drawn By: NM Checked By: EW

Scale:

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8-A0.11
Drawing No.

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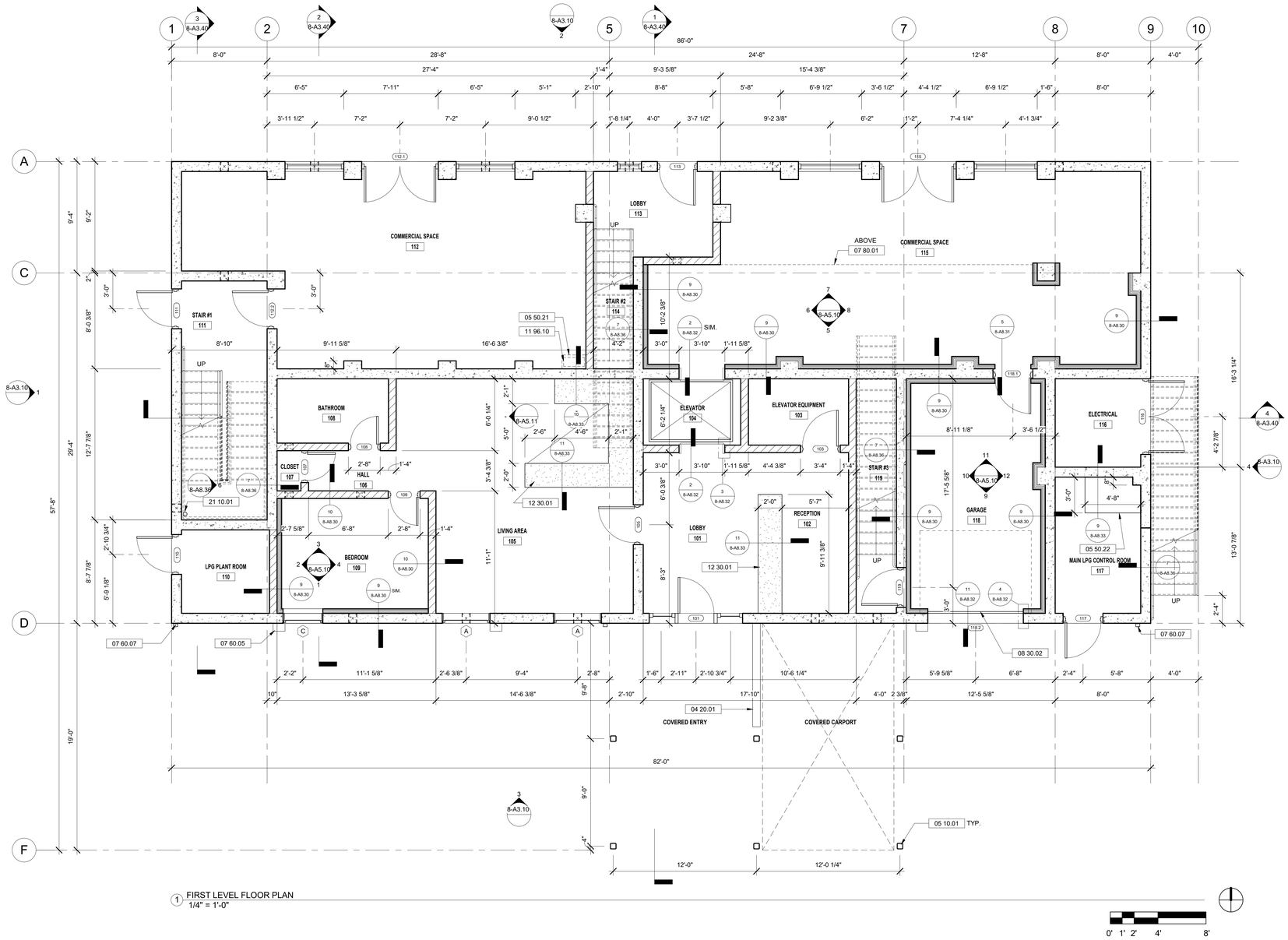

1 FIRST LEVEL FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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3. FOR ADDITIONAL INFORMATION AND COORDINATION, REFER TO STRUCTURAL DRAWINGS.
4. REFER TO CIVIL DRAWINGS FOR SITE AND UTILITY INFRASTRUCTURE WORK.
5. DURING THE VARIOUS TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING WATER THROUGHOUT THE BUILDING. INASMUCH, ALL INTERIOR AND EXTERIOR EXPOSED METAL SURFACES MUST BE PROTECTED FROM RUST AND CORROSION WITH EITHER FACTORY FINISHES, GALVANIZED METAL FINISH, OR HIGH TEMPERATURE PAINT FINISH.
6. UPON COMPLETION OF CMU, ALL WALL SURFACES SHALL BE SEALED WITH THE APPROVED MASONRY SEALER. REFER TO PROJECT SPECIFICATIONS.
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8. THIS BUILDING WILL BE SUBJECT TO HIGH HEAT LEVELS DUE TO THE USE OF LIVE FIRE DURING TRAINING SCENARIOS. ALL EXPOSED METAL SURFACES SHALL BE PROTECTED WITH EITHER GALVANIZED FINISHES WHERE NOTED, OR HIGH TEMPERATURE PAINT FINISH PER PROJECT SPECIFICATIONS.
9. UPON FINAL CLEANING OF EXPOSED CONCRETE FLOORS, SURFACES SHALL BE PREPPED FOR APPLICATION OF SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER
- MAZE PANEL WALL SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

04 20.01	SMOOTH CMU WALLS, S.S.D.
05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 50.21	24" X 14" X 10-GAGE STAINLESS STEEL SHELF ANCHORED TO WALL
05 50.22	EQUIPMENT BENCH
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 30.02	PAINTED METAL OVERHEAD COILING DOOR
11 96.10	SMOKE GENERATOR
12 30.01	CONCRETE COUNTERTOP AT +36" A.F.F. WITH CMU SUPPORT WALLS BELOW
21 10.01	FALSE FIRE SPRINKLER RISER AND LATERAL PER DETAIL 12/8-A8.30

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 9/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
FIRST LEVEL FLOOR PLAN

Drawn By: NM Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

8-A2.10
Drawing No.

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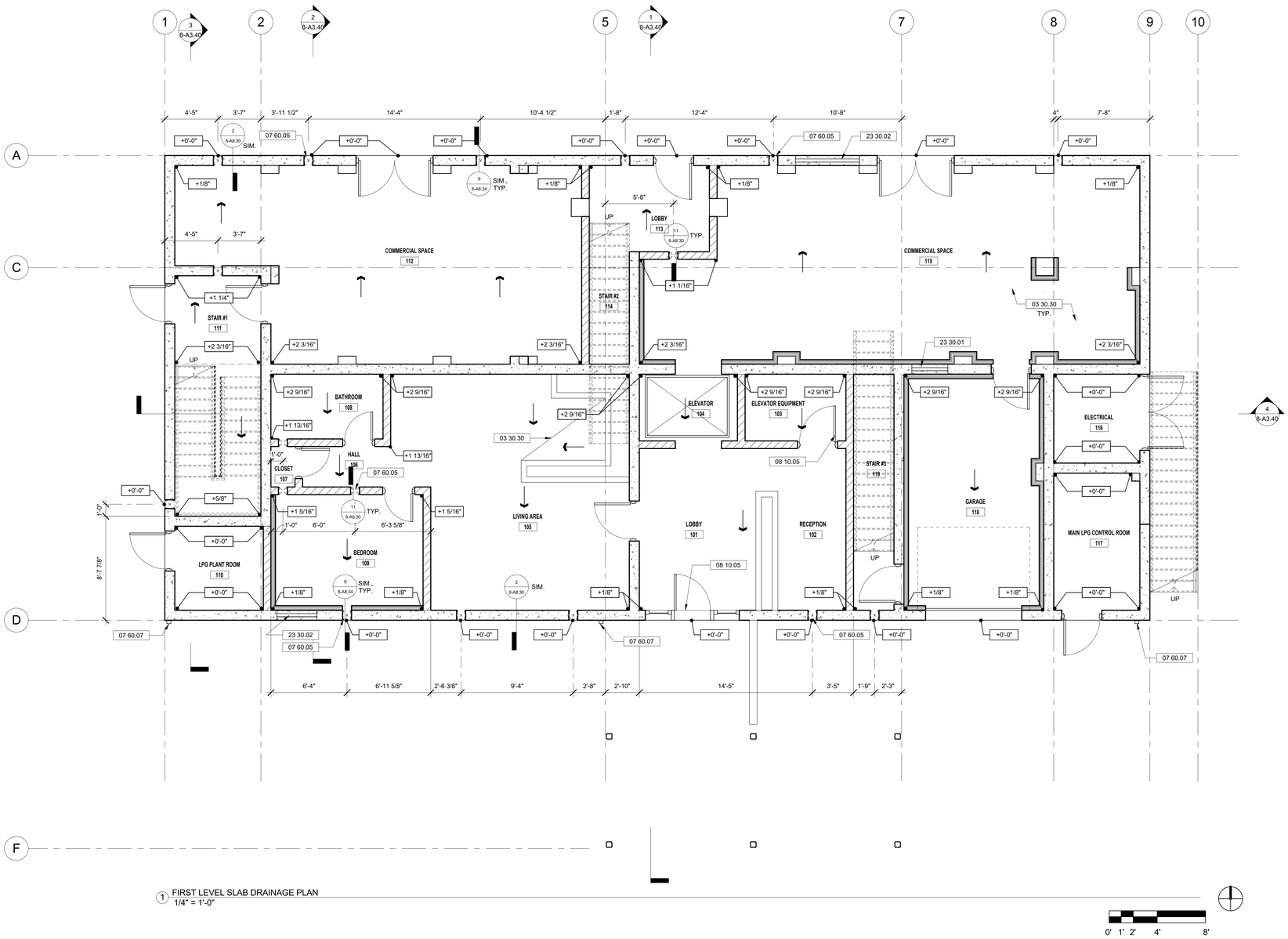

1 FIRST LEVEL SLAB DRAINAGE PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. DURING TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING LARGE AMOUNTS OF WATER FOR THE EXTINGUISHING OF FIRE SIMULATIONS. THEREFORE, ALL FLOORS WITHIN THE TRAINING BUILDING ARE TO BE SLOPED AT A MINIMUM OF 1% FOR DRAINAGE, UNLESS OTHERWISE NOTED.
2. THE INTENT OF WATER DRAINAGE WITH THE TRAINING BUILDING IS THROUGH THE SHOWN OPENINGS IN THE PERIMETER AND INTERIOR CMU WALLS. REFER TO NOTED DETAILS. FLOORS SHALL BE SLOPED AS SHOWN TO THESE LOCATIONS.
3. THE ELEVATIONS SHOWN ON THE DRAINAGE PLANS INDICATE ELEVATION ABOVE THE 0'-0" DATUM POINT ON EACH FLOOR LEVEL TO ACHIEVE SLOPE FOR DRAINAGE. THE MINIMUM AND MAXIMUM FLOOR SLAB THICKNESS SHALL BE AS ESTABLISHED ON THE STRUCTURAL DRAWINGS.
4. THE SURFACE OF ALL INTERIOR EXPOSED CONCRETE FLOORS SHALL BE A LIGHT BROOM FINISH SO AS NOT TO RESTRICT THE FLOW OF WATER TO THE SHOWN DRAINAGE POINTS. CONTRACTOR TO PROVIDE MOCK-UP OF FLOOR FINISH FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF CONCRETE FLOORS.
5. INTERIOR FLOOR SLABS SHALL BE FLOOD TESTED FOR PROPER DRAINAGE. CONTRACTOR SHALL FLOOD THE FLOOR AREAS IN OBSERVATION BY THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL TO DEMONSTRATE POSITIVE DRAINAGE. ANY AREAS OF PONDING OR STANDING WATER SHALL BE REPAIRED TO THE SATISFACTION OF THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL.
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- THERMAL WALL LINER
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SHEET KEYNOTE LEGEND

03 30.30	SLOPE CONCRETE FLOORS TO DRAINAGE SCUPPERS SUCH THAT THERE ARE NO LOW SPOTS OR PONDING, TYP.
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
08 10.05	UNDER CUT DOOR TO ALLOW DRAINAGE, TYP.
23 30.01	EXHAUST TRANSFER GRILLE
23 30.02	EXTERIOR WALL GRILLE - EXHAUST, S.M.D.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 9/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
FIRST LEVEL SLAB DRAINAGE PLAN

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

8-A2.11
Drawing No.

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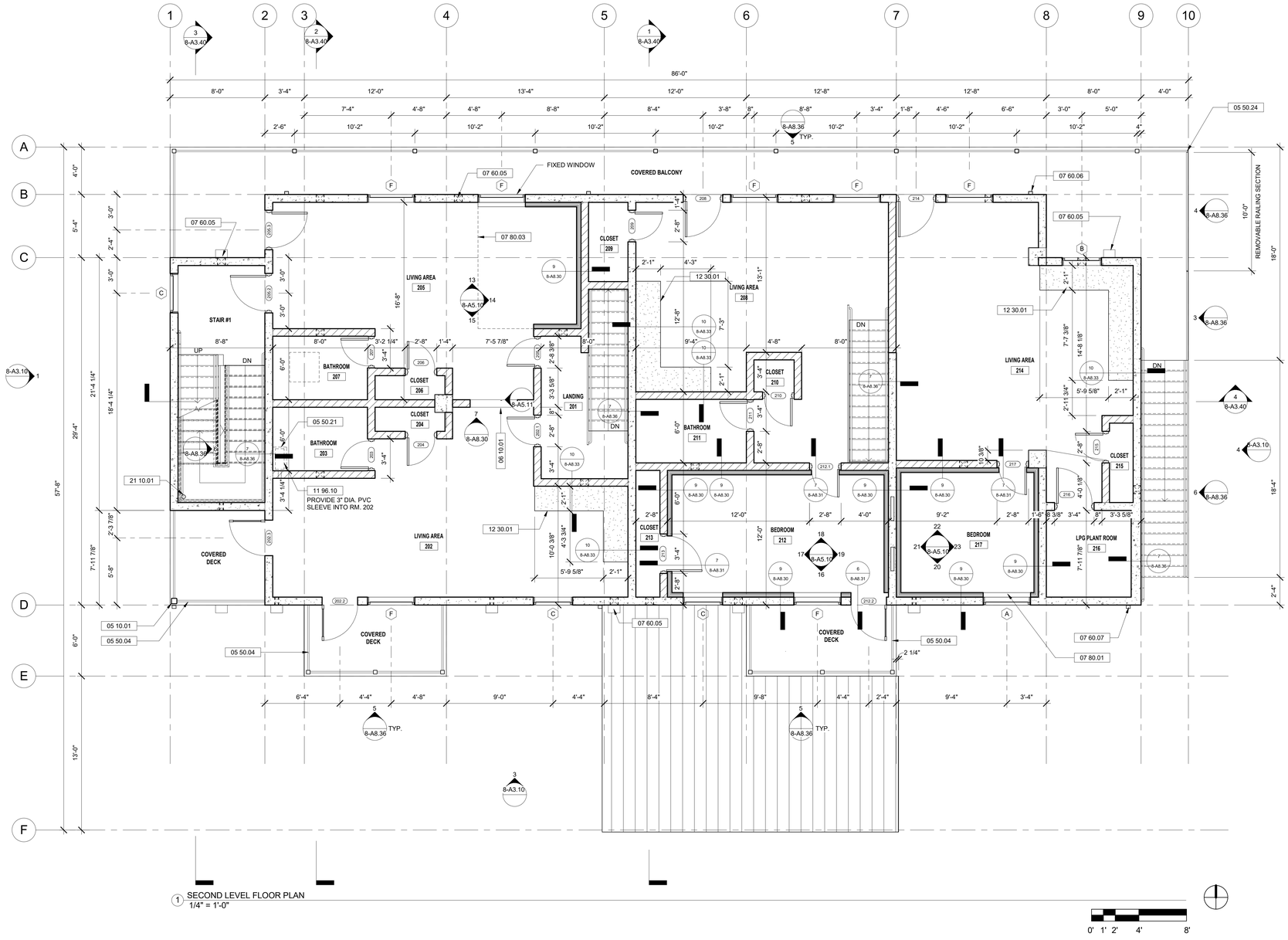

1 SECOND LEVEL FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

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- THERMAL WALL LINER
- MAZE PANEL WALL — SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.21	24" X 14" X 10-GAGE STAINLESS STEEL SHELF ANCHORED TO WALL
05 50.24	METAL RAILING CORNER POST
06 10.01	4-FOOT SQUARE BREACH PANEL THROUGH WALL WITH SILL AT FLOOR LINE
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.03	PROVIDE THERMAL LINING AT CEILING, EXTENT OF ENCLOSED AREA INDICATED
11 96.10	SMOKE GENERATOR
12 30.01	CONCRETE COUNTERTOP AT +36" A.F.F. WITH CMU SUPPORT WALLS BELOW
21 10.01	FALSE FIRE SPRINKLER RISER AND LATERAL PER DETAIL 12/8-A8.30

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
SECOND LEVEL FLOOR PLAN

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

8-A2.20
Drawing No.

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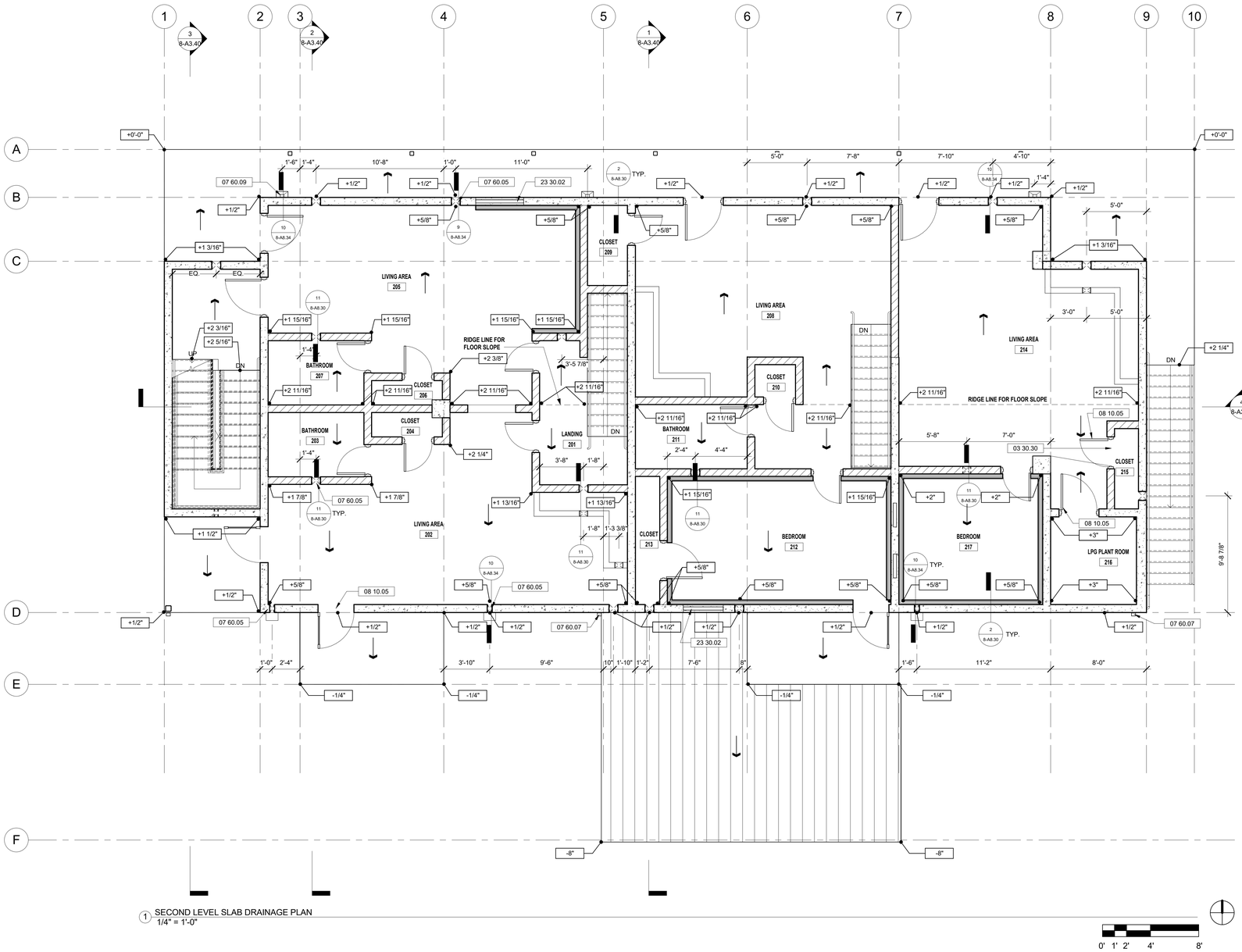

1 SECOND LEVEL SLAB DRAINAGE PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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- THERMAL WALL LINER
- MAZE PANEL WALL SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

03 30.30	SLOPE CONCRETE FLOORS TO DRAINAGE SCUPPERS SUCH THAT THERE ARE NO LOW SPOTS OR PONDING, TYP.
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
08 10.05	UNDER CUT DOOR TO ALLOW DRAINAGE, TYP.
23 30.02	EXTERIOR WALL GRILLE - EXHAUST, S.M.D.

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CITY OF HAYWARD
HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 SECOND LEVEL SLAB DRAINAGE PLAN

Drawn By: EW
Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

8-A2.21
Drawing No.

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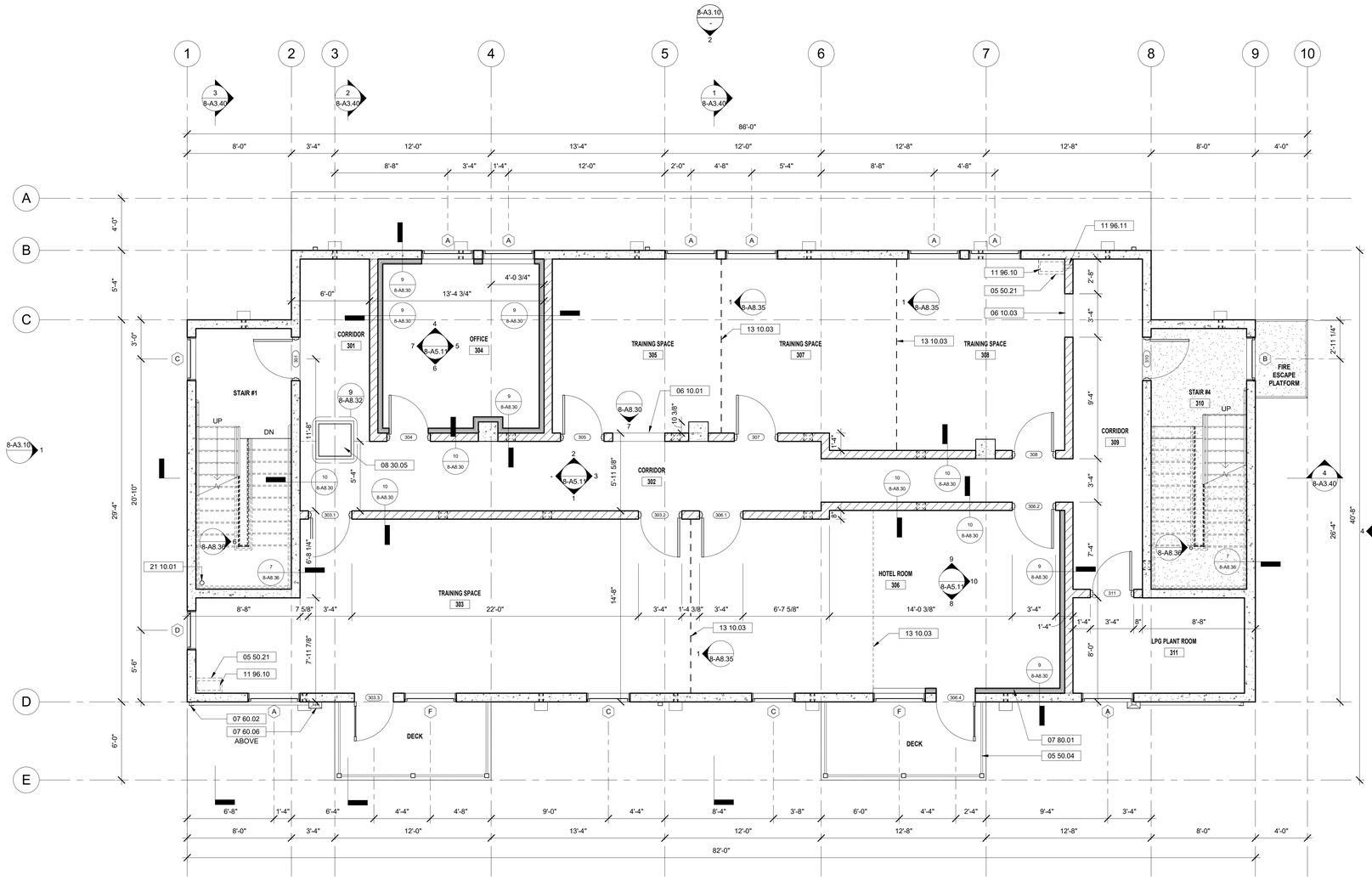

1 THIRD LEVEL FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.21	24" X 14" X 10-GAGE STAINLESS STEEL SHELF ANCHORED TO WALL
06 10.01	4-FOOT SQUARE BREACH PANEL THROUGH WALL WITH SILL AT FLOOR LINE
06 10.03	3'-4" X 7' BREACH PANEL THROUGH WALL WITH SILL AT FLOOR LINE
07 60.02	INDICATES DOWNSPOUT LOCATION, TYPICAL
07 60.06	ALUMINUM DOWNSPOUT WITH COLLECTOR HEAD AT CLEAN-OUT SCUPPER LOCATION, TYPICAL
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
08 30.05	30" SQUARE ALUMINUM FLOOR ACCESS DOOR
11 96.10	SMOKE GENERATOR
11 96.11	PROVIDE 3" DIAMETER PVC SLEEVE THROUGH WALL INTO ROOM 309 AT SAME ELEVATION AS SMOKE GENERATOR
13 10.03	96" TALL MAZE PANELS, TOP SHOES AND BENT PLATES FOR CONSTRUCTION OF INTERCHANGEABLE TRAINING WALLS
21 10.01	FALSE FIRE SPRINKLER RISER AND LATERAL PER DETAIL 12/8-A8.30

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PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
THIRD LEVEL FLOOR PLAN

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

8-A2.30

Drawing No.

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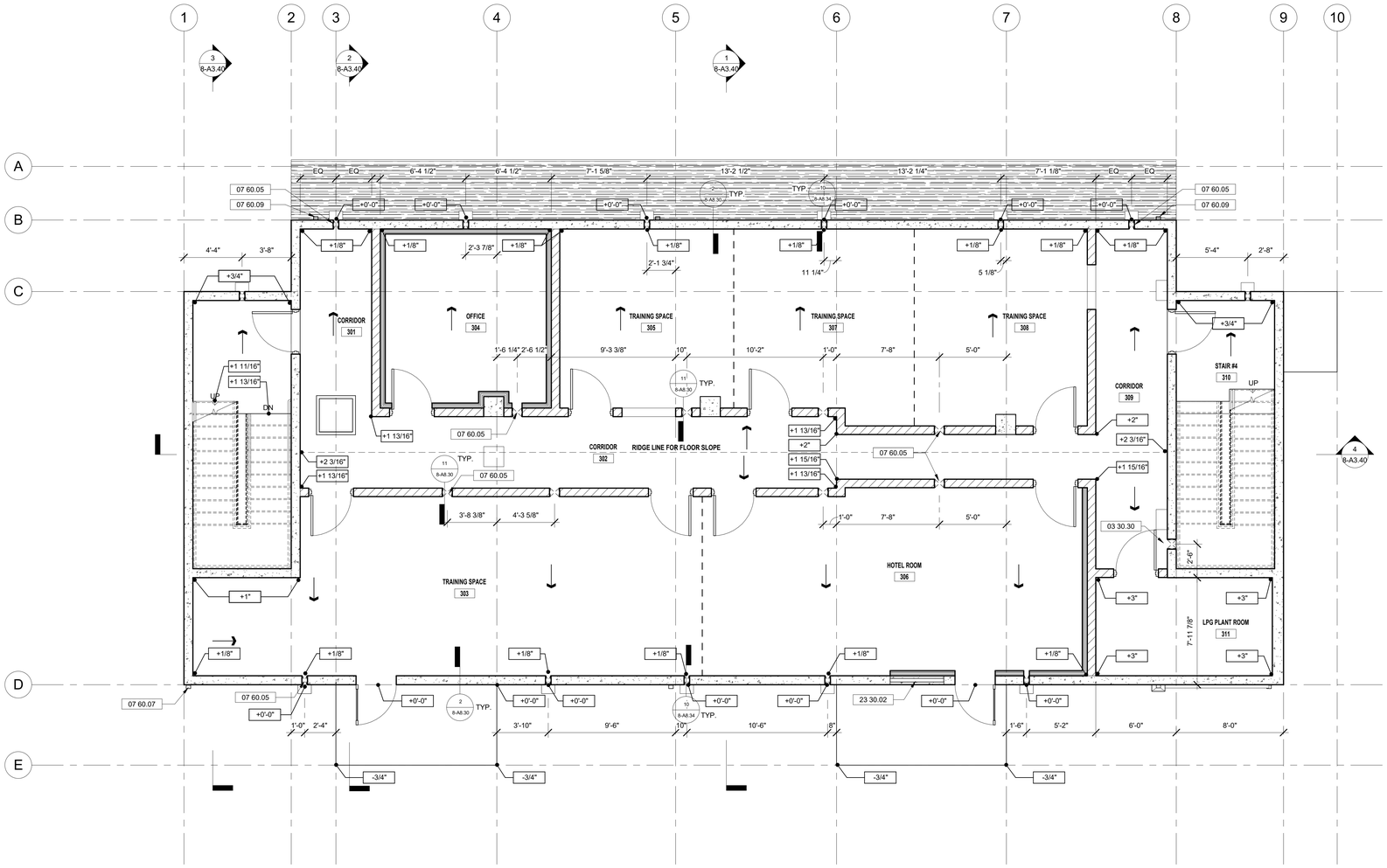

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5. INTERIOR FLOOR SLABS SHALL BE FLOOD TESTED FOR PROPER DRAINAGE. CONTRACTOR SHALL FLOOD THE FLOOR AREAS IN OBSERVATION BY THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL TO DEMONSTRATE POSITIVE DRAINAGE. ANY AREAS OF PONDING OR STANDING WATER SHALL BE REPAIRED TO THE SATISFACTION OF THE ARCHITECT AND HAYWARD FIRE DEPARTMENT PERSONNEL.
6. UPON COMPLETION OF WATER DRAINAGE TESTING, ALL INTERIOR FLOOR SLABS SHALL BE SEALED WITH AN APPLIED SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER
- MAZE PANEL WALL SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

03 30.30	SLOPE CONCRETE FLOORS TO DRAINAGE SCUPPERS SUCH THAT THERE ARE NO LOW SPOTS OR PONDING, TYP.
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 60.09	ALUMINUM ROOF SCUPPER CONDUCTOR HEAD WITH 4" X 3" DOWNSPOUT. S.C.D. FOR CONTINUATION.
23 30.02	EXTERIOR WALL GRILLE - EXHAUST, S.M.D.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 THIRD LEVEL SLAB DRAINAGE PLAN

Drawn By: Author
Checked By: Checker

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

Date: October 4, 2019

Project No. 2016039

8-A2.31
Drawing No.

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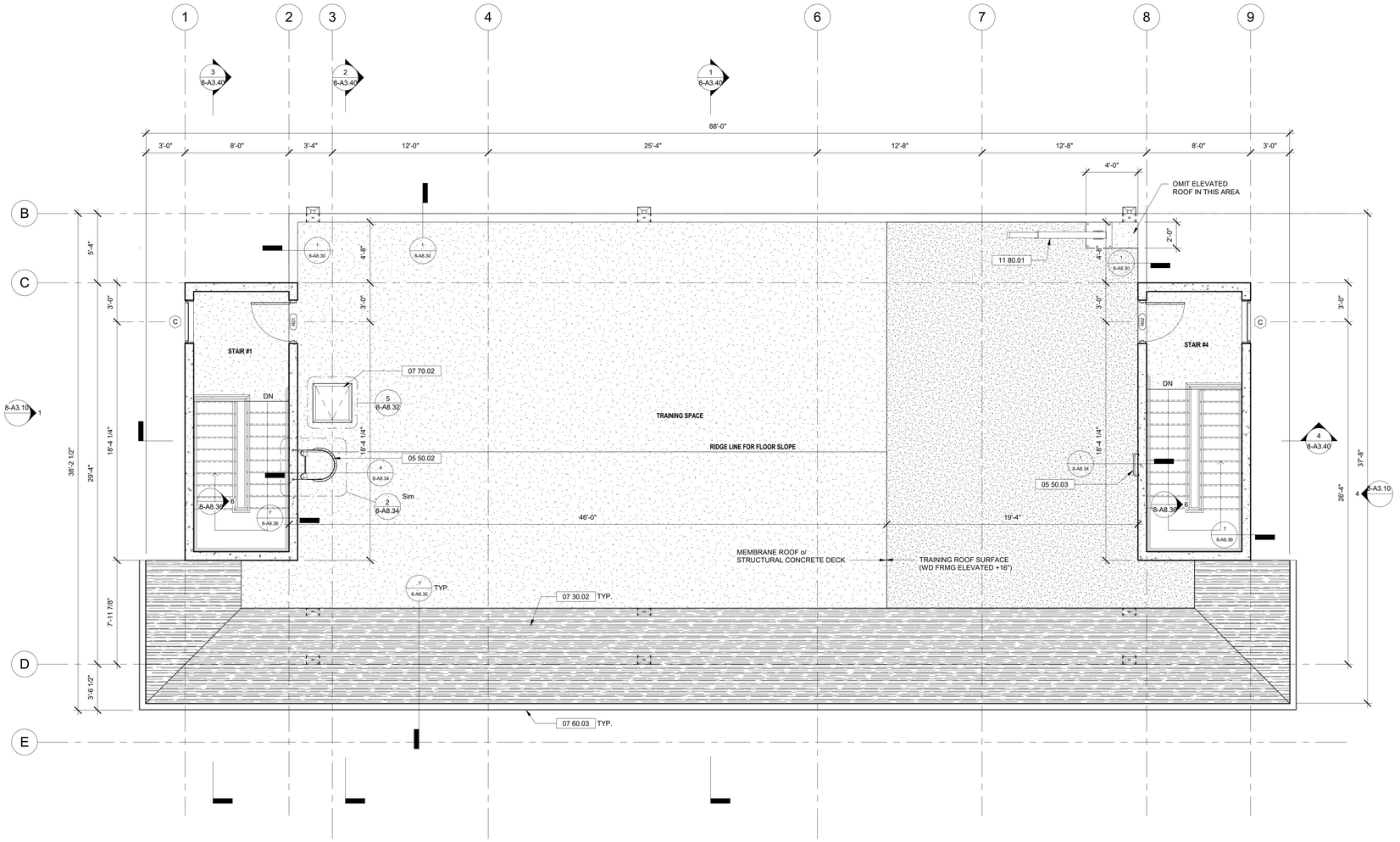

1 FOURTH LEVEL FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

NOTES:
1. CONTRACTOR TO PROVIDE THREE (3) RAPPELLING ANCHOR ASSEMBLIES PER DETAIL 5/8-A8.34. VERIFY EXACT LOCATION WITH OWNER PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO PROVIDE EIGHT (8) DECK THREADED INSERTS PER DETAIL 6/8-A8.34. VERIFY EXACT LOCATION WITH OWNER PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO PROVIDE SIX (6) FALL RESTRAINT ANCHORS PER DETAIL 14/8-S4.10. VERIFY EXACT LOCATION WITH OWNER PRIOR TO CONSTRUCTION.

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.
2. CONTRACTOR SHALL THOROUGHLY REVIEW THE PROJECT SPECIFICATIONS AND EQUIPMENT SPECIFIED THEREIN FOR REQUIRED COORDINATION AND INSTALLATION REQUIREMENTS.
3. FOR ADDITIONAL INFORMATION AND COORDINATION, REFER TO STRUCTURAL DRAWINGS.
4. REFER TO CIVIL DRAWINGS FOR SITE AND UTILITY INFRASTRUCTURE WORK.
5. DURING THE VARIOUS TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING WATER THROUGHOUT THE BUILDING. INASMUCH, ALL INTERIOR AND EXTERIOR EXPOSED METAL SURFACES MUST BE PROTECTED FROM RUST AND CORROSION WITH EITHER FACTORY FINISHES, GALVANIZED METAL FINISH, OR HIGH TEMPERATURE PAINT FINISH.
6. UPON COMPLETION OF CMU, ALL WALL SURFACES SHALL BE SEALED WITH THE APPROVED MASONRY SEALER. REFER TO PROJECT SPECIFICATIONS.
7. CONTRACTOR SHALL COORDINATE ALL INTERIOR CONSTRUCTION, INCLUDING WALLS AND DOORS WITH THE INTERIOR FLOOR SLOPE PLANS AND STRUCTURAL ELEMENTS PRIOR TO COMMENCING CONSTRUCTION.
8. THIS BUILDING WILL BE SUBJECT TO HIGH HEAT LEVELS DUE TO THE USE OF LIVE FIRE DURING TRAINING SCENARIOS. ALL EXPOSED METAL SURFACES SHALL BE PROTECTED WITH EITHER GALVANIZED FINISHES WHERE NOTED, OR HIGH TEMPERATURE PAINT FINISH PER PROJECT SPECIFICATIONS.
9. UPON FINAL CLEANING OF EXPOSED CONCRETE FLOORS, SURFACES SHALL BE PREPPED FOR APPLICATION OF SEALER PER PROJECT SPECIFICATIONS.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER
- MAZE PANEL WALL — SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

05 50.02	PRE-FABRICATED METAL LADDER WITH SAFETY CAGE EXTENDING FROM FOURTH FLOOR TO ROOF OVER STAIR #1
05 50.03	PRE-FABRICATED METAL LADDER EXTENDING FROM TRAINING ROOF TO ROOF OVER STAIR #4
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 70.02	ROOF HATCH (TRAINING DEVICE WITHOUT SAFETY POST)
11 80.01	DAVIT CRANE ANCHORED TO ROOF SLAB

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
FOURTH LEVEL FLOOR PLAN

Drawn By: EW
Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

8-A2.40
Drawing No.

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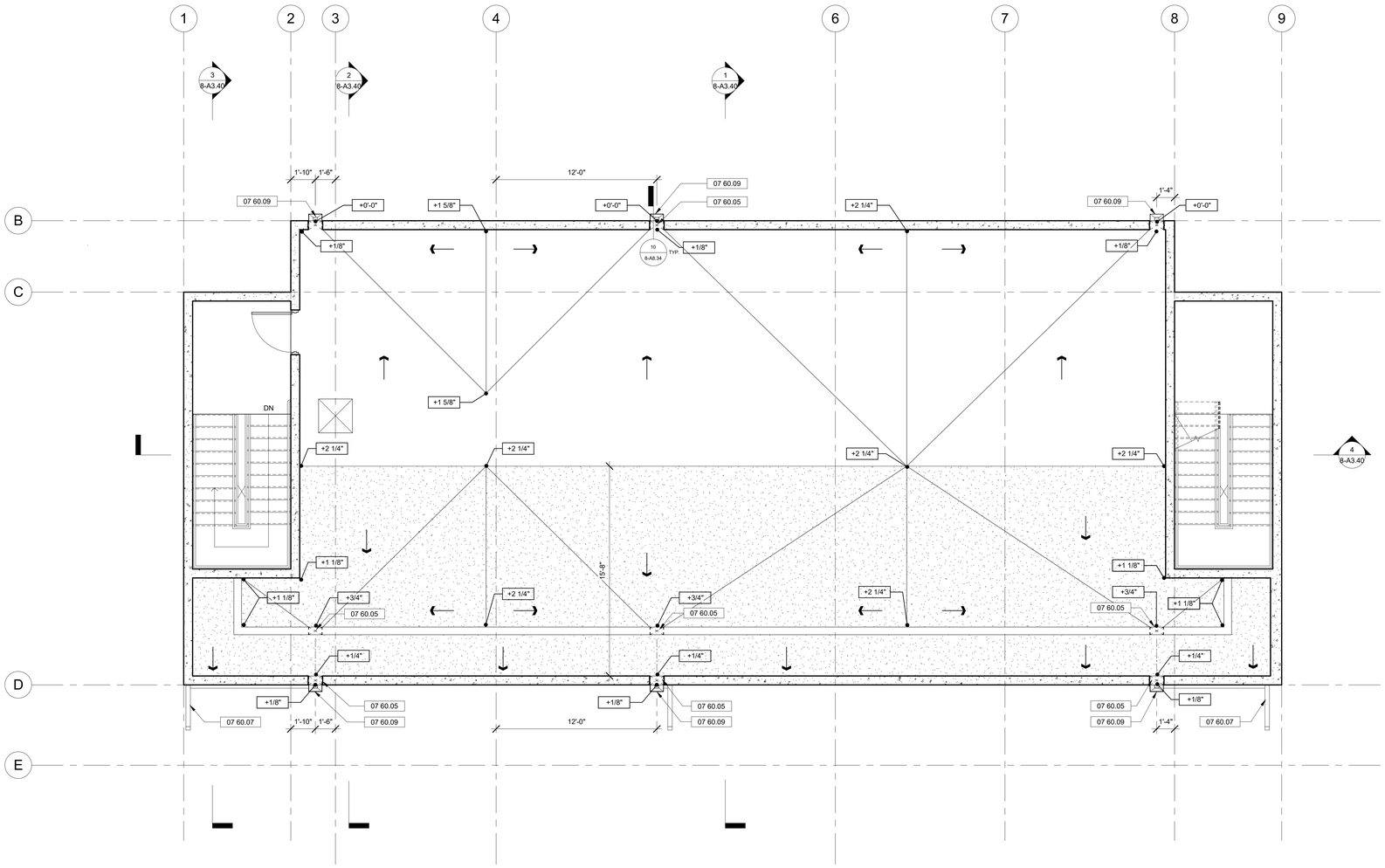

1 FOURTH LEVEL SLAB DRAINAGE PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. DURING TRAINING SCENARIOS, FIREFIGHTERS WILL BE USING LARGE AMOUNTS OF WATER FOR THE EXTINGUISHING OF FIRE SIMULATIONS. THEREFORE, ALL FLOORS WITHIN THE TRAINING BUILDING ARE TO BE SLOPED AT A MINIMUM OF 1% FOR DRAINAGE, UNLESS OTHERWISE NOTED.
2. THE INTENT OF WATER DRAINAGE WITH THE TRAINING BUILDING IS THROUGH THE SHOWN OPENINGS IN THE PERIMETER AND INTERIOR CMU WALLS. REFER TO NOTED DETAILS. FLOORS SHALL BE SLOPED AS SHOWN TO THESE LOCATIONS.
3. THE ELEVATIONS SHOWN ON THE DRAINAGE PLANS INDICATE ELEVATION ABOVE THE 0'-0" DATUM POINT ON EACH FLOOR LEVEL TO ACHIEVE SLOPE FOR DRAINAGE. THE MINIMUM AND MAXIMUM FLOOR SLAB THICKNESS SHALL BE AS ESTABLISHED ON THE STRUCTURAL DRAWINGS.
4. THE SURFACE OF ALL INTERIOR EXPOSED CONCRETE FLOORS SHALL BE A LIGHT BROOM FINISH SO AS NOT TO RESTRICT THE FLOW OF WATER TO THE SHOWN DRAINAGE POINTS. CONTRACTOR TO PROVIDE MOCK-UP OF FLOOR FINISH FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF CONCRETE FLOORS.
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WALL LEGEND

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- THERMAL WALL LINER
- MAZE PANEL WALL SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 60.09	ALUMINUM ROOF SCUPPER CONDUCTOR HEAD WITH 4" X 3" DOWNSPOUT. S.C.D. FOR CONTINUATION.

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 FOURTH LEVEL SLAB DRAINAGE PLAN

Drawn By: EW
Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

8-A2.41
Drawing No.

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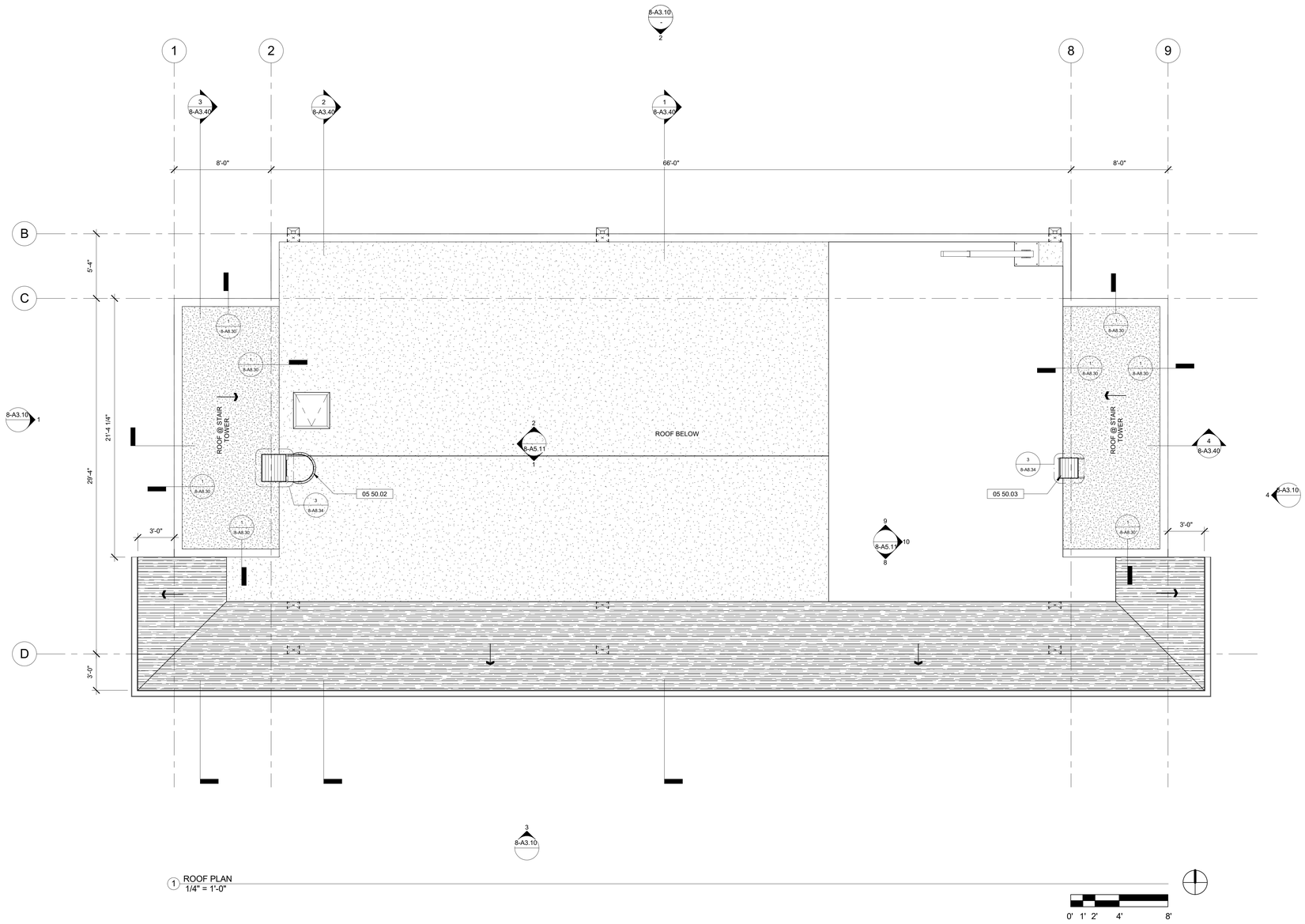

GENERAL SHEET NOTES

1. DIAGRAMMATIC FURNITURE, CASEWORK, & PLUMBING FIXTURES ARE PROPS SHOWN AS SUGGESTED ITEMS TO ENHANCE THE OVERALL RESIDENTIAL FIRE-FIGHTING SIMULATION EXPERIENCE. THEY ARE NOT INTENDED TO INDICATE ACTUAL FURNITURE OR FIXTURES.
2. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

WALL LEGEND

SHEET KEYNOTE LEGEND

05 50.02	PRE-FABRICATED METAL LADDER WITH SAFETY CAGE EXTENDING FROM FOURTH FLOOR TO ROOF OVER STAIR #1
05 50.03	PRE-FABRICATED METAL LADDER EXTENDING FROM TRAINING ROOF TO ROOF OVER STAIR #4

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MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 8/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ROOF PLAN

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A2.60
Drawing No.

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ROOM FINISH SCHEDULE

NUMBER	NAME	FLOOR	BASE	WALLS				CEILING	COMMENTS
				NORTH	EAST	SOUTH	WEST		
101	LOBBY	CONC-1	-	CMU	CMU	CONC	CMU	UNF	
102	RECEPTION	CONC-1	-	CMU	CMU	CONC	CMU	UNF	
103	ELEVATOR EQUIPMENT	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
104	ELEVATOR	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
105	LIVING AREA	CONC-1	-	CMU	CMU	CONC	CMU	UNF	
106	HALL	CONC-1	-	CMU	-	CMU	CMU	UNF	
107	CLOSET	CONC-1	-	CMU	CMU	CMU	CONC	UNF	
108	BATHROOM	CONC-1	-	CMU	CMU	CMU	CONC	UNF	
109	BEDROOM	CONC-1	-	THRM	THRM	THRM	CMU/CONC/THRM	THRM	
110	LPG PLANT ROOM	CONC-1	-	CONC	CMU	CONC	CONC	UNF	
111	STAIR #1	CONC-1	-	CONC	CONC	CONC	CONC	UNF	
112	COMMERCIAL SPACE	CONC-1	-	CONC	CMU	CMU/CONC	CONC	UNF	
113	LOBBY	CONC-1	-	CONC	CMU	CMU	CMU	UNF	
114	STAIR #2	CONC-1	-	-	CMU	-	CMU	UNF	
115	COMMERCIAL SPACE	CONC-1	-	CONC	CONC/THRM	CMU/THRM	CMU/THRM	UNF/THRM	
116	ELECTRICAL	CONC-1	-	CMU	CONC	CMU	CMU	UNF	
117	MAIN LPG CONTROL ROOM	CONC-1	-	CMU	CONC	CONC	CMU	UNF	
118	GARAGE	CONC-1	-	THRM	THRM	THRM	THRM	THRM	
119	STAIR #3	CONC-1	-	-	CMU	-	CMU	UNF	
201	LANDING	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
202	LIVING AREA	CONC-1	-	CMU	CMU	CONC	CONC	UNF	
203	BATHROOM	CONC-1	-	CMU	CMU	CMU	CONC	UNF	
204	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
205	LIVING AREA	CONC-1	-	CONC/THRM	THRM	CMU/THRM	CMU/CONC	UNF/THRM	
206	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
207	BATHROOM	CONC-1	-	CMU	CMU	CMU	CONC	UNF	
208	LIVING AREA	CONC-1	-	CONC	CMU	CMU	CMU	UNF	
209	CLOSET	CONC-1	-	CONC	CMU	CMU	CMU	UNF	
210	CLOSET	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
211	BATHROOM	CONC-1	-	CMU	CMU	CMU	CMU	UNF	
212	BEDROOM	CONC-1	-	THRM	THRM	THRM	THRM	THRM	
213	CLOSET	CONC-1	-	CMU	CMU	CONC	CMU	UNF	
214	LIVING AREA	CONC-1	-	CONC	CONC	CMU	CMU	UNF	
215	CLOSET	CONC-1	-	CMU	CONC	CMU	CMU	UNF	
216	LPG PLANT ROOM	CONC-1	-	CMU	CONC	CONC	CONC	UNF	
217	BEDROOM	CONC-1	-	THRM	THRM	THRM	THRM	THRM	
301	CORRIDOR	CONC-1	-	CONC	CMU	CMU	-	CONC	UNF
302	CORRIDOR	CONC-1	-	CMU/THRM	-	CMU/THRM	-	UNF	
303	TRAINING SPACE	CONC-1	-	CMU	MV	CONC	CONC	UNF	
304	OFFICE	CONC-1	-	THRM	THRM	THRM	THRM	THRM	
305	TRAINING SPACE	CONC-1	-	CONC	MV	CMU	CMU	UNF	
306	HOTEL ROOM	CONC-1	-	CMU/THRM	THRM	CONC/THRM	MV	THRM	
307	TRAINING SPACE	CONC-1	-	CONC	MV	CMU	MV	UNF	
308	TRAINING SPACE	CONC-1	-	CONC	CMU	CMU	MV	UNF	
309	CORRIDOR	CONC-1	-	CONC	CONC	CMU	CMU	UNF	
310	STAIR #4	CONC-1	-	CONC	CONC	CONC	CONC	UNF	
311	LPG PLANT ROOM	CONC-1	-	CMU/CONC	CONC	CONC	CONC	UNF	

ROOM FINISH SCHEDULE LEGEND:

FLOOR FINISH

(E)	EXISTING FINISH TO REMAIN
CONC-1	(E) CONCRETE - (N) SEALED FINISH
CONC-2	(E) CONCRETE - (N) POLISHED FINISH
CONC-3	(N) CONCRETE - (N) SEALED FINISH
CPT-1	CARPET TILE
CPT-2	BROADLOOM CARPET
L-1	RESLIEINT FLOORING TILE
L-2	RESILIENT SHEET FLOORING
R-1	RUBBER ATHLETIC FLOORING
T-1	PORCELAIN TILE

BASE FINISH

(E)	EXISTING FINISH TO REMAIN
BR	EXPOSED BRICK
BT	BRICK TILE
CONC	EXPOSED CONCRETE CURB
CONC-1	(E) CONCRETE CURB, STAINED TO MATCH FLOOR
CONC-2	(N) POLYASPARTIC FLOORING OVER EXISTING CONCRETE
RB-1	RUBBER TOPSET BASE - COVED
T-1	PORCELAIN TILE - COVED

WALL FINISH

(E)	EXISTING FINISH TO REMAIN
CONC	EXPOSED CONCRETE
PT-1	PAINTED GYPSUM BOARD
T-1	PORCELAIN TILE WAINSCOT - SEE ELEVATIONS
WA	PAINTED WOOD WAINSCOT
MV	MOVABLE WALLS
THRM	THERMAL LINING

CEILING FINISH

(E)	EXISTING FINISH TO REMAIN
AC-1	ACOUSTIC TILE SYSTEM
PT-1	PAINTED GYPSUM BOARD
THRM	THERMAL LINING
UNF	UNFINISHED (EXPOSED STRUCTURE)

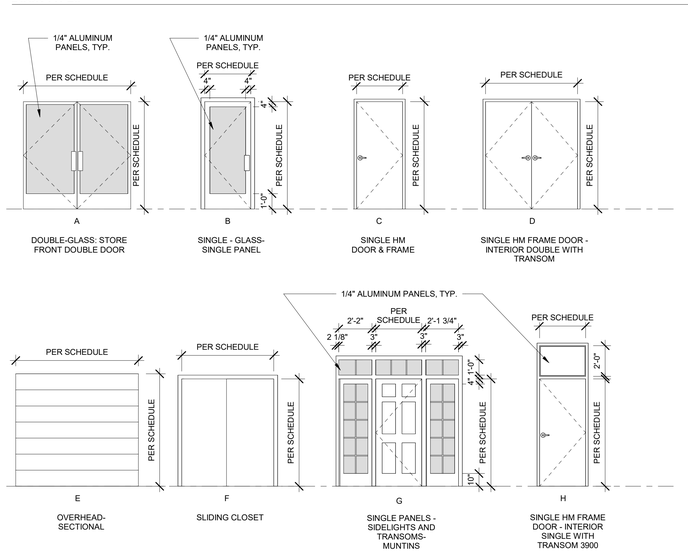
SPECIAL OPENING SCHEDULE

MARK	SIZE		FRAME		GLASS			OPERATION	DETAILS			FIRE RATING LABEL	ACCESSORIES			NOTES
	WIDTH	HEIGHT	MATERIAL	FINISH	THK	COLOR	TYPE		HEAD	JAMB	SILL		INSECT SCREEN	GRID	WINDOW COVERING	
A	4' - 0"	6' - 0"	HM	FP				DOUBLE ACTING	6/8-A8.33	5/8-A8.33	7/8-A8.33	N/A	No	No	No	
B	3' - 4"	4' - 0"	HM	FP				DOUBLE ACTING	6/8-A8.33	5/8-A8.33	7/8-A8.33	N/A	No	No	No	
C	3' - 4"	4' - 0"	HM	FP				DOUBLE ACTING	6/8-A8.33	5/8-A8.33	7/8-A8.33	N/A	No	No	No	
D	3' - 0"	4' - 0"	HM	FP				DOUBLE ACTING	6/8-A8.33	5/8-A8.33	7/8-A8.33	N/A	No	No	No	
F	4' - 0"	5' - 0"	HM	FP				DOUBLE ACTING	6/8-A8.33	5/8-A8.33	7/8-A8.33	N/A	No	No	No	

DOOR AND FRAME SCHEDULE

MARK	ROOM NAME	DOOR						FRAME					FIRE RATING	HARDWARE GROUP	REMARKS
		SIZE			TYPE	MATERIAL	FINISH	MATERIAL	FINISH	DETAILS					
		WIDTH	HEIGHT	THICKNESS						HEAD	JAMB	SILL			
101	LOBBY	3' - 0"	7' - 0"	1 3/4"	G	HM	FF	HM	FP	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-13	PRE-MANUFACTURED FORCIBLE ENTRY TRAINING DOOR
103	ELEVATOR EQUIPMENT	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-07	
105	LIVING AREA	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-A	
107	CLOSET	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-C	
108	BATHROOM	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-B	
109	BEDROOM	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-B	
110	LPG PLANT ROOM	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	11/8-A8.31		8-03	
111	STAIR #1	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	11/8-A8.31		8-04	NO FLOOR STOP
112.1	COMMERCIAL SPACE	6' - 0"	7' - 0"	1 3/4"	A	AL	FF	AL	FF	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-06	
112.2	COMMERCIAL SPACE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-04	
113	LOBBY	3' - 0"	7' - 0"	1 3/4"	H	HM	FF	HM	FF	3/8-A8.31	4/8-A8.31	11/8-A8.31		8-13	PRE-MANUFACTURED FORCIBLE ENTRY TRAINING DOOR
115	COMMERCIAL SPACE	6' - 0"	7' - 0"	1 3/4"	A	AL	FF	AL	FF	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-06	
116	ELECTRICAL	6' - 0"	7' - 0"	1 3/4"	D	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	11/8-A8.31		8-05	
117	MAIN LPG CONTROL ROOM	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	11/8-A8.31		8-03	
118.1	GARAGE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	5/8-A8.31	5/8-A8.31	12/8-A8.31		8-A	NO DOOR STOP
118.2	GARAGE	8' - 0"	7' - 4"	1 3/4"	E	MTL	FF	MTL	FF	7/8-A8.32	4/8-A8.32	11/8-A8.31		8-12	
119	STAIR #3	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-A	
202.1	LIVING AREA	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-A	
202.2	LIVING AREA	3' - 0"	7' - 0"	1 3/4"	B	AL	FF	AL	FF	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-E	
202.3	LIVING AREA	3' - 0"	7' - 0"	1 3/4"	B	AL	FF	AL	FF	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-E	
203	BATHROOM	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-B	
204	CLOSET	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-C	
205.1	LIVING AREA	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-13	FORCIBLE ENTRY TRAINING DOOR
205.2	STAIR #1	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-A	
205.3	LIVING AREA	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-13	FORCIBLE ENTRY TRAINING DOOR
206	CLOSET	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-C	
207	BATHROOM	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-B	
208	LIVING AREA	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-13	FORCIBLE ENTRY TRAINING DOOR
209	CLOSET	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-C	
210	CLOSET	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-C	
211	BATHROOM	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-B	
212.1	BEDROOM	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	5/8-A8.31	5/8-A8.31	12/8-A8.31		8-B	NO DOOR STOP
212.2	BEDROOM	3' - 0"	7' - 0"	1 3/4"	B	AL	FF	AL	FF	8/8-A8.31	8/8-A8.31	12/8-A8.31		8-E	
213	CLOSET	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	7/8-A8.31	7/8-A8.31	12/8-A8.31		8-B	NO DOOR STOP
214	LIVING AREA	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-13	FORCIBLE ENTRY TRAINING DOOR
215	CLOSET	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-F	
216	LPG PLANT ROOM	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-C	
217	BEDROOM	2' - 4"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	7/8-A8.31	7/8-A8.31	12/8-A8.31		8-B	NO DOOR STOP
301	STAIR #1	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-09	
303.1	TRAINING SPACE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-11	
303.2	TRAINING SPACE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-11	
303.3	TRAINING SPACE	3' - 0"	7' - 0"	1 3/4"	B	AL	FF	AL	FF	2/8-A8.33	2/8-A8.33	3/8-A8.33		8-E	
304	OFFICE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	7/8-A8.31	7/8-A8.31	12/8-A8.31		8-10	
305	TRAINING SPACE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-11	
306.1	HOTEL ROOM	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1 3/4"	4/8-A8.31	12/8-A8.31		8-13	FORCIBLE ENTRY TRAINING DOOR
306.2	HOTEL ROOM	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-11	NO WALL STOP. NO CLOSER
306.4	HOTEL ROOM	3' - 0"	7' - 0"	1 3/4"	B	HM	FP	HM	FP	6/8-A8.31	6/8-A8.31	12/8-A8.31		8-E	
307	TRAINING SPACE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-11	
308	TRAINING SPACE	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-11	
310	STAIR #4	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	12/8-A8.31		8-09	
311	LPG PLANT ROOM	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	1/8-A8.31	2/8-A8.31	12/8-A8.31		8-08	
R01	STAIR #1	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	11/8-A8.31		8-02	
R02	STAIR #4	3' - 0"	7' - 0"	1 3/4"	C	HM	FP	HM	FP	3/8-A8.31	4/8-A8.31	11/8-A8.31		8-02	

DOOR TYPES



DOOR SCHEDULE LEGEND

DOOR CONSTRUCTION:
AL = ALUMINUM
FAB = FABRIC
GL = TEMPERED GLASS
HC = HOLLOW CORE
SC = SOLID CORE
HM = HOLLOW METAL
MTL = METAL

DOOR FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

FRAME MATERIAL:
AL = ALUMINUM
HM = HOLLOW METAL
MTL = METAL
WD = WOOD

FRAME FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
DOOR, WINDOW, & ROOM FINISH SCHEDULES

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A2.70
Drawing No.

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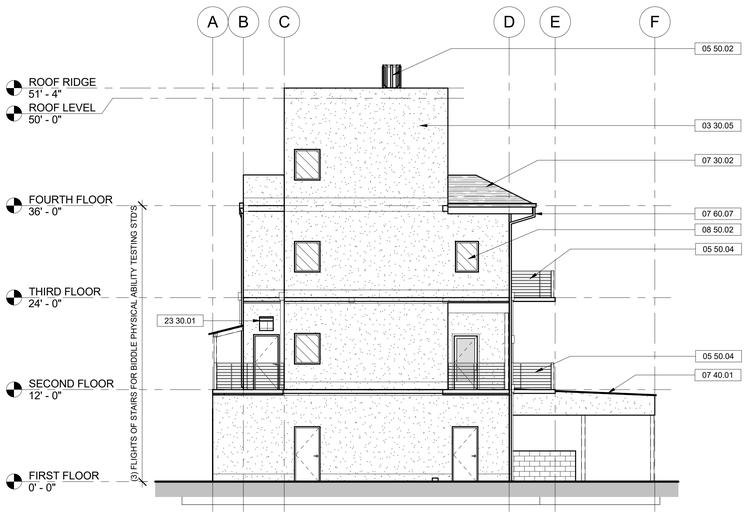
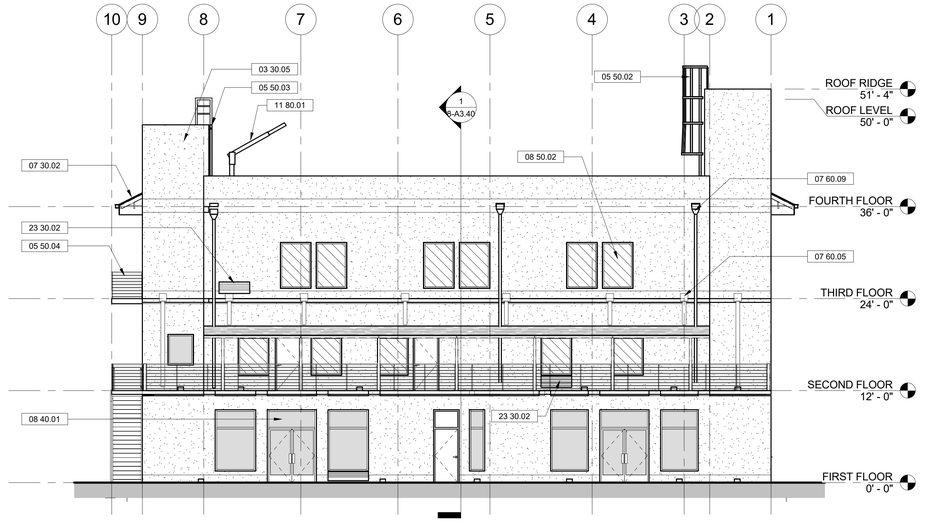


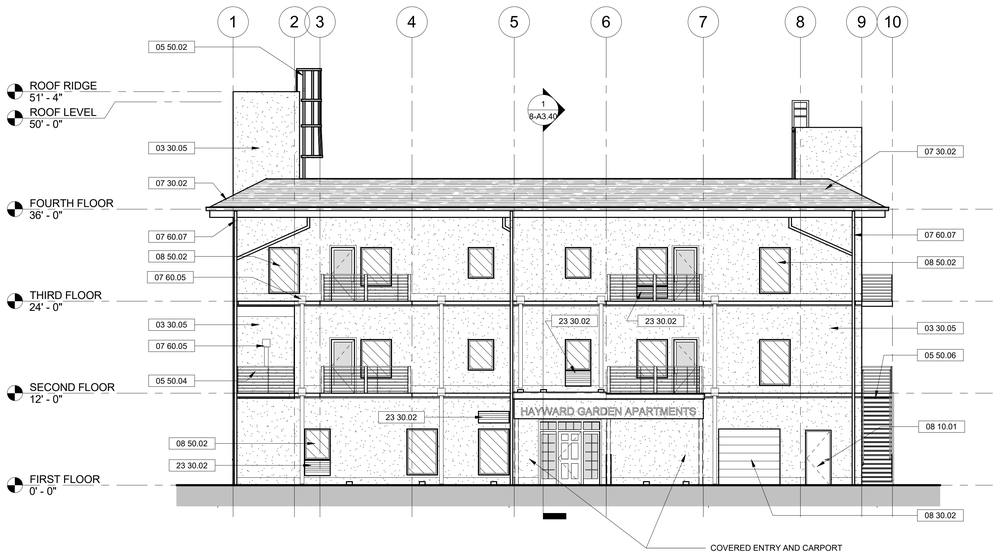
1 WEST EXTERIOR ELEVATION
1/8" = 1'-0"

0' 2' 4' 8' 16'



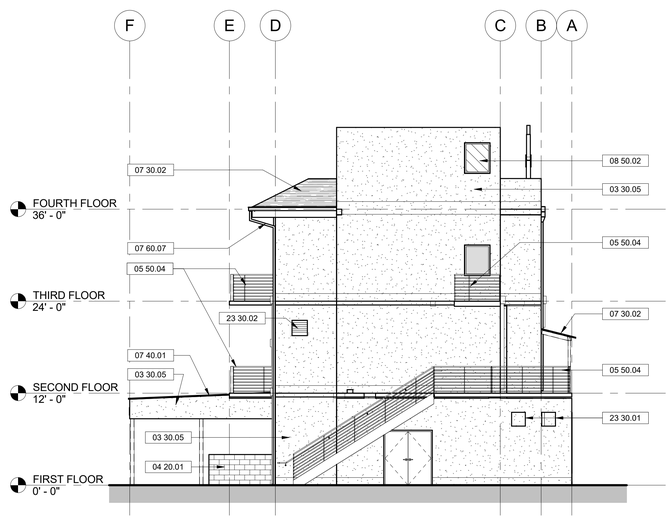
2 NORTH EXTERIOR ELEVATION
1/8" = 1'-0"

0' 2' 4' 8' 16'



3 SOUTH EXTERIOR ELEVATION
1/8" = 1'-0"

0' 2' 4' 8' 16'



4 EAST EXTERIOR ELEVATION
1/8" = 1'-0"

0' 2' 4' 8' 16'

GENERAL SHEET NOTES

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SHEET KEYNOTE LEGEND

03 30.05	SEALED CAST-IN-PLACE (CIP) CONCRETE EXTERIOR WALLS, TYPICAL
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.02	PRE-FABRICATED METAL LADDER WITH SAFETY CAGE EXTENDING FROM FOURTH FLOOR TO ROOF OVER STAIR #1
05 50.03	PRE-FABRICATED METAL LADDER EXTENDING FROM TRAINING ROOF TO ROOF OVER STAIR #4
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.06	METAL EMERGENCY FIRE ESCAPE PLATFORM WITH PERMANENT STAIR
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
07 40.01	PRE-FINISHED STANDING SEAM METAL ROOF PANELS, TYPICAL
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 60.07	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE
07 60.09	ALUMINUM ROOF SCUPPER CONDUCTOR HEAD WITH 4" X 3" DOWNSPOUT. S.C.D. FOR CONTINUATION.
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 30.02	PAINTED METAL OVERHEAD COILING DOOR
08 40.01	STEEL-FRAME STOREFRONT OPENINGS WITH ENTRY DOORS AND SOLID PANEL "GLAZING"
08 50.02	STEEL FRAME WINDOW OPENINGS WITH DOUBLE-ACTING HOLLOW METAL DOORS, TYPICAL
11 80.01	DAVIT CRANE ANCHORED TO ROOF SLAB
23 30.01	EXHAUST TRANSFER GRILLE
23 30.02	EXTERIOR WALL GRILLE - EXHAUST, S.M.D.

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 EXTERIOR ELEVATIONS

Drawn By: NM Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A3.10
Drawing No.

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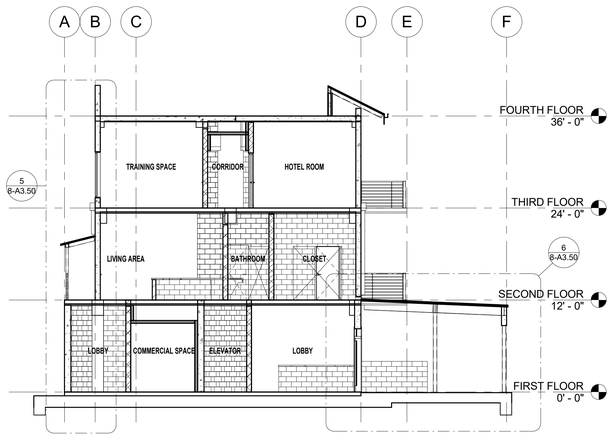
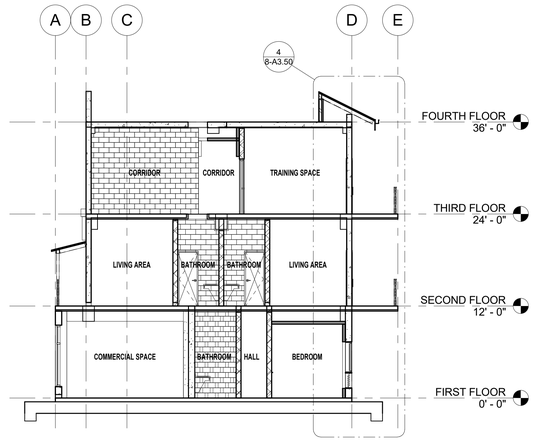


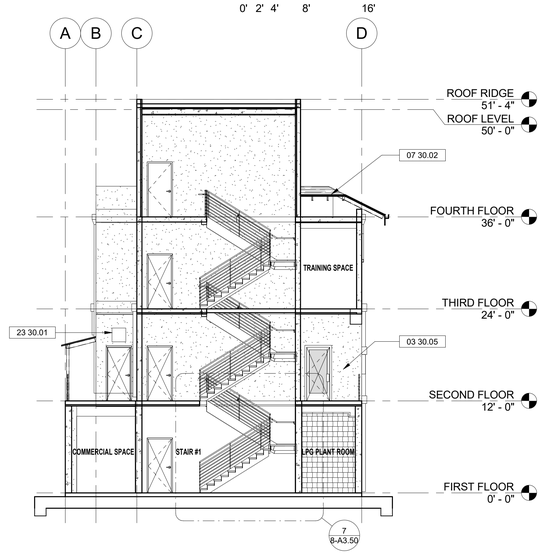
1 TRANSVERSE SECTION @ COVERED ENTRY
1/8" = 1'-0"

0' 2' 4' 8' 16'



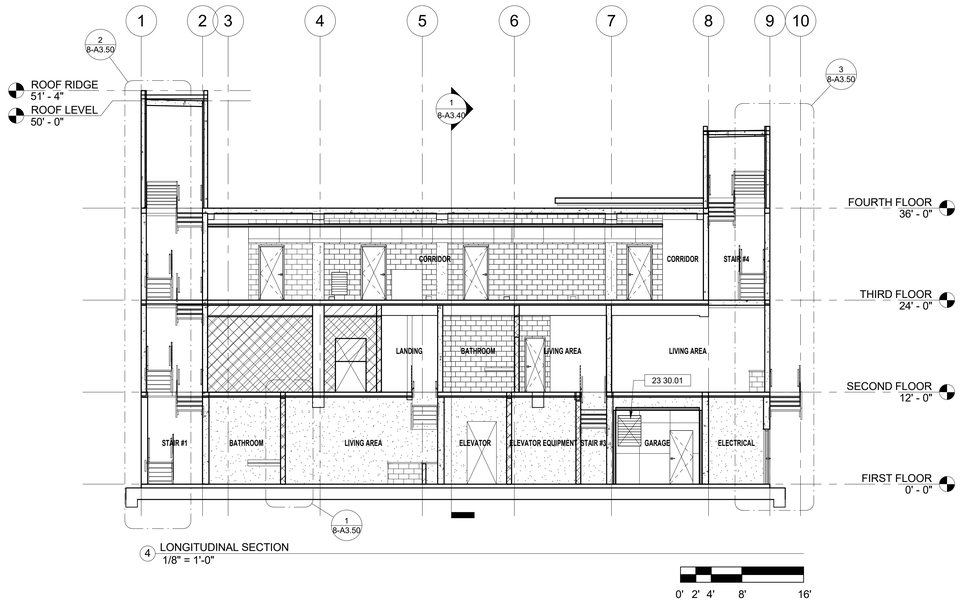
2 TRANSVERSE SECTION @ EXTERIOR DECK
1/8" = 1'-0"

0' 2' 4' 8' 16'



3 TRANSVERSE SECTION @ STAIR TOWER
1/8" = 1'-0"

0' 2' 4' 8' 16'



4 LONGITUDINAL SECTION
1/8" = 1'-0"

0' 2' 4' 8' 16'

GENERAL SHEET NOTES

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WALL LEGEND

SHEET KEYNOTE LEGEND

03 30.05	SEALED CAST-IN-PLACE (CIP) CONCRETE EXTERIOR WALLS, TYPICAL
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
23 30.01	EXHAUST TRANSFER GRILLE

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 12/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
BUILDING CROSS SECTIONS

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

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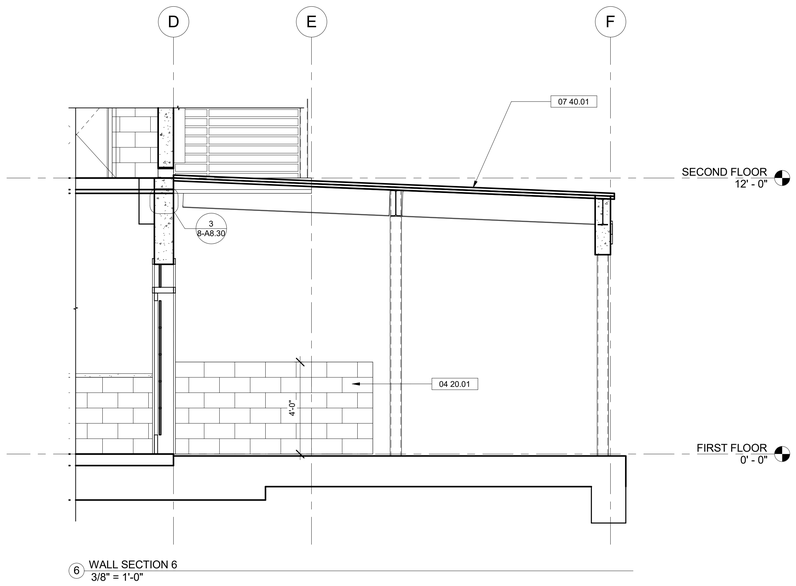
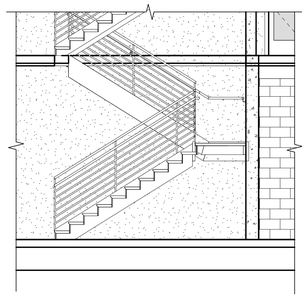
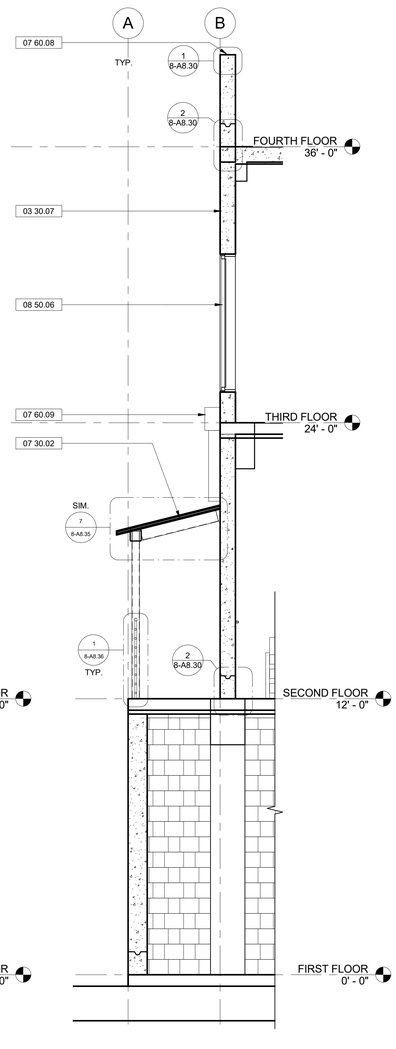


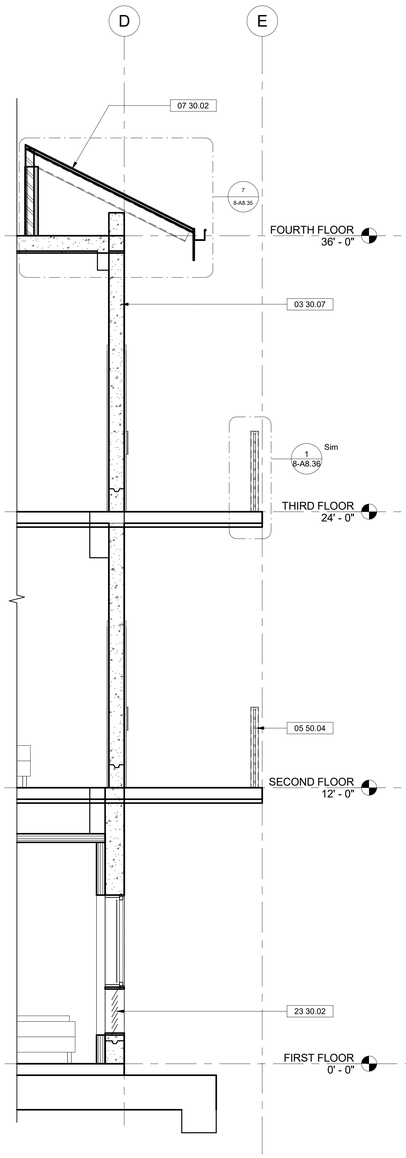
6 WALL SECTION 6
3/8" = 1'-0"



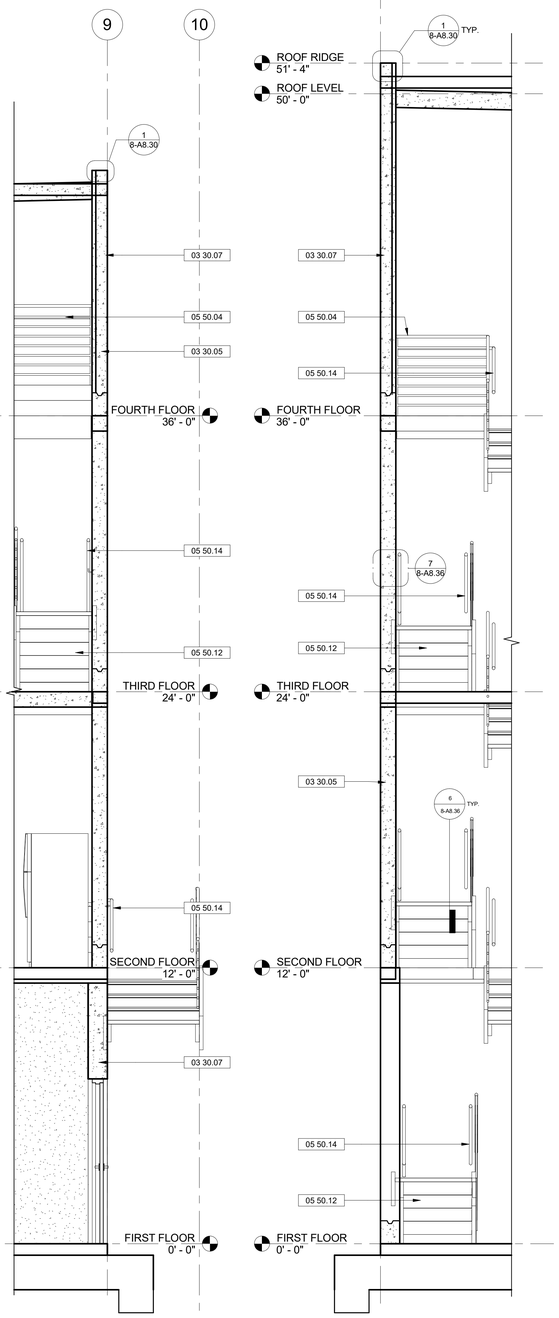
7 STAIR DETAIL
1/4" = 1'-0"



1 WALL SECTION 1
3/8" = 1'-0"



5 WALL SECTION 5
3/8" = 1'-0"



4 WALL SECTION 4
3/8" = 1'-0"

3 WALL SECTION 3
3/8" = 1'-0"

2 WALL SECTION 2
3/8" = 1'-0"

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WALL LEGEND

SHEET KEYNOTE LEGEND

03 30.05	SEALED CAST-IN-PLACE (CIP) CONCRETE EXTERIOR WALLS, TYPICAL
03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
05 50.04	3'-6" HIGH PIPE GUARD, TYPICAL
05 50.12	CONCRETE FILLED STEEL PAN STAIR
05 50.14	1-1/2" OD SS HANDRAIL
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
07 40.01	PRE-FINISHED STANDING SEAM METAL ROOF PANELS, TYPICAL
07 60.08	PAINTED ALUMINUM CAP FLASHING CONTINUOUS AT TOP OF WALL
07 60.09	ALUMINUM ROOF SCUPPER CONDUCTOR HEAD WITH 4" X 3" DOWNSPOUT. S.C.D. FOR CONTINUATION.
08 50.06	ALUMINUM FRAMED WINDOW W/ 1/4" ALUMINUM PANEL, SEE WINDOW SCHEDULE
23 30.02	EXTERIOR WALL GRILLE - EXHAUST, S.M.D.

RossDrulisCusenbery
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Sonoma
CA 95476
TEL 707 996 8448
FAX 707 996 8542
ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 WALL SECTIONS

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A3.50

Drawing No.

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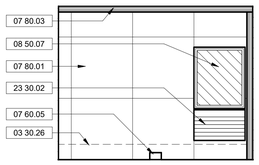
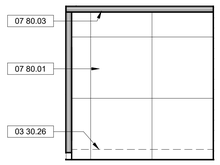
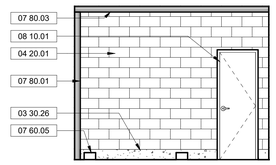


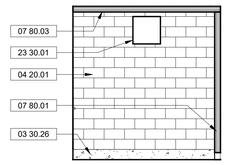
1 BEDROOM 109 - SOUTH
1/4" = 1'-0"



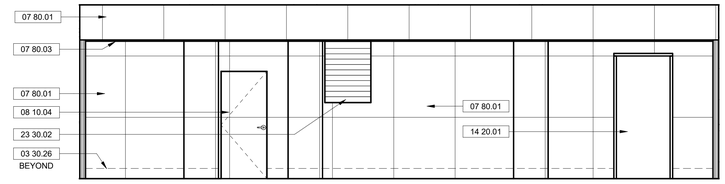
2 BEDROOM 109 - WEST
1/4" = 1'-0"



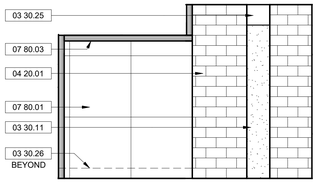
3 BEDROOM 109 - NORTH
1/4" = 1'-0"



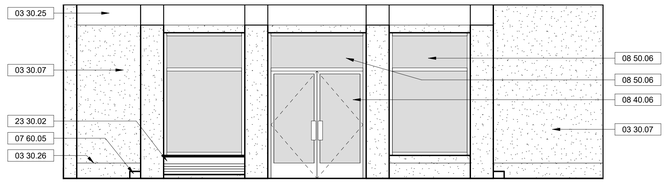
4 BEDROOM 109 - EAST
1/4" = 1'-0"



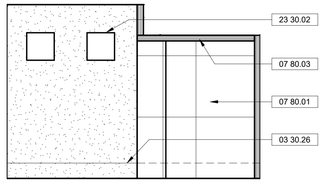
5 COMMERCIAL SPACE 115 - SOUTH
1/4" = 1'-0"



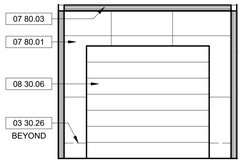
6 COMMERCIAL SPACE 115 - WEST
1/4" = 1'-0"



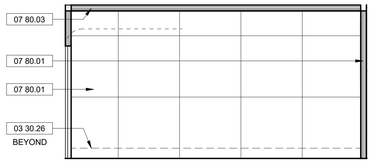
7 COMMERCIAL SPACE 115 - NORTH
1/4" = 1'-0"



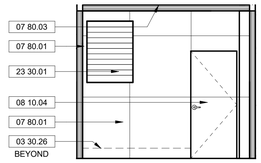
8 COMMERCIAL SPACE 115 - EAST
1/4" = 1'-0"



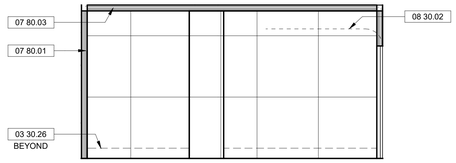
9 GARAGE 118 - SOUTH
1/4" = 1'-0"



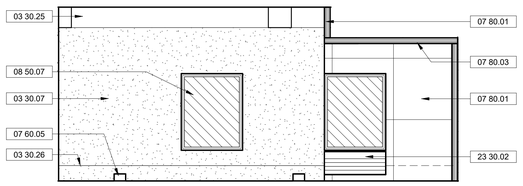
10 GARAGE 118 - WEST
1/4" = 1'-0"



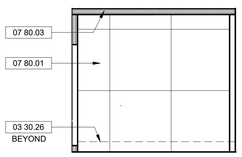
11 GARAGE 118 - NORTH
1/4" = 1'-0"



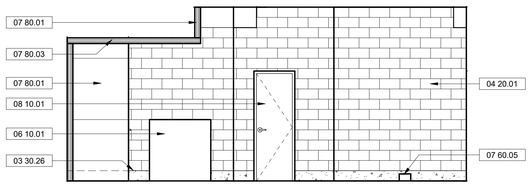
12 GARAGE 118 - EAST
1/4" = 1'-0"



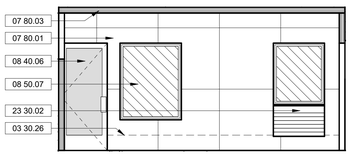
13 LIVING AREA 205 - NORTH
1/4" = 1'-0"



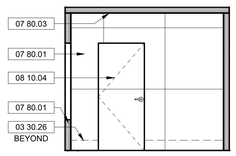
14 LIVING AREA 205 - EAST
1/4" = 1'-0"



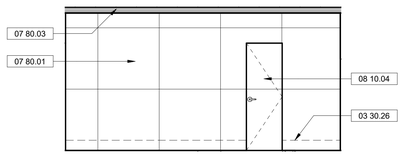
15 LIVING AREA 205 - SOUTH
1/4" = 1'-0"



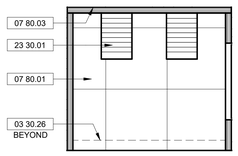
16 BEDROOM 212 - SOUTH
1/4" = 1'-0"



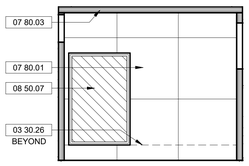
17 BEDROOM 212 - WEST
1/4" = 1'-0"



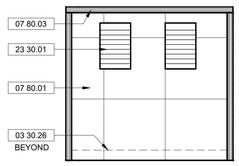
18 BEDROOM 212 - NORTH
1/4" = 1'-0"



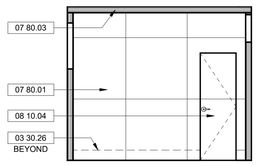
19 BEDROOM 212 - EAST
1/4" = 1'-0"



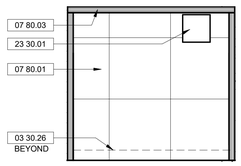
20 BEDROOM 217 - SOUTH
1/4" = 1'-0"



21 BEDROOM 217 - WEST
1/4" = 1'-0"



22 BEDROOM 217 - NORTH
1/4" = 1'-0"



23 BEDROOM 217 - EAST
1/4" = 1'-0"

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.11	CAST-IN-PLACE CONCRETE COLUMN, S.S.D.
03 30.25	CAST-IN-PLACE CONCRETE BEAM, S.S.D.
03 30.26	CAST IN PLACE CONCRETE CURB, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
06 10.01	4-FOOT SQUARE BREACH PANEL THROUGH WALL WITH SILL AT FLOOR LINE
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.03	PROVIDE THERMAL LINING AT CEILING, EXTENT OF ENCLOSED AREA INDICATED
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 10.04	PAINTED HOLLOW METAL DOOR AND FRAME W/ HIGH TEMP. LINING
08 30.02	PAINTED METAL OVERHEAD COILING DOOR
08 30.06	OVERHEAD SECTIONAL DOOR
08 40.06	ALUMINUM FRAME STOREFRONT DOOR W/ 1/4" ALUMINUM PANELS, SEE DOOR SCHEDULE
08 50.06	ALUMINUM FRAMED WINDOW W/ 1/4" ALUMINUM PANEL, SEE WINDOW SCHEDULE
08 50.07	DOUBLE ACTING WINDOW W/ HIGH TEMP. LINING
14 20.01	ELEVATOR DOOR FOR FIRE TRAINING
23 30.01	EXHAUST TRANSFER GRILLE
23 30.02	EXTERIOR WALL GRILLE - EXHAUST, S.M.D.

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA	**ALEX AMERI**
DEP. DIR. PUBLIC WORKS	INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/30/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 INTERIOR ELEVATIONS

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A5.10
Drawing No.

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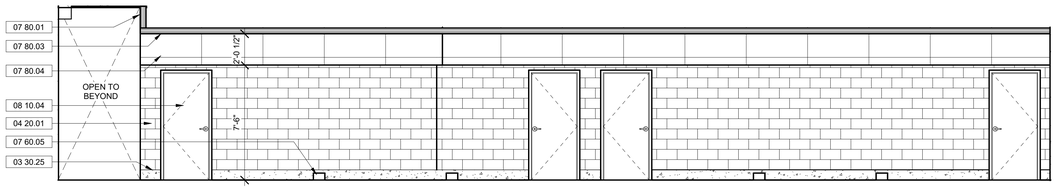
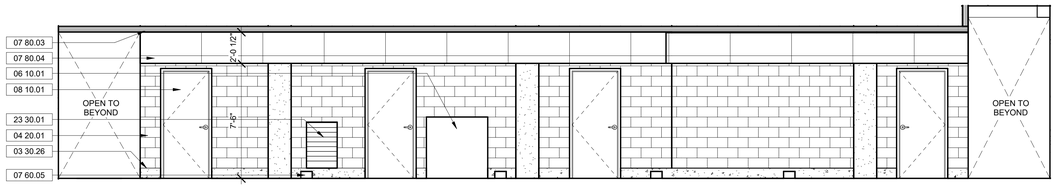


1 CORRIDOR 302 - SOUTH
1/4" = 1'-0"



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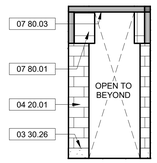
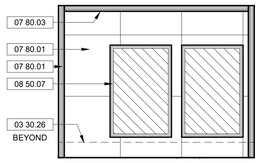
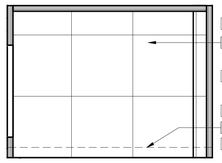
1/4" = 1'-0"



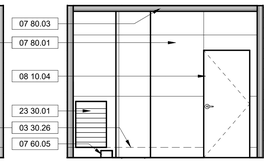
3 CORRIDOR 302 - EAST
1/4" = 1'-0"



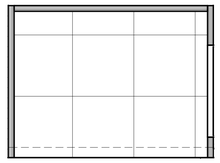
4 OFFICE 304 - NORTH
1/4" = 1'-0"



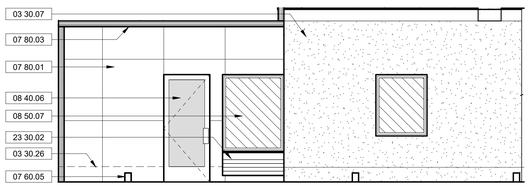
5 OFFICE 304 - EAST
1/4" = 1'-0"



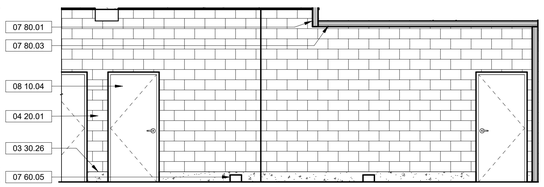
6 OFFICE 304 - SOUTH
1/4" = 1'-0"



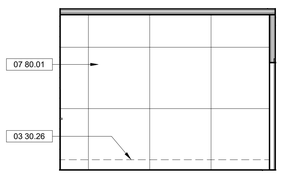
7 OFFICE 304 - WEST
1/4" = 1'-0"



8 HOTEL ROOM 306 - SOUTH
1/4" = 1'-0"



9 HOTEL ROOM 306 - NORTH
1/4" = 1'-0"



10 HOTEL ROOM 306 - EAST
1/4" = 1'-0"

GENERAL SHEET NOTES

1. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

SHEET KEYNOTE LEGEND

03 30.07	CAST-IN-PLACE CONCRETE WALL, S.S.D.
03 30.25	CAST-IN-PLACE CONCRETE BEAM, S.S.D.
03 30.26	CAST IN PLACE CONCRETE CURB, S.S.D.
04 20.01	SMOOTH CMU WALLS, S.S.D.
06 10.01	4-FOOT SQUARE BREACH PANEL THROUGH WALL WITH SILL AT FLOOR LINE
07 60.05	CLEAN-OUT SCUPPER THROUGH WALL, TYP.
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.03	PROVIDE THERMAL LINING AT CEILING, EXTENT OF ENCLOSED AREA INDICATED
07 80.04	THERMAL WALL LINER FRAMING AND PANELS AT 7'-6" A.F.F. TO CEILING
08 10.01	PAINTED HOLLOW METAL DOOR & FRAME
08 10.04	PAINTED HOLLOW METAL DOOR AND FRAME W/ HIGH TEMP. LINING
08 40.06	ALUMINUM FRAME STOREFRONT DOOR W/ 1/4" ALUMINUM PANELS, SEE DOOR SCHEDULE
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CA 95476

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FAX 707 996 8542

ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

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PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
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STATE OF CALIFORNIA

Sheet Title

BUILDING 8
INTERIOR ELEVATIONS

Drawn By: EW Checked By: EW

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Project No. 2016039

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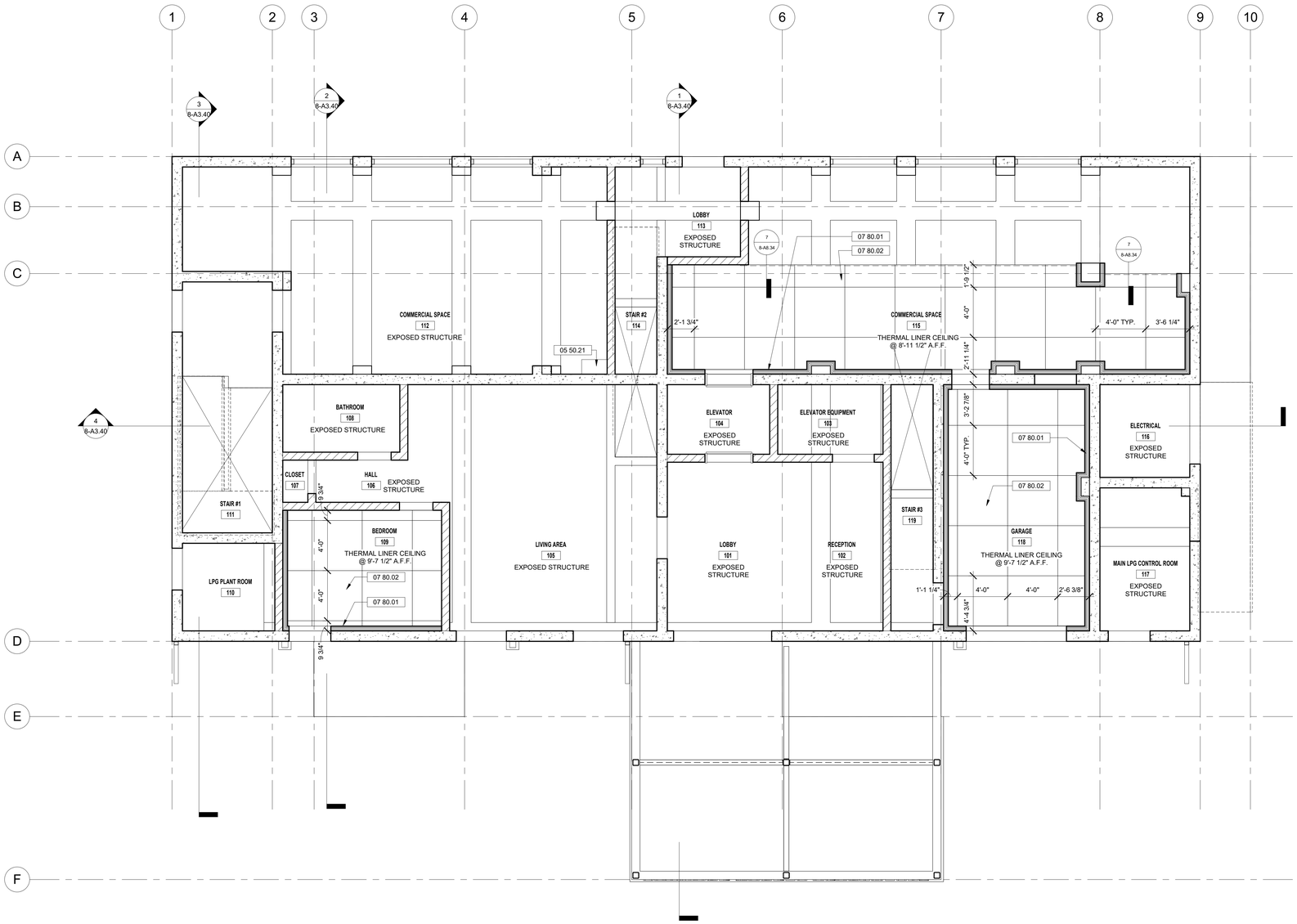

1 FIRST LEVEL REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. DIAGRAMMATIC FURNITURE, CASEWORK, & PLUMBING FIXTURES ARE PROPS SHOWN AS SUGGESTED ITEMS TO ENHANCE THE OVERALL RESIDENTIAL FIRE-FIGHTING SIMULATION EXPERIENCE. THEY ARE NOT INTENDED TO INDICATE ACTUAL FURNITURE OR FIXTURES.
2. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER
- MAZE PANEL WALL SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

05 50.21	24" X 14" X 10-GAGE STAINLESS STEEL SHELF ANCHORED TO WALL
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 FIRST LEVEL REFLECTED CEILING PLAN

Drawn By: EW Checked By: EW

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 2016039

8-A6.10
Drawing No.

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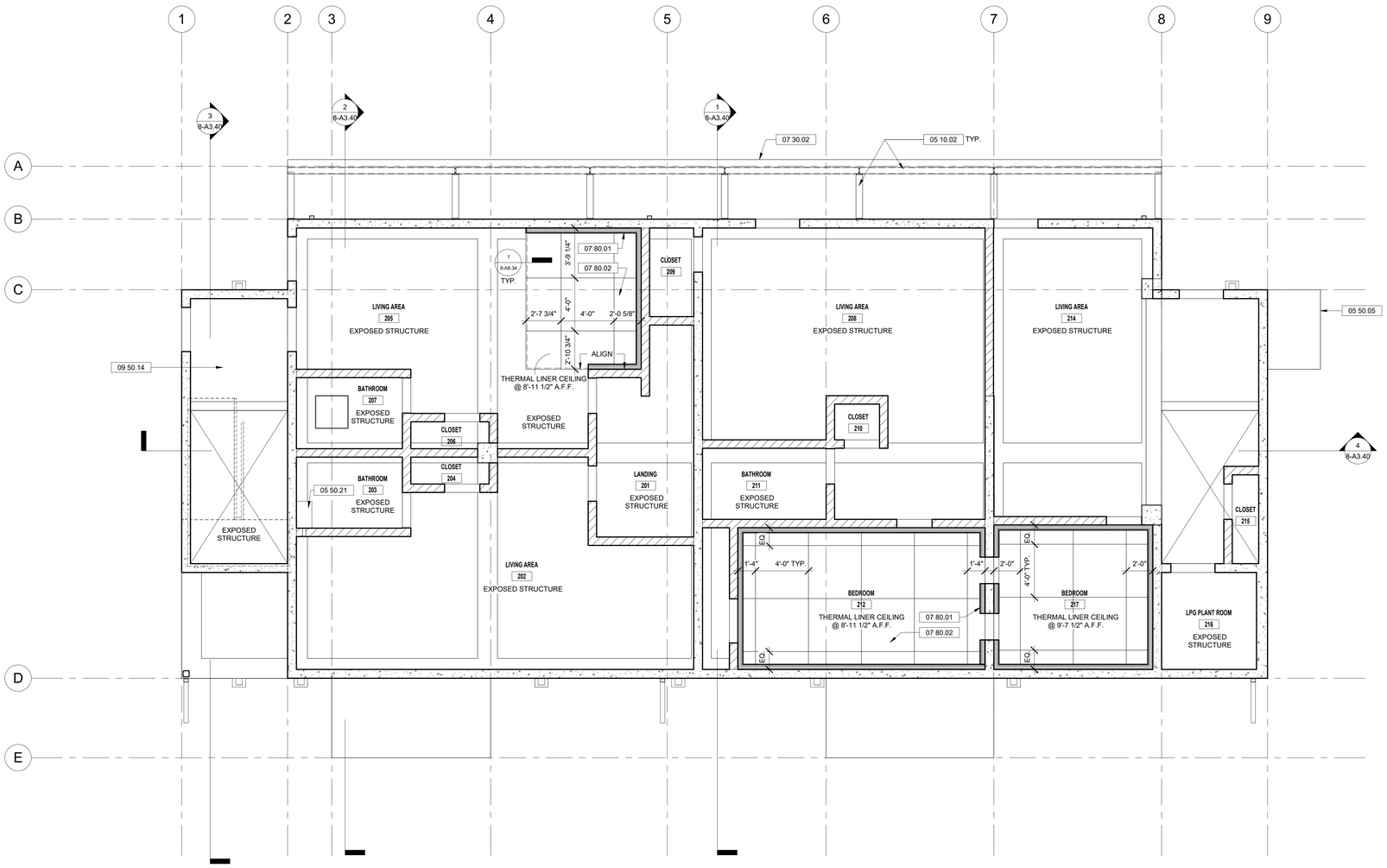

1 SECOND LEVEL REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. DIAGRAMMATIC FURNITURE, CASEWORK, & PLUMBING FIXTURES ARE PROPS SHOWN AS SUGGESTED ITEMS TO ENHANCE THE OVERALL RESIDENTIAL FIRE-FIGHTING SIMULATION EXPERIENCE. THEY ARE NOT INTENDED TO INDICATE ACTUAL FURNITURE OR FIXTURES.
2. THIS STRUCTURE IS A NON-OCCUPIED STRUCTURE USED FOR THE SOLE PURPOSE OF TRAINING ABLE-BODIED FIRE DEPARTMENT AND LAW ENFORCEMENT PERSONNEL. THIS STRUCTURE IS NOT DESIGNED TO ACCOMODATE THE GENERAL PUBLIC AND AS SUCH IS NOT DESIGNED IN CONFORMANCE WITH ACCESS AND BUILDING CODES FOR CIRCULATION, EXITING, OR LIFE SAFETY.

WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER
- MAZE PANEL WALL SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

05 10.02	PAINTED STEEL BEAM, S.S.D.
05 50.05	METAL EMERGENCY FIRE ESCAPE PLATFORM WITH PULL DOWN LADDER
05 50.21	24" X 14" X 10-GAGE STAINLESS STEEL SHELF ANCHORED TO WALL
07 30.02	FIBERGLASS COMPOSITION SHINGLE ROOFING
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL
09 50.14	EXPOSED CEILING

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PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/30/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
SECOND LEVEL REFLECTED CEILING PLAN

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A6.20
Drawing No.

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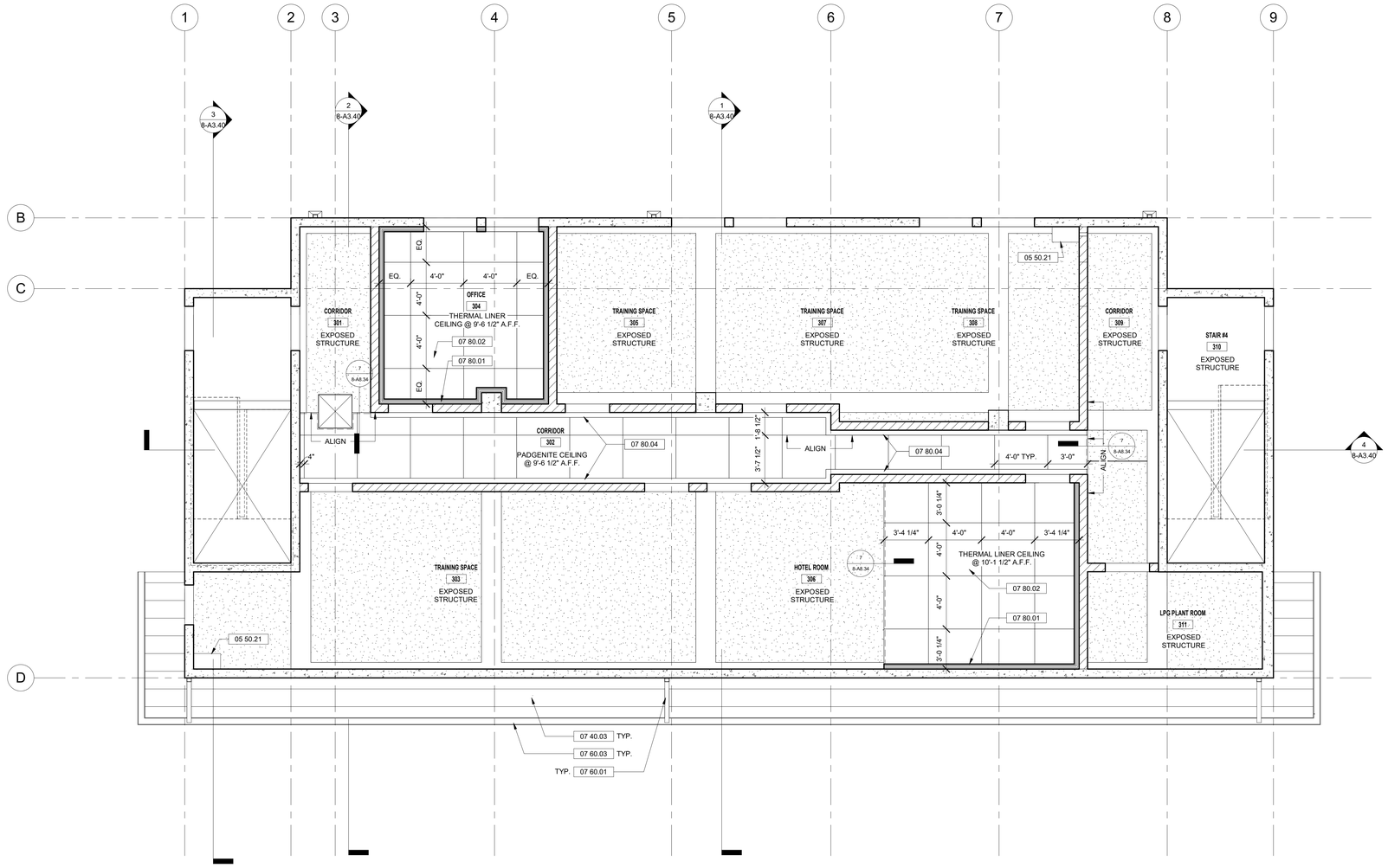

1 THIRD LEVEL REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. DIAGRAMMATIC FURNITURE, CASEWORK, & PLUMBING FIXTURES ARE PROPS SHOWN AS SUGGESTED ITEMS TO ENHANCE THE OVERALL RESIDENTIAL FIRE-FIGHTING SIMULATION EXPERIENCE. THEY ARE NOT INTENDED TO INDICATE ACTUAL FURNITURE OR FIXTURES.
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WALL LEGEND

- CONCRETE WALL or COLUMN, S.S.D. FOR THICKNESS & REINFORCING
- CMU WALL, S.S.D. FOR THICKNESS & REINFORCING
- THERMAL WALL LINER
- MAZE PANEL WALL — SEE SHEET 8-A8.35 FOR DETAILS

SHEET KEYNOTE LEGEND

05 50.21	24" X 14" X 10-GAGE STAINLESS STEEL SHELF ANCHORED TO WALL
07 40.03	PRE-FINISHED METAL SOFFIT PANELS, TYPICAL
07 60.01	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE, SECURED TO STEEL COLUMN
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 80.01	THERMAL WALL LINER FRAMING AND PANELS, TYPICAL
07 80.02	VERTICAL CROSSHATCH INDICATES AREAS OF THERMAL LINING AT CEILING, TYPICAL
07 80.04	THERMAL WALL LINER FRAMING AND PANELS AT 7'-6" A.F.F. TO CEILING

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ARCHITECTURE

CITY OF HAYWARD
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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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APPROVED BY:	
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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/15/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
THIRD LEVEL REFLECTED CEILING PLAN

Drawn By: EW Checked By: EW

Scale:
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Date:
October 4, 2019

Project No. 2016039

8-A6.30

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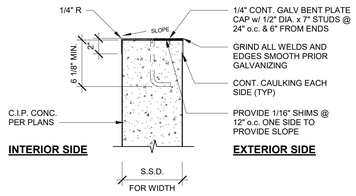
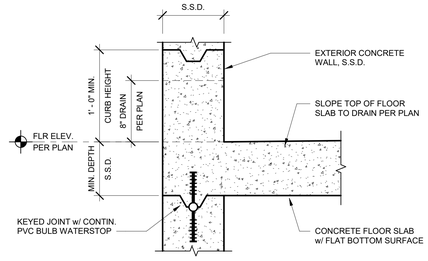
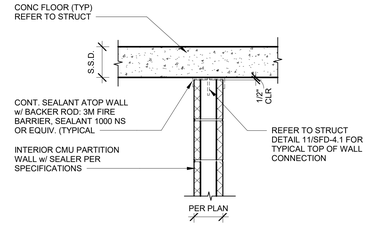


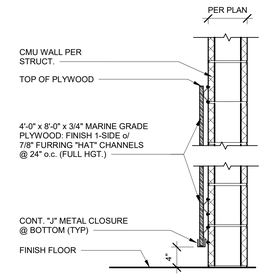
1 WALL - TYP. CONCRETE PARAPET CAP
1 1/2" = 1'-0"



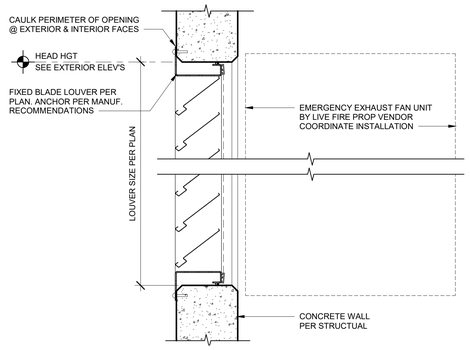
2 TYP. EXTERIOR CONCRETE WALL AND FLOOR CONNECTION
1 1/2" = 1'-0"



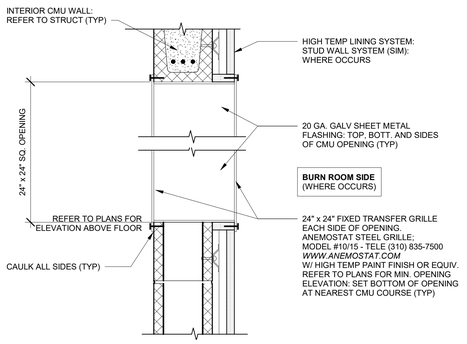
3 TYP. TOP OF WALL SEALANT
1" = 1'-0"



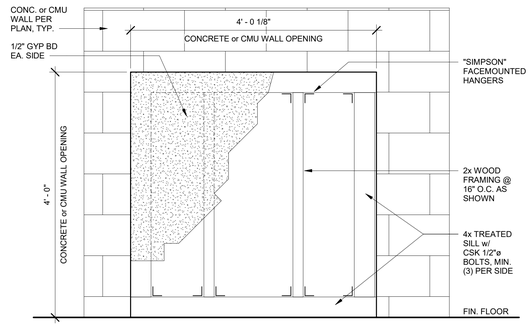
4 TYP. PLYWOOD BACKBOARD
1" = 1'-0"



5 WALL - EXTERIOR WALL GRILLE - EXHAUST
1 1/2" = 1'-0"

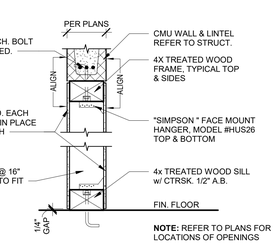


6 EXHAUST TRANSFER GRILLE
1 1/2" = 1'-0"



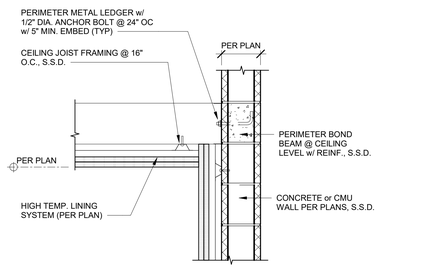
NOTE: THE PURPOSE OF THIS PROP IS TO ALLOW THE FIREFIGHTER TO BREACH THRU THE WALL USING A TOOL. THIS SCENARIO WILL BE REPEATED REQUIRING THE TRAINER TO REPLACE THE INTERIOR 2x FRAMING AND GYPSUM BOARD AS REQUIRED.

7 WALL BREACH PROP ELEVATION
1" = 1'-0"

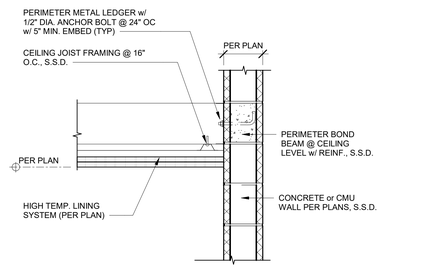


NOTE: REFER TO PLANS FOR LOCATIONS OF OPENINGS

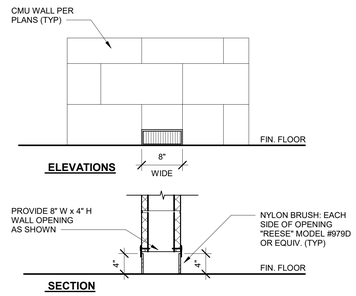
8 BREACH PROP WALL SECTION
1" = 1'-0"



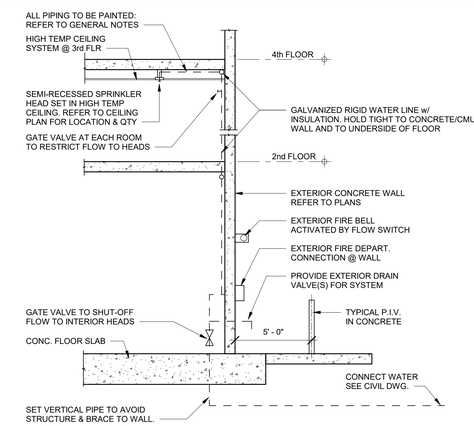
9 HIGH TEMP. LINING ON WALL AND CEILING FRAMING
1" = 1'-0"



10 HIGH TEMP. LINING ON CEILING FRAMING
1" = 1'-0"



11 WALL - THRU-WALL SCUPPER
1" = 1'-0"



NOTE:
THE PURPOSE OF THIS PROP IS TO ADD REALISM TO THE INTERIOR FIRE TRAINING ENVIRONMENT BY INCORPORATING MANUALLY ACTIVATED SPRINKLERS. THE SYSTEM RUNS THROUGH A TYPICAL P.I.V. VALVE AT THE STREET LEVEL. A STANDARD WALL MOUNTED EXTERIOR FIRE BELL IS ACTIVATED FROM A FLOW SWITCH UPON OPENING OF THE GATE VALVE. THE WATER FLOWS THROUGH THE BUILIDING AND THE ELECTED SPRINKLER HEADS.

THE SYSTEM SHALL HAVE TWO (2) SOURCES OF WATER SUPPLY. ONE SHALL BE FROM THE DOMESTIC WATER SUPPLY, THE OTHER WILL BE VIA EXTERIOR WALL MOUNTED FIRE DEPARTMENT CONNNECTION. SYSTEM SHALL BE PROVIDED WITH AN EXTERIOR DRAIN FOR FREEZE PROTECTION.

ALL PIPING IN THE INTERIOR OF THE BUILDING IS TO BE SECURED THE CONCRETE/CMU WALLS AND UNDERSIDE OF THE FLOOR CONCRETE DECKS. THE SPRINKLER DROPS ARE TO EXTEND DOWN THROUGH THE HIGH TEMP CEILING SYSTEM AT THE 3rd FLOOR. TO ALLOW FOR SPECIFIC CONTROL LOCATIONS, GATE VALVES ARE TO BE INSTALLED FOR EACH ROOM SHOWN. VALVES SHALL BE LOCATED OUTSIDE PROTECTED ROOM BEFORE WALL PENETRATION AS SHOWN WHICH WILL ALLOW THE INSTRUCTOR TO INCLUDE OR EXCLUDE ROOMS DURING THE TRAINING SCENARIO.

IT SHOULD BE NOTED THAT THIS IS NOT A LIVE SYSTEM. THE HEADS WILL NOT ACTIVATE FROM FUSIBLE LINKS NOR WILL NOTIFICATION TO THE MAIN FIRE ALARM SYSTEM OCCUR.

THIS PROP IS FOR TRAINING PURPOSES ONLY

12 FIRE SPRINKLER TRAINING PROP
1/4" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE. HAYWARD, CA 94545

REVISIONS

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PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ARCHITECTURAL DETAILS

Drawn By: AA
Checked By: EW

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 2016039

8-A8.30
Drawing No.

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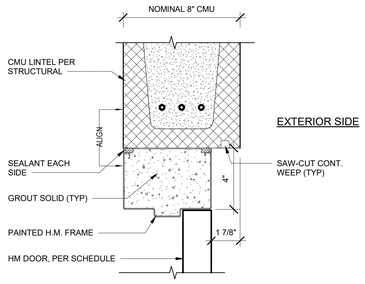
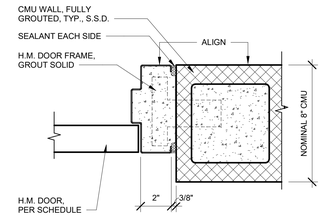
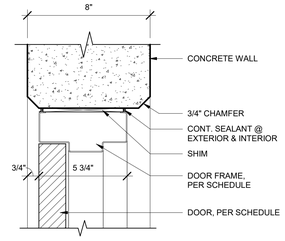


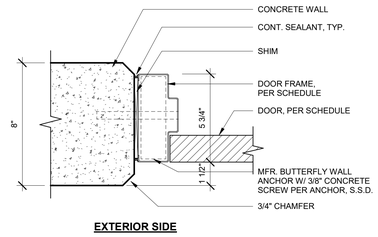
1 DR - EXTERIOR DOOR HEAD - 8" CMU
3" = 1'-0"



2 DR - EXTERIOR DOOR JAMB - 8" CMU
3" = 1'-0"



3 DR - EXT/INT DOOR HEAD - 8" CONCRETE
3" = 1'-0"



EXTERIOR SIDE

4 DR - EXTERIOR DOOR JAMB - CONCRETE
3" = 1'-0"

INWARD SWINGING DOOR

5 DR -. HIGH TEMP LINING BOTH SIDES @ CMU WALL OUT SWINGING DOOR OPENING
3" = 1'-0"

OUTWARD SWINGING DOOR

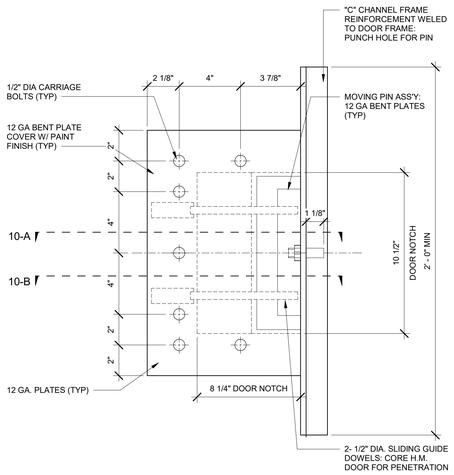
6 DR -. HIGH TEMP LINING @ CONCRETE WALL OUTWARD SWINGING DOOR OPENING
3" = 1'-0"

INWARD SWINGING DOOR

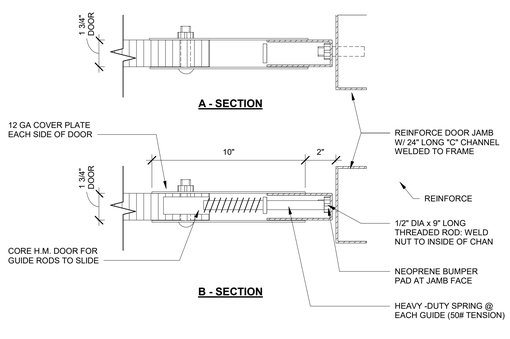
7 DR -. HIGH TEMP LINING @ CMU WALL INWARD SWINGING DOOR OPENING
3" = 1'-0"

NOTE:
THE INTENT OF THIS PROP IS TO PROVIDE A DOOR WHICH REQUIRES THE FIREFIGHTER TO FORCE BACK THE LATCH TO OPEN: THIS IS ACCOMPLISHED VIA THE SPRING PIN. TO OPEN, ONE MUST USE A PRY BAR THEREBY FORCING THE ASSEMBLY BACK TO RELEASE WITH PERMANANT DAMAGE AFTER USE.

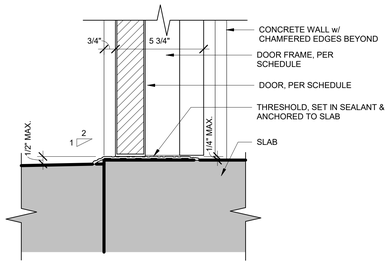
8 DR- DOOR - FORCEABLE ENTRY DOOR
3/8" = 1'-0"



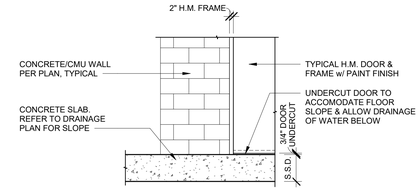
9 DR - FORCIBLE ENTRY DOOR
3" = 1'-0"



10 DR- FORCIBLE ENTRY LATCH
3" = 1'-0"



11 DR - EXT. DOOR THRESHOLD - 8" CONCRETE
3" = 1'-0"



12 DR- TYP. DOOR BOTTOM @ SLOPING CONC. FLOOR
3/8" = 1'-0"

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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ARCHITECTURAL DETAILS

Drawn By: EW Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A8.31

Drawing No.

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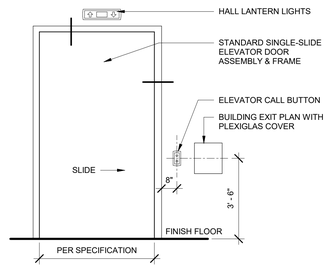
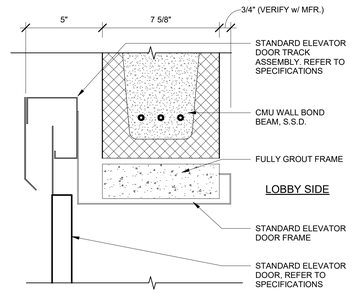
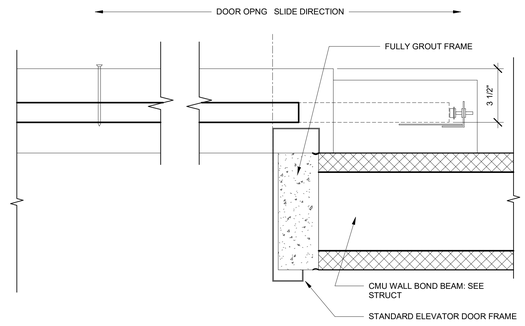


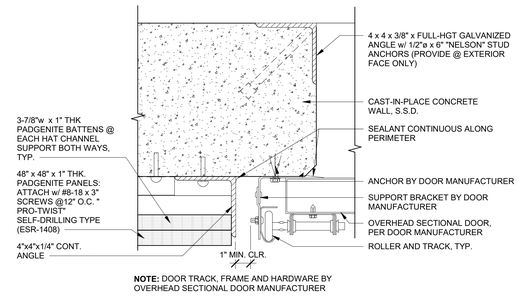
1 DR- ELEVATOR DOOR - ELEVATION
3/8" = 1'-0"



2 DR - ELEVATOR DOOR HEAD
3" = 1'-0"



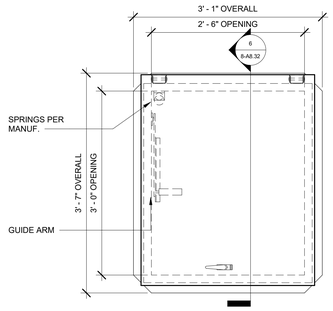
3 DR-ELEVATOR DOOR JAMB
3" = 1'-0"



NOTE: DOOR TRACK, FRAME AND HARDWARE BY OVERHEAD SECTIONAL DOOR MANUFACTURER

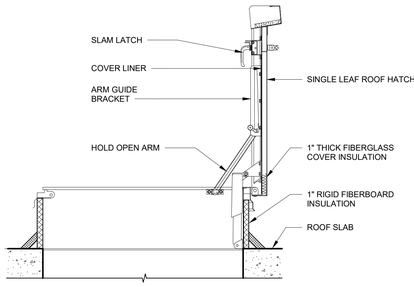
4 OVERHEAD SECTIONAL DOOR JAMB IN CONCRETE WALL
3" = 1'-0"

NOTE:
BASIS OF DESIGN: 30" x 36" ALUMINUM SINGLE-LEAF ACCESS HATCH, TYPE S-50 WITH INTEGRAL CURB & FRAME BY THE BILCO COMPANY or APPROVED EQUIVALENT

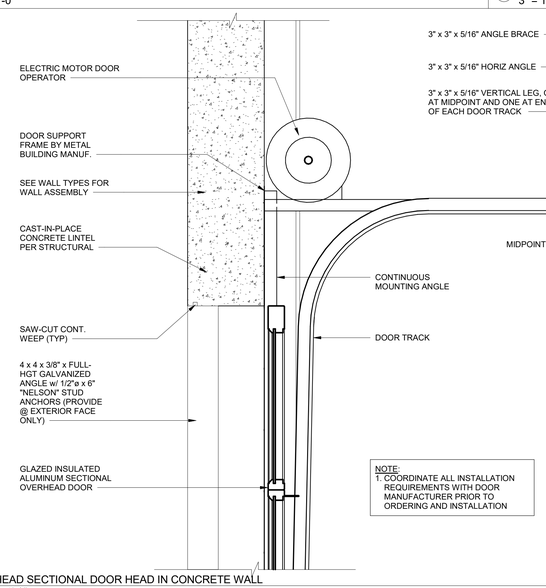


PLAN VIEW

5 ROOF - ACCESS HATCH
1" = 1'-0"



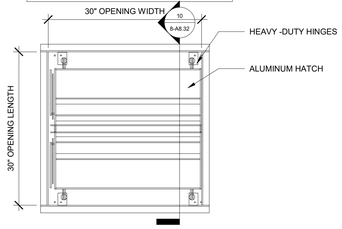
6 ROOF ACCESS HATCH
1" = 1'-0"



NOTE:
1. COORDINATE ALL INSTALLATION REQUIREMENTS WITH DOOR MANUFACTURER PRIOR TO ORDERING AND INSTALLATION

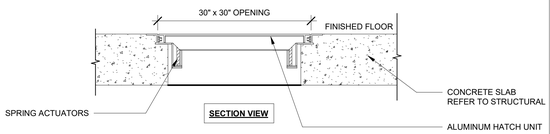
7 OVERHEAD SECTIONAL DOOR HEAD IN CONCRETE WALL
1 1/2" = 1'-0"

BASIS OF DESIGN:
B.L. WILCOX & ASSOC. TYPE "APS" 30" x 30" ALUM. SINGLE LEAF ACCESS HATCH w/ 300 PSF LOAD RATING w/ SPRINGS, SLAMLOCK, #316 S.S. HARDWARE & ANGLE FRAME or APPROVED EQUIVALENT.



PLAN VIEW LOOKING UP FROM BELOW UNIT

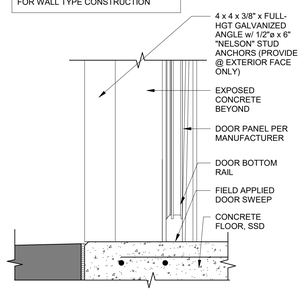
9 FLOOR ACCESS HATCH
1" = 1'-0"



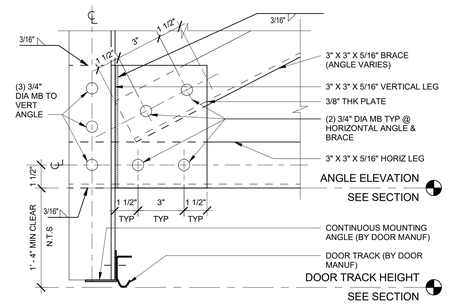
SECTION VIEW

10 FLOOR ACCESS HATCH
1" = 1'-0"

NOTE:
COORDINATE W/ PLANS AND DETAILS FOR WALL TYPE CONSTRUCTION



11 OVERHEAD SECTIONAL DOOR SILL IN CONCRETE WALL
1 1/2" = 1'-0"



12 OVERHEAD SECTIONAL DOOR TRACK SUPPORT FRAME
3" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
3/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ARCHITECTURAL DETAILS

Drawn By: AA
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

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Drawing No.

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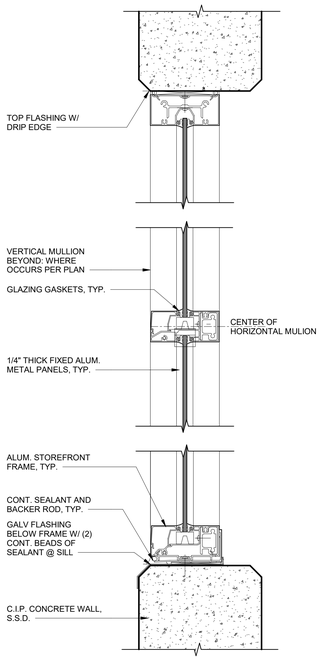
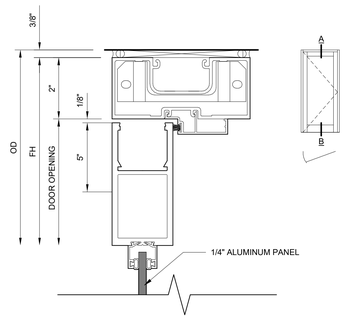


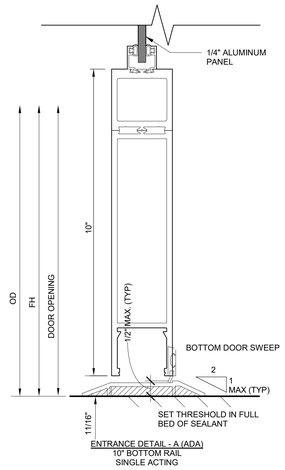
TYPICAL SECTION @ CONCRETE WINDOW OPENING

1 TYPICAL SECTION @ CONCRETE WINDOW OPENING
3" = 1'-0"



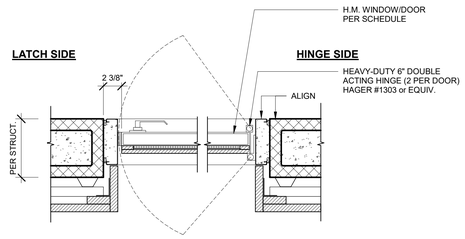
ENTRANCE DETAIL - A HEADER
SINGLE ACTING FOR SURFACE CLOSER

2 DOOR HEAD AT TRANSOM
6" = 1'-0"

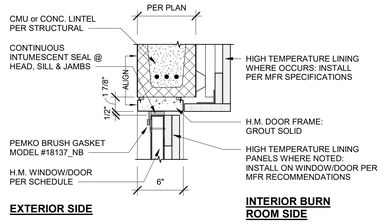


ENTRANCE DETAIL - A (ADA)
10" BOTTOM RAIL
SINGLE ACTING

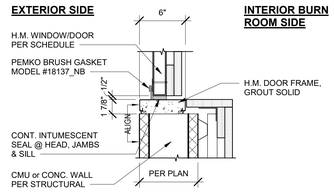
3 STOREFRONT DOOR SILL
6" = 1'-0"



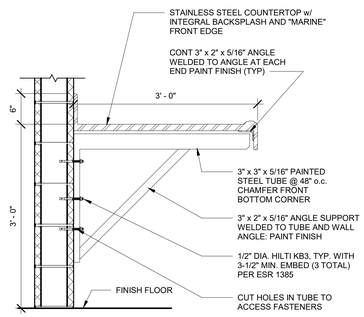
5 DR/WND - DOUBLE ACTING WINDOW JAMB
1 1/2" = 1'-0"



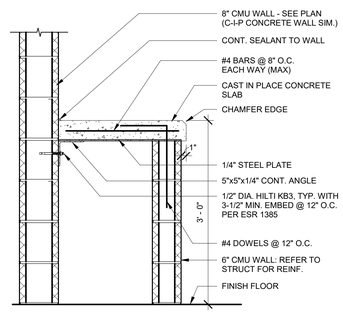
6 DR/WND - DOUBLE ACTING WINDOW HEAD
1 1/2" = 1'-0"



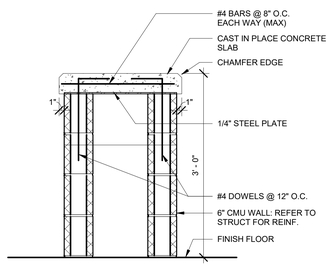
7 DR/WND - DOUBLE ACTING WINDOW SILL
1 1/2" = 1'-0"



9 CONTROL ROOM COUNTERTOP
1" = 1'-0"



10 COUNTER AND LOW WALL @ CMU
1" = 1'-0"



11 OPEN COUNTER AND LOW WALL
1" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 9/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ARCHITECTURAL DETAILS

Drawn By: AA
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A8.33
Drawing No.

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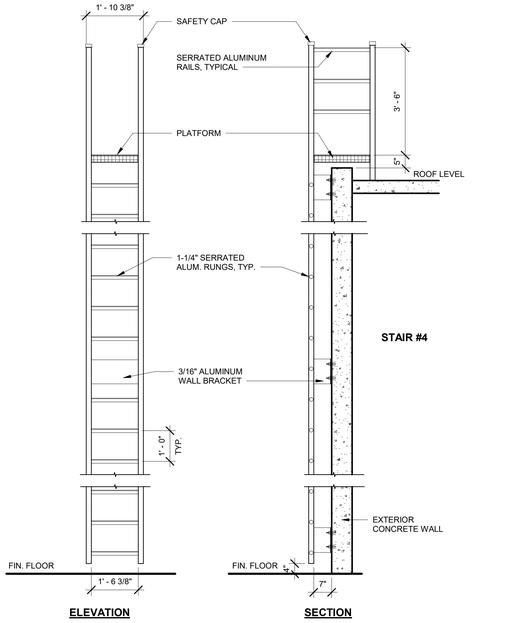
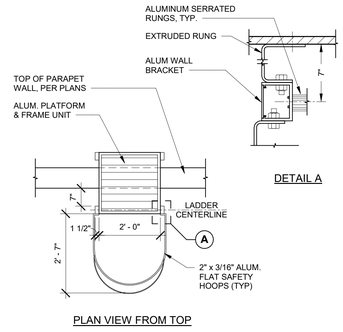
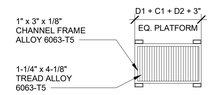


1 LADDER - ACCESS LADDER
1/2" = 1'-0"



2 CAGED LADDER PLAN VIEW
1/2" = 1'-0"

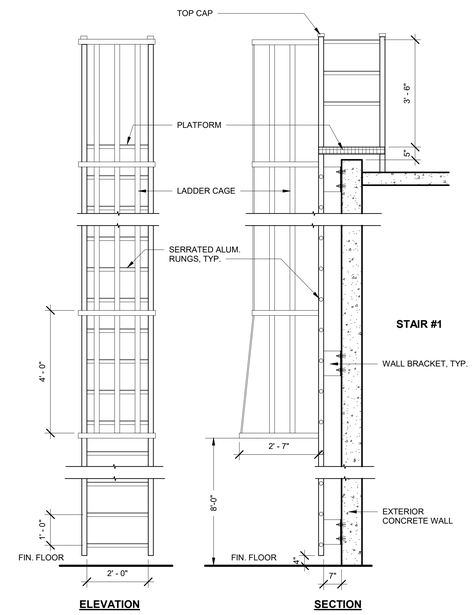
NOTE:
BASIS OF DESIGN FOR LADDER:
"O'KEEFE'S, INC" MODEL #503 w/ PLATFORM
& RETURN or APPROVED EQUIVALENT



PLATFORM PLAN

3 LADDER PLATFORM PLAN
1/2" = 1'-0"

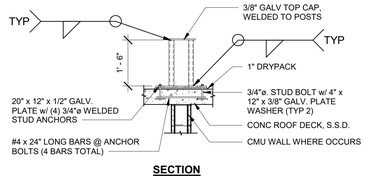
NOTE:
BASIS OF DESIGN FOR LADDER:
"O'KEEFE'S, INC" MODEL #533 w/ PLATFORM &
RETURN or APPROVED EQUIVALENT



4 LADDER W/ SAFETY CAGE
1/2" = 1'-0"

NOTE:
HAYWARD FIRE DEPARTMENT TO COORDINATE INSTALLATION FOR (3) LOCATIONS ON ROOF

TOP PLAN VIEW



SECTION

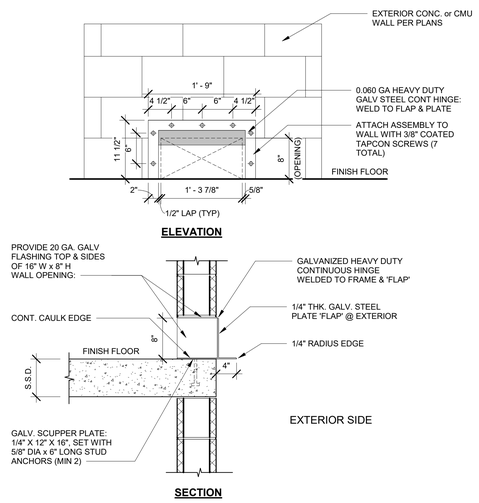
5 ROOF - RAPPELLING ANCHOR
1/2" = 1'-0"

NOTE:
HAYWARD FIRE DEPARTMENT TO COORDINATE TEMP. CANOPY LOCATIONS @ ROOF

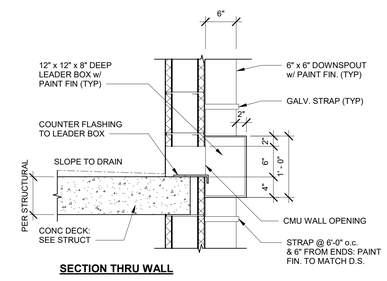
NOTE:
THE PURPOSE OF THESE ANCHORS ARE TO PROVIDE TIE-DOWN SUPPORT FOR TEMPORARY SHADE STRUCTURES PLACED ON THE ROOF DURING VARIOUS TRAINING EXERCISES. WHEN NOT IN USE THE ADAPTERS ARE PLACED IN THE INSERT TO PREVENT DIRT AND DEBRIS FROM ENTERING.

6 ROOF - DECK THREADED INSERT
3" = 1'-0"

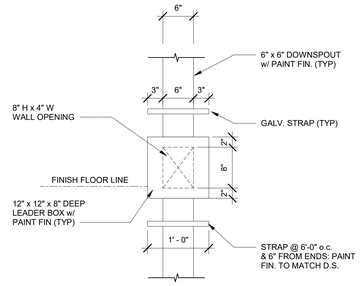
7 SOFFIT FRAMING FOR HIGH TEMP. LINING
1" = 1'-0"



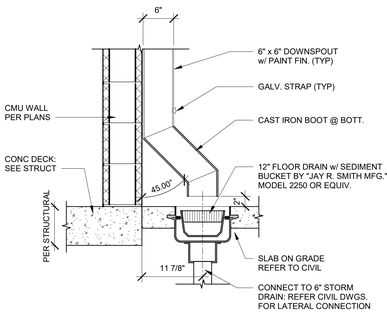
9 RF - CLEAN-OUT SCUPPER
1" = 1'-0"



10 RF - TYPICAL COLLECTOR BOX
1" = 1'-0"



11 RF - TYPICAL DOWNSPOUT ELEVATION
1" = 1'-0"



12 RF - DOWMSPOUT TO DRAIN
1" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	
DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVED RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ARCHITECTURAL DETAILS

Drawn By: AA
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

8-A8.34
Drawing No.

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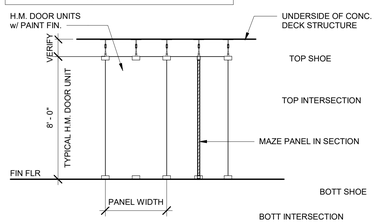
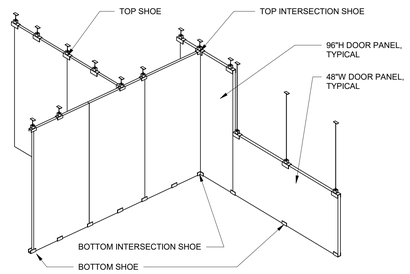
NOTE:
CONTRACTOR SHALL PROVIDE THE FOLLOWING QUANTITIES OF H.M. DOOR UNITS FOR THIS PROJECT:
20 - 24"W x 96"H x 1-3/4" UNITS
20 - 36"W x 96"H x 1-3/4" UNITS
20 - 48"W x 96"H x 1-3/4" UNITS



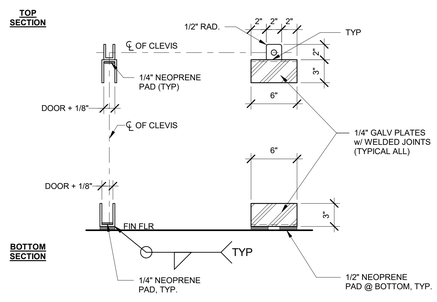
NOTE:
THE "MAZE" PANELS ARE A SERIES OF DOOR PANELS AND ADJUSTABLE DEVICES THAT CAN SECURE THE PANELS IN PLACE THUS CREATING INTERCHANGEABLE WALLS WITHIN THE ROOM.

1 MAZE PANEL ELEVATION
1/4" = 1'-0"

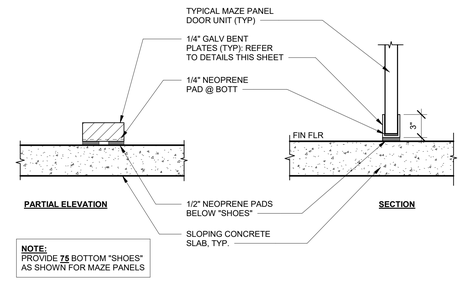


NOTE:
FOR CONSTRUCTION DETAILS OF MAZE PANEL COMPONENTS AND ATTACHMENTS: **REFER TO DETAILS THIS SHEET**

2 MAZE PANEL - ISOMETRIC
1/4" = 1'-0"



3 MAZE PANEL BENT PLATES
1 1/2" = 1'-0"



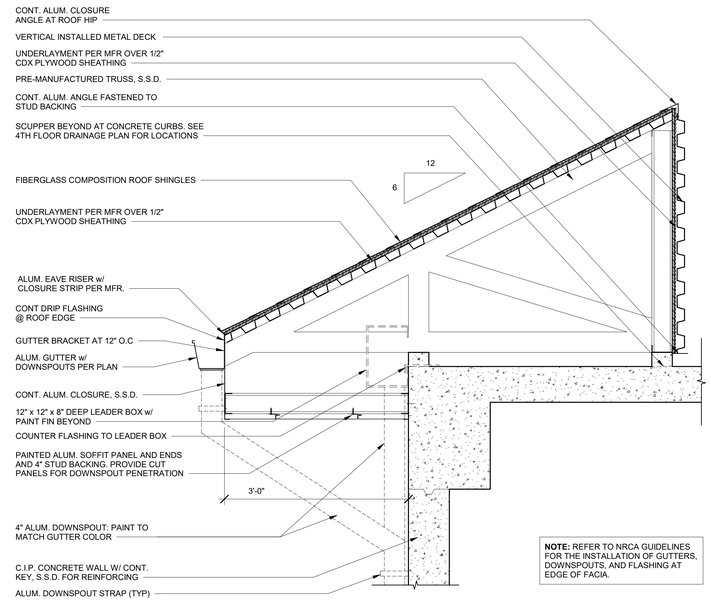
NOTE:
PROVIDE **75** BOTTOM "SHOES" AS SHOWN FOR MAZE PANELS

4 MAZE PANEL BOTTOM SHOE
1 1/2" = 1'-0"

NOTE:
PROVIDE **50** TOP & **50** BOTT. MAZE PANEL INTERSECTION "SHOES" AS SHOWN

5 MAZE PANEL INTERSECTION BENT PLATES
1 1/2" = 1'-0"

6 ELEVATOR FALSE WALL
1" = 1'-0"



NOTE: REFER TO NRCA GUIDELINES FOR THE INSTALLATION OF GUTTERS, DOWNSPOUTS, AND FLASHING AT EDGE OF FACIA.

7 PARAPET ROOF @ EXTERIOR WALL
1" = 1'-0"

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ARCHITECTURE

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DEPARTMENT OF PUBLIC WORKS
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APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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MICHAEL B. ROSS
No. C-18867
8/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ARCHITECTURAL DETAILS

Drawn By: EW
Checked By: EW

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Project No. 2016039

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Drawing No.

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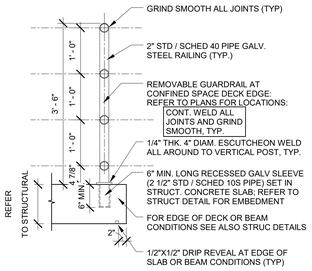
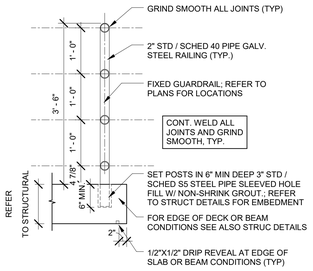
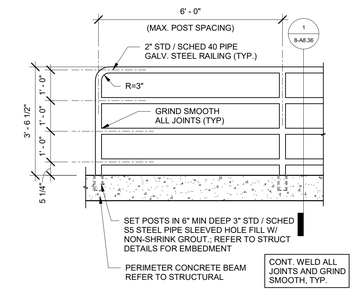


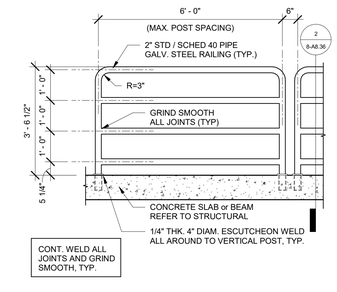
1 GUARDRAIL - FIXED GUARDRAIL SECTION
3/4" = 1'-0"



2 GUARDRAIL - REMOVABLE GUARDRAIL SECTION
3/4" = 1'-0"



3 GUARDRAIL - FIXED EXTERIOR GUARDRAIL
1/2" = 1'-0"



4 GUARDRAIL - REMOVABLE EXTERIOR GUARDRAIL
1/2" = 1'-0"

5 GUARDRAIL @ SLAB EDGE
1/2" = 1'-0"

6 GUARDRAIL - STAIR HANDRAIL/GUARDRAIL @ TOP
3/4" = 1'-0"

7 GUARDRAIL @ CMU WALL
1 1/2" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
5/31/21
RENEWAL DATE
STATE OF CALIFORNIA

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BUILDING 8 ARCHITECTURAL DETAILS

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8-A8.36
Drawing No.

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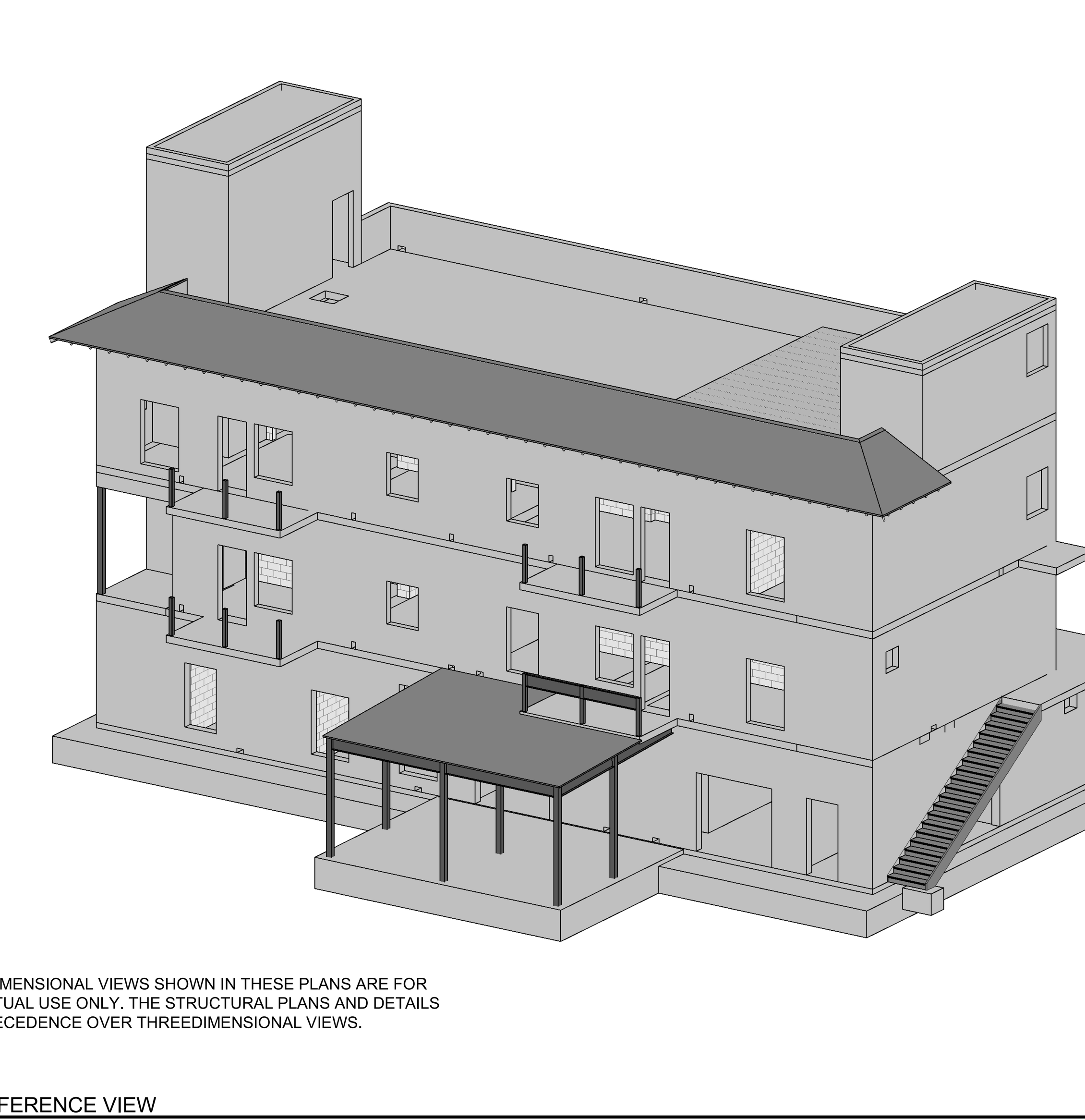
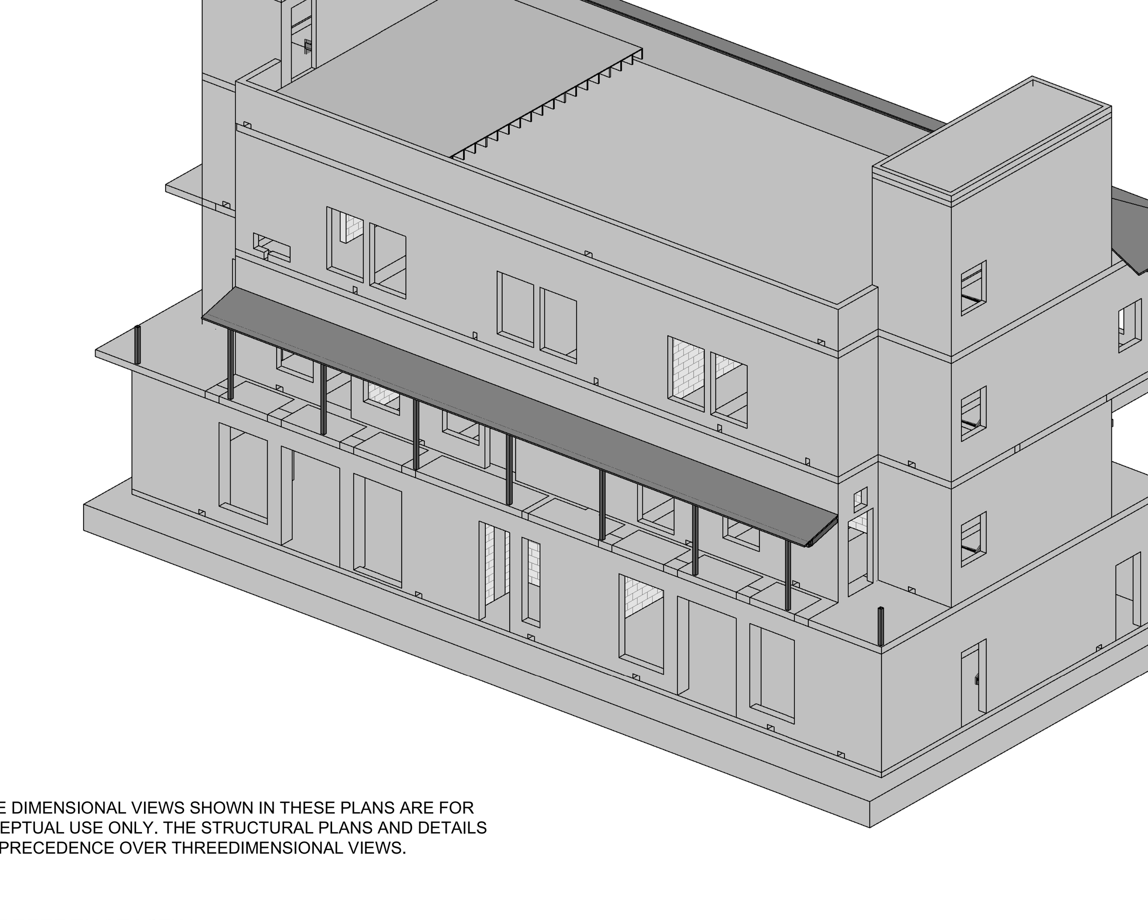
ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	AIR CONDITIONING
ADJ	ADJACENT
ADDL	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
ARCH	ARCHITECT
@	AT
BLDG	BUILDING
BLK/BLKG	BLOCK/BLOCKING
BLW	BELOW
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
BU	BUILT-UP
BYND	BEYOND
C	AMERICAN STANDARD CHANNEL
CANT	CANTILEVER
CB	CARRIAGE BOLT
CIP	CAST IN PLACE
CGL	CERTIFIED GLUED LUMBER
CJ	CONTROL JOINT
℄	CENTERLINE
CJP	COMPLETE JOINT PENETRATION
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COLL	COLLECTOR
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE/ COORDINATION
CMU	CONCRETE MASONRY UNIT
CSK	COUNTERSINK
CW	CUT WASHER
DBL	DOUBLE
DCW	DEMAND CRITICAL WELD
DF	DOUGLAS FIR
DIA or Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DJ	DOWEL JOINT
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DWG	DRAWING
DWL	DOWEL
EA	EACH
EE	EACH END
EF	EACH FACE
ELEC	ELECTRICAL
ELEV	ELEVATOR/ELEVATION
EMBED	EMBEDMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST or (E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FIN	FINISH
FG	FINISH GRADE
FLI	FERRULE LOOP INSERT
FLR	FLOOR
FN	FACE NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FRMG	FRAMING
FS	FAR SIDE
FTG	FOOTING
GA	GAGE or GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GLB	GLUE LAMINATED BEAM
GR	GRADE
HD	HOLD DOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HGR	HANGER
HK	HOOK
HORIZ	HORIZONTAL
HS	HIGH STRENGTH
HSB	HIGH STRENGTH BOLT
HSFB	HIGH STRENGTH FRICTION BOLT
HSG	HIGH STRENGTH GROUT
HSH	HORIZONTAL SLOTTED HOLE
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
ID	INSIDE DIAMETER
IJ	I SHAPED WOOD BUILT UP TRUSS
INT	INTERIOR
JST	JOIST
JT	JOINT
KP	KING POST
	STEEL ANGLE
Lb or #	POUND(s)
LGMF	LIGHT GAGE METAL FRAMING
LGMFC	LIGHT GAGE METAL FRAMING CONTRACTOR
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LS	LAG SCREW
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
MAX	MAXIMUM
MB	MACHINE BOLT
MBM	METAL BUILDING MANUFACTURER
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MEZZ	MEZZANINE
MF	MOMENT FRAME
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MIW	MALLEABLE IRON WASHER
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NO or #	NUMBER
NS	NEAR SIDE
NSG	NON-SHRINK GROUT
NTS	NOT TO SCALE
O/	OVER
oc	ON CENTER
OD	OUTSIDE DIAMETER
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OW	OTHERWISE
OWT	OPEN WEB TRUSS
PL	PLATE or PROPERTY LINE
PA	POST ABOVE
PDP	POWDER DRIVEN PINS
PEN	PANEL EDGE NAIL
PERP	PERPENDICULAR
PES	PANEL EDGE SCREWS
PJP	PARTIAL JOINT PENETRATION
PLF	POUNDS PER LINEAR FOOT
PNL	PANEL
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PTB	PANEL TIE BAR
PTDF	PRESSURE TREATED DOUGLAS FIR
PT	POINT
R	RADIUS
RBS	REDUCED BEAM SECTION
RFTR	RAFTER
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISION
RF	ROOF
RWD	REDWOOD
S	AMERICAN STANDARD BEAM
SAD	SEE ARCHITECTURAL DRAWINGS
SB	SOLID BLOCK
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACED FRAME
SCD	SEE CIVIL DRAWINGS
SCHED	SCHEDULE
SED	SEE ELECTRICAL DRAWINGS
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHTG	SHEATHING
SIM	SIMILAR
SKYLT	SKYLIGHT
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SMD	SEE MECHANICAL DRAWINGS
SOG	SLAB ON GRADE
SPCG	SPACING
SPD	SEE PLUMBING DRAWINGS
SPEC	SPECIFICATION
SQ	SQUARE
SS	SELECT STRUCTURAL or STAINLESS STEEL
STGR	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THK	THICK
THRD	THREADED
THRU	THROUGH
TL	TOTAL LOAD
TN	TOE NAIL
TOC	TOP OF CONCRETE
TOF	TOP OF FRAMING
TOM	TOP OF MASONRY
TOP	TOP OF PLYWOOD
TOS	TOP OF STEEL
TOT	TOTAL
TU	TILT UP
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VSH	VERTICAL SLOTTED HOLE
W	WIDE FLANGE STEEL BEAM
W/	WITH
W/O	WITHOUT
WD	WOOD
WHS	WELDED HEADED STUD
WLD	WELDED
WP	WORK POINT/WATERPROOF
WS	WOOD SCREW
WT	WEIGHT
WTS	WELDED THREADED STUD
WWR	WELDED WIRE REINFORCEMENT



THREE DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREEDIMENSIONAL VIEWS.

1 3D REFERENCE VIEW



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2 3D REFERENCE VIEW

G MATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY ULTIMATE COMPRESSIVE STRENGTH:
F'_c = 5,000 PSI MAT FOUNDATIONS , WALLS, COLUMNS, ELEVATED SLABS
F'_c = 3,000 PSI CONCRETE OVER METAL DECK

REINFORCING STEEL YIELD STRENGTH:
ALL VERTICAL WALL REINFORCING SHALL BE A706 GR 60
ALL BEAM AND COLUMN LONGITUDINAL REINFORCING SHALL BE A706 GR 60
MAT SLAB REINFORCING SHALL BE A615 GR 80, UNO
F_y = 40,000 PSI AT #3 AND SMALLER
F_y = 60,000 PSI AT #4 AND LARGER

STEEL YIELD STRENGTH (UNO):
F_y = 50,000 PSI W SHAPES
F_y = 36,000 PSI ANGLES, CHANNELS, AND PLATES
F_y = 50,000 PSI PLATES AT MOMENT FRAME CONNECTIONS
F_y = 46,000 PSI RECTANGULAR HSS
F_y = 42,000 PSI ROUND HSS
F_y = 35,000 PSI PIPES

FASTENERS:
MACHINE BOLTS SHALL BE ASTM A307
HIGH STRENGTH BOLTS SHALL BE ASTM F3125 GRADE A325 OR F1852 UNO
ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNO
ARC-WELDING ELECTRODES SHALL BE E70

COLD FORMED METAL FRAMING YIELD STRENGTH:
F_y = 33,000 PSI 33 & 43 MILS (20 & 18 GAUGE)
F_y = 50,000 PSI 54, 68, & 97 MILS (16, 14, & 12 GAUGE)

MASONRY COMPRESSIVE STRENGTH:
F'_m = 2,000 PSI

WOOD BASE DESIGN STRESSES (UNO):

SAWN LUMBER MEMBER	SPECIES AND MINIMUM GRADE, UNO	F_b (PSI)	F_v (PSI)	E (PSI)
6x POSTS	DOUGLAS FIR - #1	1200	170	$1.6x10^6$
6x BEAMS	DOUGLAS FIR - #1	1350	170	$1.6x10^6$
4x POSTS & BEAMS	DOUGLAS FIR - #1	1000	180	$1.7x10^6$
2x JOISTS, RAFTERS	DOUGLAS FIR - #2	900	180	$1.7x10^6$
PL MATERIAL	DOUGLAS FIR - #2	900	180	$1.6x10^6$
2x STUDS	DOUGLAS FIR - #2	900	180	$1.6x10^6$

FOR METAL CONNECTOR DESIGNATION REFER TO SIMPSON STRONG-TIE PER SPECIFICATIONS.

H CONCRETE MASONRY UNIT NOTES

1. CONCRETE MASONRY UNIT CONSTRUCTION SHALL BE PER **8-S1.40** & **8-S1.41** UNO. USE DOUBLE OPEN END WHERE POSSIBLE AND SINGLE OPEN END OTHERWISE. ALL CELLS TO BE GROUTED SOLID. ALL CMU TO BE LAID IN RUNNING BOND.
2. PROVIDE INVERTED BOND BEAM UNITS AT FOUNDATION LEVEL. SEE SPECIFICATIONS FOR CLEANOUT AND GROUTING REQUIREMENTS.
3. DOWELS FROM FOUNDATION ARE TO MATCH SIZE AND ALIGNMENT WITH THE WALL VERTICAL REINFORCEMENT. EXTEND DOWELS FROM FOUNDATION INTO WALL TO PROVIDE MINIMUM LAP WITH WALL VERTICAL REINFORCEMENT. INSTALL DOWEL BARS PER PLAN AND **4/8-S1.40** ALL DOWELS TO EXTEND TO THE LOWEST FOUNDATION REINFORCEMENT AND END WITH A STANDARD HOOK.
4. WALL REINFORCING SHALL BE PER **1/8-S1.40** UNO.
5. PROVIDE (2) #5 IN BOND BEAM UNITS AT THE TOPS OF ALL WALLS AND AT EACH FLOOR AND ROOF ELEVATION, UNO.
6. PROVIDE SASH UNITS AT ALL OPENINGS TYPICAL UNO.
7. SET ALL LEDGER AND CONNECTOR BOLTS PER **12/8-S1.40** . 1" GROUT AROUND BOLT REQUIRED.
8. SAD FOR TYPE OF FINISH, LOCATION, COLOR, ETC. SEE SPECIFICATIONS OTHERWISE.
9. VERTICAL CONTROL JOINTS SHALL BE SPACED NO GREATER THAN 25'-0"oc. SEE **15/8-S1.40** CONTRACTOR TO SUBMIT VERTICAL JOINT LAYOUT FOR REVIEW PRIOR TO CONSTRUCTION.

J MANUFACTURED ROOF TRUSS NOTES

1. MANUFACTURED ROOF TRUSSES ARE AT 24"oc UNO.
2. REFER TO PLAN FOR ROOF TRUSS TYPE. REFER TO ARCHITECTURAL DRAWINGS FOR SHAPE, OVERHANG, DIMENSIONS, SLOPES, SPAN, DRAINAGE, ETC. LOCATION OF BEARING POINTS ARE AS INDICATED ON THE DRAWINGS.
3. MANUFACTURER SHALL PROVIDE THE FOLLOWING: TRUSS CALCULATIONS AND TRUSS DESIGN DRAWINGS (INCLUDING TRUSS LAYOUT PLAN), BOTH PREPARED AND SIGNED BY A CIVIL OR STRUCTURAL ENGINEER (STATE OF CALIFORNIA). TRUSS CALCULATIONS AND TRUSS DESIGN DRAWINGS SHALL BE PROVIDED FOR EACH TRUSS PROFILE TYPE PER CBC SECTION 2303.4. THE TRUSS LAYOUT PLAN SHALL SHOW ALL TRUSS TYPES, TRUSS PLACEMENT LOCATIONS, PERMANENT AND TEMPORARY BRACING LOCATIONS, ALL TRUSS TO TRUSS CONNECTIONS, ALL LIVE AND DEAD LOADING CONDITIONS, AND TRUSS HANGERS. TRUSS CALCULATIONS SHALL BE BASED UPON LOADS, BEARING POINTS, AND CONDITIONS SPECIFIED HEREIN. TRUSS LAYOUT, TRUSS PROFILES, LOCATIONS OF GIRDER TRUSSES AND BEARING LOCATIONS SHALL BE AS SHOWN ON THE STRUCTURAL PLANS.
4. NO UPLIFT REACTIONS AT SUPPORT POINTS DUE TO APPLICATION OF VERTICAL LIVE OR DEAD LOADS ARE ALLOWED.
5. THE CONTRACTOR SHALL VERIFY TRUSS DIMENSIONS, MECHANICAL LOADS AND LOCATIONS. ETC., AND AFFIX A REVIEW STAMP PRIOR TO SUBMITTAL TO ARCHITECT/ENGINEER.
6. CHANGES MADE IN TRUSS LAYOUT CONFIGURATION REQUIRING ADDITIONAL ENGINEERING REVIEW AND/OR DETAILING WILL BE CONSIDERED A SUBSTITUTION AND EXTRA SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COST OF INVESTIGATING AND REVIEWING THE ADEQUACY AND/OR ACCEPTABILITY OF SUCH SUBSTITUTIONS.
7. THE CONTRACTOR SHALL SUBMIT TRUSS SUBMITTAL PACKAGE TO THE ARCHITECT/ENGINEER FOR REVIEW AND COMMENT. FOLLOWING ARCHITECT/ENGINEER REVIEW, CONTRACTOR SHALL THEN SUBMIT REVIEWED TRUSS SUBMITTAL TO THE BUILDING DEPARTMENT FOR REVIEW. TRUSS FABRICATION SHALL NOT COMMENCE UNTIL APPROVAL IS RECEIVED FROM THE BUILDING DEPARTMENT AND SEOR.
8. TRUSS MANUFACTURER SHALL PROVIDE HANGERS AND CONNECTORS ADEQUATE FOR LOADS FOR ALL TRUSS-TO-TRUSS, TRUSS-TO-BEAM, AND BEAM-TO-TRUSS CONNECTIONS.
9. TRUSS MANUFACTURER TO PROVIDE VERTICAL WEB MEMBERS AT TRUSS SUPPORTS, BRIDGING, AND BLOCKING AS REQUIRED.
10. THE POSITIONS, WEIGHTS, AND METHODS OF ATTACHMENT OF ALL MECHANICAL UNITS, ELECTRICAL FIXTURES, PLUMBING, FIRE SPRINKLERS, ETC. SHALL BE INCLUDED IN THE DESIGN OF THE TRUSSES BY THE TRUSS MANUFACTURER AND SHALL BE VERIFIED BY THE ARCHITECT. SAD FOR ATTIC ACCESS SIZE AND LOCATIONS. ADDITIONAL TRUSSES OR SPECIAL DESIGNED TRUSSES MAY BE REQUIRED. ALL "GABLE END TRUSSES" TO HAVE CLEAR SPACE BETWEEN WEBS FOR WALL VENT. SIZE TO MATCH ARCHITECTURAL DRAWINGS.
11. SUPERIMPOSED LOADS FROM THE JACK TRUSSES OR SECONDARY FRAMING (I.E. CALIFORNIA FRAMING, FURRED CEILINGS, ETC.) SHALL BE INCLUDED IN THE DESIGN OF SUPPORTING TRUSSES.
12. BRACING SHALL BE PROVIDED TO BRACE THE TOP CHORD OF TRUSSES WHERE "PIGGY BACK" TRUSSES ARE USED.
13. BOTTOM CHORD TRUSS MEMBERS HAVING A GYPSUM BOARD CEILING ATTACHED SHALL PROVIDE A LEVEL SURFACE WITH A MAXIMUM VARIATION OF ¼" IN 10'-0" IN ANY DIRECTION.
14. TRUSS MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED, OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN CONCURRENCE AND APPROVAL OF AN ENGINEER.
15. MANUFACTURED ROOF TRUSS DESIGN LOADS:
    A. TOP CHORD DEAD LOAD = 19 PSF LIVE LOAD = 20 PSF
    B. BOTTOM CHORD DEAD LOAD = 8 PSF LIVE LOAD = 10 PSF (BOTTOM CHORD LIVE LOAD DOES NOT ACT SIMULTANEOUSLY WITH OTHER IMPOSED LIVE LOADS)
    C. SPECIAL LOADS AND CONCENTRATED LOADS ARE AS NOTED ON THE DRAWINGS.
    D. ATTICS WITH 2 OR MORE ADJACENT TRUSSES WITH THE SAME WEB CONFIGURATION CAPABLE OF CONTAINING A RECTANGLE 42 INCHES HIGH BY 24 INCHES WIDE OR GREATER SHALL HAVE A BOTTOM CHORD LIVE LOAD OF 20 PSF AT THESE LOCATIONS.

D FOUNDATION NOTES

1. FOUNDATION DESIGN PRESSURES ARE:

   SHALLOW FOOTINGS:
   DEAD LOAD + LIVE LOAD = 3,000 PSF
   DEAD LOAD + LIVE LOAD + LATERAL = 4,000 PSF

2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW, AND CHAPTER 18 OF THE CBC. ALL FOUNDATIONS SHALL BEAR ON FIRM ENGINEERED FILL AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. ENGINEERED FILL TO BE COMPACTED PER GEOTECHNICAL REPORT. INCREASE FILL AND OR FOOTING DEPTH AS REQUIRED BY GEOTECHNICAL ENGINEER. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. MAXIMUM OVER EXCAVATION IN WIDTH SHALL BE LESS THAN 12 INCHES OR 25% OF FOOTING WIDTH, WHICH EVER IS LESS. 6 INCHES MAXIMUM PER SIDE. LARGER OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH ADDITIONAL REINFORCED CONCRETE AS DIRECTED BY THE ENGINEER, OR FORMWORK SHALL BE PROVIDED. OVER-EXCAVATIONS IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE. GEOTECHNICAL REPORT BY:

   ROCKRIDGE GEOTECHNICAL
   REPORT NO. 15-919B
   DATED: July 14, 2017

3. ALL SLAB ON GRADES AND MAT FOUNDATIONS PER PLAN SHALL BEAR ON VAPOR RETARDER OVER 12" MINIMUM OF NON-EXPANSIVE SOIL CONSISTING OF COMPACTED IMPORTED SELECT FILL OR LIME TREATED ON-SITE SOIL PER GEOTECHNICAL RECOMMENDATIONS, AND AS APPROVED BY THE GEOTECHNICAL ENGINEER. DO NOT DRIVE CONCRETE TRUCKS OR LARGE SCREED MACHINES ON VAPOR BARRIER WITHOUT ADDITIONAL BUFFER MATERIAL AND APPROVAL FROM THE STRUCTURAL ENGINEER.
4. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DEPRESSED SLABS FOR ARCHITECTURAL FLOORING OR INSERTS, SLOPED SLABS TO DRAIN AND PIPES OR CONDUITS AT SLAB. SEE **12/8-S4.11** AT DEPRESSED SLAB & **6/8-S1.10** FOR PIPES AND CONDUITS.
5. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, ETC.

E SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH CBC CHAPTER 17 AND THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY CBC SECTIONS 1704.2.3 AND 1704.3 FOR BUILDING STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. **SHOP FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES** PER CBC SECTION 1704.2.5 OR ALTERNATIVELY, APPROVED FABRICATORS SHALL SUBMIT A CERTIFICATE OF COMPLIANCE PER CBC SECTION 1704.2.5.1 INCLUDING GLULAM BEAM INSPECTION CERTIFICATES.
2. **STRUCTURAL STEEL CONSTRUCTION** PER CBC SECTIONS 1705.2, 1705.12.1, 1705.13.1, AND TABLE 1705.2.3 INCLUDING MATERIAL IDENTIFICATION, SHOP AND FIELD WELDING, AND INSTALLATION OF HIGH-STRENGTH BOLTS.
3. **CONCRETE CONSTRUCTION** PER CBC SECTIONS 1705.3, AND TABLE 1705.3 INCLUDING FORMWORK, REINFORCING STEEL, CAST-IN-PLACE BOLTS, MIX DESIGNS, CONCRETE SAMPLES, AND PLACEMENT FOR ALL CONCRETE. REINFORCING DOWELS FROM FOOTINGS TO RETAINING WALLS SHALL BE INSPECTED PRIOR TO PLACEMENT OF FOOTING CONCRETE AND WALL GROUT OR CONCRETE. CONTINUOUS OR ISOLATED SPREAD FOOTINGS WITH DESIGN STRENGTH NO GREATER THAN 2500 PSI, NON-STRUCTURAL SLABS ON GRADE, AND EXTERIOR FLATWORK DO NOT REQUIRE SPECIAL INSPECTION PER CBC SECTION 1705.3.
4. **MASONRY CONSTRUCTION** PER CBC SECTION 1705.4 INCLUDING COMPRESSIVE STRENGTH, BLOCK LAYING PROCEDURES, MORTAR PREPARATION, REINFORCEMENT SIZE AND GRADE, REINFORCEMENT PLACEMENT, GROUT PREPARATION AND GROUT PLACEMENT, AND ANCHOR BOLT TYPE, SIZE AND PLACEMENT.
5. **WOOD CONSTRUCTION** PER CBC SECTIONS 1705.5, 1705.11.1, AND 1505.12.2 INCLUDING NAILING, BOLTING, AND ANCHORING OF ALL DRAG STRUTS; TOP PLATE SPLICES, LEDGER SPLICES, SIMPSON HARDWARE, BRACES, AND HOLDOWNS; AND NAILING, BOLTING, AND ANCHORING OF ALL SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS WHERE THE FASTENER SPACING OF THE SHEATHING IS 4" APART OR LESS.
6. **SOILS** PER CBC SECTION 1705.6, TABLE 1705.6, AND THE APPROVED SOILS REPORT INCLUDING SUBGRADE PREPARATION, FOUNDATION BEARING MATERIALS AND DEPTH OF EXCAVATIONS, AND VERIFICATION, PLACEMENT AND TESTING OF CONTROLLED FILL.
7. **SPECIAL CASES** PER CBC SECTION 1705.1.1 AND PRODUCT ICC REPORTS FOR ALL STRUCTURAL MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE CBC OR REFERENCED STANDARDS INCLUDING POST-INSTALLED ANCHOR BOLTS IN CONCRETE AND CMU.

F WOOD FRAMING NOTES

1. ALL BEAMS AND JOISTS (EXCLUDING I JOISTS) SHALL BE SEAT CUT FOR FULL UNIFORM BEARING AT SUPPORTS, INCLUDING BEAM SEATS AND COLUMN CAPS.
2. FOR ROOF DRAINAGE, TOP OF FRAMING BETWEEN NOTED POINTS IS A STRAIGHT LINE.
3. ALL MECHANICAL SUPPLY AND RETURN OPENINGS TO BE BETWEEN FRAMING UNO.
4. JOISTS AND RAFTERS ARE PER PLAN. UNLESS NOTED OTHERWISE, PROVIDE "LU" HANGER AT FLUSH FRAMING AND "HU" HANGER WHERE HANGER IS SHOWN SKEWED PER PLAN AND/OR HANGER SEAT IS INDICATED TO BE SLOPED. HANGER SIZE TO BE CORRECT FULL SIZE FOR JOIST SIZE (I.E. LU210 FOR 2x10). HANGERS FOR PANELIZED ROOF CONSTRUCTION ARE PER PLAN.
5. ROUND HOLES IN STEEL PLATES TO BE 1/16" OVERSIZE. SLOTTED HOLES IN STEEL PLATES SHALL BE 1/16" WIDER THAN THE BOLT DIAMETER AND HAVE A LENGTH OF 2 TIMES THE BOLT DIAMETER. THE DIRECTION OF THE SLOTTED LENGTH IS INDICATED ON THE DETAILS (VSH OR HSH). INSTALL BOLT AT THE CENTER LINE OF THE HOLE. BOLT HOLES IN WOOD SHALL BE ROUND AND 1/32" OVERSIZE. CUT OFF BOLT THREADED END FLUSH WITH NUT WHEN REQUIRED BY FINISHES AND 1" MAXIMUM FROM NUT OTHERWISE. PROVIDE STANDARD CUT WASHERS UNDER HEAD AND NUT WHERE BOLT BEARS ON WOOD. USE PLATE OR MALLEABLE IRON WASHERS AT EXPOSED CONDITIONS OR AS INDICATED.
6. ALL BOLTED OR NAILED STRAP CONNECTIONS SHALL HAVE AN EQUAL NUMBER OF BOLTS OR NAILS EACH SIDE OF THE SPLICE JOINT. THE FIRST BOLT OR NAIL FROM EACH SIDE OF THE SPLICED OR STRAPPED MEMBER SHALL BE EQUIDISTANT FROM THE SPLICE. STRAPS USING 16d NAILS ON 2x MATERIAL TO BE INSTALLED ON THE 1½" EDGE OF THE MEMBER.
7. THE CONTRACTOR SHALL VERIFY THAT THE MOISTURE CONTENT OF ALL FRAMING LUMBER AND SHEATHING MEET THE REQUIREMENTS OF THE SPECIFICATIONS AT THE TIME OF INSTALLATION AND AT CLOSE-IN. THE CONTRACTOR SHALL PROVIDE ALLOWANCE FOR DIFFERENTIAL SHRINKAGE BETWEEN FLOORS, ETC.
8. VENTING IS REQUIRED IN ENCLOSED FRAMING AREAS, SAD. DRILL BLOCKING AND LEDGERS AND PROVIDE SKIP BLOCKING AS DETAILED.
9. ALL SHEATHING SHALL HAVE 1/8" GAP AT ALL EDGES AND JOINTS. TYPICAL SHEATHING:
    A. FLAT ROOF SHEATHING (SLOPE 2:12 OR LESS): 19/32" T&G APA RATED SHEATHING (40/20) EXP 1 WITH 10d @ 6"oc EDGES (PEN) AND 12"oc FIELD UNO ON PLANS. LAY PERPENDICULAR TO FRAMING MEMBERS. BLOCK EDGES WITH 2x4 LAID FLAT WHERE NOTED ON THE PLANS AND DETAILS. NO PANELS LESS THAN 24" WIDE SHALL BE USED. STAGGER SHEETS.
    B. SLOPING ROOF SHEATHING (SLOPE GREATER THAN 2:12): 15/32" APA RATED SHEATHING (32/16) EXP 1 WITH 10d @ 6"oc EDGES (PEN) AND 12"oc FIELD UNO ON PLANS. LAY PERPENDICULAR TO FRAMING MEMBERS. PROVIDE SHTG CLIPS AT UNSUPPORTED EDGES UNLESS NOTED TO BE BLOCKED ON PLANS. NO PANELS LESS THAN 24" WIDE SHALL BE USED. STAGGER SHEETS.
    C. FLOOR SHEATHING: 23/32" T&G APA RATED SHEATHING (48/24) EXP 1 WITH 10d @ 6"oc EDGES (PEN) AND 12"oc FIELD UNO ON PLANS. LAY PERPENDICULAR TO & GLUE TO FRAMING MEMBERS IMMEDIATELY PRIOR TO FULL NAILING (DO NOT SPOT NAIL). BLOCK EDGES WITH 2x4 LAID FLAT AS NOTED ON THE PLANS AND DETAILS. NO PANELS LESS THAN 24" WIDE SHALL BE USED. STAGGER SHEETS.

A DESIGN CRITERIA

DESIGN CRITERIA: 2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
FLOOR LIVE LOAD: 40 PSF (REDUCIBLE)
ROOF LIVE LOAD: 20 PSF (REDUCIBLE) (AT LIGHT FRAMED MANSARD ONLY)
FUTURE SOLAR: N/A
RISK CATEGORY: I
WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110
WIND EXPOSURE: C
INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18
COMPONENTS AND CLADDING DESIGN PRESSURES FOR SYSTEMS DESIGNED BY OTHERS SHALL COMPLY WITH THE "ASCE 7" DESIGN STANDARD
EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_e: 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_S = 1.923; S_1 = 0.777
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 1.282; S_{D1} = 0.777
SEISMIC DESIGN CATEGORY: E
SEISMIC FORCE RESISTING SYSTEM(S): SPECIAL REINFORCED CONCRETE SHEAR WALLS
RESPONSE MODIFICATION FACTOR: R = 5
DESIGN BASE SHEAR: 1290 KIPS
SEISMIC RESPONSE COEFFICIENT, C_S = 0.256 (LRFD)
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

MAXIMUM ANTICIPATED STORY DRIFT = 0.001 X HEIGHT
PROVIDE DEFORMATION COMPATIBILITY PER ASCE 7 SECTION 12.12.5 FOR NON-STRUCTURAL ITEMS, INCLUDING PIPING AND BURNERS FOR GAS LIVE FIRE SYSTEM, CLADDING, STAIRS, GLAZING, ETC.

NARRATIVE: BUILDING #8: TRAINING TOWER

GENERAL DESCRIPTION: 4 STORIES, CAST IN PLACE (CIP) CONCRETE WALL STRUCTURE DESIGNED FOR FIRE TRAINING. THE STRUCTURE IS NOT INTENDED TO BE DESIGNED AS ESSENTIAL SERVICE FACILITY AND WILL NOT BE USED FOR THAT PURPOSE.

- FOUR STORY, 14,000 SF NON-ESSENTIAL SERVICES STRUCTURE
- CIP CONCRETE WALLS FOR GRAVITY AND LATERAL SUPPORT
- STEEL ROOF FRAMING, SUPPORTING LIGHT GAGE RAFTERS

B GENERAL NOTES

1. REFER TO SHEETS **8-S1.10** THROUGH **8-S1.50** FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.
2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.
6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. USE DETAIL **2/8-S1.10** , **6/8-S1.10** , **7/8-S1.10**, AND **11/8-S1.10** AT CONDITIONS WHERE THESE DETAILS DO NOT APPEAR TO APPLY, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
7. VERIFY WEIGHTS AND LOCATIONS OF MECHANICAL UNITS WITH MECHANICAL ENGINEER PRIOR TO PLACEMENT. UNITS VARYING OVER 10% IN WEIGHT SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION (MECHANICAL WEIGHTS SHOWN ARE MAXIMUM). CONTRACTOR TO VERIFY MECHANICAL UNIT SIZES AND WEIGHTS AS INSTALLED PRIOR TO INSTALLATION OF SPECIAL FRAMING TO ENSURE CORRECT PLACEMENT UNDER CURBS, ETC.
8. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL ENGAGE A LICENSED CIVIL OR STRUCTURAL ENGINEER TO PROVIDE SHORING.
9. SPECIAL INSPECTIONS ARE REQUIRED PER **E/8-S0.10** AND THE TESTING AND INSPECTION FORM.
10. VEHICULAR TRAFFIC, HEAVY EQUIPMENT AND MATERIAL STAGING SHALL NOT BE ALLOWED ADJACENT TO ANY RETAINING/BASEMENT WALL, NEW OR EXISTING WITHIN A HORIZONTAL DISTANCE EQUAL TO THE WALL HEIGHT MEASURED FROM THE BOTTOM OF FOOTING OR 5'-0" WHICHEVER IS GREATER, UNLESS APPROVED BY THE STRUCTURAL ENGINEER OR NOTED OTHERWISE. WITHIN THIS ZONE, ONLY HAND-OPERATED EQUIPMENT ("WHACKERS", VIBRATORY PLATES, OR PNEUMATIC COMPACTORS) SHALL BE USED TO COMPACT THE BACKFILL SOILS.
11. STRUCTURAL OBSERVATION PER CBC SECTION 1704.6 IS REQUIRED. NOTIFY ZFA FOR GENERAL REVIEW OF:
    - MAT FOUNDATION THICKNESS, SIZE AND REINFORCING STEEL.
    - BEAM AND COLUMN SIZE AND REINFORCING.
    - SHEAR WALLS REINFORCING STEEL AND CONNECTIONS TO OTHER COMPONENTS OF THE SEISMIC FORCE RESISTING SYSTEM.
    - STRUCTURAL SLAB THICKNESS AND REINFORCING STEEL.
12. CMU WALL REINFORCING STEEL.

    NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE.
13. SUBMIT ENGINEERING FOR DEFERRED APPROVAL ITEMS TO ARCHITECT/ENGINEER FOR REVIEW AND SUBMITTAL TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO FABRICATION. DEFERRED APPROVAL ITEMS SHALL BE DESIGNED AND DETAILED BY MANUFACTURER TO ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS AS NOTED IN STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL REVIEW AND APPROVE DIMENSIONS AND DETAILS SHOWN ON THE SHOP DRAWINGS PRIOR TO SUBMITTAL. MANUFACTURER TO PROVIDE DRAWINGS AND CALCULATIONS DESIGNED IN ACCORDANCE WITH THE CBC AND SPECIFICATIONS, PREPARED AND SIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER FOR THE FOLLOWING ITEMS, UNLESS NOTED OTHERWISE:
    A. STAIR STRINGERS, LANDINGS, CONCRETE/METAL PAN STAIR TREADS AND LANDINGS. HAND RAILS. INCLUDE ATTACHMENTS TO STRUCTURE.
    B. MANUFACTURED ROOF JOISTS OR TRUSSES.

C STEEL NOTES

1. COORDINATE TOP OF FOOTING ELEVATIONS AS DETERMINED BY THE CONTRACTOR PER **C/8-S0.10** NOTE #5.
2. TOP OF STEEL ELEVATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS.

STRUCTURAL SHEET INDEX

8-S0.10	BUILDING 8	GENERAL NOTES AND SPECIFICATIONS
8-S1.10	BUILDING 8	TYPICAL CONCRETE DETAILS
8-S1.20	BUILDING 8	STEEL FRAMING DETAILS
8-S1.30	BUILDING 8	TYPICAL METAL STUD ELEVATION AND CONNECTION DETAILS
8-S1.40	BUILDING 8	TYPICAL CMU DETAILS
8-S1.41	BUILDING 8	TYPICAL CMU DETAILS
8-S1.50	BUILDING 8	TYPICAL METAL DECKING DETAILS
8-S2.10	BUILDING 8	FOUNDATION PLAN
8-S2.20	BUILDING 8	SECOND FLOOR PLAN
8-S2.30	BUILDING 8	THIRD FLOOR PLAN
8-S2.40	BUILDING 8	ROOF PLAN
8-S2.50	BUILDING 8	STAIR TOWER ROOF PLAN
8-S3.10	BUILDING 8	ELEVATIONS
8-S3.20	BUILDING 8	ELEVATIONS
8-S3.30	BUILDING 8	ELEVATIONS
8-S4.10	BUILDING 8	DETAILS AND SECTIONS
8-S4.11	BUILDING 8	FOUNDATION DETAILS
8-S4.12	BUILDING 8	TYPICAL CONCRETE WALL DETAILS
8-S4.13	BUILDING 8	CONCRETE WALL DETAILS
8-S4.14	BUILDING 8	CONCRETE COLUMN DETAILS
8-S4.15	BUILDING 8	CONCRETE BEAM DETAILS
8-S4.16	BUILDING 8	CONCRETE SLAB DETAILS

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

**1401 W. WINTON AVE.
HAYWARD, CA 94545**

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

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REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL No. 4861
STATE OF CALIFORNIA

Sheet Title

**BUILDING 8
GENERAL NOTES AND SPECIFICATIONS**

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

8-S0.10
Drawing No.

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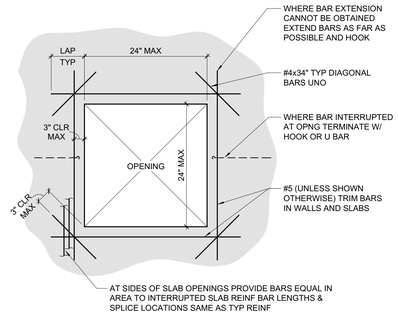
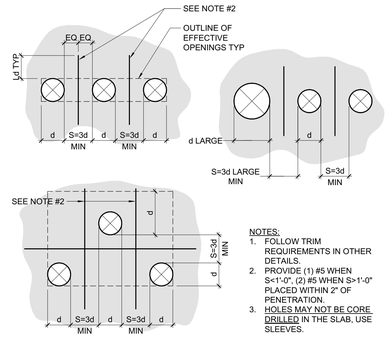
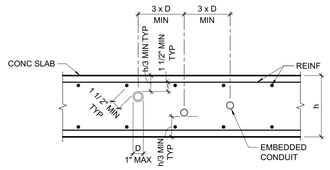


10 SMALL SLAB AND WALL PENETRATIONS
1" = 1'-0"



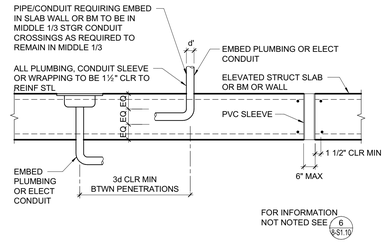
NOTES:
1. FOLLOW TRIM REQUIREMENTS IN OTHER DETAILS.
2. PROVIDE (1) #5 WHEN S<1'-0", (2) #5 WHEN S>1'-0" PLACED WITHIN 2" OF PENETRATION.
3. HOLES MAY NOT BE CORE DRILLED IN THE SLAB, USE SLEEVES.

11 MULTIPLE SLAB AND WALL PENETRATIONS
1" = 1'-0"

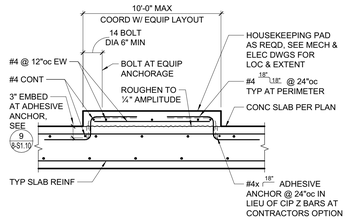


NOTES:
1. 'PIPE' = ANY PIPE OR CONDUIT EMBEDDED IN CONCRETE.
2. WHERE MORE THAN ONE SIZE PIPE IS USED, 'D' IS THE OUTSIDE DIAMETER OF THE LARGEST PIPE.
3. ALUMINIUM CONDUIT IS NOT PERMITTED.
4. PRESSURIZED PIPE SHALL NOT BE USED WITHOUT SEOR WRITTEN APPROVAL.
5. PIPES SHALL BE PLACED BETWEEN TOP AND BOTTOM LAYERS OF REINFORCING. WHERE ONLY ONE LAYER IS SPECIFIED IN PLAN AN ADDITIONAL LAYER SHALL BE PLACED NORMAL TO THE EMBEDDED PIPE WITH IDENTICAL SIZE AND SPACING TO THE SPECIFIED LAYER.
6. PIPE EMBEDDED IN CONCRETE MAT FOUNDATION TO BE PROVIDED W/ FLEXIBLE COUPLINGS AT ENTRY/EXIT POINTS.

6 TYPICAL DETAIL AT EMBEDDED CONDUITS IN WALLS & SLABS
1" = 1'-0"



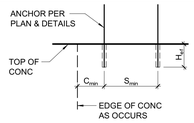
7 PIPE PENETRATIONS IN STRUCTURAL SLAB
3/4" = 1'-0"



8 TYPICAL HOUSEKEEPING PAD AT STRUCTURAL SLAB
3/4" = 1'-0"

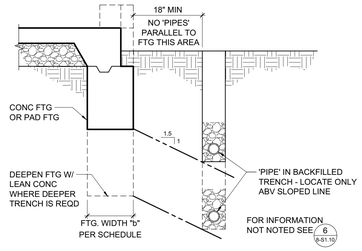
ADHESIVE ANCHOR IN 2500 PSI MIN CONCRETE

ADHESIVE TYPE	ANCHOR		PILOT HOLE	MIN EMBED UNO H_{ref}	MIN EDGE DISTANCE C_{min}	MIN SPCG S_{min}	MIN CONC DEPTH H_{min}
	THRD ROD	REBAR					
SIMPSON SET-XP (ICC-ESR 2508)	⅜"ø	#3	½"ø	3"	1¾"	3"	5"
	½"ø	#4	⅝"ø	4"	1¾"	3"	6½"
	⅝"ø	#5	¾"ø	5"	1¾"	3"	8¼"
	¾"ø	#6	⅞"ø	6"	1¾"	3"	9½"
	⅞"ø	#7	1"ø	7"	1¾"	3"	11½"
	1"ø	#8	1⅛"ø	8"	1¾"	3"	13"
	1¼"ø	#10	1⅜"ø	10"	2¾"	6"	16¼"
HILTI HIT-HY 200R (ICC-ESR 3187)	⅜"ø	N/A	⅞"ø	3"	1¾"	1⅞"	4½"
	N/A	#3	½"ø	3"	1¾"	1⅞"	4¼"
	½"ø	N/A	⅞"ø	4"	1¾"	2½"	5¼"
	N/A	#4	⅝"ø	4"	1¾"	2½"	5¼"
	⅝"ø	#5	¾"ø	5"	1¾"	3¼"	6½"
	¾"ø	#6	⅞"ø	6"	1¾"	3⅞"	7⅞"
	⅞"ø	#7	1"ø	7"	1¾"	4⅜"	9"
	1"ø	#8	1⅛"ø	8"	1¾"	5"	10¼"
	N/A	#9	1⅜"ø	9"	1¾"	5⅝"	11⅜"
	1¼"ø	N/A	1⅜"ø	10"	1¾"	6¼"	12¾"
	N/A	#10	1½"ø	10"	1¾"	6¼"	13"

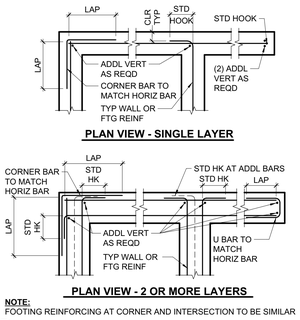


NOTES:
1. INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING, AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORTS. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND ADHESIVE INJECTION. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 . SEE DRAWINGS FOR SPECIFIC TENSION TEST LOADS FOR ANCHORS.

9 ADHESIVE ANCHOR IN CONCRETE
3/4" = 1'-0"



2 TRENCHING ADJACENT TO MAT FOUNDATION
3/4" = 1'-0"



NOTE:
FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

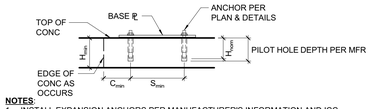
3 TYPICAL CORNER, INTERSECTION AND END REINFORCING
3/4" = 1'-0"

NOTE:
LOCATION OF JOINTS TO BE SUBMITTED TO ARCHITECT/ ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE

4 FOOTING CONSTRUCTION JOINT
3/4" = 1'-0"

STAINLESS STL EXPANSION ANCHORS IN 2500 PSI MIN CONC

ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MIN NOMINAL EMBED H_{nom}	MIN EDGE DISTANCE C_{min}	MIN SPACING S_{min}	MIN CONC THICKNESS H_{min}	INSTALL TORQUE (FT-LB)
SIMPSON STRONG-BOLT 2 (ICC-ESR 3037)	⅜"	1⅞"	6"	10"	3½"	30
	½"	2¾"	6½"	8"	4½"	65
	⅝"	3⅜"	4"	8"	5½"	80
	¾"	4⅛"	6"	6½"	6¾"	150
HILTI KWIK BOLT TZ (ICC-ESR 1917)	⅜"	2⅜"	2½"	5"	4"	25
	½"	2¾"	2¾"	5¾"	4"	40
	⅝"	3⅜"	3¼"	5½"	5"	60
	¾"	4⅝"	4¼"	10"	6"	110



NOTES:
1. INSTALL EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORTS.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.

5 EXPANSION ANCHOR IN CONCRETE
3/4" = 1'-0"

DEVELOPMENT LENGTHS (Ld) GR60*

	LOCATION	SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	TOP	12"	22"	32"	43"	69"	86"	103"	122"	141"
	OTHER	12"	17"	25"	33"	53"	66"	80"	94"	109"
CONCRETE f'c = 4000 PSI AT 28 DAYS	TOP	12"	19"	28"	37"	60"	74"	90"	106"	122"
	OTHER	12"	15"	21"	29"	46"	57"	69"	81"	94"
CONCRETE f'c = 5000 PSI AT 28 DAYS	TOP	12"	17"	25"	34"	54"	67"	80"	95"	109"
	OTHER	12"	13"	19"	26"	42"	51"	62"	73"	84"

*= INCREASE DEVELOPMENT LENGTHS BY 1/3 FOR GRADE 80 REINF

HOOKED DEVELOPMENT LENGTHS (Ldh) GR60*

	LOCATION	SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	ANY	9"	11"	14"	17"	20"	22"	25"	28"	-
CONCRETE f'c = 4000 PSI AT 28 DAYS	ANY	8"	10"	12"	15"	17"	19"	22"	24"	-
CONCRETE f'c = 5000 PSI AT 28 DAYS	ANY	7"	9"	11"	13"	15"	17"	20"	22"	-

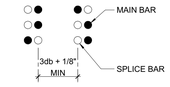
*= INCREASE HOOKED DEVELOPMENT LENGTHS BY 1/3 FOR GRADE 80 REINF

LAP SPLICE LENGTHS (Ls) GR60*

	LOCATION	SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'c = 3000 PSI AT 28 DAYS	TOP	17"	28"	41"	56"	90"	112"	134"	158"	183"
	OTHER	13"	22"	32"	43"	69"	86"	103"	122"	141"
CONCRETE f'c = 4000 PSI AT 28 DAYS	TOP	15"	25"	36"	49"	78"	97"	116"	137"	159"
	OTHER	12"	19"	28"	37"	60"	74"	90"	106"	122"
CONCRETE f'c = 5000 PSI AT 28 DAYS	TOP	13"	22"	32"	44"	70"	87"	104"	123"	142"
	OTHER	12"	17"	25"	34"	54"	67"	80"	95"	109"

*= INCREASE LAP SPLICE LENGTHS BY 1/3 FOR GRADE 80 REINF

NOTES:
1. TOP REINFORCING IS HORIZONTAL REINFORCEMENT WITH MORE THAN TWELVE INCHES (12") OF CONCRETE PLACED BELOW IT.
2. IF THE LAP SPLICE REINFORCEMENT DOES NOT HAVE A MINIMUM SPACING 3db + 1/8 INCHES & A MINIMUM COVER OF db + 1/8 INCHES, USE WELDED SPLICE OR MECHANICAL CONNECTOR.



3. HOOKED DEVELOPMENT LENGTHS (Ldh) MAY BE USED IN LIEU OF DEVELOPMENT LENGTH (Ld) IF STANDARD HOOK IS PROVIDED AT END OF BAR.
4. MECHANICAL CONNECTORS SHALL BE TENSION-COMPRESSION TYPE WITH THE ABILITY TO DEVELOP 125% OF THE YIELD STRENGTH FOR THE SPLICED REINFORCEMENT (75 KSI). MECHANICAL CONNECTORS SHALL HAVE & BE INSTALLED PER AN ICC EVALUATION REPORT.
5. WWF SHALL LAP MINIMUM (3) BAR CROSSINGS.

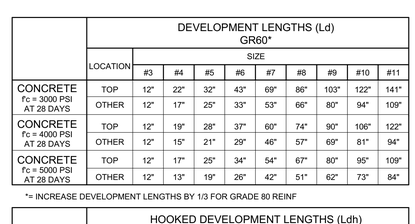
CONCRETE COVER FOR REINFORCING STEEL 'CLR'

CAST AGAINST EARTH OR GRADE: . . . . . 3"

EXPOSED TO EARTH (FORMED) OR WEATHER;
#5 AND SMALLER: . . . . . 1½"
#6 AND LARGER: . . . . . 2"

NOT EXPOSED TO EARTH OR WEATHER;
#5 AND SMALLER: . . . . . 1"
#6 AND LARGER, AND ALL BEAM STIRRUPS, COLUMN TIES AND SPIRALS: . . . . 1½"

ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN A STANDARD 90° OR 180° HOOK UNLESS DETAILED OTHERWISE.



PRINCIPAL REINF

REINF	Dmin
#3 TO #8	6 db
#9 TO #11	8 db
#14 TO #18	10 db

CROSSTIES, HOOPS & STIRRUPS

REINF	Dmin
#3	1 1/2"
#4	2"
#5	2 1/2"

NOTE:
1. ALL BENDS SHALL BE MADE COLD.

1 REINFORCING LAPS AND SPLICES AND BENDS
1" = 1'-0"

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HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

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1390 el camino real | suite 100 zfa.com
san carlos ca 94070 650.394.8869
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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO No. 48611 STRUCTURAL STATE OF CALIFORNIA

Sheet Title

BUILDING 8
TYPICAL CONCRETE DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

8-S1.10
Drawing No.

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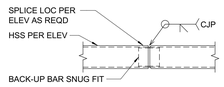
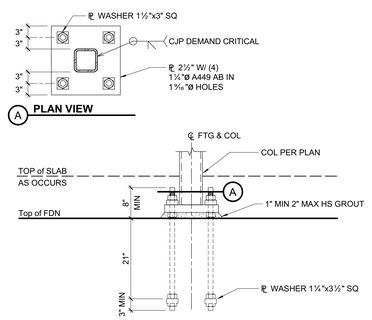
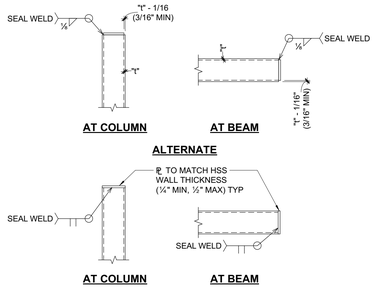


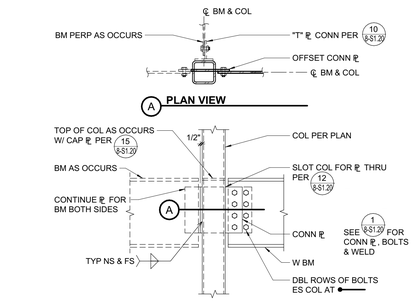
13 HSS SPLICE
3/4" = 1'-0"



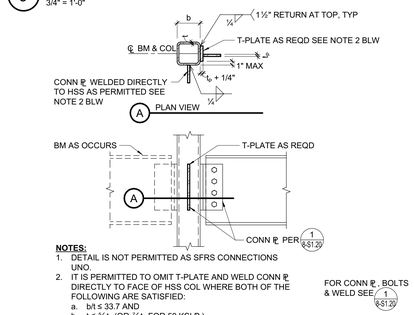
14 HSS COLUMN BASE PLATE
3/4" = 1'-0"



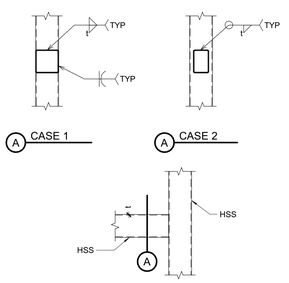
15 TYPICAL CAP PLATE
3/4" = 1'-0"



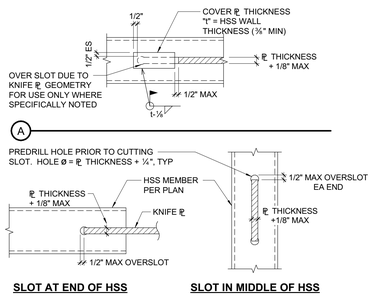
9 BEAM EACH SIDE TO HSS COLUMN
3/4" = 1'-0"



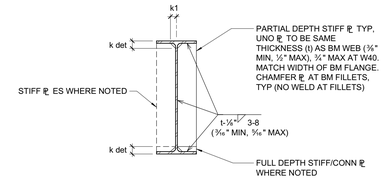
10 BEAM TO HSS COLUMN ('T' PLATE)
3/4" = 1'-0"



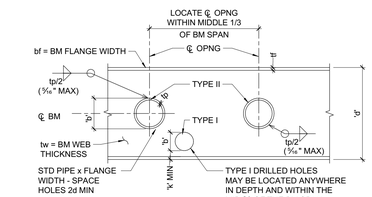
11 TYPICAL HSS TO HSS CONNECTION
3/4" = 1'-0"



12 TYPICAL SLOTTED HSS FOR GUSSET CONNECTION
1 1/2" = 1'-0"



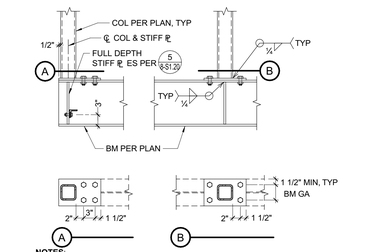
5 TYPICAL BEAM WEB STIFFENER PLATE DETAIL
3/4" = 1'-0"



LIMITS OF OPENINGS:
TYPE I: b = 1/5d MAX
SPACED A MINIMUM OF 2d APART
TYPE II:b = 2/3d MAX
SPACED A MINIMUM 2d APART

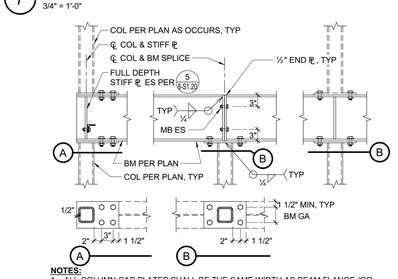
NOTES:
1. PROVIDE HOLES IN BEAMS ONLY WHERE SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS.
2. DO NOT TORCH CUT OPENINGS ON SITE. TORCH CUT OPENINGS MADE IN SHOP TO BE GROUND SMOOTH. NO OVERCUTS OF ANY TYPE ALLOWED WITHOUT REPAIR.

6 OPENING IN STEEL BEAM
3/4" = 1'-0"



NOTES:
1. ALL COLUMN BASE PLATES SHALL BE THE SAME WIDTH AS BEAMM FLANGE (OR COLUMN DIMENSION + ½", WHICHEVER IS GREATER), THICKNESS SAME AS BEAM FLANGE, ½" MINIMUM.
2. ALL FASTENERS TO BE ¾"ø MB.

8 COLUMN ABOVE AND BELOW
3/4" = 1'-0"



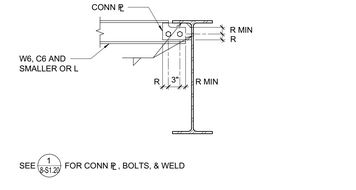
NOTES:
1. ALL COLUMN CAP PLATES SHALL BE THE SAME WIDTH AS BEAM FLANGE (OR COLUMN DIMENSION +½", WHICHEVER IS GREATER), THICKNESS SAME AS BEAM FLANGE, ½" MINIMUM.
2. ALL FASTENERS TO BE ¾"ø MB.

7 COLUMN TO BEAM CONNECTION
3/4" = 1'-0"

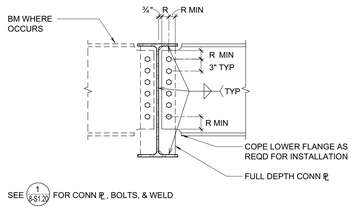
BM DEPTH	NO. BOLTS PER ROW	CONN. PLATE	WELD SIZE
W8, W10	2	℄ ¾"	⅜"
W12, W14	3	℄ ¾"	⅜"
W16	4	℄ ¾"	⅜"
W18	5	℄ ¾"	⅜"
W21	5	℄ ½"	⅜"
W24	6	℄ ½"	⅜"
W27	7	℄ ½"	⅜"
W30	8	℄ ½"	⅜"
W33	9	℄ ½"	⅜"
W36	10	℄ ½"	⅜"

NOTES:
1. R = 1¾" SEE TYP CONNECTION DETAILS. BOLT SPACING AND EDGE DISTANCE SHALL CONFORM TO AISC SPECIFICATIONS.
2. HIGH STRENGTH BOLTS (HSB) ARE GRADE A325-N UNO. PREPARE MATING SURFACES & TIGHTEN "SNUG TIGHT" AS DEFINED IN THE SPECIFICATIONS.
3. USE ASTM A36 CONNECTION PLATES, UNO.
4. A COMPLETE PENETRATION BEVEL WELD MAY BE SUBSTITUTED FOR THE FILLET WELDS SPECIFIED.
5. HOLE SIZE = BOLT SIZE +⅛". SHORT SLOTTED HOLES (+⅜" VERT, + ¼" HORIZ) MAY BE SUBSTITUTED (EXCEPT AS NOTED) ROUND HOLES ARE REQUIRED AT SFRS CONNECTIONS.
6. USE SAME CONNECTIONS AT CHANNELS. FOR W6, C6 & ANGLES USE PLATE, WELD & BOLT SIZE PER W8 & SEE 4/8-S1.20.

1 ⅞"ø HIGH STRENGTH BOLT (HSB) CONNECTION SCHEDULE
3/4" = 1'-0"



2 TYPICAL BEAM TO BEAM CONNECTION
3/4" = 1'-0"



3 TYPICAL FULL DEPTH BEAM TO BEAM CONNECTION
3/4" = 1'-0"

4 TYPICAL SHALLOW BEAM DETAIL
3/4" = 1'-0"

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HEART OF THE BAY

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ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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Sheet Title

BUILDING 8
STEEL FRAMING DETAILS

Drawn By: LS Checked By: SRP

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

8-S1.20
Drawing No.

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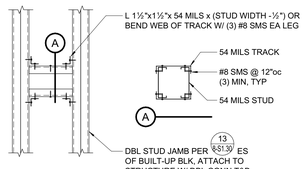
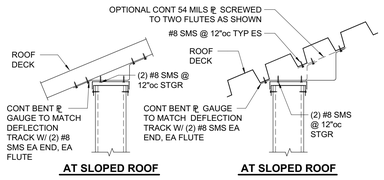
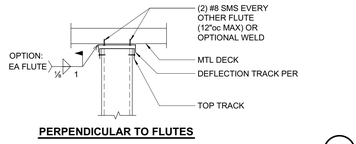
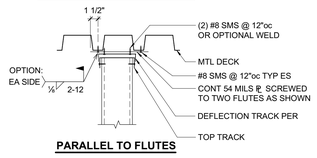


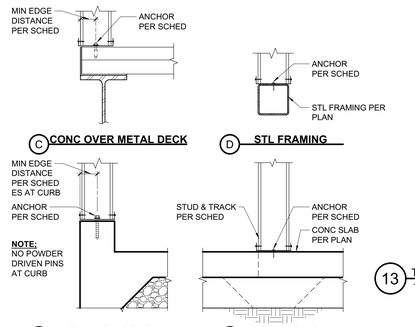
15 HEAVY DUTY WALL BACKING PLATE
1" = 1'-0"







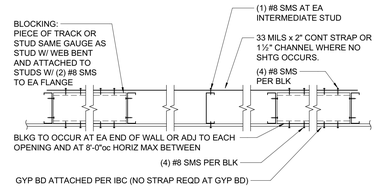
16 ATTACHMENT OF NON-BEARING STUDS TO METAL DECK
1" = 1'-0"



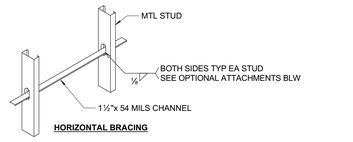
	ANCHOR TYPE, DIAMETER AND SPACING				
LOCATION	SCREW ANCHOR	POWDER DRIVEN PINS	EXPANSION ANCHOR	CAST-IN-PLACE	DETAIL
EXTERIOR WALL SLAB ON GRADE (H=15'-0" MAX)	½"ø @ 36"oc	NOT PERMITTED	½"ø @ 36"oc	½"ø @ 48"oc	A
INTERIOR WALL SLAB ON GRADE	½"ø @ 48"oc	0.157"ø @ 16"oc	½"ø @ 48"oc	½"ø @ 48"oc	B
INTERIOR WALL SLAB ON MTL DECK	NOT PERMITTED	0.157"ø @ 16"oc	¾"ø @ 48"oc	N/A	C
EXTERIOR WALL SLAB ON MTL DECK (H=15'-0" MAX)	NOT PERMITTED	NOT PERMITTED	¾"ø @ 16"oc	N/A	C
STL FRAMING (H=14'-0" MAX)	N/A	0.157"ø @ 16"oc	N/A	N/A	D
MIN CONC EDGE DISTANCE	1¾"	3"	3"	3"	
REF DETAIL & NOTES	5 S1.10	STAGGER PINS	5 S1.10	NOTE #4	

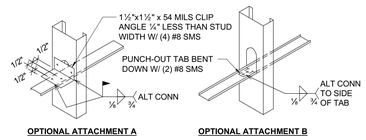
NOTES:
1. PROVIDE (2) ANCHORS MIN PER TRACK SEGMENT.
2. FOUNDATION AND SLAB REINFORCING PER OTHER DETAILS.
3. CENTER FASTENERS W/ TRACK, UNO.
4. SEE PLAN AND SCHEDULE FOR ADDITIONAL ANCHORAGE REQUIREMENTS, AS OCCURS.

17 TYPICAL BOTTOM TRACK ANCHORS AT CONCRETE
1" = 1'-0"



OPTION 2

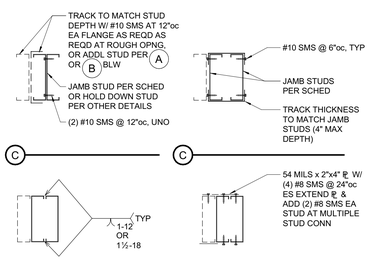




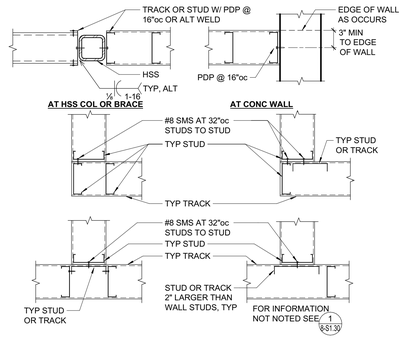
OPTION 1

NOTES:
1. BRIDGING MAY BE PER OPTION 1 OR 2.
2. PROVIDE BRIDGING @ 4'-0"oc.
3. BRIDGING IS NOT REQUIRED WHERE PROPERLY ATTACHED SHEATHING OCCURS ON BOTH SIDES OF STUDS.
4. THE MAX STUD DEPTH FOR OPTION 1 IS 8" MAX.
5. PROVIDE BLOCKING PER OPTION 2 AT LOCATIONS INDICATED ON DRAWINGS OR OTHER DETAILS

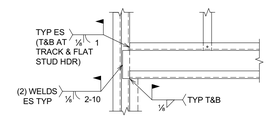
12 WALL BRIDGING/BLOCKING
1" = 1'-0"

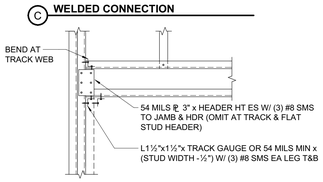


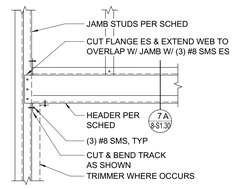
13 TYPICAL MULTIPLE STUD CONNECTION
1 1/2" = 1'-0"



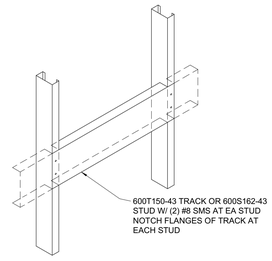
14 TYPICAL CORNERS AND INTERSECTIONS
1" = 1'-0"



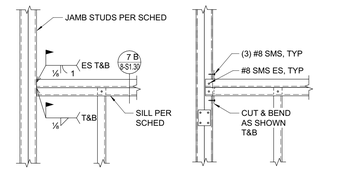




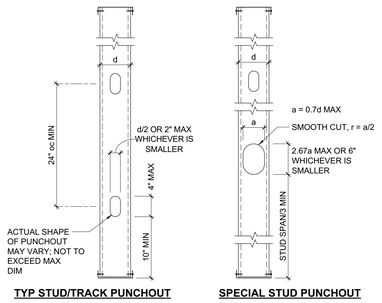
8 TYPICAL HEADER CONNECTION
1" = 1'-0"



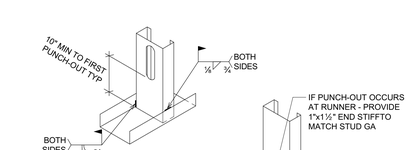
9 WALL BACKING PLATE
1" = 1'-0"



10 TYPICAL SILL CONNECTION
1" = 1'-0"

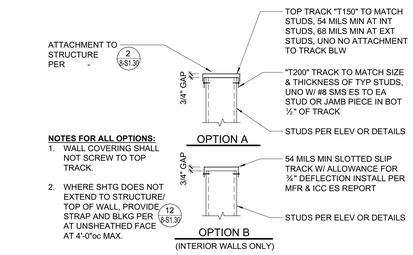


11 TYPICAL STUD PUNCHOUT
1" = 1'-0"

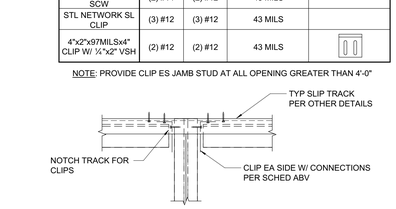


NOTE:
STUDS TO HAVE FULL BEARING ON TRACK TYP

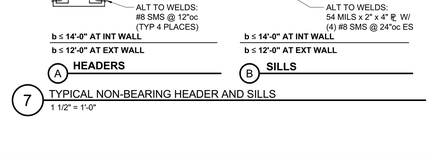
4 STUD OR JOIST TO TRACK
1" = 1'-0"



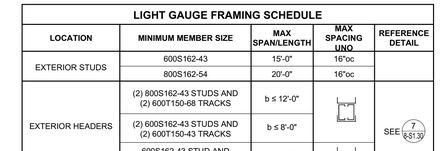
5 NON-BEARING WALL DEFLECTION TRACK AT TOP
1" = 1'-0"



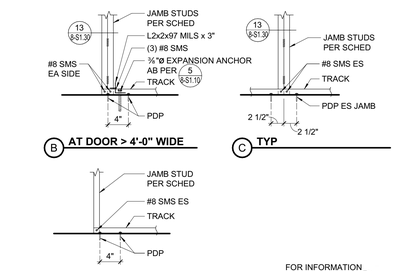
6 JAMB STUD DELECTION TRACK
1 1/2" = 1'-0"



7 TYPICAL NON-BEARING HEADER AND SILLS
1 1/2" = 1'-0"



2 INTERIOR NON-BEARING WALL (OPENING AS OCCURS)
1" = 1'-0"



3 INTERIOR BOXED STUD BASE
1" = 1'-0"

LIGHT GAUGE FRAMING SCHEDULE				
LOCATION	MINIMUM MEMBER SIZE	MAX SPAN/LENGTH	MAX SPACING UNO	REFERENCE DETAIL
EXTERIOR STUDS	600S162-43	15'-0"	16"oc	
	800S162-54	20'-0"	16"oc	
EXTERIOR HEADERS	(2) 800S162-43 STUDS AND (2) 600T150-68 TRACKS	b ≤ 12'-0"		SEE 7 S1.30
	(2) 600S162-43 STUDS AND (2) 600T150-43 TRACKS	b ≤ 8'-0"		
	600S162-43 STUD AND 600T150-43 TRACK	b ≤ 4'-0"		
EXTERIOR SILLS	600S162-54 STUD AND 600T150-68 TRACK	b ≤ 12'-0"		SEE 7 S1.30
	600S162-43 STUD AND 600T150-43 TRACK	b ≤ 8'-0"		
	600T150-43	b ≤ 4'-0"		
EXTERIOR JAMBS	(3) 600S162-68	15'-0"	b ≤ 12'-0"	SEE 13 S1.30
	(2) 600S162-97	15'-0"	b ≤ 8'-0"	
	(2) 600S162-43	15'-0"	b ≤ 4-0"	
PARAPET SILLS	600S162-54 STUD AND 600T150-54 TRACK			SEE 7 S1.30
INTERIOR STUDS	400S162-43	12'-0"	16"oc	
	600S162-33	18'-0"	16"oc	
INTERIOR STUDS W/ SHELVING OR EQUIPMENT ANCHORAGE	400S162-54	15'-0"	16"oc	
	600S162-43	15'-0"	16"oc	
INTERIOR HEADERS	(2) 600S162-33 STUDS AND (2) 400T150-43 TRACKS	b ≤ 12'-0"		SEE 7 S1.30
	(2) 800S162-54 STUDS AND (2) 600T150-33) TRACKS			
	(2) 400S162-33 STUDS AND (2) 400T150-43 TRACKS	b ≤ 8'-0"		
	400T200-43 (OR 600T200-43)	b ≤ 4'-0"		
INTERIOR SILLS	400S162-43 STUD AND 400T150-43 TRACK (OR 600S162-33 AND 600T150-33)	b ≤ 14'-0"		SEE 7 S1.30
	400T150-43 (OR 600T150-43)	b ≤ 8'-0"		
INTERIOR JAMBS	(2) 400S162-43 (OR (2) 600S162-33)	15'-0"	b ≤ 12'-0"	SEE 13 S1.30
	400S162-43 (OR 600S162-33)	15'-0"	b ≤ 4-0"	
CEILING JOISTS	400S162-33	10'-0"	16"oc	SEE - ---
	600S162-43	17'-0"	16"oc	
CEILING HANGERS	400S162-43	h ≤ 6'-0"		SEE - ---
	400S162-43 & 400T150-43	h ≤ 8'-0"		

1. TYP TRACK TO BE SAME GAUGE AS STUD OR 43 MILS MIN, UNO. FLANGE TO BE 1½" MIN.
2. AT EXTERIOR WALL W/ BUMP OUT BOTH MAIN WALL & FURRING WALL ARE EXTERIOR STUDS. PROVIDE BRIDGING @ 4'-0"oc MAX PER 12/8-S1.30 AT BOTH WALLS.
3. A WALL W/ ANY PORTION HAVING EXTERIOR EXPOSURE SHALL BE FRAMED ENTIRELY AS AN EXTERIOR WALL.
4. MULTIPLE ADJACENT WINDOWS TO EACH HAVE INDIVIDUAL HEADERS AND FULL JAMB STUDS BETWEEN WINDOWS.
5. TYP WALL BRIDGING/BLKG PER 12/8-S1.30
6. TYP STUD/JOIST TO TRACK PER 4/8-S1.30
7. COORDINATE STUD DEPTH W/ ARCH DRAWINGS. INCREASE MIN HDR, SILL OR JAMB MEMBER DEPTHS AS REQD TO MATCH ACTUAL WALL STUD DEPTH.
8. "b" INDICATES OPENING WIDTH PER -/--- OR 2/8-S1.30 .

1 SCHEDULE - LIGHT GAUGE METAL FRAMING, UNO
3/4" = 1'-0"

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

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zfa job no.17143

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO No. 4861 STRUCTURAL STATE OF CALIFORNIA

Sheet Title

BUILDING 8
TYPICAL METAL STUD ELEVATION AND CONNECTION DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

8-S1.30
Drawing No.

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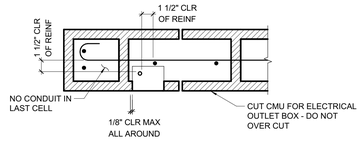
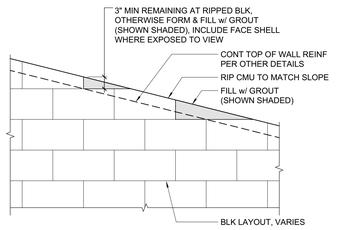
NOTES:

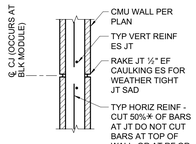
1. DO NOT TIE CONDUIT TO REINFORCING.
2. PLACE CONDUIT IN CELLS W/O REINF WHERE POSSIBLE.



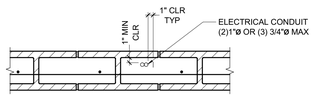
13 CONDUIT BOX IN CMU
1 1/2" = 1'-0"



14 SLOPED TOP OF MASONRY WALL
3/4" = 1'-0"



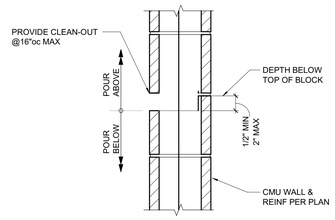
PLAN VIEW



w/o VERT REINFORCING

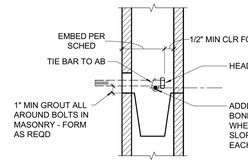
NOTES:
1. DETAILS SHOWN ARE FOR WALLS ONLY.
2. CONDUITS SHALL NOT BE LOCATED IN WALL PIERS OR UNDER BEAMS. WALL PIERS SHALL BE DEFINED AS ANY WALL SEGMENT 32" OR LESS IN LENGTH.
3. CONDUIT LOCATIONS SHALL BE SPACED 24"oc MIN.
4. DO NOT TIE CONDUIT TO REINFORCING.
5. PLACE CONDUIT IN CELLS w/ OUT REINFORCING WHERE POSSIBLE.
6. DO NOT PLACE CONDUITS IN JAMB CELLS

10 PIPES AND CONDUITS
1" = 1'-0"



NOTE:
1. POUR HEIGHT 10'-0" MAX.

11 HORIZONTAL CONSTRUCTION JOINT
1 1/2" = 1'-0"

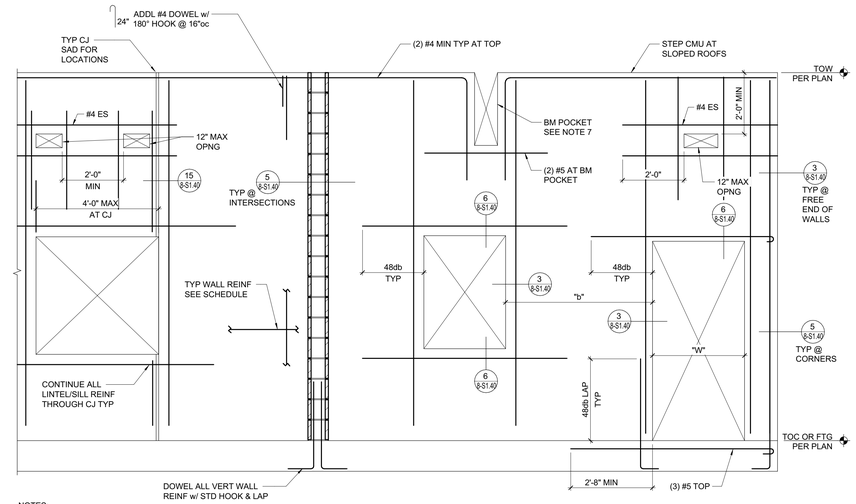


8" CMU WALL EMBEDMENT	12" CMU WALL EMBEDMENT	16" MIN PILASTER EMBEDMENT
5½"	9½"	12"

NOTE:
1. USE TEMPLATE TO SET ALL BOLTS.
2. BEDMENT TOLERANCE IS ±½" AND AS REQUIRED FOR CLEARANCE TO CMU.
3. AB SHALL PROJECT NOT LESS THAN ¼" OR MORE THAN 1" BEYOND NUT. REMOVE EXCESS THREADS WHERE NUT IS TO BE COUNTERSUNK FLUSH

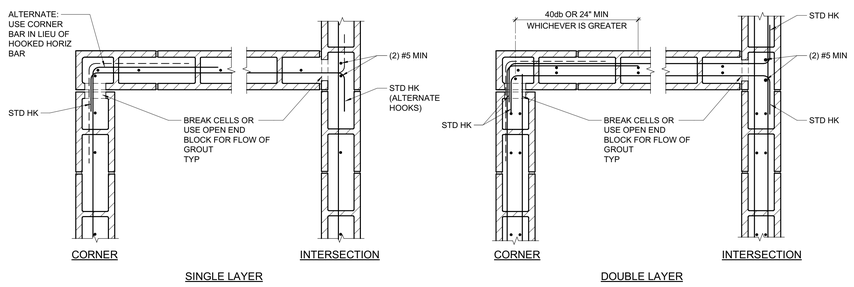
15 CMU WALL CONTROL JOINT
3/4" = 1'-0"

12 BOLT EMBEDMENT SCHEDULE
3/4" = 1'-0"

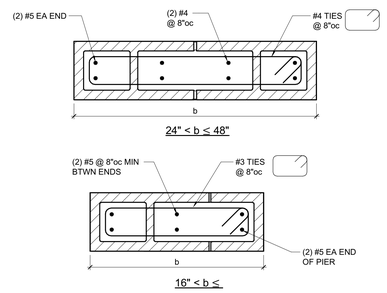


NOTES:
1. "W" DENOTES WIDTH OF OPENINGS. SEE ARCH DWGS FOR SIZE & LOCATION.
   "b" DENOTES DIMENSION BETWEEN OPENINGS. SEE ARCH DWGS.
2. DO NOT PLACE ELECTRICAL CONDUIT IN THE SAME CELL AS VERTICAL JAMB BARS. SEE **10/8-S1.40** & **13/8-S1.40** .
3. MASONRY WALL PIERS SHALL NOT BE LESS THAN 15⅝" WIDE.
4. FOR 12" CMU WALLS, REINFORCING SHOWN OCCURS AT EACH FACE.
5. ALL HORIZONTAL REINFORCING IN CMU BEARING WALLS SHALL TERMINATE WITH 90° OR 180° STANDARD HOOK.
6. FOR SLOPED TOP OF WALL, SEE **14/8-S1.40** .
7. FOR TYPE 1 WALLS PROVIDE 2" MIN 3" MAX CLEARANCE FROM UNDERSIDE OF BEAMS, SLAB & ALL SIDES OF BEAM.

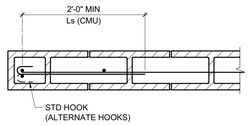
4 TYPICAL CMU WALL REINFORCING
1/2" = 1'-0"



5 REINFORCING AT WALL INTERSECTIONS
1" = 1'-0"

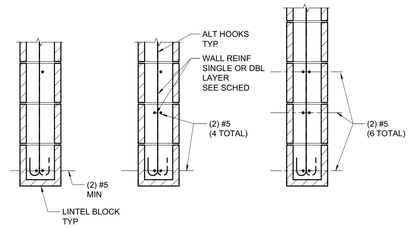


8 REINFORCING AT PIERS
1 1/2" = 1'-0"



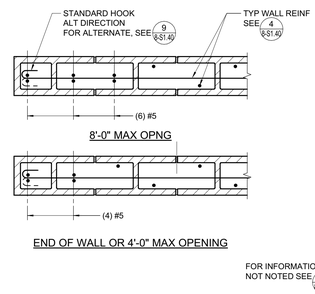
NOTES:
1. WHERE WALL IS NOT DESIGNATED AS A SHEAR WALL, STD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS.
2. HOOK AROUND END BARS AT NARROW PIERS.

9 ALTERNATE REINFORCING TERMINATION
1" = 1'-0"



NOTE:
LINTELS WILL BE SHORED FOR 28 DAYS MIN AFTER GROUT PLACEMENT.

6 REINFORCING AT LINTELS
1" = 1'-0"



7 REINFORCING AT JAMB OR END OF CANTILEVERED WALLS
1" = 1'-0"

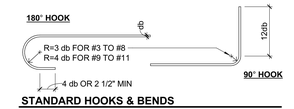
CMU WALL REINFORCING SCHEDULE					
TYPE	NOMINAL WALL THICKNESS "t"	HORIZ	VERT	JAMB AND END OF WALL	NOTES
1A	8"	#4 @ 24"oc CENTERED	#4 @ 24"oc	3/8-S1.40	NON-STRUCTURAL FULLY GROUTED
1B	8"	#4 @ 24"oc	#4 @ 24"oc CENTERED	3/8-S1.40	NON-STRUCTURAL FULLY GROUTED
1C	8"	#4 @ 24"oc	#5 @ 8"oc STAGGERED	7/8-S1.40	NON-STRUCTURAL FULLY GROUTED
2A	8"	#4 @ 16"oc	#4 @ 16"oc	3/8-S1.40	BEARING SHEAR WALL FULLY GROUTED
2B	8"	#5 @ 16"oc	#5 @ 16"oc	3/8-S1.40	BEARING SHEAR WALL FULLY GROUTED

NOTES:
1. USE THIS SCHEDULE WHERE SIZE OF CMU AND REINFORCING IS NOT SHOWN OTHERWISE ON PLANS, DETAILS, OR WALL ELEVATIONS. FOR TYPICAL CMU WALL ELEVATION, SEE **4/8-S1.40** .
2. FOR FOUNDATION CONNECTION AT TYPE 1C WALLS SEE **1/8-S1.41** .
3. FOR FOUNDATION OR SLAB CONNECTION AT TYPE 1A & 1B WALLS SEE **2/8-S1.41** .
4. FOR TYP 1B WALLS PROVIDE TOP OF WALL CONNECTION TO UNDERSIDE OF STRUCTURE ABOVE PER **6/8-S1.41** OR **7/8-S1.41** .
5. VERTICAL REINF FOR WALLS SHALL BE CONTINUOUS FROM TOP OF SLAB TO TOP OF WALL OR FLOOR TO FLOOR WITHOUT SPLICE.
6. USE OPEN END BLOCK AT VERTICAL REINFORCING BARS.
7. USE SPECIAL BOND BEAM OR LINTEL BLOCK AT ALL HORIZONTAL BARS.
8. THE TERM "STANDARD HOOK" SHALL MEAN EITHER:
   --180 HOOK PLUS AN EXTENSION OF 4 BAR DIAMETERS OR 2.5".
   --90 HOOK PLUS AN EXTENSION OF 12 BAR DIAMETERS.
9. FOR LAP SPLICES & MIN CLEARANCES SEE **2/8-S1.40** .
10. FOR REINF AT PIERS WITH b ≤ 6t SEE **8/8-S1.40** .
11. USE 9 GA. WIRE POSITIONERS FOR ALL VERTICAL WALL REINFORCING. SPACE VERT TIES MAX 192 x (BAR DIA) oc OR 120".
12. FOR ATTACHMENT TO CONC COLUMNS OR WALLS SEE **4/8-S1.41** .

1 CMU REINFORCING SCHEDULE
1" = 1'-0"

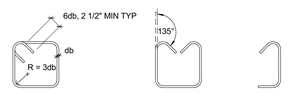
MINIMUM BAR LAPS, Ls (CMU), FOR REINFORCING STEEL MASONRY STRENGTH: 2000 PSI OR GREATER (STAGGER SPLICES)					
SIZE	LAP LENGTH	SIZE	LAP LENGTH	SIZE	LAP LENGTH
#3	12"	#6	54"	#9	82"
#4	24"	#7	64"		
#5	36"	#8	72"		

MINIMUM CLEARANCES . . . . . **'CLR'**
CMU TO BAR . . . . . ½"
BAR TO BAR . . . . . 2"
ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE



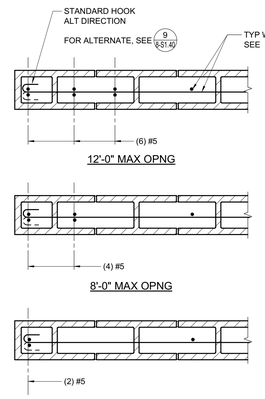
STANDARD HOOKS & BENDS

COL BAR & STRUCT OFFSET **SPLICE**



135° STIRRUP TIES #3, #4, #5 **STIRRUP #3, #4, #5** **CROSSTIE #3, #4, #5**

2 TYPICAL LAP SPLICES IN MASONRY WALLS
3/4" = 1'-0"



NOTES:
1. ALL JAMB BARS SHALL BE FULL HEIGHT OF WALL.
2. ELECTRICAL CONDUIT REQUIRED NEAR THE EDGE OF ANY OPENING GREATER THAN 4'-0" SHALL BE ROUTED VERTICALLY IN FIRST OPEN ADJACENT CELL, THEN HORIZONTALLY TO DESIRED LOCATION.
3. TAIL OF STANDARD HOOK (90 OR 180) CAN BE ORIENTED VERTICALLY DOWNWARD INTO THE LAST CELL IN LIEU OF THE HOOK BEING WRAPPED AROUND THE VERTICAL END BARS WHERE WALL IS NOT DESIGNATED ON PLAN AS A SHEAR WALL. HOOK AROUND END BARS AT NARROW PIERS.

3 REINFORCING AT JAMB OR END OF WALL
1" = 1'-0"

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DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVED RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

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Sheet Title

BUILDING 8
TYPICAL CMU DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

8-S1.40
Drawing No.

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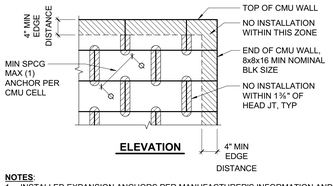
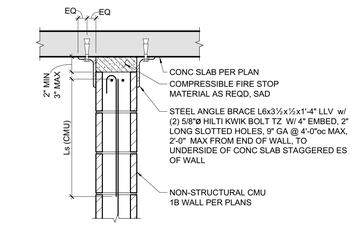
CARBON STL EXP ANCHORS IN 1500 PSI MIN CMU				
ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MINIMUM EMBEDMENT DEPTH*	MIN SPCG S_{min}	INSTALL TORQUE (FT-LB)
SIMPSON STRONG-BOLT 2 (IAPMO ES-0240)	⅜"	2⅜"	4"	30
	½"	3½"	4"	35
	⅝"	4⅜"	4"	55
	¾"	5½"	4"	120
HILTI KWIK BOLT 3 (ICC-ESR 1385)	⅜"	2½"	8"	15
	½"	3½"	8"	25
	⅝"	4"	8"	65
	¾"	4⅜"	8"	120

* PILOT HOLE DEPTH = MIN (1) DIAMETER GREATER THAN EMBEDMENT DEPTH



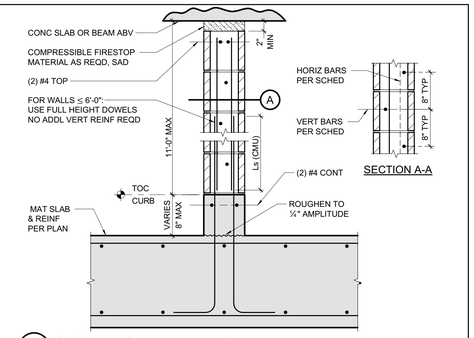
NOTES:
1. INSTALLED EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND EVALUATION REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR AND SHALL CONSIDER BOLT SPACING WHEN SELECTING ANCHOR TYPE.
3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING CMU, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. USE ROTARY DRILL ONLY. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND ANCHOR. WHEN REINFORCEMENT IS PRESENT IN DRILLED HOLE ABANDON THE HOLE. FILL ABANDONED HOLES W/ DRY PACK AND FINISH TO MATCH CMU. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, MASONRY TYPE, MASONRY COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), MASONRY THICKNESS, AND TIGHTENING TORQUE.
5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTIONS 1705.4 AND 1913.7.

11 EXPANSION ANCHORS IN CMU
3/4" = 1'-0"

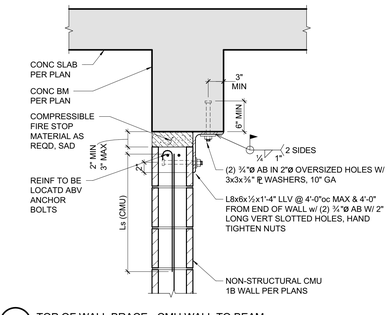


NOTES:
1. WHERE BM INTERSECTS TOP OF WALL, PROVIDE BM POCKET W/ MIN 2" CLR TO BM ALL AROUND WITH STEEL ANGLE BRACES AT EA SIDE OF WALL W/ IN 2'-0" ℄ OF BM.
2. LONG SLOTTED HOLES IN STEEL ANGLE SHALL BE INLINE W/ WALL.
3. IF REINF IS ENCOUNTERED DURING ANCHOR INSTALLATION, DRY PACK ABANDONED HOLE W/ NON-SHRINK GROUT AND ADJUST ANCHOR LOCATION AS REQD. IF ENCOUNTERED REINFORCING STEEL IS INLNE WITH WALL, USE L6x6x½x1'-4" STEEL BRACING ANGLE TO AVOID CONFLICT.

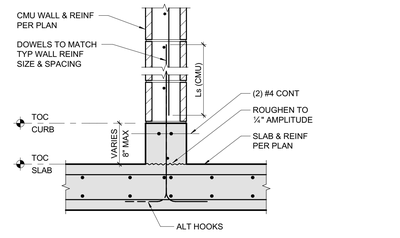
6 TOP OF WALL BRACE - CMU WALL TO SLAB
1" = 1'-0"



1 CANTILEVER CMU WALL AT MAT SLAB
1" = 1'-0"

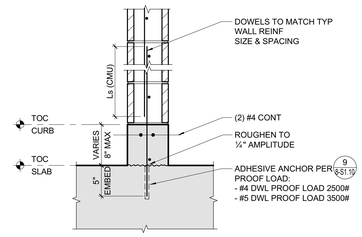


7 TOP OF WALL BRACE - CMU WALL TO BEAM
1" = 1'-0"



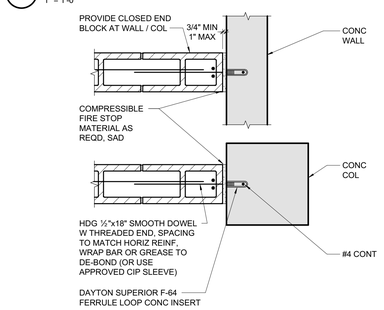
NOTES:
1. FOR ALT ANCHORAGE SEE 3/8-S1.41 .

2 CMU WALL AT SLAB
1" = 1'-0"



NOTES:
1. LOCATE SLAB REINF PRIOR TO DRILLING.
2. DO NOT DAMAGE SLAB REINFORCING.
3. IF HOLE CONFLICTS w/ SLAB REINF, FILL ABANDONED HOLE WITH ADHESIVE.

3 ALTERNATE ANCHORAGE FOR TYPE 1A AND TYPE 1B WALLS
1" = 1'-0"



4 NON-STRUCTURAL CMU WALL ANCHORAGE TO CONCRETE WALL OR COLUMN
1" = 1'-0"

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HEART OF THE BAY

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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REVISIONS

No.	Description	Date

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Sheet Title

BUILDING 8
TYPICAL CMU DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

8-S1.41
Drawing No.

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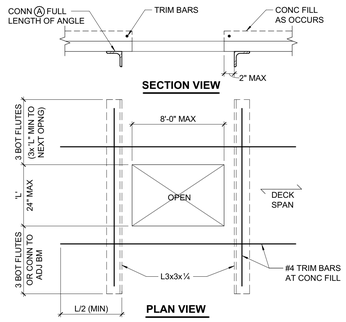
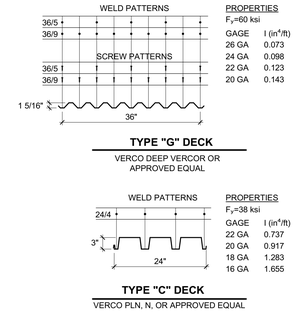


11 TYPICAL REINFORCED OPENING IN DECK (LESS THAN 24")
1" = 1'-0"

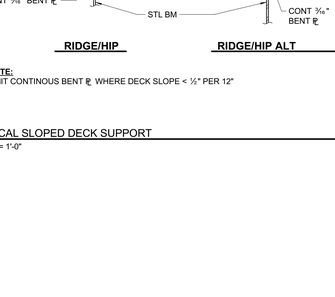


7 DECKING TYPE AND CONNECTION PATTERN

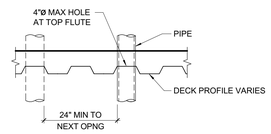
MARK	STEEL DECK GAGE & PROFILE TYPE SEE 7/S1.50	DECK CONNECTIONS						MINIMUM SLAB FILL THICKNESS ABV DECK	MINIMUM SLAB FILL REINFORCING	REMARKS
		END/INT BEARING CONN Ⓐ		SIDE BEARING CONN Ⓑ		SIDELAP CONNECTION Ⓒ				
		SIZE & TYPE	PATTERN	SIZE & TYPE	SPACING	SIZE & TYPE	SPACING			
1	B - 18 GA	¾"ø PW	24/4	¾"ø PW	12"	1½" TSW	12"	4½" CONCRETE MIN (7½" TOT THICKNESS MIN)	#4 @ 18"oc EW AT MID HEIGHT	
2	C - 20 GA	¾"ø PW	36/4	¾"ø PW	12"	1½" TSW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	
3	C - 18 GA	¾"ø PW	36/4	¾"ø PW	12"	1½" TSW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	
4	G - 22 GA	¾"ø PW	36/9	¾"ø PW	12"	1½" TSW OR ¾"x1½" ASW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	SEE 7/8-S1.50 FOR SCREW CONNECTION
5	E - 18 GA	¾"ø PW	24/3	¾"ø PW	12"	1½" TSW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	
6	C - 18 GA	¾"ø PW	36/4	¾"ø PW	12"	1½" TSW	12"	3½" CONCRETE MIN (6½" TOT THICKNESS MIN)	#4 @ 18"oc EW AT MID HEIGHT	

NOTES:
1. * = ½"ø MIN OF FUSION (EFFECTIVE WELD). ATTACH DECK TO ALL STEEL SUPPORT FRAMING AS OCCURS.
2. ALL DECK TYPES TO RECEIVE CONCRETE FILL TO HAVE FACTORY PUNCHED VENT TABS.
3. PW = PUDDLE WELD.
4. TSW = TOP SEAM WELD (⅛" FILLET).
5. ASW = ARC SEAM WELD.
6. BP = BUTTON PUNCH.
7. VSC2 = VERCO SIDE LAP CONNECTION.
8. PINS = HILTI X-ENP-19 PER ICC ESR-2197.
9. ABOVE REFERENCED DECKS AND COMPOSITE DEPTHS ARE BASED ON ALLOWABLE DESIGN LOADS PER IAPMO ER-0217 VERCO MANUFACTURING, ESR-2047 EPIC METAL DECK CORP - EQUIVALENT DECK MUST HAVE EQUIVALENT ALLOWABLE VERTICAL LOADS, DIAPHRAGM SHEAR VALUES, AND FLEXIBILITY FACTORS.
10. SHORING OF DECK REQUIRED AT SINGLE SPAN & 2 SPAN CONDITIONS. NOT REQUIRED AT 3 SPAN CONDITIONS. AT CONTRACTOR'S OPTION, HEAVIER DECK MAY BE USED TO AVOID SHORING PER SEOR WRITTEN APPROVAL.
11. PROVIDE EXTRA CONCRETE TOPPING TO PROVIDE FLAT LEVEL SURFACE, 1" MAX.
12. WHERE A WELDED HEADED STUD OCCURS COINCIDENT WITH A TYPE 'A' DECK ATTACHMENT, THE TYPE 'A' ATTACHMENT MAY BE OMITTED.
13. PROVIDE FULL WIDTH DECK SHEET ON EACH SIDE OF BEAMS IN THE SFRS, AND AT THE BUILDING PERIMETER.

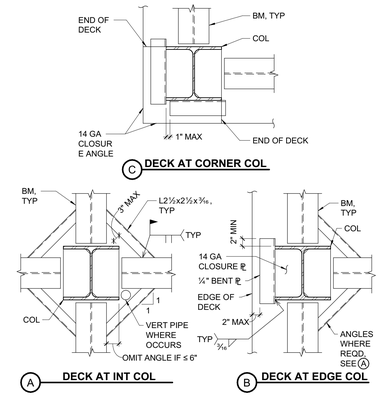
1 DECKING SCHEDULE
3/4" = 1'-0"



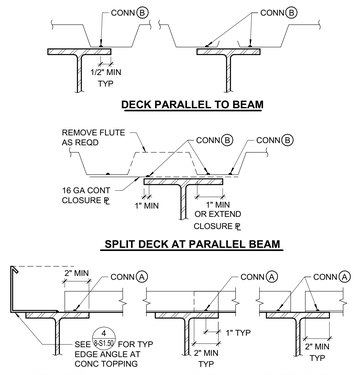
12 TYPICAL FRAMED OPENING IN DECK (LESS THAN 11'-0")
1" = 1'-0"



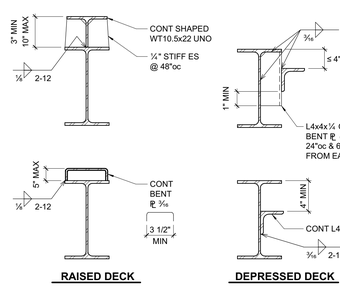
8 TYPICAL UNREINFORCED OPENING IN DECK (≤ 4")
3/4" = 1'-0"



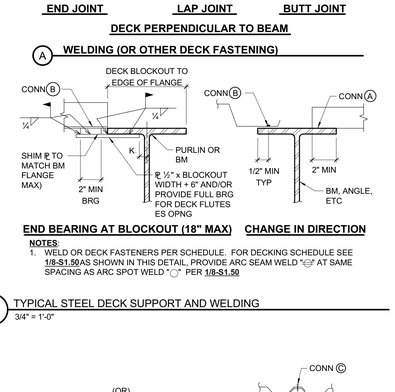
5 TYPICAL DECK SUPPORT AT COLUMN
3/4" = 1'-0"



A WELDING (OR OTHER DECK FASTENING)

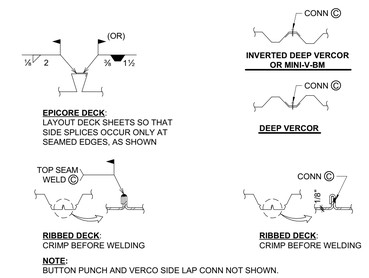


6 TYPICAL RAISED AND DEPRESSED DECK SUPPORT
1 1/2" = 1'-0"



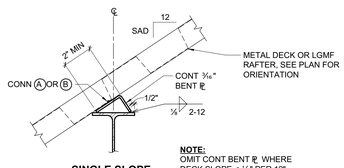
NOTES:
1. WELD OR DECK FASTENERS PER SCHEDULE. FOR DECKING SCHEDULE SEE 1/8-S1.50AS SHOWN IN THIS DETAIL, PROVIDE ARC SEAM WELD "⌓" AT SAME SPACING AS ARC SPOT WELD "◯" PER 1/8-S1.50

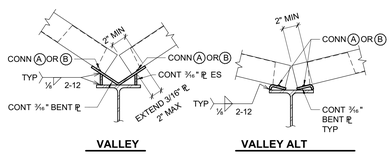
2 TYPICAL STEEL DECK SUPPORT AND WELDING
3/4" = 1'-0"

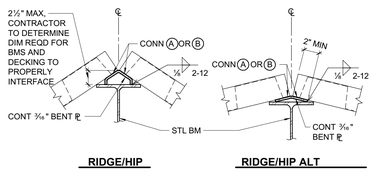


NOTE:
BUTTON PUNCH AND VERCO SIDE LAP CONN NOT SHOWN.

3 TYPICAL DECK SIDE LAP CONNECTION
3" = 1'-0"

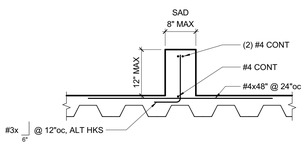




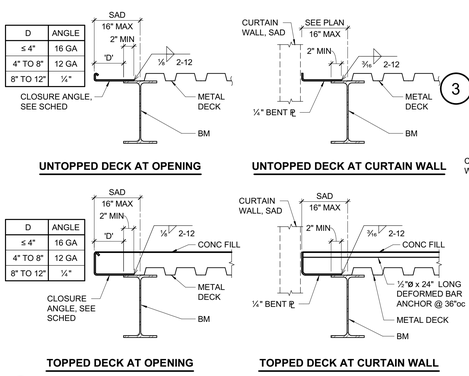


NOTE:
OMIT CONTINOUS BENT ℄ WHERE DECK SLOPE < ½" PER 12"

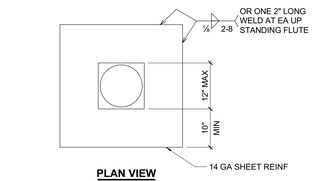
13 TYPICAL SLOPED DECK SUPPORT
1 1/2" = 1'-0"



9 TYPICAL CURB ON DECK WITH CONCRETE FILL
3/4" = 1'-0"



4 TYPICAL EDGE OF DECK
1" = 1'-0"



10 TYPICAL REINFORCED OPENING IN DECK (LESS THAN 12")
3/4" = 1'-0"

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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Sheet Title

BUILDING 8
TYPICAL METAL DECKING DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

8-S1.50
Drawing No.

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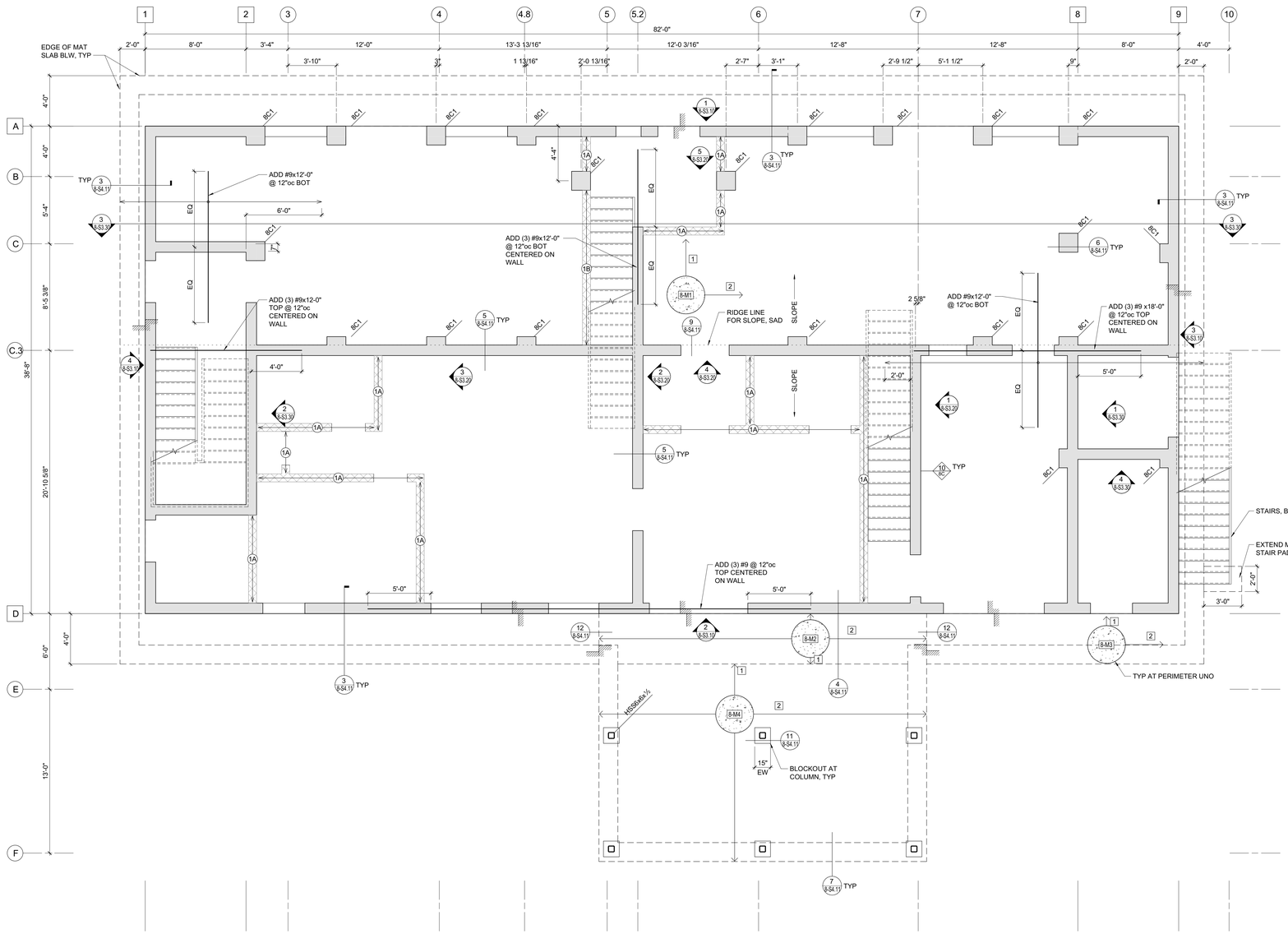

FOUNDATION PLAN

1/4" = 1'-0"

FOUNDATION PLAN NOTES:

1. REFER TO SHEETS **8-S0.10** THROUGH **8-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. SEE DETAILS OR CURB PLAN FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
4. PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO PIPES OR CONDUITS THRU SILL PLATES SHALL BE WITHIN 12" OF HOLDOWN BOLTS. NO MECHANICAL, ELECTRICAL, OR PLUMBING OPENINGS SHALL BE LOCATED IN SHEAR WALLS UNLESS SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

   PIPES PARALLEL TO FOOTINGS SHALL BE PER **2/8-S1.10** .
5. ELEVATION OF THE TOP OF FINISHED SLAB = 0'-0", UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
1A	1/8-S4.12	INDICATES CAST IN PLACE CONCRETE WALL W/ THICKNESS "t" AND REINFORCING TYPE "A" PER SCHEDULE TYP, UNO.
8C1	1/8-S4.14	INDICATES CONCRETE COLUMN PER SCHEDULE.
		INDICATES STEEL COLUMN.
		INDICATES FOUNDATION.
88		INDICATES GRIDLINE AT FACE OF WALL.
88		INDICATES GRIDLINE AT CENTERLINE OF WALL.
		INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
1 / S3.1		INDICATES ELEVATION.
2 / 8-M1 / 1	1/8-S4.11	INDICATES CONCRETE MAT FOUNDATION TYPE 'M1' PER SCHEDULE AND REINF LAYER DIRECTIONS. INCREASE SLAB THICKNESS AS REQUIRED TO SLOPE TOP OF SLAB TO DRAINS PER ARCH. MAT TO BE PLACED OVER VAPOR BARRIER OVER 12" OF NON-EXPANSIVE SOIL CONSISTING OF COMPACTED IMPORTED SELECT FILL OR LIME TREATED ON-SITE SOIL.
1A	1/8-S1.40	INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A", SIZE AND REINFORCING PER SCHEDULE TYP, UNO.

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Sheet Title

BUILDING 8
FOUNDATION PLAN

Drawn By: -
Checked By: -

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

8-S2.10

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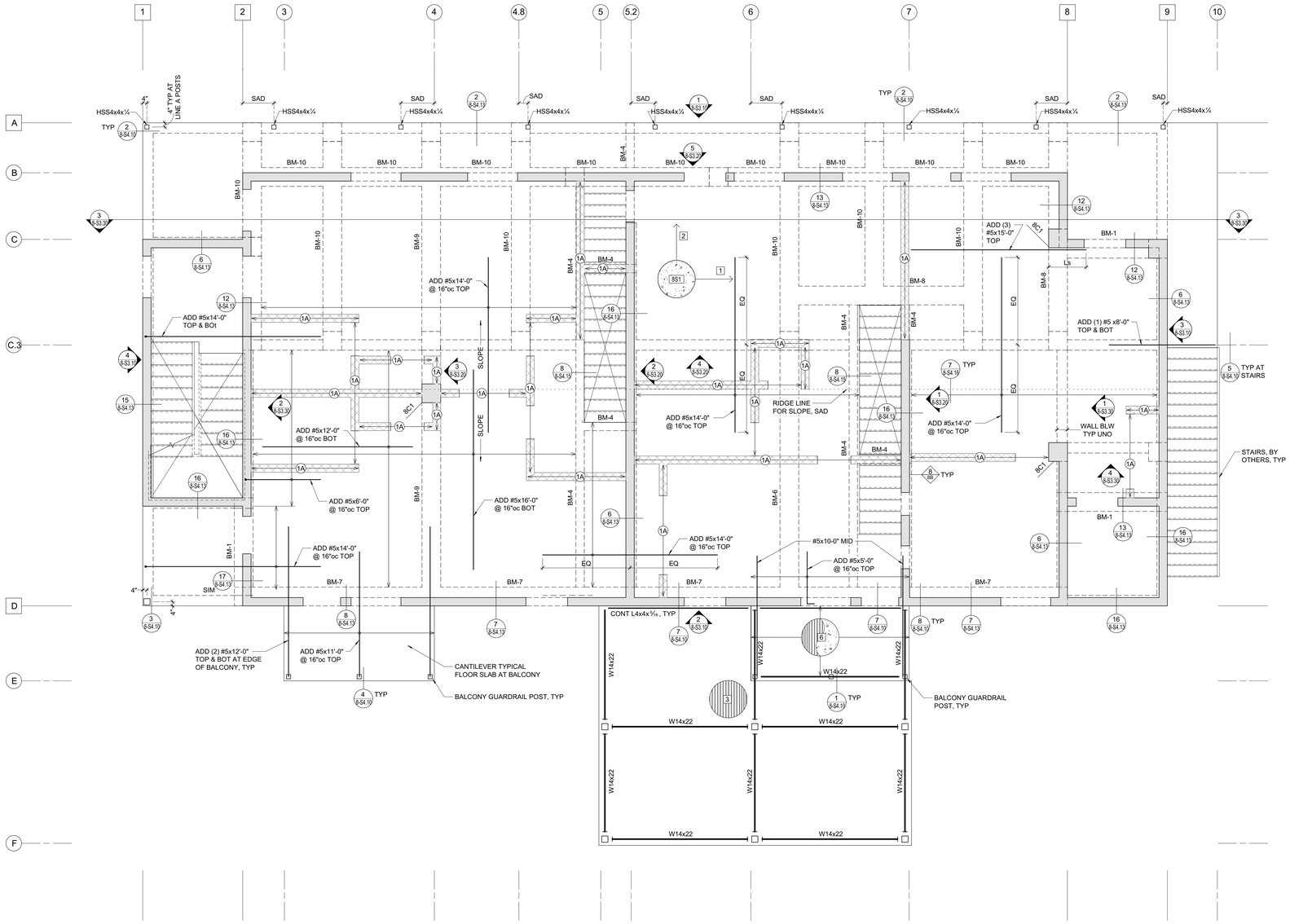

SECOND FLOOR FRAMING PLAN

1/4" = 1'-0"

FLOOR FRAMING PLAN NOTES:

1. REFER TO SHEETS **8-S0.10** THROUGH **8-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMING, COLUMNS, OR ASE PLATES. CONDUIT OR PLUMBING NOT ALLOWED WITHIN CONCRETE FILL ON METAL DECK. PROVIDE FURRING WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE RESTRICTIONS.
4. FIRE PROTECTION SYSTEM SUPPORTS TO BE LOCATED TO MAINTAIN A MAXIMUM OF (2) 500 LB MAX POINT LOADS WITH 15'-0" MINIMUM SEPARATION TO ANY STEEL BEAM. NO SUPPORTS TO BE HUNG FROM METAL DECKING.
5. SEE ARCHITECTURAL DRAWINGS FOR EDGE OF SLAB, FACE OF WALL, ETCETERA.
6. SEE ARCHITECTURAL DRAWINGS FOR TOP OF SLAB OR TO TOP OF STEEL ELEVATION.
7. BEAM CENTERLINES TO ALIGN WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.
8. BEAMS TO BE EQUALLY SPACED IN EACH BAY, UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
88		INDICATES GRIDLINE AT CENTERLINE OF WALL.
88		INDICATES GRIDLINE AT FACE OF WALL.
		INDICATES STEEL COLUMN.
W16x26 C=1"		INDICATES BEAM SIZE AND CAMBER. WHERE NO CAMBER IS SPECIFIED FABRICATE BEAM WITH NATURAL CAMBER UP.
		INDICATES "T" PLATE BEAM CONNECTION TO COLUMN.
2	1/8-S1.50	INDICATED CONCRETE OVER METAL DECK PER SCHEDULE AND DIRECTION OF DECK SPAN
1	1/8-S1.50	INDICATES METAL DECK PER SCHEDULE AND DIRECTION OF DECK SPAN.
2 / BS1 / 1	1/8-S4.16	INDICATES SUSPENDED CONCRETE SLAB TYPE 'S1' PER SCHEDULE AND REINF LAYER DIRECTIONS. INCREASE SLAB THICKNESS AS REQUIRED TO SLOPE TOP OF SLAB TO DRAINS PER ARCH.
MU 1,000#		INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
1 / S3.10		INDICATES BUILDING ELEVATION.
1 / EA	1/8-S4.12	INDICATES CAST IN PLACE CONCRETE WALL PANEL W/ THICKNESS "t" AND REINFORCING TYPE "A" PER SCHEDULE TYP, UNO.
8C1	1/8-S4.14	INDICATES CONCRETE COLUMN PER SCHEDULE.
		INDICATES CONCRETE WALL BELOW. (NON-BEARING WALLS BELOW NOT SHOWN FOR CLARITY)
		INDICATES CONCRETE COLUMN BELOW.
BM-1	1/8-S4.15	INDICATES CONCRETE BEAM TYPE BM-1 PER SCHEDULE UNO
		INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
1A	1/8-S1.40	INDICATES NON-STRUCTURAL CMU WALL, TYPE "1A". SIZE AND REINFORCING PER SCHEDULE TYP, UNO.

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

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Sheet Title

BUILDING 8
SECOND FLOOR PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

8-S2.20
Drawing No.

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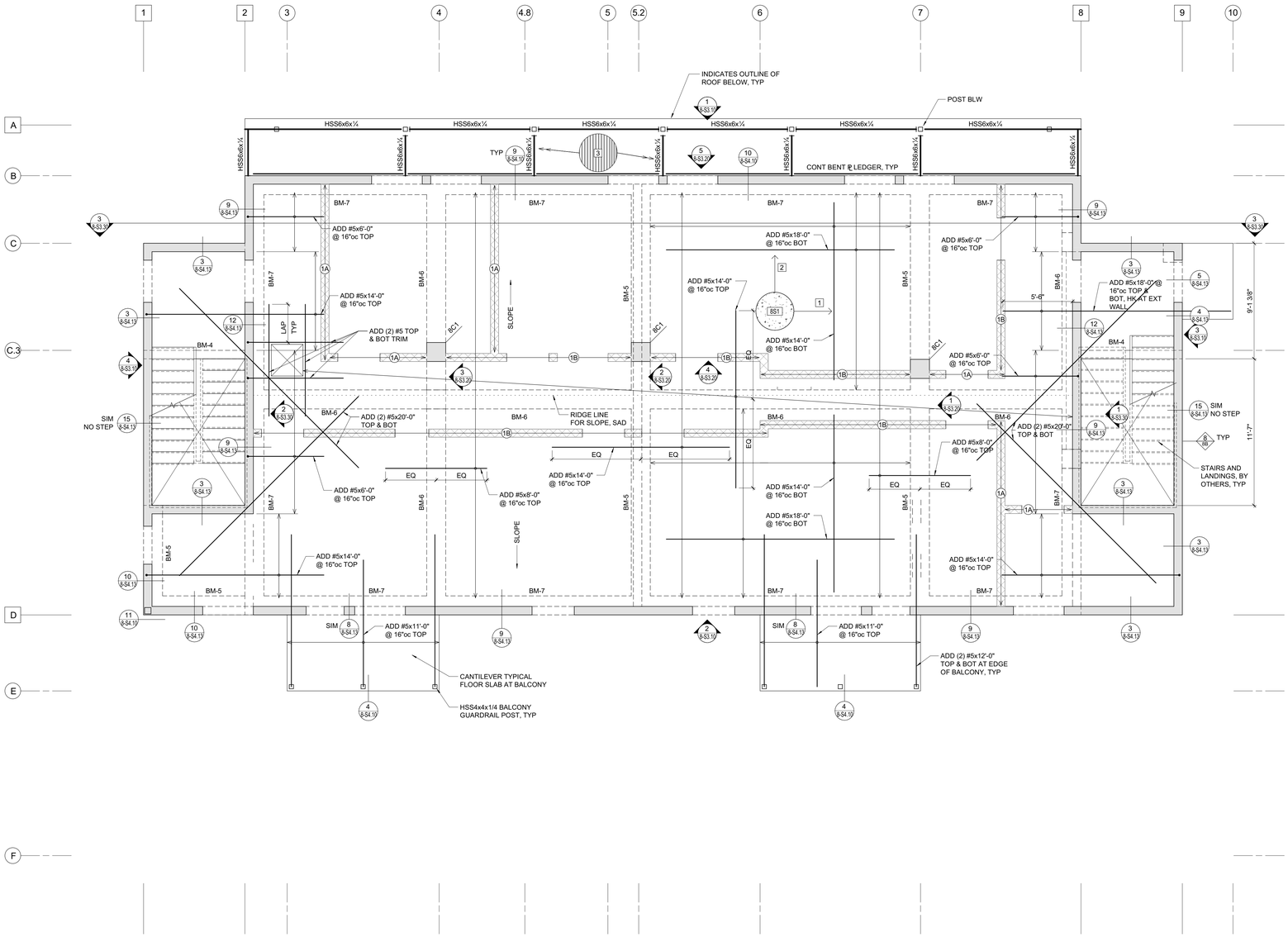
2/25/2020 11:30:53 AM C:\revit_local\R2017\17143_B8 - HWFT 08 Training Tower_S17C_local@zfa.com.rvt

FLOOR FRAMING PLAN NOTES:

1. SEE SHEET **8-S2.20** FOR PLAN NOTES AND LEGEND.



NORTH

THIRD FLOOR FRAMING PLAN

1/4" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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Sheet Title

BUILDING 8
THIRD FLOOR PLAN

Drawn By: LS Checked By: SRP

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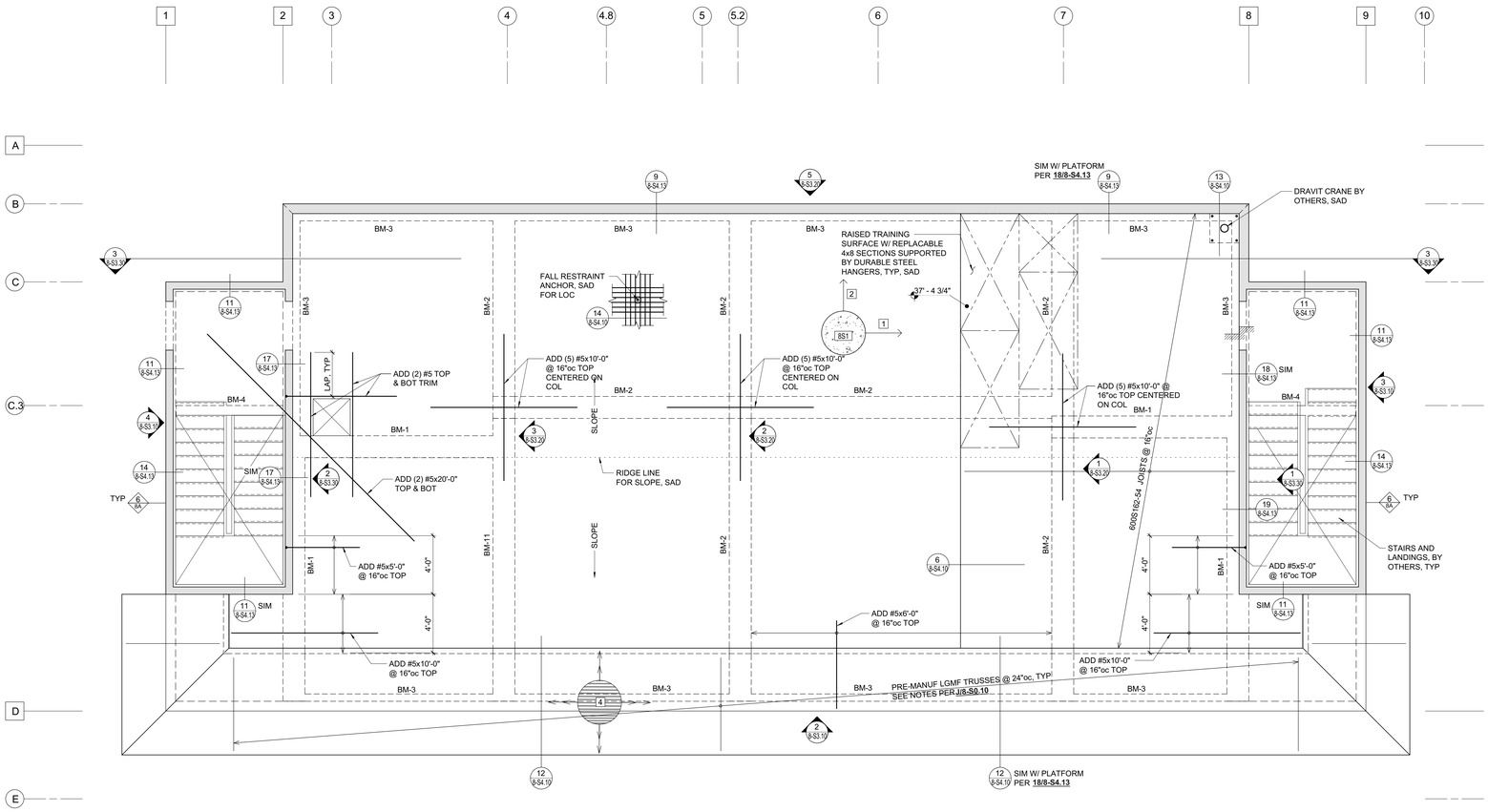
ROOF FRAMING PLAN NOTES:

1. SEE SHEET **8-S2.20** FOR PLAN NOTES AND LEGEND.



ROOF FRAMING PLAN

1/4" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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KEVIN G. ZUCCO
No. 4861
STRUCTURAL
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ROOF PLAN

Drawn By: Author
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8-S2.40

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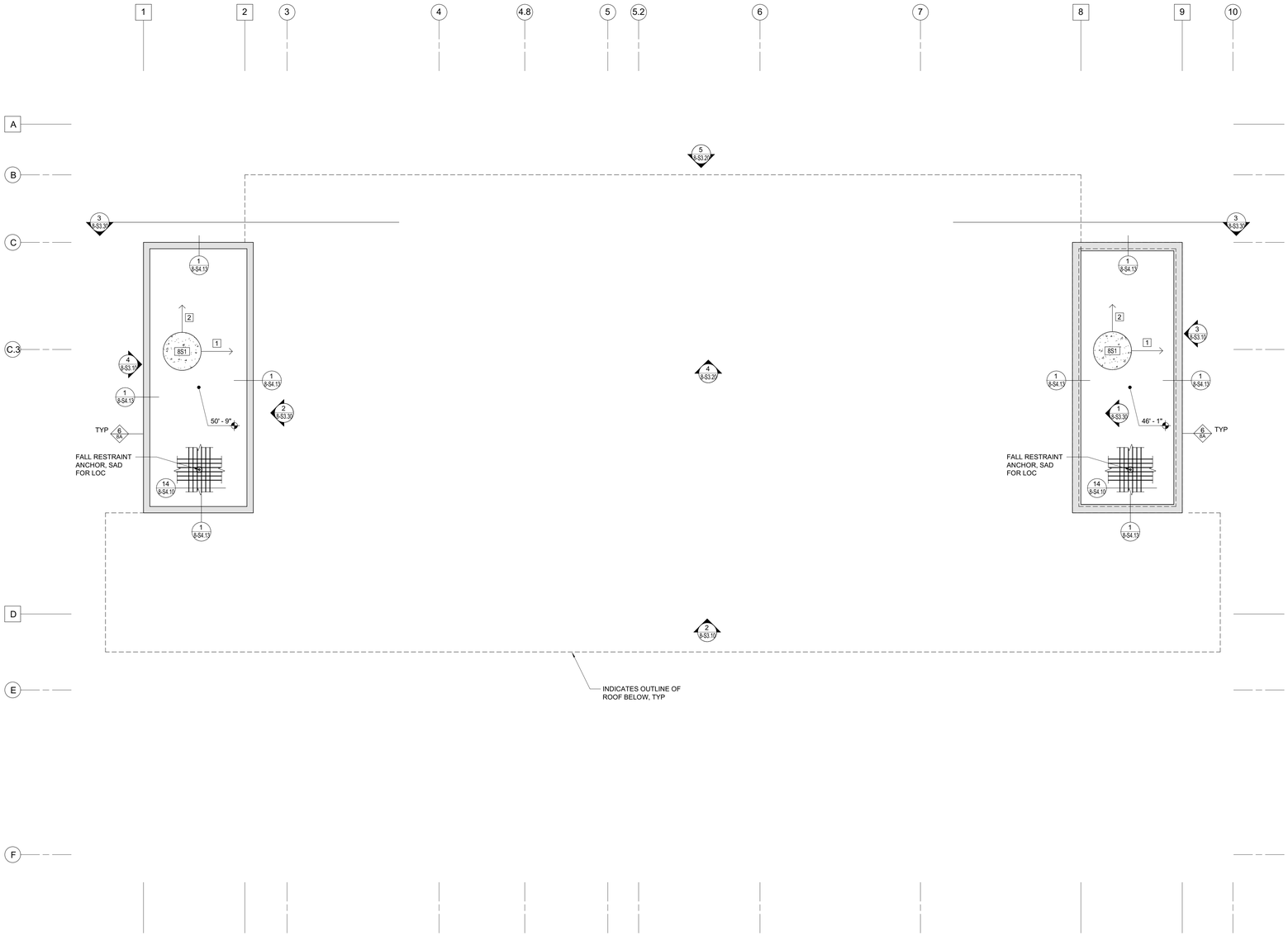
ROOF FRAMING PLAN NOTES:

1. SEE SHEET 8-S2.20 FOR PLAN NOTES AND LEGEND.



NORTH

STAIR TOWER ROOF FRAMING PLAN

1/4" = 1'-0"

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

Sheet Title

BUILDING 8
STAIR TOWER ROOF PLAN

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October 4, 2019

Project No. 17143

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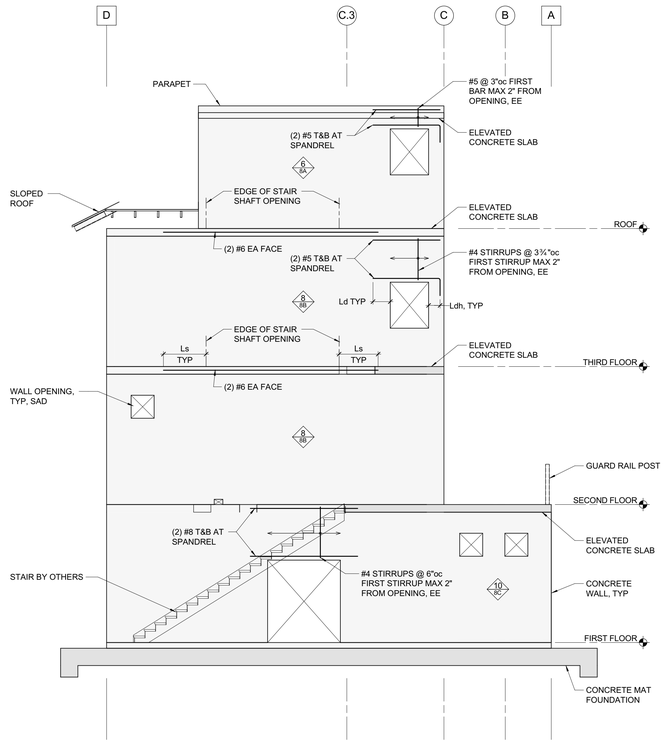
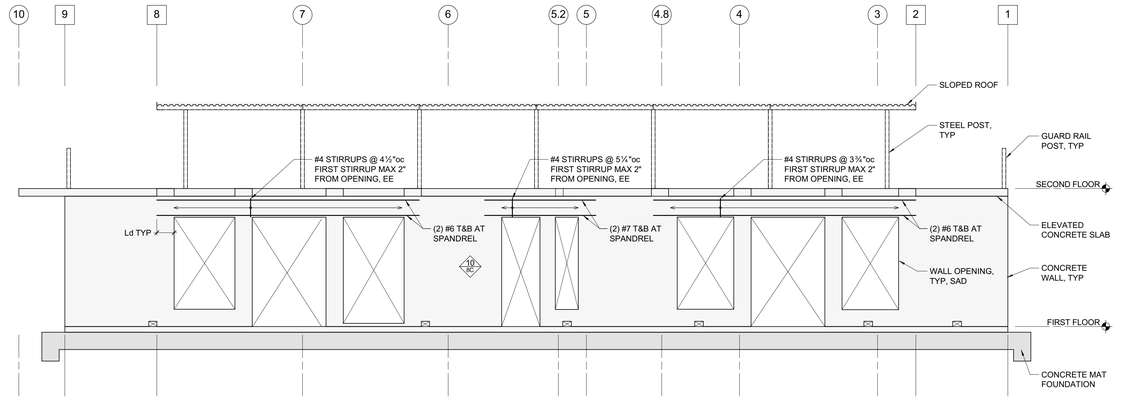


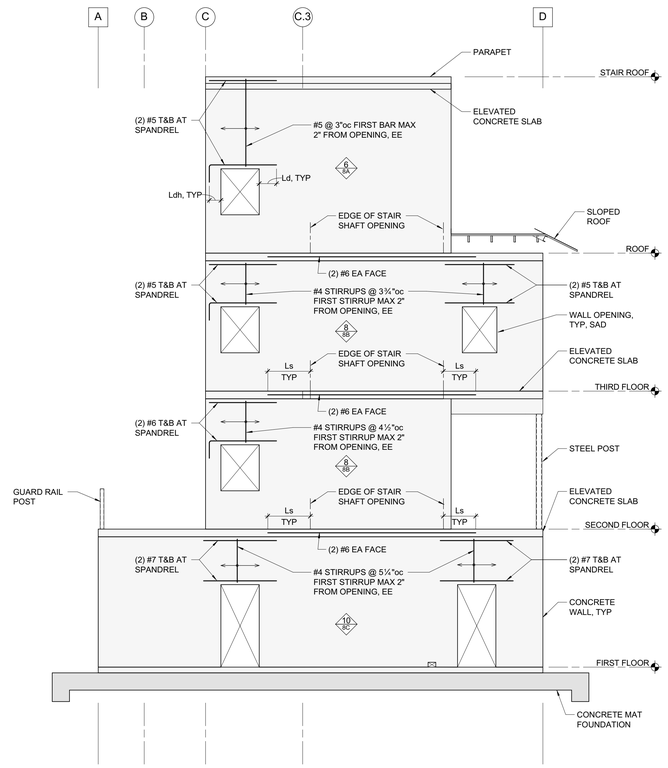
3 EXTERIOR ELEVATION AT GRID 9
3/16" = 1'-0"

ELEVATION NOTES:

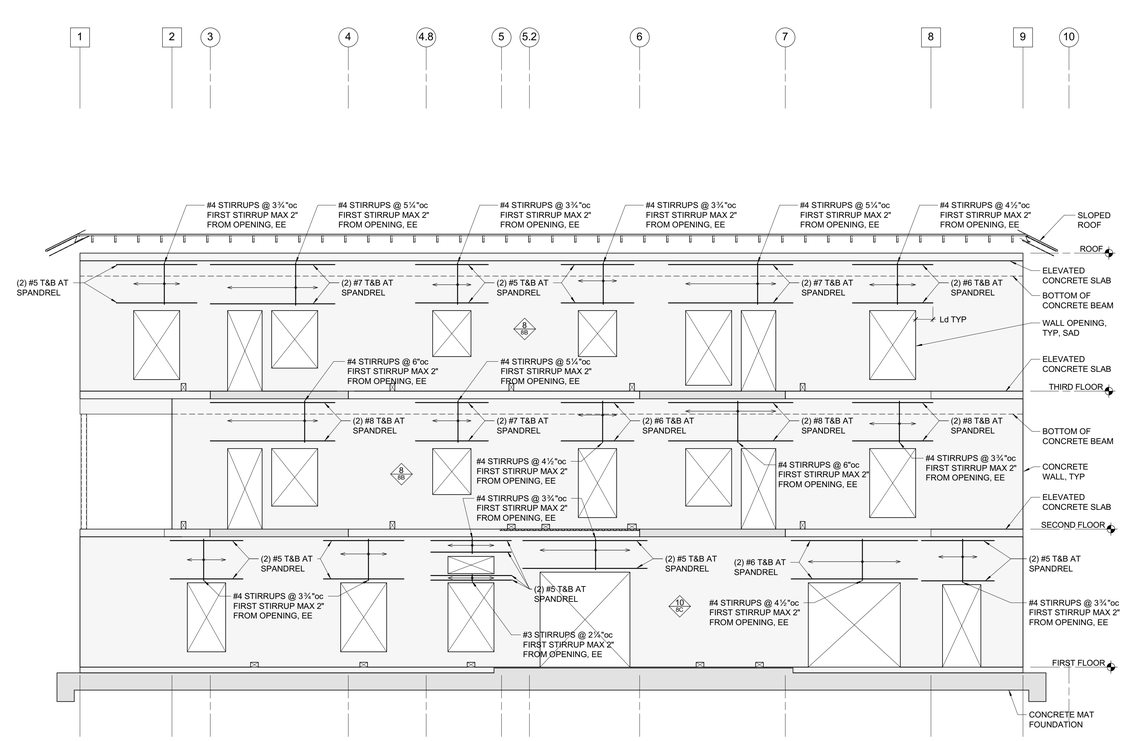
1. ELEVATIONS ARE SCHEMATIC. SEE PLANS FOR ADDITIONAL INFORMATION.
2. SEE PLANS FOR ALL COLUMN AND BEAM SIZES.
3. SAD FOR FRAMING HEIGHTS, BEAM SLOPES AND ALL DIMENSIONS.
4. OPENINGS SHOWN FOR REFERENCE ONLY. COORDINATE ALL OPENING SIZE AND LOCATIONS WITH ALL OTHER DISCIPLINES



1 EXTERIOR ELEVATION AT GRID A
3/16" = 1'-0"



4 EXTERIOR ELEVATION AT GRID 1
3/16" = 1'-0"



2 EXTERIOR ELEVATION AT GRID D
3/16" = 1'-0"

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CITY OF HAYWARD
HEART OF THE BAY

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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Sheet Title

BUILDING 8 ELEVATIONS

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Project No. 17143

8-S3.10

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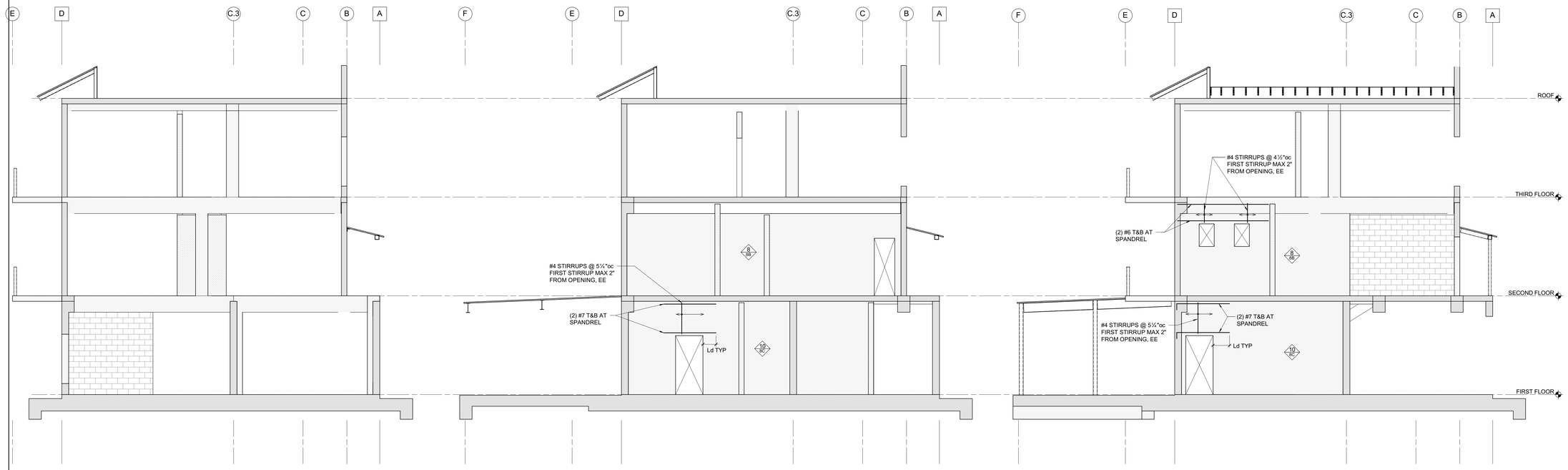
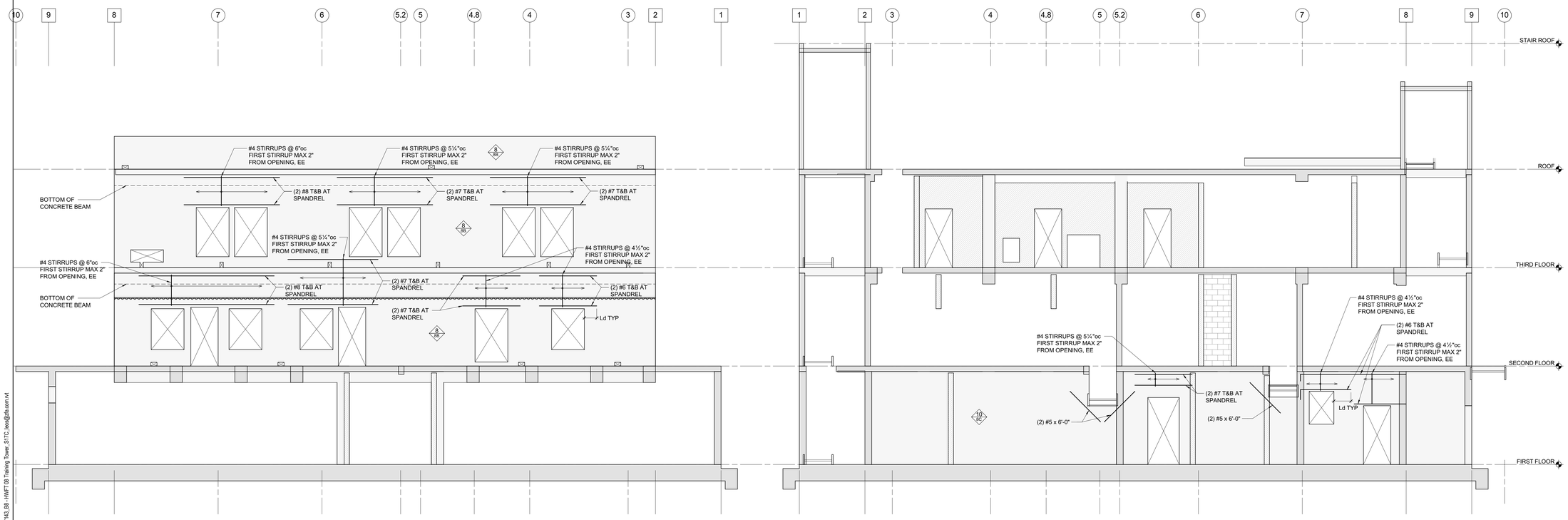


3 ELEVATION AT GRID 4
3/16" = 1'-0"

2 ELEVATION AT GRID 5.2
3/16" = 1'-0"

1 ELEVATION AT GRID 7
3/16" = 1'-0"



5 ELEVATION AT GRID B
3/16" = 1'-0"

4 ELEVATION AT GRID C.3
3/16" = 1'-0"

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2/26/2020 11:31:20 AM

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KEVIN G. ZUCCO
No. 4861
STRUCTURAL
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ELEVATIONS

Drawn By: Author
Checked By: Checker

Scale:
3/16" = 1'-0"

Date:
October 4, 2019

Project No. 17143

8-S3.20
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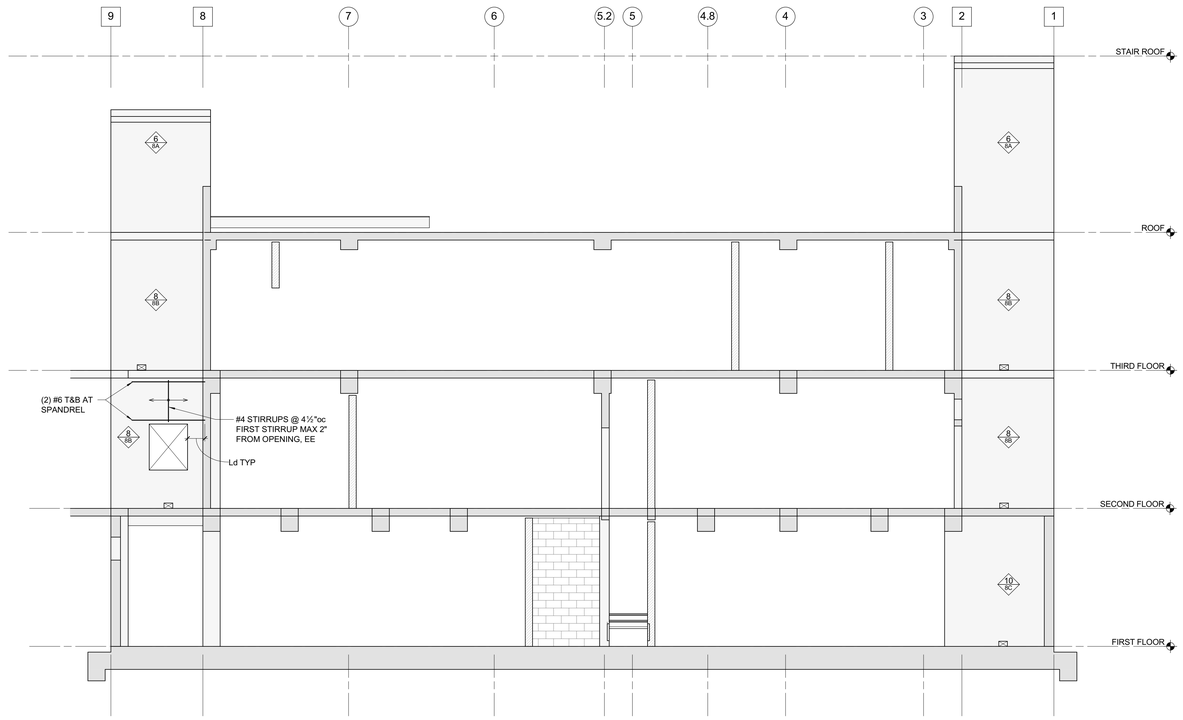
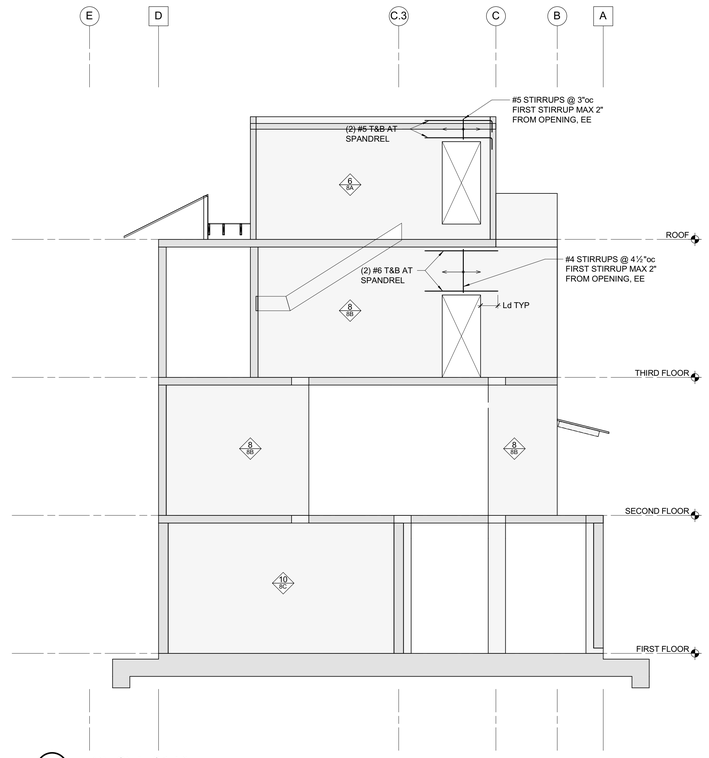
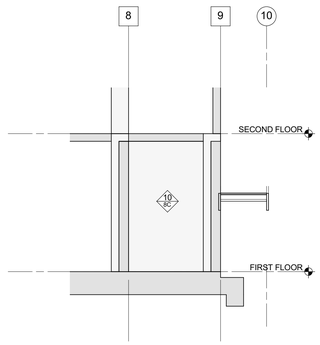


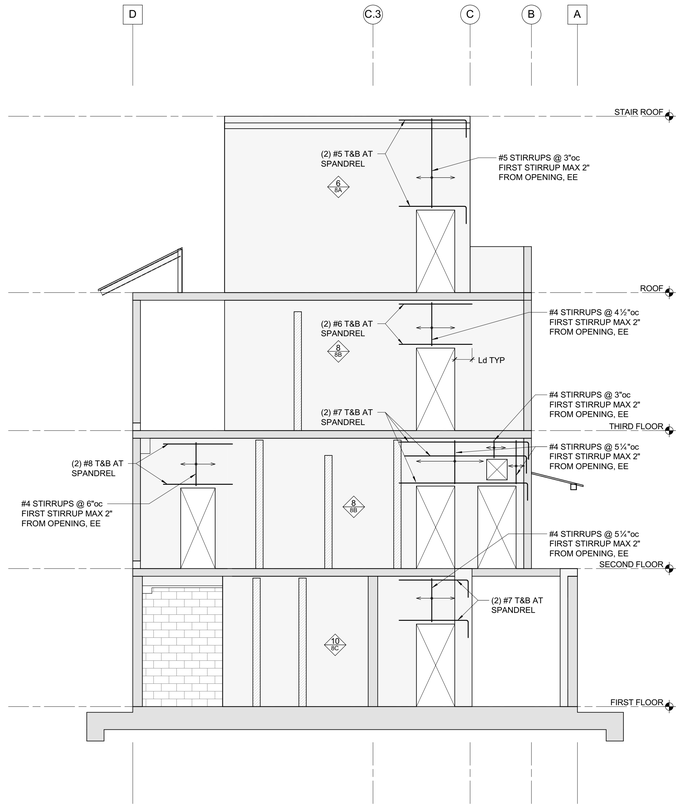
3 ELEVATION AT GRID C
3/16" = 1'-0"



1 ELEVATION AT GRID 8
3/16" = 1'-0"



4 ELEVATION AT GRID C.5
3/16" = 1'-0"



2 ELEVATION AT GRID 2
3/16" = 1'-0"

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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KEVIN G. ZUCCO
No. 4861
STRUCTURAL
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 ELEVATIONS

Drawn By: Author
Checked By: Checker

Scale:
3/16" = 1'-0"

Date:
October 4, 2019

Project No. 17143

8-S3.30
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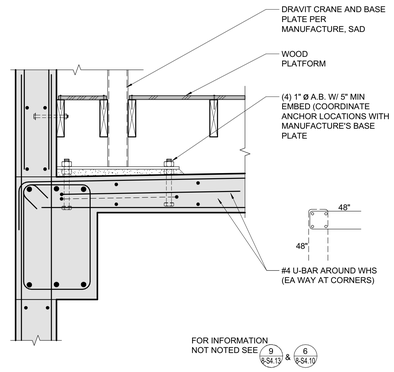
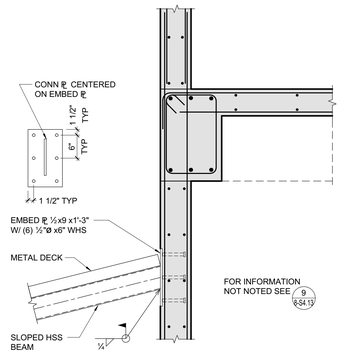
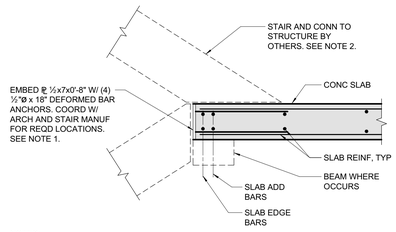


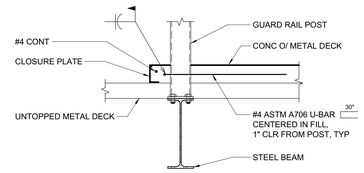
13 ROOF DRAVIT CRANE ANCHORAGE
1" = 1'-0"



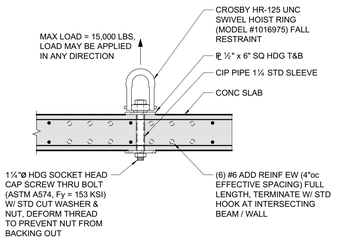
9 HSS BEAM AT CONCRETE WALL
3/4" = 1'-0"



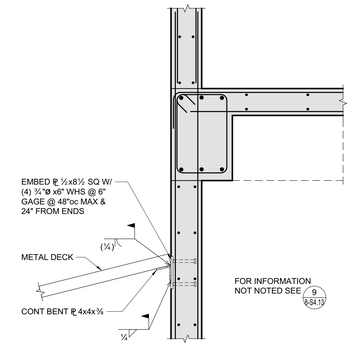
5 STAIR TO EDGE OF SLAB CONNECTION
1" = 1'-0"



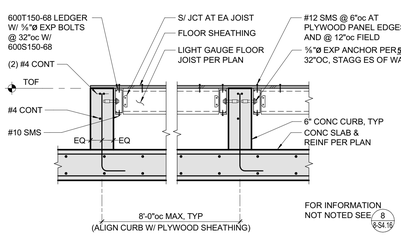
1 GUARD RAIL POST AT STEEL BEAM
1" = 1'-0"



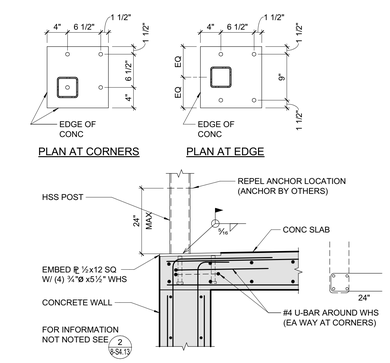
14 FALL RESTRAINT ANCHOR
1" = 1'-0"



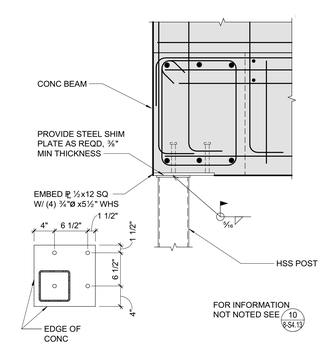
10 SLOPED ROOF AT CONCRETE WALL
3/4" = 1'-0"



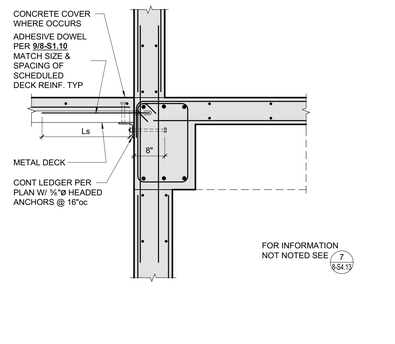
6 SECTION AT ELEVATED ROOF PLATFORM
3/4" = 1'-0"



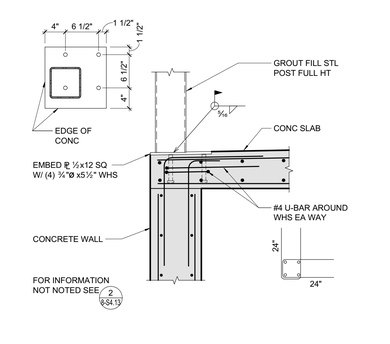
2 HSS POST BASE AT CONCRETE SLAB
1" = 1'-0"



11 HSS POST TO CONCRETE BEAM AT CORNER
1" = 1'-0"

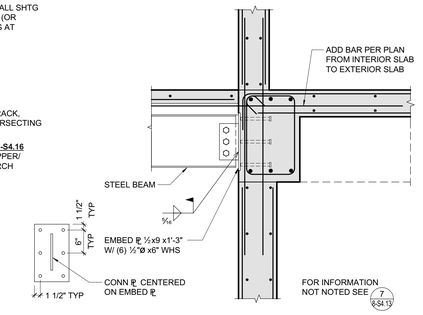


7 METAL DECK AT EXTERIOR WALL
3/4" = 1'-0"

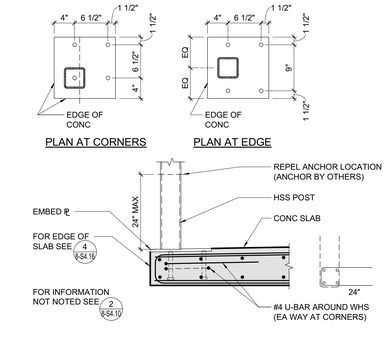


3 HSS POST BASE AT CONCRETE SLAB AT CORNER
1" = 1'-0"

12 SECTION AT MANSARD ROOF
3/4" = 1'-0"



8 METAL DECK AT EXTERIOR WALL
3/4" = 1'-0"



4 HSS POST BASE AT CONCRETE SLAB
1" = 1'-0"

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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BUILDING 8 DETAILS AND SECTIONS

Drawn By: -
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Scale:
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Date:
October 4, 2019

Project No. 17143

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Drawing No.

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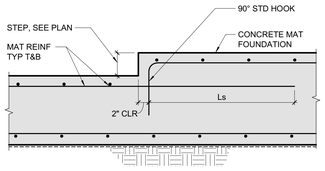
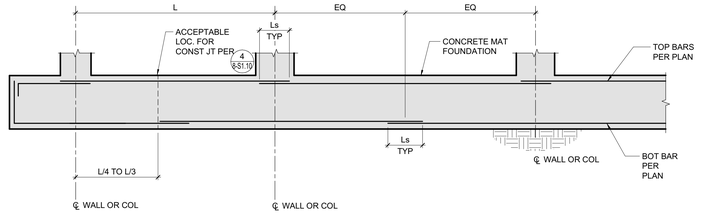
4/2/2020 12:10:35 PM C:\revit_local\11143_B8 - HWFT 08 Training Tower_S17C_alfeves@zfa.com.rvt



12 STEP IN MAT FOUNDATION
3/4" = 1'-0"



NOTES:
1. ADDITIONAL BARS PER PLAN SHALL BE EQUALLY SPACED. MAX SPACING SHALL BE 12"
2. NO SPLICES PERMITTED, UNO.
3. LAP BOTTOM BARS AT MIDSPAN & TOP BARS UNDER WALL/COL. SEE **1/S1.10** FOR LAP LENGTHS.
4. WHERE BAR LENGTHS OR EXTENSIONS ARE NOTED PER PLAN THIS LENGTH GOVERNS.

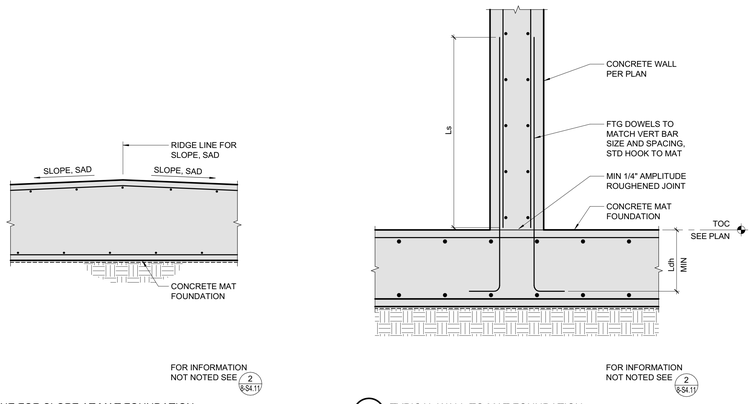
8 TYPICAL CONCRETE MAT FOUNDATION REINFORCEMENT
3/4" = 1'-0" TYPICAL CONCRETE MAT FOUNDATION REINFORCEMENT

CONCRETE MAT FOUNDATION SCHEDULE

MAT MARK	MINIMUM MAT THICKNESS	TOP BAR SPAN 1 DIRECTION	TOP BAR SPAN 2 DIRECTION	BOTTOM BAR SPAN 1 DIRECTION	BOTTOM BAR SPAN 2 DIRECTION	REMARKS
8-M1	30"	#9 @ 12"oc	#9 @ 12"oc	#9 @ 12"oc	#9 @ 12"oc	REINF - A615 GR 80
8-M2	29"	#9 @ 12"oc	#9 @ 12"oc	#9 @ 12"oc	#9 @ 12"oc	REINF - A615 GR 80
8-M3	24"	#9 @ 12"oc	#9 @ 12"oc	#9 @ 12"oc	#9 @ 12"oc	REINF - A615 GR 80
8-M4	16"	#5 @ 12"oc	#5 @ 12"oc	#5 @ 12"oc	#5 @ 12"oc	REINF - A615 GR 60

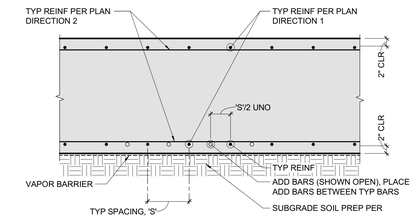
NOTES:
1. SEE OTHER DETAILS THIS SHEET FOR TYP SLAB DETAILS.
2. REFER TO PLANS FOR ADDITIONAL REINFORCING (ADD BARS).
3. SEE **2/8-S4.11** FOR REBAR LAYERING AND COVER.
   SEE **8/8-S4.11** FOR TYPICAL SLAB REINFORCING LAYOUT.
4. PLACE SPAN DIRECTION REINFORCING AT MID DEPTH OF SLAB FOR SINGLE LAYER CONDITIONS, UNO.
5. WHERE SLABS ARE SLOPED, SLAB THICKNESS NOTED IS MINIMUM.
6. SEE SHEETS **8-S1.40** & **8-S1.41** FOR DETAILS AT CMU WALL TO SLAB ATTACHMENTS.
7. SEE PLANS FOR NON-TYPICAL ADD BAR REINFORCING.

1 CONCRETE MAT FOUNDATION SCHEDULE
1/2" = 1'-0"

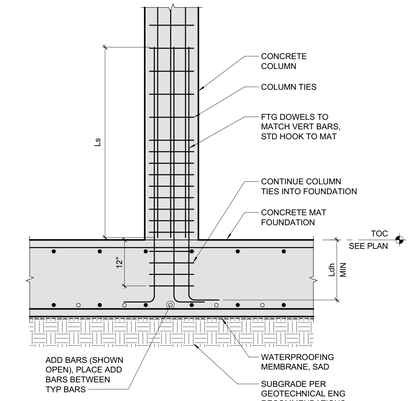


9 RIDGE LINE FOR SLOPE AT MAT FOUNDATION
3/4" = 1'-0" RIDGE LINE FOR SLOPE AT MAT FOUNDATION

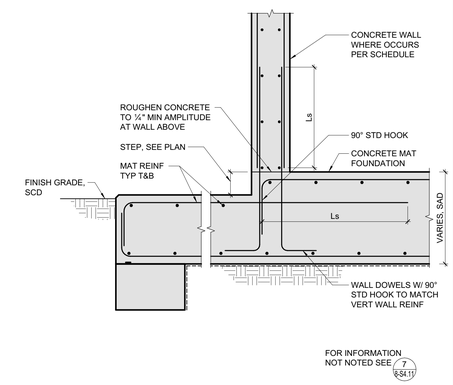
5 TYPICAL WALL TO MAT FOUNDATION
3/4" = 1'-0" TYPICAL WALL TO MAT FOUNDATION



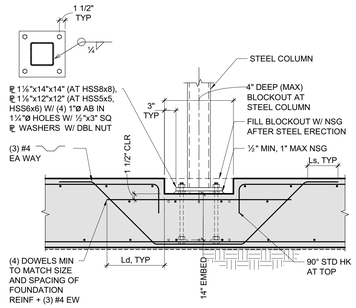
2 TYPICAL MAT SLAB SECTION
3/4" = 1'-0"



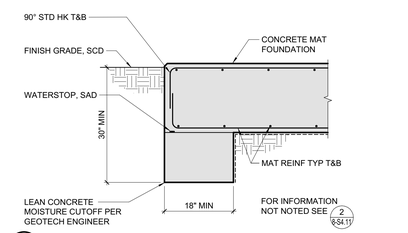
6 TYPICAL COLUMN TO MAT FOUNDATION
3/4" = 1'-0"



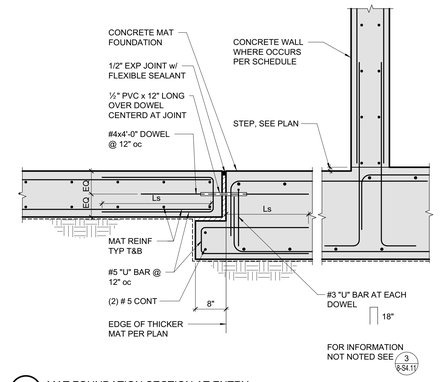
3 MAT FOUNDATION SECTION AT PERIMETER
3/4" = 1'-0"



11 STEEL COLUMN AT ENTRY MAT FOUNDATION AT ENTRY
3/4" = 1'-0" STEEL COLUMN AT ENTRY MAT FOUNDATION



7 EDGE OF MAT FOUNDATION AT ENTRY
3/4" = 1'-0" EDGE OF MAT FOUNDATION AT ENTRY



4 MAT FOUNDATION SECTION AT ENTRY
3/4" = 1'-0"

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

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REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

Sheet Title

BUILDING 8 FOUNDATION DETAILS

Drawn By: Author Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

8-S4.11
Drawing No.

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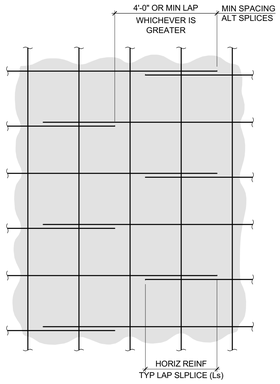
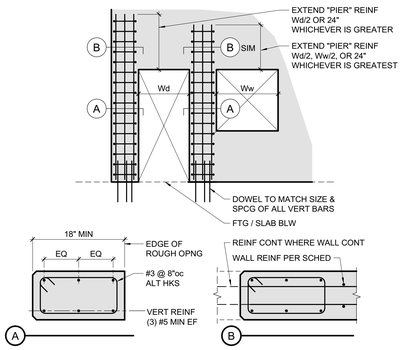


9 TYPICAL WALL REINFORCING SPLICES
1" = 1'-0"



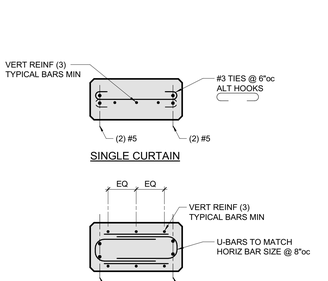
5 WALL PIER REINFORCING AT DOORS AND WINDOWS
1" = 1'-0"

CONCRETE WALL REINFORCING SCHEDULE						
WALL TYPE	THICKNESS (N)	# OF CURTAINS	HORIZONTAL REINFORCING	VERTICAL REINFORCING	REFERENCE DETAIL	REMARKS
6 / 8-S4.12	6"	1	#5 @ 12"oc, CENTERED	#5 @ 8"oc, CENTERED		
8 / 8-S4.12	8"	2	#4 @ 18"oc, EF	#5 @ 12"oc, EF		
10 / 8-S4.12	10"	2	#4 @ 16"oc, EF	#5 @ 12"oc, EF		

NOTES:

1. SEE CONCRETE WALL ELEVATIONS FOR ADDITIONAL WALL REINFORCEMENT. REINFORCEMENT SHOWN ON WALL ELEVATIONS SHALL GOVERN OTHER DETAILS.
2. FOR WALL SECTION SEE 3 / 8-S4.12 .
3. FOR TYPICAL WALL REINFORCEMENT SEE 8 / 8-S4.12 .
4. FOR TYPICAL TRIM STEEL AT OPENINGS SEE 2 / 8-S4.12 .
5. FOR TYPICAL CORNER, INTERSECTION AND END REINFORCING SEE 3 / S1.19 .

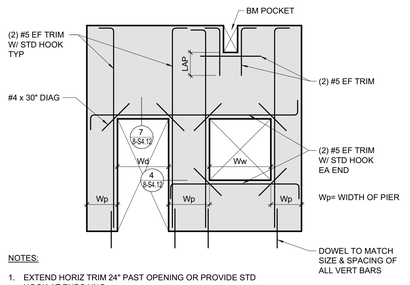
1 CONCRETE WALL SCHEDULE
12" = 1'-0"



NOTES:

1. EXTEND U-BARS OR TIES 24" MIN PAST OPENINGS

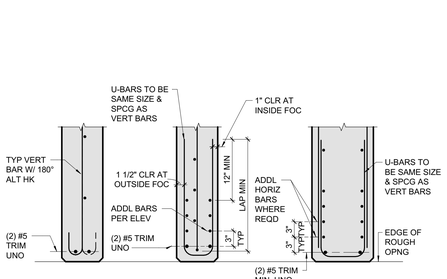
6 WALL PIER REINFORCING
1" = 1'-0"

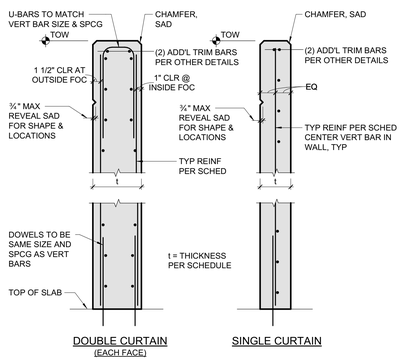


NOTES:

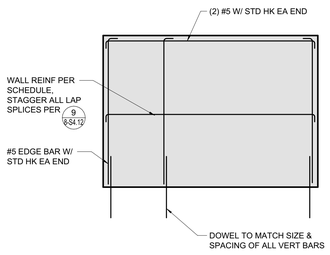
1. EXTEND HORIZ TRIM 24" PAST OPENING OR PROVIDE STD HOOK AT ENDS UNO.
2. WALL SEGMENTS LESS THAN 36" ARE PIERS.
3. WHERE Wd > 4'-0" OR Ww > 4'-0", Wp MUST BE ≥ 27", UNO.
4. Wp ≤ 24" SEE 5/8-S4.12 , UNO.
5. 24" < Wp TO 36" SEE 6/8-S4.12 , UNO.
6. OMIT STD HOOK AT U-BAR.

2 TYPICAL TRIM STEEL AT OPENINGS
1" = 1'-0"

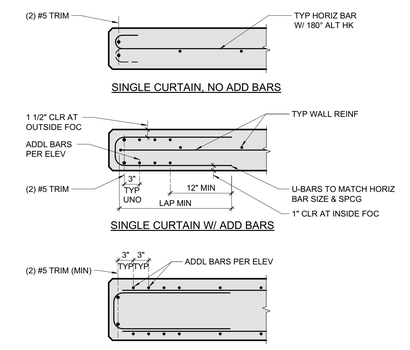




7 DOOR/WINDOW HEADER
1" = 1'-0"



3 SOILD WALL SECTION
1" = 1'-0"



8 TYPICAL TRIM STEEL AT OPENINGS
1" = 1'-0"

4 ADDITIONAL REINFORCING AT EDGE OF WALL OPENING
1" = 1'-0"

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REVISIONS

No.	Description	Date

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4961 STATE OF CALIFORNIA

Sheet Title

BUILDING 8
TYPICAL CONCRETE WALL DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

8-S4.12
Drawing No.

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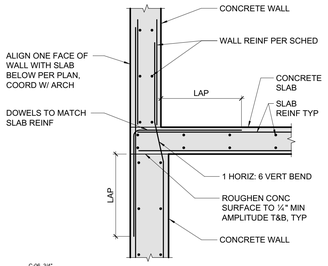
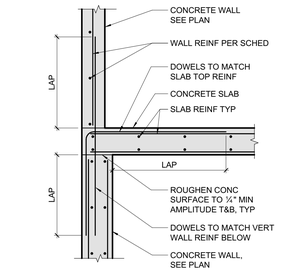
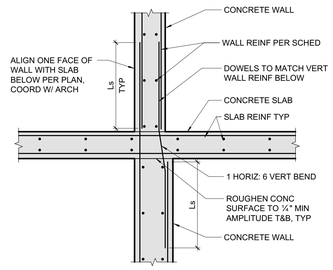


C-06_3/4"

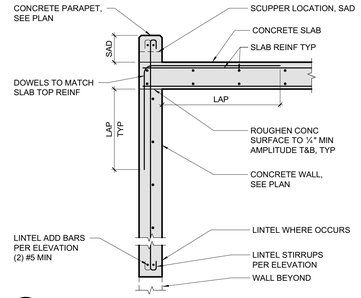
16 EXTERIOR SHEAR WALL STEP IN WALL THICKNESS
3/4" = 1'-0"



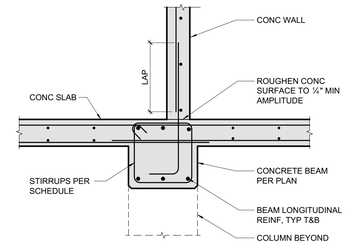
11 SECTION AT CONCRETE WALL THICKNESS TRANSITION
3/4" = 1'-0"



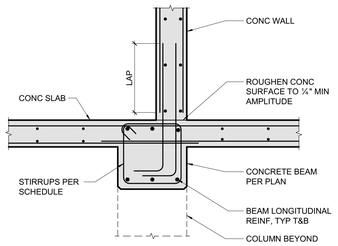
6 INTERIOR SHEAR WALL (DOUBLE CURTAIN) SECTION
3/4" = 1'-0"



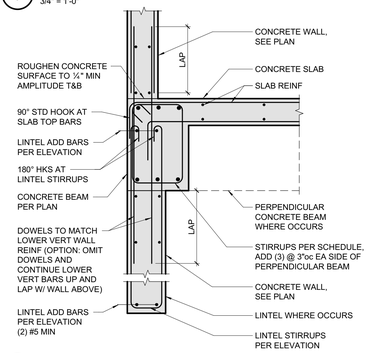
1 EXTERIOR WALL AT PARAPET
3/4" = 1'-0"



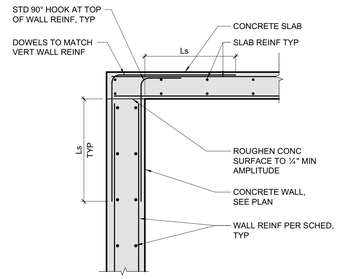
17 CONCRETE WALL ON OFFSET BEAM
3/4" = 1'-0"



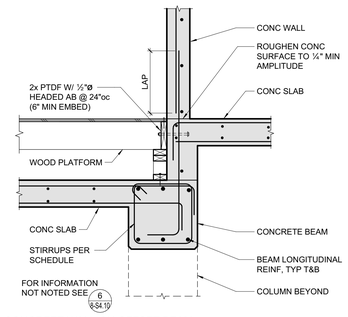
12 CONCRETE WALL ON OFFSET BEAM
3/4" = 1'-0"



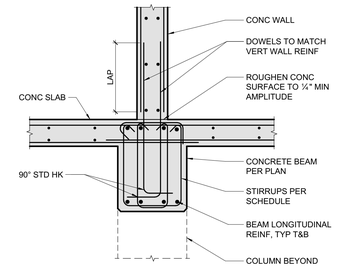
7 CONCRETE BEAM AT EXTERIOR WALL SECTION
3/4" = 1'-0"



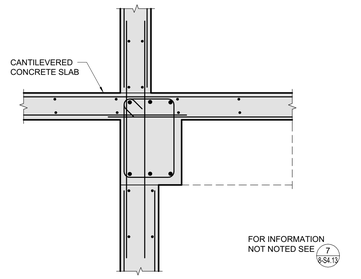
2 EXTERIOR SHEAR WALL (DOUBLE CURTAIN) SECTION
3/4" = 1'-0"



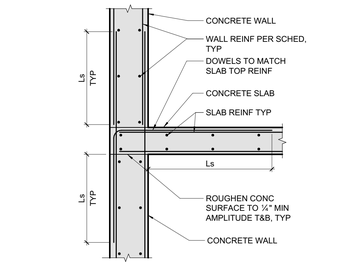
18 CONCRETE WALL ON OFFSET BEAM
3/4" = 1'-0"



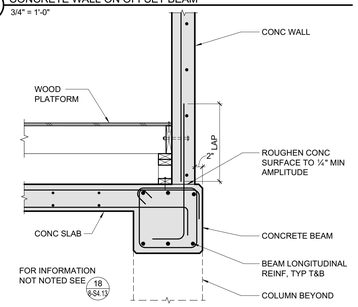
13 INTERIOR CONCRETE WALL AT GROUND FLOOR
3/4" = 1'-0"



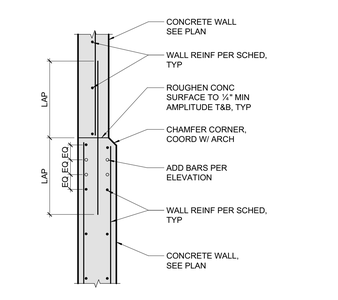
8 CANTILEVERED SLAB AT EXTERIOR WALL
3/4" = 1'-0"



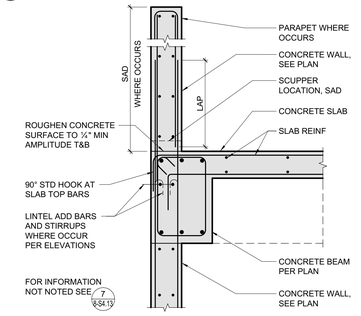
3 EXTERIOR SHEAR WALL (DOUBLE CURTAIN) SECTION
3/4" = 1'-0"



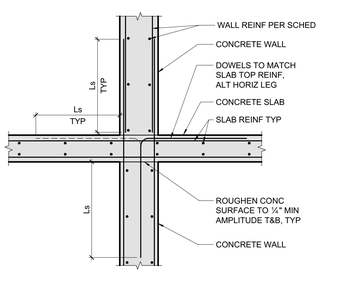
19 CONCRETE WALL ON OFFSET BEAM
3/4" = 1'-0"



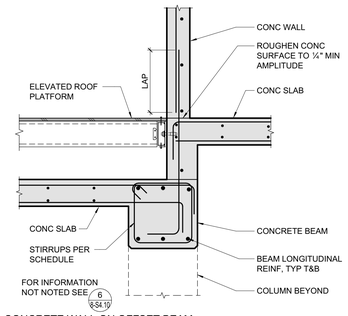
14 STEP IN UPPER WALL AT STAIR
3/4" = 1'-0"



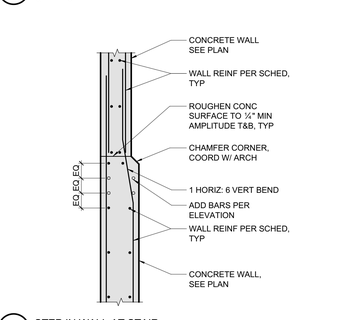
9 CONCRETE BEAM AT EXTERIOR WALL
3/4" = 1'-0"



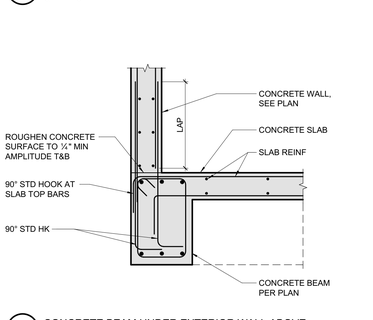
4 INTERIOR SHEAR WALL (DOUBLE CURTAIN) SECTION
3/4" = 1'-0"



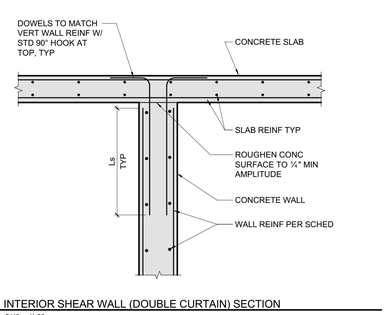
20 CONCRETE WALL ON OFFSET BEAM
3/4" = 1'-0"



15 STEP IN WALL AT STAIR
3/4" = 1'-0"



10 CONCRETE BEAM UNDER EXTERIOR WALL ABOVE
3/4" = 1'-0"



5 INTERIOR SHEAR WALL (DOUBLE CURTAIN) SECTION
3/4" = 1'-0"

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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No.	Description	Date

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Sheet Title

BUILDING 8
CONCRETE WALL DETAILS

Drawn By: Author Checked By: Checker

Scale: **3/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 17143

8-S4.13
Drawing No.

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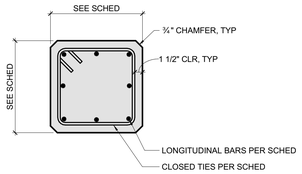


8 COLUMN SECTION
1" = 1'-0"

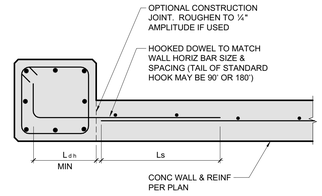
CONCRETE COLUMN SCHEDULE

TYPE MARK	SIZE	VERT REINF	LENGH "L1"	HORIZONTAL REINF (TIES & CROSS TIES WHERE OCCURS)		DETAIL	REMARKS
				S1	S2		
8C1	18 x 18	(8) #6	24"	#4 @ 2"oc	#4 @ 4½"oc	8/8-S4.14	

NOTES:

1. ALL LONGITUDINAL COLUMN REINF SHALL BE ASTM A706.
2. REFER TO DETAILS 2/8-S4.14 & 3/8-S4.14 FOR TYPICAL DEFENITION OF TERMS USED IN THIS TABLE.
3. AT CONCREETE COLUMN TO WALL INTERSECTIONS SEE DETAILS 4/8-S4.14, 5/8-S4.14 AND 6/8-S4.14

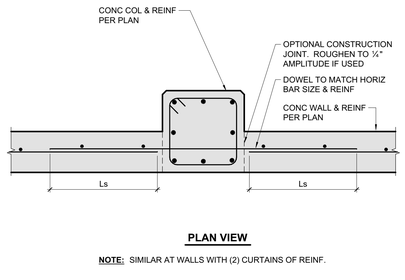
1 CONCRETE COLUMN SCHEDULE
12" = 1'-0"



PLAN VIEW

NOTE: SIMILAR AT WALLS WITH (2) CURTAINS OF REINF.

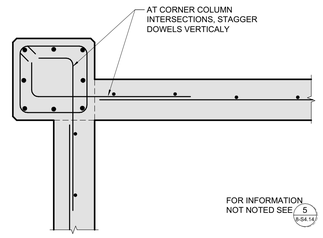
4 END OF WALL AT CONCRETE COLUMN CONNECTION
1" = 1'-0"



PLAN VIEW

NOTE: SIMILAR AT WALLS WITH (2) CURTAINS OF REINF.

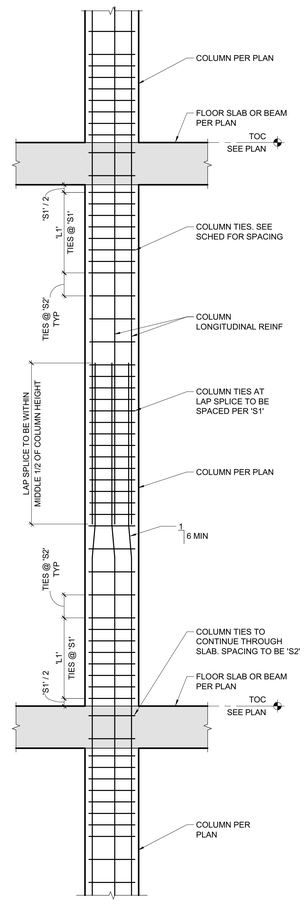
5 WALL AT CONCRETE COLUMN CONNECTION
1" = 1'-0"



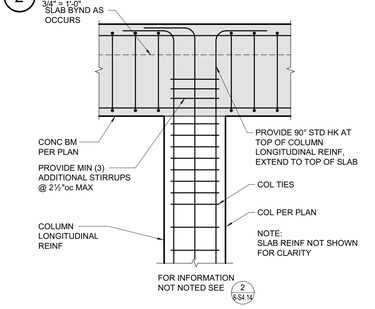
PLAN VIEW

NOTE: SIMILAR AT WALLS WITH (2) CURTAINS OF REINF.

6 CORNER OF WALL AT CONCRETE COLUMN CONNECTION
1" = 1'-0"



2 TYPICAL COLUMN ELEVATION
3/4" = 1'-0"



3 TOP OF INTERIOR COLUMNS
3/4" = 1'-0"

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KEVIN G. ZUCCO
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STATE OF CALIFORNIA

Sheet Title

BUILDING 8 CONCRETE COLUMN DETAILS

Drawn By: Author
Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

8-S4.14
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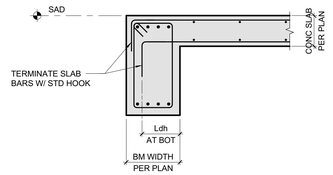
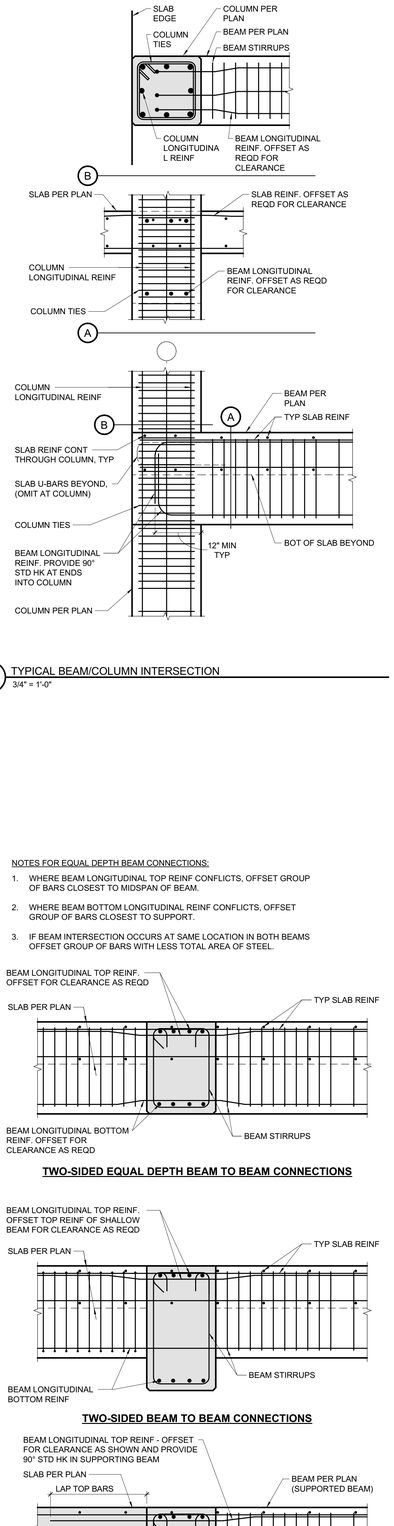


8 BEAM AT EDGE OF SLAB
3/4" = 1'-0"



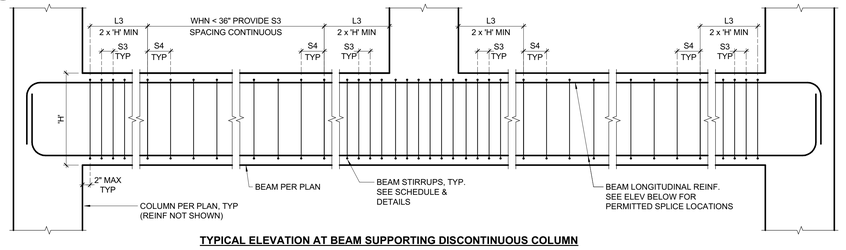
6 TYPICAL BEAM/COLUMN INTERSECTION
3/4" = 1'-0"

CONCRETE BEAM SCHEDULE

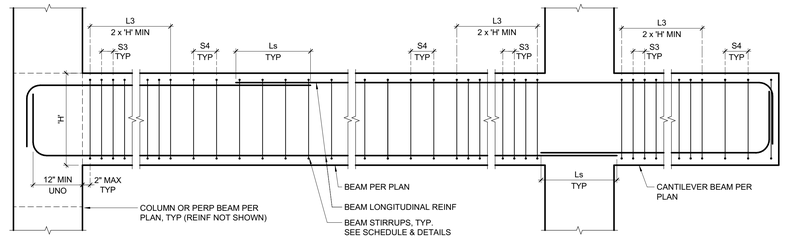
MARK	REFERENCE LEVEL	B (in)	H (in)	REF ELEV	REF SECT	LONGITUDINAL REINFORCEMENT					STIRRUPS AND TIES				LENGTH Ls	REMARKS
						BOTTOM		TOP					SPACING			
						TYP	ADD	TYP	ADD "A"	SIDE BARS	TYP	SIZE	S3	S4		
BM-1		18"	18"			3-#6	-	3-#6	-	-	T1	#4	6"	8"	3'-0"	
BM-2		18"	18"			4-#6	-	4-#6	-	-	T1	#4	6"	8"	6'-0"	
BM-3		14"	18"			2-#6	-	2-#6	-	-	T1	#4	16"	16"	n/a	
BM-4		8"	12"			2-#5	-	2-#5	-	1-#4	T1	#4	4"	4"	n/a	
BM-5		18"	24"			3-#6	-	3-#6	-	-	T1	#4	8"	10"	4'-0"	
BM-6		18"	24"			4-#8	-	3-#8	-	-	T1	#4	6"	10"	4'-0"	
BM-7		18"	24"			3-#6	-	3-#6	-	-	T1	#4	16"	16"	n/a	
BM-8		18"	24"			4-#8	-	4-#8	-	-	T3	#4	4"	4"	n/a	
BM-9		18"	24"			4-#9	-	4-#9	-	-	T3	#4	4"	4"	n/a	
BM-10		18"	24"			3-#8	-	3-#7	-	-	T3	#4	4"	4"	n/a	
BM-11		18"	18"			4-#7	-	4-#9	-	-	T1	#4	3"	8"	6'-0"	

NOTES:
1. REFER TO DETAIL **2/8-S4.15** & **4/8-S4.15** FOR TYPICAL DEFENITION OF TERMS USED IN THIS TABLE.
2. SEE **4/8-S1.40** & **7/8-S1.41** FOR DETAILS WHERE CMU WALLS OCCUR BELOW BEAMS.
3. ALL BEAM LONGITUDINAL REINF TO BE ASTM A706.
4. FOR TYPICAL BEAM COLUMN INTERSECTION, SEE **6/8-S4.15** .
5. FOR TYPICAL BEAM TO BEAM INTERSECTION, SEE **7/8-S4.15** .
6. WHERE TOP OF SLAB IS SLOPED, BOTTOM OF BEAM ELEVATION TO BE LEVEL WITH MINIMUM DEPTH PER SECHEDULE.

1 CONCRETE BEAM SCHEDULE
12" = 1'-0"



TYPICAL ELEVATION AT BEAM SUPPORTING DISCONTINUOUS COLUMN



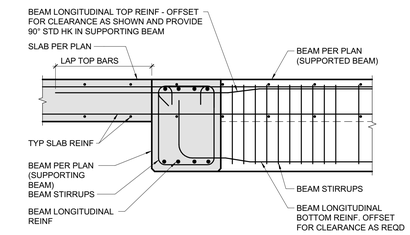
TYPICAL BEAM ELEVATION

NOTES:
1. LAP TOP BEAM LONGITUDINAL BARS AT MIDSPAN & BOTTOM BARS OVER SUPPORTS. SEE FOR LAP LENGTHS.
2. BEAM LONGITUDINAL BARS TO BE TERMINATED WITH 90° STANDARD HOOK UNLESS DETAILED OTHERWISE.
3. WHERE BAR EXTENSIONS ARE NOTED IN PLAN OR IN OTHER SPECIFIC DETAILS THIS LENGTH GOVERNS.
4. COLUMN TIES AND LONGITUDINAL REINF TO EXTEND THROUGH BEAM COLUMN JOINT.

NOTES FOR EQUAL DEPTH BEAM CONNECTIONS:
1. WHERE BEAM LONGITUDINAL TOP REINF CONFLICTS, OFFSET GROUP OF BARS CLOSEST TO MIDSPAN OF BEAM.
2. WHERE BEAM BOTTOM LONGITUDINAL REINF CONFLICTS, OFFSET GROUP OF BARS CLOSEST TO SUPPORT.
3. IF BEAM INTERSECTION OCCURS AT SAME LOCATION IN BOTH BEAMS OFFSET GROUP OF BARS WITH LESS TOTAL AREA OF STEEL.

TWO-SIDED EQUAL DEPTH BEAM TO BEAM CONNECTIONS

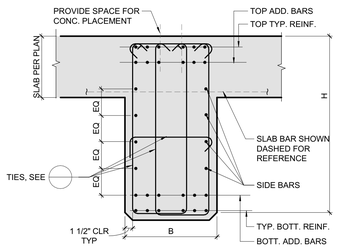
TWO-SIDED BEAM TO BEAM CONNECTIONS



ONE-SIDED BEAM TO BEAM CONNECTIONS

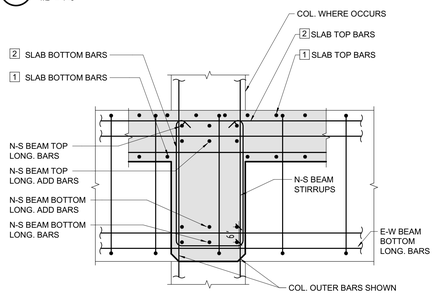
7 TYPICAL BEAM TO BEAM CONNECTION
3/4" = 1'-0"

2 TYPICAL BEAM TRANVERSE REINFORCING
3/4" = 1'-0"

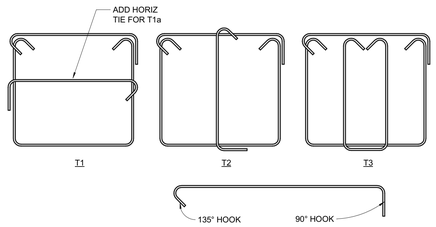


1. SEE CONC BEAM SCHEDULE FOR ADDL INFO.
2. SEE **5/8-S4.15** FOR REBAR LAYERING.

4 TYPICAL BEAM SECTION DETAIL
1/2" = 1'-0"



5 BEAM REBAR LAYERING DETAIL
1/2" = 1'-0"



TYPICAL CROSSTIE

CROSSTIE NOTES
A. SIZE AND SPACING TO MATCH STIRRUPS OR TIES, TYP, UNO
B. FOR BEAMS AND GIRDERS WHERE SLAB OCCURS ON BOTH SIDES OF MEMBER, ALTERNATE PLACEMENT OF 135° HOOK AT EACH CONSECUTIVE CROSSTIE. WHERE SLAB OCCURS ON ONE SIDE ONLY, PLACE THE 135° HOOK ON THE SIDE WITHOUT SLAB AT EACH CONSECUTIVE CROSSTIE.

NOTES:
1. FOR SIZE AND SPACING OF STIRRUPS SEE SCHEDULE.
2. FOR TYPICAL BAR HOOKS AND BENDS SEE TYPICAL DETAILS.
3. SERPENTINE TIES OF EQUIVALENT CONFIGURATION ARE STRUCTURALLY ACCEPTABLE.

3 STIRRUPS TYPES DETAIL
3/4" = 1'-0"

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Sheet Title

BUILDING 8 CONCRETE BEAM DETAILS

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Scale: As indicated

Date: October 4, 2019

Project No. 17143

8-S4.15
Drawing No.

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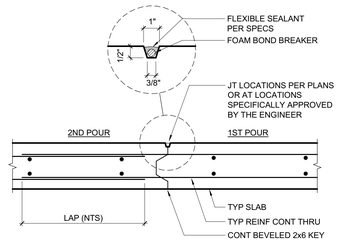


STRUCT SLAB CONSTRUCTION JOINT

9 STRUCTURAL SLAB CONSTRUCTION JOINT
1 1/2" = 1'-0"

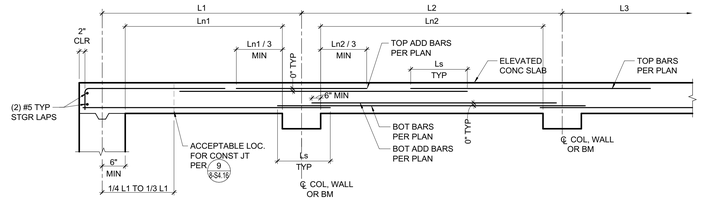
ELEVATED CONCRETE SLAB SCHEDULE

SLAB MARK	SLAB THICKNESS	TOP BAR SPAN [1] DIRECTION	TOP BAR SPAN [2] DIRECTION	BOTTOM BAR SPAN [1] DIRECTION	BOTTOM BAR SPAN [2] DIRECTION	REMARKS
8S1	7" MIN	#5 @ 16"oc	#5 @ 16"oc	#5 @ 16"oc	#5 @ 16"oc	

NOTES:

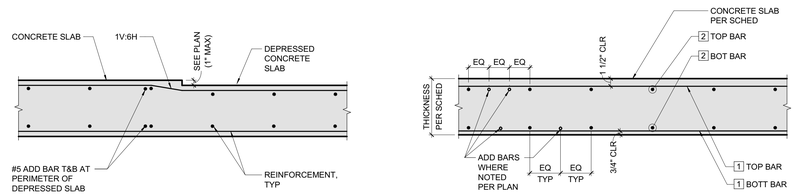
1. SEE OTHER DETAILS THIS SHEET FOR TYP SLAB DETAILS.
2. REFER TO PLANS FOR ADDITIONAL REINFORCING (ADD BARS).
3. SEE **3/8-S4.16** FOR REBAR LAYERING AND COVER. SEE **9/8-S4.16** FOR TYPICAL SLAB REINFORCING LAYOUT.
4. PLACE SPAN DIRECTION REINFORCING AT MID DEPTH OF SLAB FOR SINGLE LAYER CONDITIONS, UNO.
5. WHERE SLABS ARE SLOPED, SLAB THICKNESS NOTED IS MINIMUM. BOTTOM OF SLAB ELEVATION TO REMAIN FLAT, SAD FOR ELEVATION.
6. SEE **2/8-S1.41** FOR DETAILS AT CMU WALL TO SLAB ATTACHMENTS.
7. SEE PLANS FOR NON-TYPICAL ADD BAR REINFORCING.

1 CONCRETE SUSPENDED SLAB SCHEDULE
12" = 1'-0"



5/8-S4.16
9/8-S4.16
7/8-S1.10

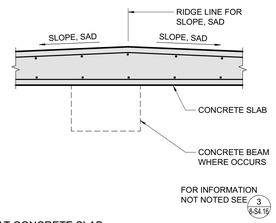
2 TYPICAL ELEVATED CONCRETE SLAB REINFORCEMENT
3/4" = 1'-0"



NOTE:
THIS DETAIL IS ONLY PERMITTED WHERE EXPLICITY NOTED ON PLANS.

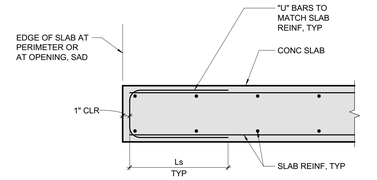
[1] = PRIMARY LAYER (LONGITUDINAL) PER PLAN
[2] = PRIMARY LAYER (TRANSVERSE) PER PLAN

6 DEPRESSION AT SUSPENDED SLAB
1" = 1'-0"

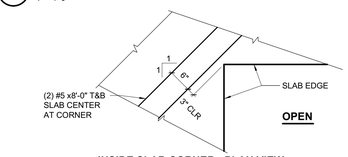


7 RIDGE AT CONCRETE SLAB
3/4" = 1'-0"

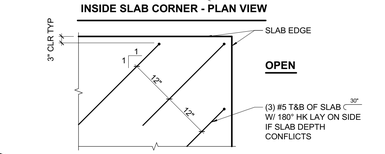
3 TYPICAL SUSPENDED SLAB DETAIL
1" = 1'-0"



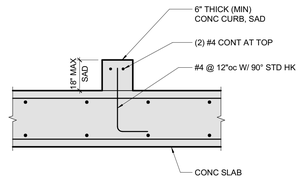
4 TYPICAL EDGE OF SLAB DETAIL
1" = 1'-0"



INSIDE SLAB CORNER - PLAN VIEW



8 TYPICAL CONCRETE CURB
1" = 1'-0"



5 OUTSIDE & INSIDE SLAB CORNER - PLAN VIEW
3/4" = 1'-0"

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STRUCTURAL No. 4861
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BUILDING 8
CONCRETE SLAB DETAILS

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PLUMBING AND FIRE PROTECTION LEGEND AND ABBREVIATIONS

ABBREVIATIONS - PLUMBING

ABD	AUTOMATIC BALL DRIP
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BLDG	BUILDING
BOB	BOTTOM OF BEAM
BOP	BOTTOM OF PIPE
BT	BATH TUB
BV	BALANCING VALVE
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CLG	CEILING
CLNA	CLEAN AGENT
CO	CLEANOUT
COTG	CLEANOUT TO GRADE
CONN	CONNECTION
CONT	CONTINUATION
CP	CIRCULATING PUMP
CV	CHECK VALVE
CW	COLD WATER
DF	DRINKING FOUNTAIN
DI	DEIONIZED WATER
DIA	DIAMETER
DER	DEIONIZED WATER RETURN
DN	DOWN
DR	DRAIN
DROP	DROP (WITHIN FLOOR)
DSP	DRY SPRINKLER
DFS	DRY FIRE STANDPIPE
DWP	DOMESTIC WATER PUMP
DWG	DRAWING
EEW	EMERGENCY EYE WASH
EL	ELEVATION
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FHVC	FIRE HOSE VALVE CABINET
FL	FLOOR
FLH	FLOOR HYDRANT
FS	FLOW SWITCH
FSK	FLOOR SINK
FSP	FIRE STANDPIPE
FT	FEET
FU	FIXTURE UNIT
GAL	GALLONS
GD	GARAGE DRAIN
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HB	HOSE BIBB
HD	HUB DRAIN
HT	HEAT TRACING
HW	HOT WATER
HWR	HOT WATER RETURN
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
IW	INDIRECT WASTER

ABBREVIATIONS - PLUMBING

JP	JOCKEY PUMP
JS	JANITOR SINK
L	LAVATORY
LDR	LEADER
MAX	MAXIMUM
MG	MEDIUM PRESSURE GAS
MGA	MEDICAL GAS ALARM
MH	MANHOLE
MIN	MINIMUM
MS	MOP SINK
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NPW	NON-POTABLE WATER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OSD	OVERFLOW STORM PIPING
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
PDR	PLANTER DRAIN
PD	PUMP DISCHARGE
P/FT	PITCH PER FOOT
PIV	POST INDICATOR VALVE
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RC	ROOF RECEPTOR
RD	ROOF DRAIN
RISE	RISE (WITH IN FLOOR)
RW	RECLAIMED WATER
SA	SHOCK ABSORBER
SAN	SANITARY
SD	SMOKE DETECTOR
SE	SEWAGE EJECTOR
SED	SEWAGE EJECTOR DISCHARGE
SF	SQUARE FEET
SH	SHOWER
SK	SINK
SPD	SUMP PUMP DISCHARGE
SP	SUMP PUMP
SPKR	SPRINKLER
SSD	SUB SOIL DRAIN
ST	STORM PIPING
TD	TRENCH DRAIN
TDH	TOTAL DISCHARGE HEAD
TMV	TEMPERATURE MIXING VALVE
TOP	TOP OF PIPE
TOS	TOP OF SLAB
TP	TRAP PRIMER
TPV	TRAP PRIMER VALVE
TS	TAMPER SWITCH
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP (PENETRATES FLOOR SLAB)
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VP	VACUUM PUMP
VR	VENT RISE
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WH	WALL HYDRANT
W&T	WASTE AND TRAP
WP	WALL PLATE
Z	ZONE

SYMBOL LEGEND

	Y STRAINER WITH BLOW OFF VALVE
	FLEXIBLE CONNECTION
(H) (X) (L)	EXPANSION LOOP SIZE
	SEISMIC JOINT
PIV	POST INDICATOR VALVE
	SHOCK ABSORBER
	VACUUM BREAKER
M	MANUAL AIR VENT
A	AUTOMATIC AIR VENT
	PRESSURE GAUGE AND COCK
	THERMOMETER
	WATER FLOW SWITCH
	RUNNING TRAP
	VALVE (SPECIFICATION FOR TYPE)
	CHECK VALVE
	CHECK VALVE WITH ABD
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	OS&Y (OUTSIDE SCREW & YOKE) VALVE
	AUTOMATIC FLOW CONTROL VALVE
	BUTTERFLY VALVE (MANUAL)
	GLOBE VALVE
	BALANCING VALVE
	VALVE WITH TAMPER SWITCH
	RELIEF VALVE
	ANGLE RELIEF VALVE
	TEMPERATURE MIXING VALVE
	UNION
	REDUCER
	ECCENTRIC REDUCER (E.R.)
	SLEEVE
	PUMP
M	METER
	HOSE BIBB
	WATER HAMMER ARRESTER
	FLOOR DRAIN, AREA DRAIN, PLANT DRAIN, GARAGE DRAIN
	FLOOR SINK
	ROOF RECEPTOR
	ROOF DRAIN
	OVERFLOW ROOF DRAIN

SYMBOL LEGEND

	POINT OF CONNECTION (NEW TO EXISTING)
	FIRE DEPARTMENT CONNECTION
	FIRE DEPARTMENT TEST HEADER
	FIRE HOSE VALVE
	FIRE HOSE VALVE CABINET
	FIRE DEPT. HOSE VALVE W/ CAP & CHAIN
	ROOF MANIFOLD
	SPRINKLER FLOOR CONTROL VALVE ASSEMBLY
	NEW FIRE HYDRANT
T	TAMPER SWITCH
ACV	ALARM CHECK VALVE W/ ALL RELATED APPURTENANCES
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DDCA	DOUBLE DETECTOR CHECK ASSEMBLY
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY
	UPRIGHT SPRINKLER HEAD
	PENDANT SPRINKLER HEAD
	CONCEALED PENDANT SPRINKLER HEAD
	SPRINKLER HEAD
	EXTENDED COVERAGE SPRINKLER HEAD
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	VALVE IN VERTICAL
	P-TRAP
	UP TO CLEANOUT
	WALL CLEANOUT
	END OF PIPE CLEANOUT / PLUG
	FLOOR CLEANOUT
	GRADE CLEANOUT
	PIPE DROP UNLESS OTHERWISE NOTED
	PIPE UP UNLESS OTHERWISE NOTED
	CAP FOR FUTURE (CFF)
	CHANGE IN PIPE ELEVATION
	ARROW INDICATES DIRECTION OF FLOW
	PITCH PIPE DOWN IN DIRECTION OF ARROW
	INSULATED AND HEAT TRACED PIPING
	FRESH AIR INLET
	WALL HYDRANT
	FIRE SPRINKLER FLOOR CONTROL ASSEMBLY

PIPING LEGEND

GAS

NG	NATURAL GAS
CA	COMPRESSED AIR PIPING
PG	PROPANE GAS PIPING

WASTE / VENT / STORM

SAN	SANITARY (ABOVE FLOOR)
SAN	SANITARY (BELOW FLOOR)
V	VENT PIPING
ST	STORM DRAIN PIPING
OST	OVERFLOW STORM PIPING
CD	CONDENSATE DRAIN PIPING
GD	GARAGE DRAIN PIPING (ABOVE FLOOR)
GD	GARAGE DRAIN PIPING (BELOW FLOOR)

POTABLE WATER

	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING (120°F)
	DOMESTIC HOT WATER RETURN PIPING (120°F)

FIRE PROTECTION

F	FIRE WATER SUPPLY
SP	SPRINKLER PIPING
FSP	FIRE STANDPIPE
DR	SPRINKLER DRAIN PIPING

MISCELLANEOUS

P / 1	P = SAN, VENT STACK OR DOMESTIC WATER RISER ST = STORM DRAIN LEADER RISER F = FIRE STANDPIPE RISER RISER RISER NO.
CP / 1	EQUIPMENT DESIGNATION EQUIPMENT EQUIPMENT NO.
1 / P2.1	DETAIL DESIGNATION DETAIL NUMBER DWG. SHEET NO.
1	SHEET NOTE NUMBER
1	REVISION NUMBER

PLBG_DRAWING LIST Bldg 8	
SHEET NUMBER	SHEET NAME
8-P0.01	PLUMBING AND FIRE PROTECTION LEGEND AND ABBREVATION, DRAWING LIST
8-P2.01	PLUMBING TRAINING TOWER BUILDING FIRST FLOOR PLAN
8-P2.02	PLUMBING TRAINING TOWER BUILDING SECOND FLOOR PLAN
8-P2.03	PLUMBING TRAINING TOWER BUILDING THIRD FLOOR PLAN
8-P2.04	PLUMBING TRAINING TOWER BUILDING ROOF PLAN
8-P3.01	PLUMBING BUILDING 8 FIRE RISER DIAGRAM
8-P5.01	PLUMBING DETAILS

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
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No. M30765
MECHANICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

PLUMBING AND FIRE PROTECTION LEGEND AND ABBREVATION, DRAWING LIST

Drawn By: Author
Checked By: Checker

Scale:
12" = 1'-0"

Date:
October 4, 2019

Project No. B17.07369

8-P0.01
Drawing No.

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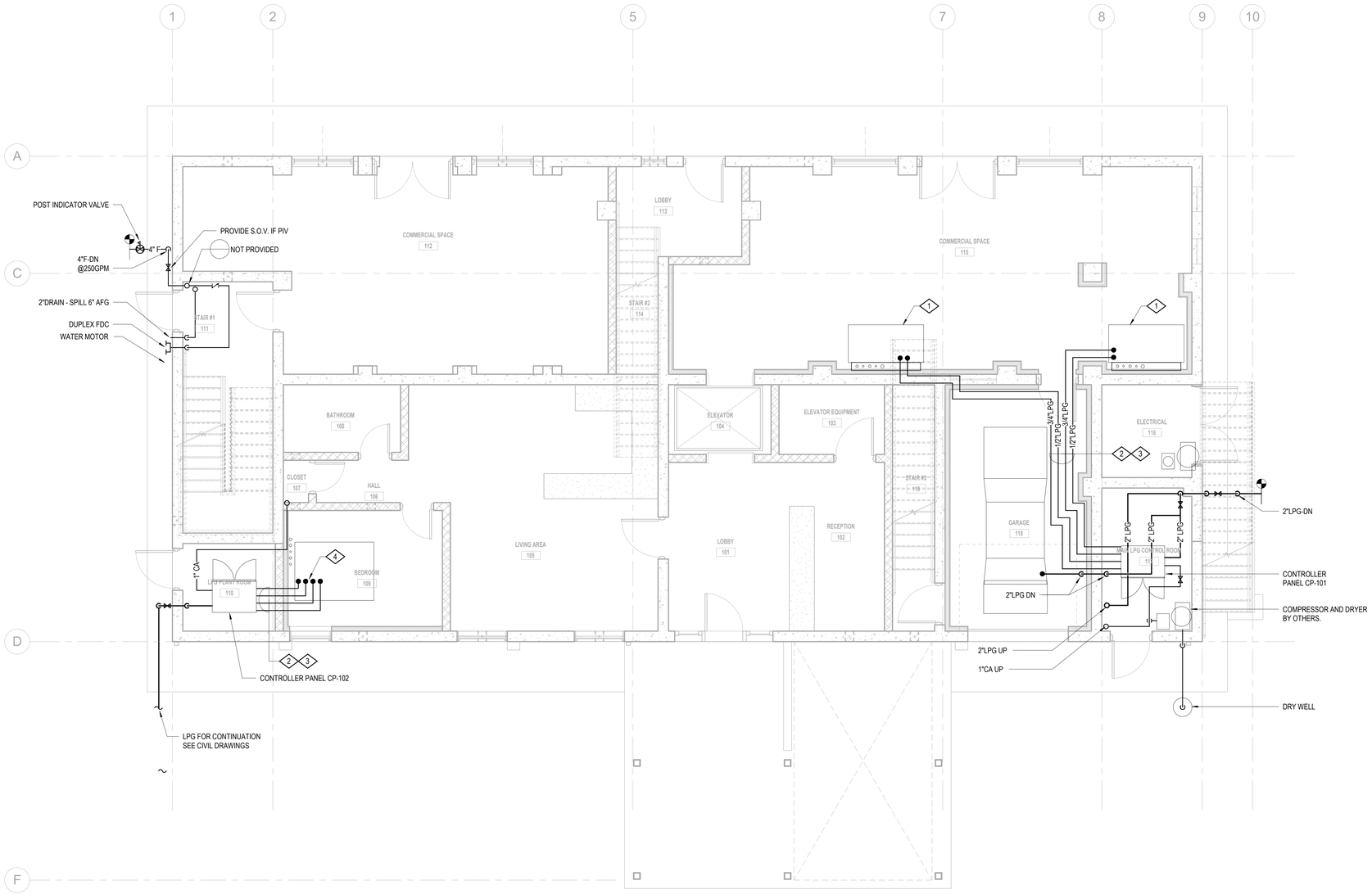
GENERAL NOTES:

NUMBERED NOTES:

1. 1/2" LPG TO STORAGE RACK PROP, 3/4"LPG TO STORAGE RACK PROP
2. ROUTE PIPING BETWEEN CMU/ CONCRETE WALL AND SUPER PAGINATOR WALL SURFACE
3. PIPING TO BE RACKED VERTICALLY ON WALL
4. (2) 1/2" LPG TO BED PROP IN WALL PLATE
   (2) 3/4" LPG TO BED PROP IN WALL PLATE



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Sheet Title

PLUMBING TRAINING TOWER BUILDING FIRST FLOOR PLAN

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. B17.07369

8-P2.01
Drawing No.

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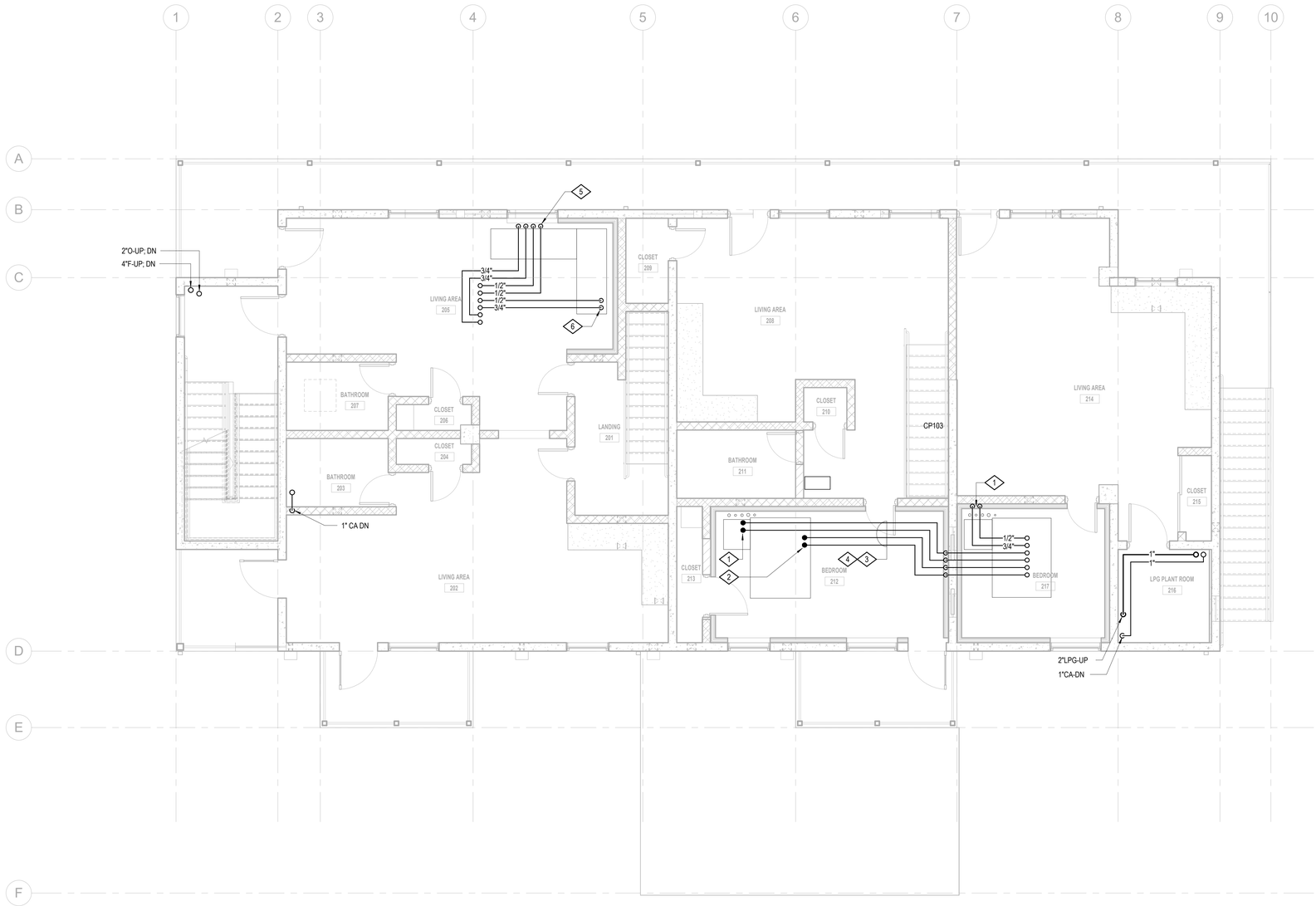
GENERAL NOTES:

NUMBERED NOTES:

1. 1/2" LPG TO BED PROP,
   3/4" LPG TO BED PROP
2. 1/2" LPG TO FLASHOVER PROP,
   3/4" LPG TO FLASHOVER PROP
3. ROUTE PIPING BETWEEN CMU/ CONE WALL AND USPER PAGINATOR WALL
4. PIPING TO BE RACKED VERTICALLY ON WALL
5. (2) 1/2" LPG TO STOVE PROP
   (2) 3/4" LPG TO STOVE PROP
6. (1) 1/2" LPG TO STOVE PROP
   (1) 3/4" LPG TO STOVE PROP



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Sheet Title

PLUMBING TRAINING TOWER BUILDING SECOND FLOOR PLAN

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. B17.07369

8-P2.02
Drawing No.

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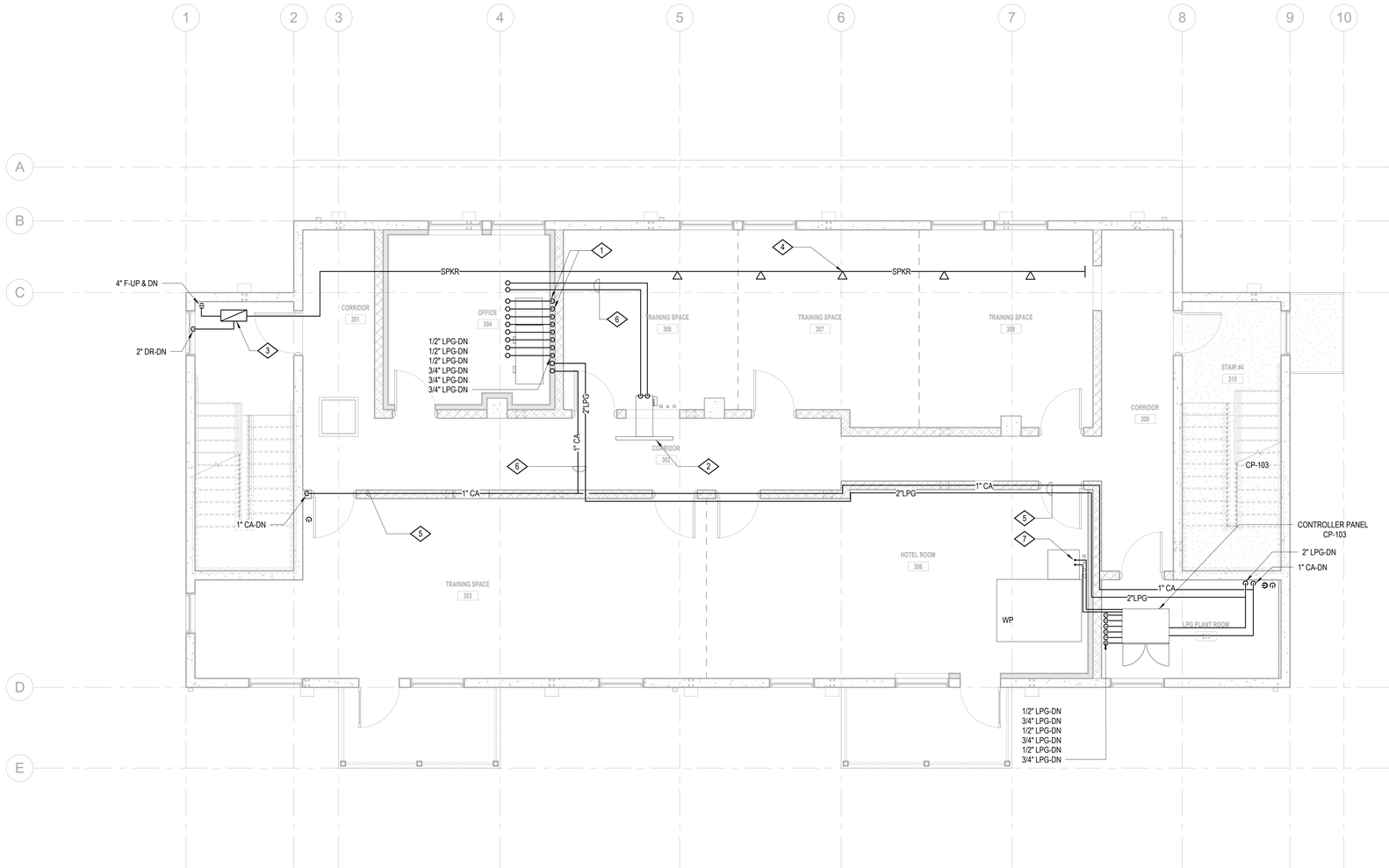
1. 1/2" LPG TO DESK PROP
   -3/4" LPG TO DESK PROP
2. 1/2" LPG TO FLASHOVER PROP
   3/4" LPG TO FLASHOVER PROP
3. 1/2" LPG TO BED PROP
   3/4" LPG TO BED PROP
4. PROVIDE DELUGE SPKR HEADS AND FUSEABLE LINK SPKR HEADS
5. ROUTE LPG AND CA PIPING IN CMU WALL VERTICALLY
6. EMBED PIPING IN FLOOR SLAB
7. FLOW SWITCH TO ACTIVATE WATER MOTOR GOING



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PERMIT SUBMITTAL V3

Sheet Title

PLUMBING TRAINING TOWER BUILDING THIRD FLOOR PLAN

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. B17.07369

8-P2.03
Drawing No.

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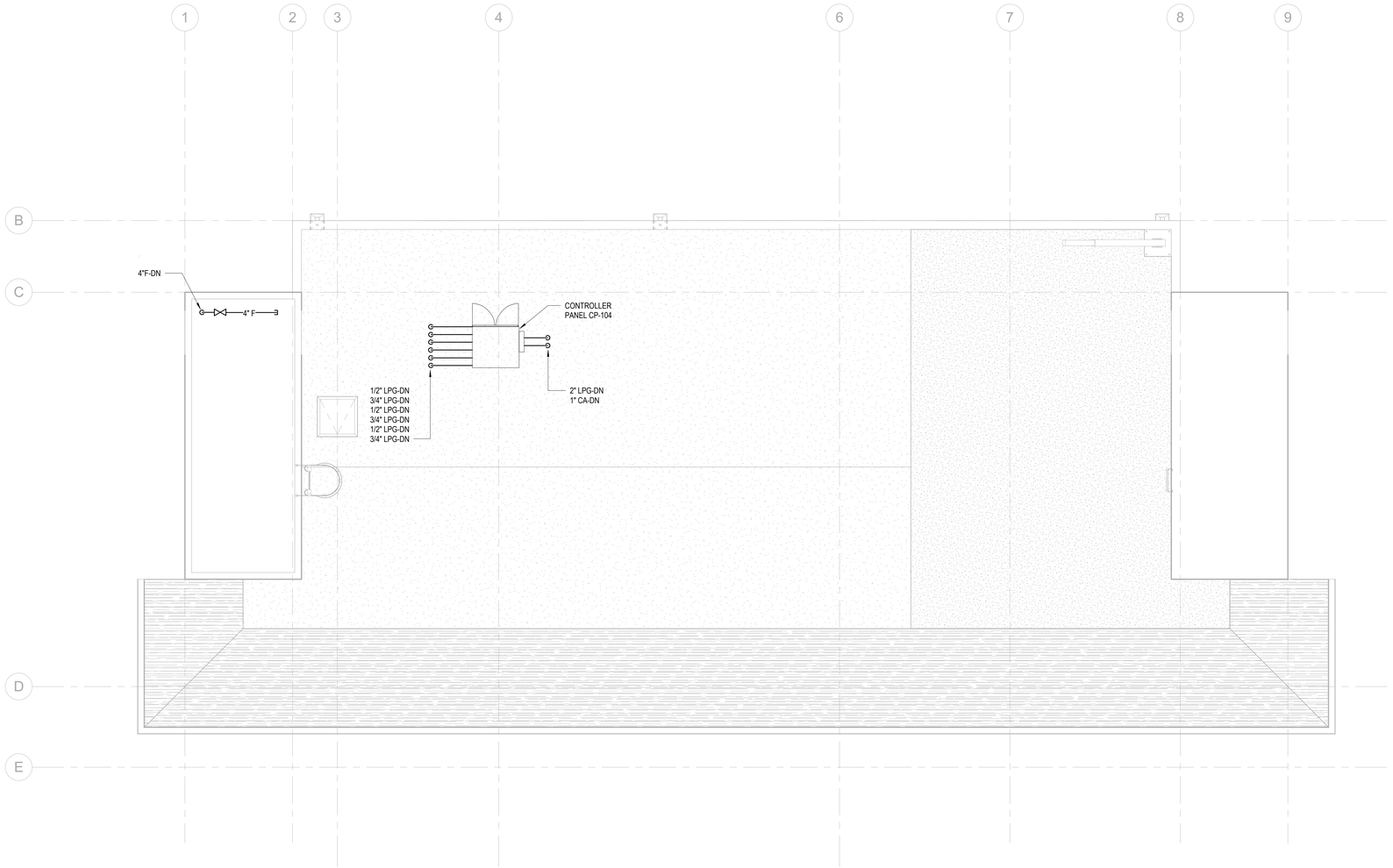

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Sheet Title

PLUMBING TRAINING TOWER BUILDING ROOF PLAN

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. B17.07369

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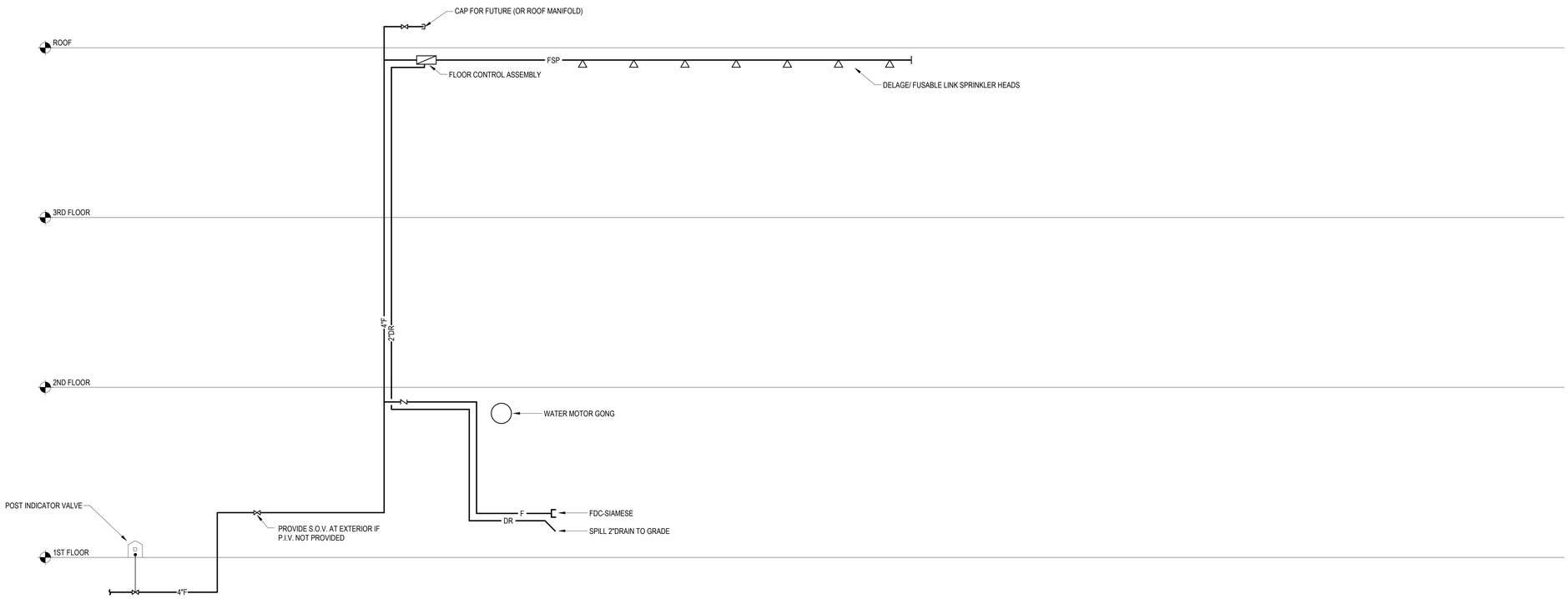

1 FIRE RISER DIAGRAM
SCALE NTS

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Sheet Title

PLUMBING BUILDING 8 FIRE RISER DIAGRAM

Drawn By: Author
Checked By: Checker

Scale:
NTS

Date:
October 4, 2019

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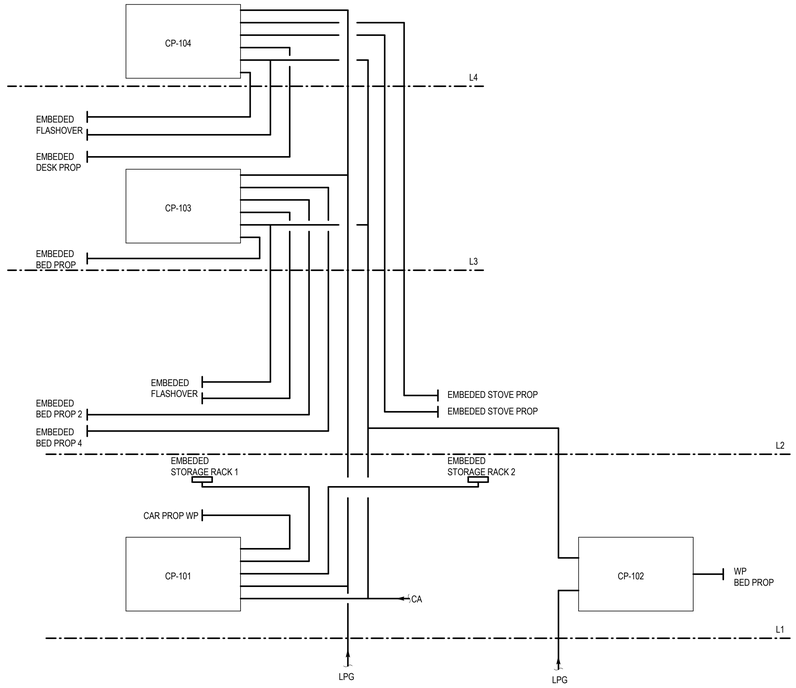

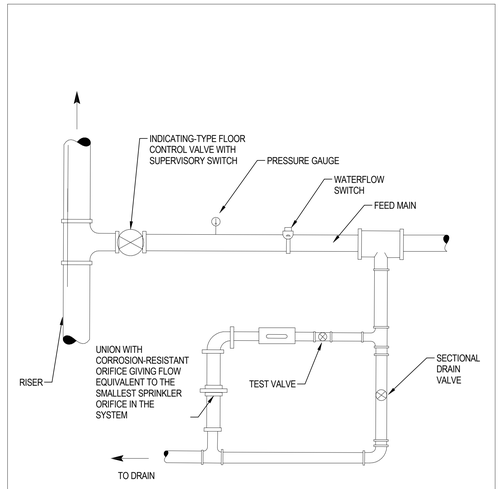

1 FLOOR CONTROL VALVE ASSEMBLY — NO SCALE

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PLUMBING DETAILS

Drawn By: Author
Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. B17.07369

8-P5.01
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MECHANICAL LEGEND AND ABBREVIATIONS

ABBREVIATIONS - MECHANICAL

ABV	ABOVE
AD	ACCESS DOOR (18 INCH X 12 INCH)
AFF	ABOVE FINISHED FLOOR
ARCH	ARCHITECTURAL
BDD	BACK DRAFT DAMPER
BO	BLANK OFF
BHP	BRAKE HORSE POWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
DB	DRY BULB
DIA	DIAMETER
DN	DOWN
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EFF	EFFICIENCY
°F	DEGREES FAHRENHEIT
FBO	FURNISHED BY OTHERS
FC	FLEXIBLE CONNECTION (DUCT)
FLR	FLOOR
FLA	FULL LOAD AMPS
FT	FEET
HP	HORSE POWER
HR	HOUR
ID	INSIDE DIMENSION
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCK ROTOR AMPS
L	LOUVER
MAX	MAXIMUM
MFG	MANUFACTURER
MFS	MAXIMUM FUSE SIZE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
NC	NORMALLY CLOSED
NFA	NET FREE AREA
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OAI	OUTSIDE AIR INTAKE
OD	OUTSIDE DIMENSION
PD	PRESSURE DROP
RPM	REVOLUTIONS PER MINUTE
SAD	SEE ARCHITECTURAL DRAWINGS
SED	SEE ELECTRICAL DRAWINGS
SM	SHEET METAL
SP	STATIC PRESSURE
SQFT	SQUARE FEET
TRG	TRANSFER GRILLE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VAR	VARIABLE
VD	VOLUME DAMPER
W/	WITH
WG	WATER GAUGE
WMS	WIRE MESH SCREEN (1/2 INCH x 1/2 INCH, 16 GA)
WO	WALL OPENING - [SAD]
(300)	CUBIC FEET OR AIR PER MINUTE

DUCTWORK LEGEND

	RADIUS ELBOW
	ELBOW WITH TURNING VANES
	RECTANGULAR SUPPLY DUCT UP
	RECTANGULAR SUPPLY DUCT DOWN
	RECTANGULAR RETURN OR EXHAUST DUCT UP
	RECTANGULAR RETURN OR EXHAUST DUCT DOWN
	BEAM PENETRATION
	SLOPING RISE IN DUCTWORK
	SLOPING DROP IN DUCTWORK
	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
	SIDE, TOP OR BOTTOM DUCT ACCESS DOOR
	RECTANGULAR OR SQUARE TO ROUND OR OVAL TRANSITION
	FLEXIBLE CONNECTION

MISCELLANEOUS

	DETAIL DESIGNATION		DETAIL NUMBER DRAWING NUMBER
	EQUIPMENT DESIGNATION		EQUIPMENT TYPE EQUIPMENT FLOOR AND NUMBER

HAYWARD FIRE TRAINING FACILITY

BUILDING 8 - MECHANICAL DRAWING LIST
11/2/2018
WSP PROJECT: B17.07369.000

DRAWING NUMBER	DRAWING NAME	SCALE	80%DD	100%DD	50%CD	90%CD
			8/11/2017	9/1/2017	1/17/2018	11/2/2018
8-M0.01	MECHANICAL LEGEND, ABBREVIATIONS, DRAWING LIST, AND SCHEDULES	NTS	X	X	X	X
8-M0.02	MECHANICAL FS#6/CLASSROOM FIRST FLOOR PLAN	1/8" = 1'	X	X	X	X

GENERAL NOTES:

A. ALL DUCTWORK FOR BUILDING 8 SHALL BE GALVANIZED STEEL, 16 GAUGE MINIMUM TO SEAL CLASS A WITH HIGH TEMPERATURE SEALANTS (MINIMUM 200 F)
B. ALL LOUVERS PROVIDED AT BUILDING 8 SHALL BE RUSKIN MODEL L6375D OR EQUAL, 16 GAUGE GALVANIZED STEEL FRAME AND BLADES AND 1/2" x 1/2" BIRD SCREEN FOR MASONRY WALL MOUNTING.
C. ALL DUCT INSULATION SHALL BE INSTALLED IN COMPLIANCE WITH 2016 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS SECTION 120.4.
D. ALL PIPING INSULATION SHALL BE INSTALLED IN COMPLIANCE WITH 2016 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS SECTION 120.3.

LOUVERS

DESIGNATION	MFGR/ MODEL NUMBER	LOCATION	SIZE	CFM	MAX. STATIC PRESSURE (IN. WG.)	NOTES
L-B	RUSKIN L6375D	EXTERNAL WALL	48 X 18	4,190	0.25	1, 2, 3
L-D	RUSKIN L6375D	INTERNAL WALL	24 X 36	4,190	0.25	1, 2, 3
L-E	RUSKIN L6375D	INTERNAL WALL	48 X 36	4,190	0.25	1, 2, 3

NOTES:
1. MINIMUM FREE AREA SHALL BE 50%.
2. MINIMUM 16 GAUGE, GALVANIZED STEEL, UNPAINTED, MASONRY WALL MOUNTED WITH INTERNAL FASTENINGS AND BIRD SCREEN.
3. REFER PLANS AND ARCHITECURAL DRAWINGS FOR ELEVATIONS.

FANS

DESIGNATION	MODEL NUMBER	LOCATION/ SERVICE	TYPE	MOUNTING	CFM	STATIC PRESSURE (IN. WG.)	BHP	MOTOR		EMERG. POWER	OPERATING WEIGHT (LBS)	NOTES
								HP	VOLTAGE/ PHASE			
EF-101-1	46-186HSSTFEH3	EXHAUST FAN	AXIAL	HORIZONTAL - WALL	4,190	-	1	-	460/3	N	300	1, 2
EF-101-2	46-186HSSTFEH3	EXHAUST FAN	AXIAL	HORIZONTAL - WALL	4,190	-	1	-	460/3	N	300	1, 2
EF-102-1	46-186HSSTFEH3	EXHAUST FAN	AXIAL	HORIZONTAL - WALL	4,190	-	1	-	460/3	N	300	1, 2
EF-103-1	46-186HSSTFEH3	EXHAUST FAN	AXIAL	HORIZONTAL - WALL	4,190	-	1	-	460/3	N	300	1, 2
EF-104-1	46-186HSSTFEH3	EXHAUST FAN	AXIAL	HORIZONTAL - WALL	4,190	-	1	-	460/3	N	300	1, 2
EF-103-2	A69H-183-S-STFCH3	EXHAUST FAN	AXIAL	VERTICAL - ROOF	4,190	-	1	-	460/3	N	300	1, 2
EF-104-2	A69H-183-S-STFCH3	EXHAUST FAN	AXIAL	VERTICAL - ROOF	4,190	-	1	-	460/3	N	300	1, 2

NOTES:
1. PROVIDED AND INSTALLED BY OWNER.
2. REFER TO FIRE PROP VENDOR FOR SPECIFIC INSTALLATION DETAILS AND COORDINATION NOTES.

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
TODD M SEE
No. M30765
MECHANICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

MECHANICAL LEGEND, ABBREVIATIONS, DRAWING LIST, AND SCHEDULES

Drawn By: MCE Checked By: TMS

Scale: **As indicated**

Date: **October 4, 2019**

Project No. B17.07369

8-M0.01
Drawing No.

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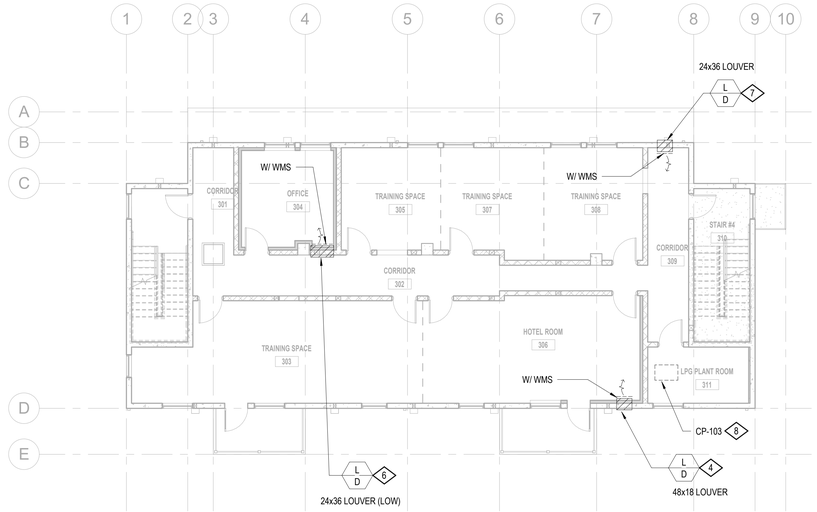
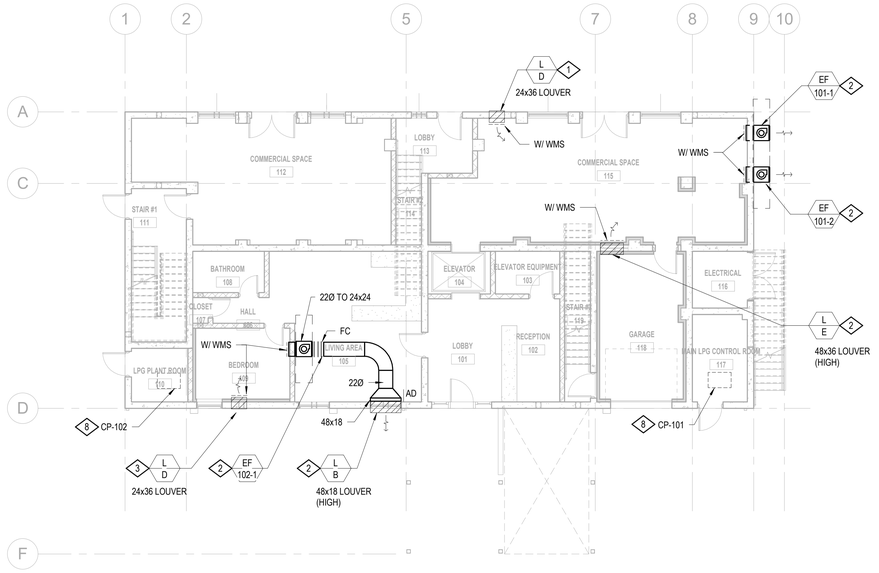
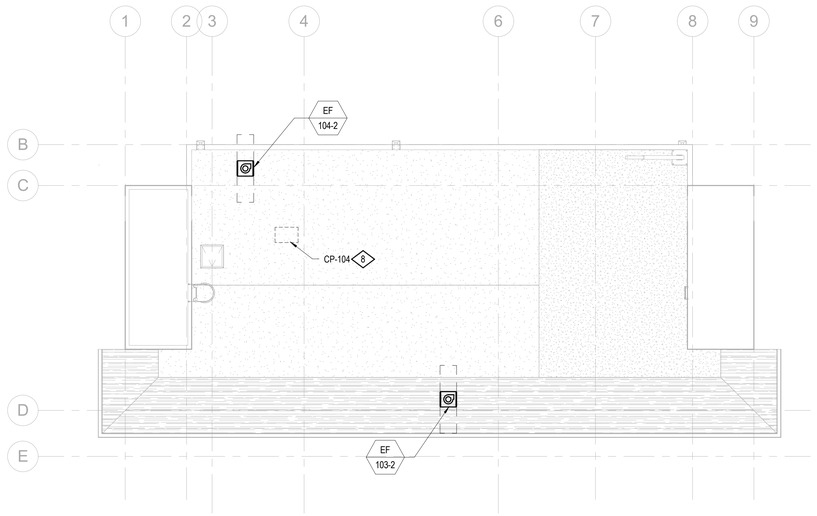


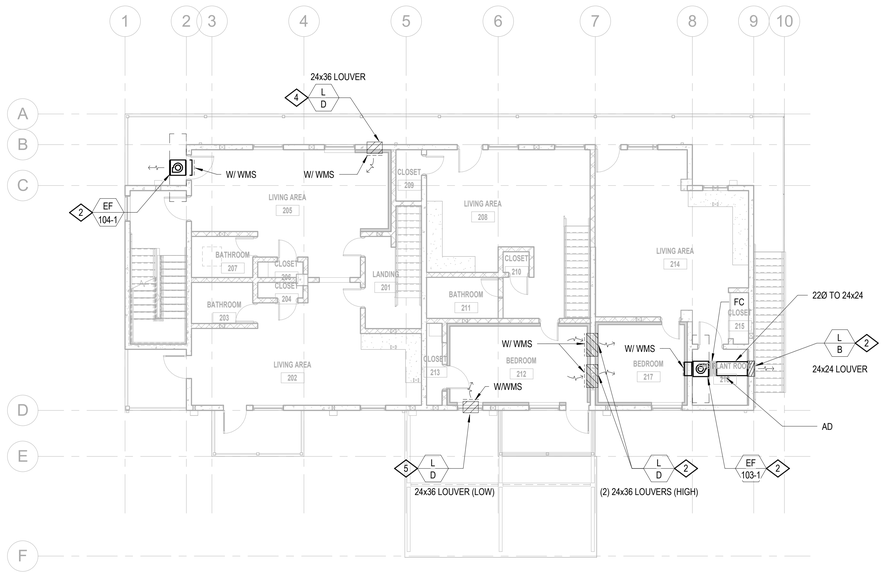
3 08-MECH TRAINING TOWER BLDG-03-THIRD FLOOR
1/8" = 1'-0"



1 08-MECH TRAINING TOWER BLDG-01-FIRST FLOOR
1/8" = 1'-0"



4 08-MECH TRAINING TOWER BLDG-05-ROOF LEVEL
1/8" = 1'-0"



2 08-MECH TRAINING TOWER BLDG-02-SECOND FLOOR
1/8" = 1'-0"

SHEET NOTES:

A. COORDINATE WITH FIRE PROP VENDOR FOR SPECIFIC INSTALLATION DETAILS, COORDINATION ITEMS, AND FAN MOUNTING DETAILS.
B. REFER TO ARCHITECTURAL DRAWINGS FOR FINAL EQUIPMENT ELEVATIONS.
C. ALL EXHAUST FANS SHALL BE PROVIDED AND INSTALLED BY OWNER. ALL DUCTWORK AND LOUVERS BY DIVISION 23.

NUMBERED NOTES:

1. BOTTOM OF OPENING SHALL BE 1'-5" AFF.
2. BOTTOM OF OPENING SHALL BE 9'-6" AFF.
3. BOTTOM OF OPENING SHALL BE 3'-3" AFF.
4. BOTTOM OF OPENING SHALL BE 1'-11" AFF.
5. BOTTOM OF OPENING SHALL BE 2'-11" AFF.
6. BOTTOM OF OPENING SHALL BE 3'-8" AFF.
7. BOTTOM OF OPENING SHALL BE 2'-2" AFF.
8. CONTROL PANEL BY OWNER

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
TODD M SEE
No. M30765
MECHANICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

MECHANICAL TRAINING TOWER BUILDING FIRST, SECOND, THIRD, AND ROOF LEVEL FLOOR PLANS

Drawn By: MCE
Checked By: TMS

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

Date:
October 4, 2019

Project No. B17.07369

8-M2.01
Drawing No.

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ELECTRICAL LEGEND AND ABBREVIATIONS

EQUIPMENT NAMING LEGEND

E O U S - ATS BUS DPH DPL DSH DSL LP LPH LRC MCC MP MS PDU T TB TC - B 2 A / 1,3,5

- B — BUILDING
- 2 — BUILDING NUMBER
- A — FIRST OF THIS TYPE ON FLOOR
- 1,3,5 — CIRCUIT NUMBER(S)

ATS	AUTOMATIC TRANSFER SWITCH
BUS	BUSWAY
DPH	DISTRIBUTION PANEL 277/480V
DPL	DISTRIBUTION PANEL 120/208V
DSH	DISTRIBUTION SWITCHBOARD 277/480V
DSL	DISTRIBUTION SWITCHBOARD 120/208V
LP	BRANCH CIRCUIT PANELBOARD 120/208V
LPH	BRANCH CIRCUIT PANELBOARD 277/480V
LRC	LIGHTING RELAY CABINET
MCC	MOTOR CONTROL CENTER
MP	MECHANICAL EQUIPMENT PANELBOARD
MS	MAIN SWITCHBOARD
PDU	POWER DISTRIBUTION UNIT
T	TRANSFORMER
TB	TELECOM BACKBOARD
TC	TELECOM CABINET

E	EMERGENCY LIFE SAFETY
O	POWER OPTIONAL STANDBY
U	UPS POWER
S	LEGALLY REQUIRED STANDBY

WIRING DEVICE LEGEND

	DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V, DEDICATED; WALL MOUNTED
	DOUBLE DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
	SPECIAL PURPOSE RECEPTACLE OUTLET: RATING AS INDICATED; WALL MOUNTED
	TELECOM OUTLET
$	SINGLE POLE SWITCH
$3	THREE WAY SWITCH
$F	FAN SWITCH
$H	ILLUMINATED HANDLE SWITCH
$K	KEY SWITCH
D	WALL DIMMER
LV	LOW VOLTAGE SWITCH

WIRING DEVICE SUBSCRIPT LEGEND

AC	AC = ABOVE COUNTER
GFI	GFI = GROUND FAULT INTERRUPTER
WP	WP = WEATHERPROOF
a	a = LOWER CASE LETTER INDICATES SWITCH CONTROL
6	6 = NUMBER INDICATES CIRCUIT NUMBER
$a	a = LOWER CASE INDICATES SWITCH CONTROL
HVB-10#	HIGH VOLTAGE BOX - 120V JUNCTION BOX # = INSTANCE
LVB-10#	LOW VOLTAGE BOX - LOW-VOLTAGE JUNCTION BOX # = INSTANCE

FIRE ALARM LEGEND

FCIP	FIREFIGHTER'S CONTROL AND INDICATING PANEL
FPSP	FIRE PUMP REMOTE STATUS PANEL
GSP	GENERATOR REMOTE STATUS PANEL

SECURITY LEGEND

	FIXED CCTV CAMERA
DC	DOOR CONTACT
MS	MOTION SENSOR
CR	CARD READER

PROGRAMMABLE LIGHTING & RECEPTACLE CONTROL SYSTEM DEVICE LEGEND

$	SWITCH
D	DIMMER
PC	PHOTOCELL
OS	OCCUPANCY SENSOR; WALL MOUNTED
OS	2 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	1 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	CORRIDOR OCCUPANCY SENSOR; CEILING MOUNTED
#B	MULTI-BUTTON KEYPAD, # INDICATES QTY OF BUTTONS
#S	MULTI-BUTTON PRESET SCENE CONTROLLER WITH MASTER RAISE/LOWER, # INDICATES QTY OF SCENE BUTTONS
G	GRAPHICAL INTERFACE CONTROLLER

POWER LEGEND

T	ATS, CPC, DPH, DPL, DSH, DSL, MCC OR MS: SIZE APPROXIMATELY AS SHOWN. DOUBLE LINE INDICATES FRONT.
	SURFACE MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	SURFACE MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	TB: LENGTH APPROXIMATELY AS SHOWN
T/F	STEP DOWN TRANSFORMER
G	GENERATOR IN WP ENCLOSURE
	AUTOMATIC TRANSFER SWITCH
	HEAVY DUTY DISCONNECT SWITCH
	HEAVY DUTY DISCONNECT SWITCH WITH FUSE
	MOTOR STARTER
MCP	MOTOR STARTER, NOT PROVIDED UNDER ELECTRICAL SCOPE
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH
MCP	COMBINATION MOTOR STARTER/DISCONNECT SWITCH, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITH DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITHOUT DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
EPO	EMERGENCY POWER OFF BUTTON
$MD	MOTORIZED DOOR CONTROLLER (FURNISHED WITH DOOR)
$MS	MOTORIZED SHADE CONTROLLER (FURNISHED WITH SHADES)
$PS	PROJECTION SCREEN CONTROLLER (FURNISHED WITH SCREEN)
$T	THERMAL OVERLOAD/DISCONNECT SWITCH
M	MOTOR CONNECTION
J	JUNCTION BOX, CEILING MOUNTED
J	JUNCTION BOX, WALL MOUNTED
P/B	PULL BOX
S/B	SPLICE BOX
G	GROUND BUS CABINET
	GROUND ROD
	GROUND TEST WELL
	CIRCUIT BREAKER
	SWITCH AND FUSE
	CIRCUIT BREAKER IN ENCLOSURE
M	CURRENT TRANSFORMER COMPARTMENT AND KWH METER
GFR	GROUND FAULT RELAY
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	TRANSFORMER
CT 1-1	EQUIPMENT DESIGNATION — EQUIPMENT TYPE; NUMERICAL DESIGNATION REFER TO EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION DETAILS

LIGHTING LEGEND

	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; CEILING MOUNTED
	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; WALL MOUNTED
	LIGHTING FIXTURE CONNECTED TO EMERGENCY POWER SYSTEM
2 a A	LIGHTING FIXTURE SUBSCRIPTIONS: NUMBER INDICATES CIRCUIT, LOWERCASE LETTER INDICATES SWITCH CONTROL UPPERCASE LETTER INDICATES FIXTURE TYPE
EXIT SIGNS	ARROWS AS SHOWN, ILLUMINATED FACE AS INDICATED BY SHADING, CONNECT TO EMERGENCY POWER SYSTEM
	EXIT SIGN; WALL MOUNTED
	EXIT SIGN; CEILING MOUNTED
R	EXIT SIGN; RECESSED IN WALL
P	EXIT SIGN; PENDENT MOUNTED
L	EXIT SIGN, LOW LEVEL; RECESSED IN WALL

ABBREVIATIONS

℄	CENTER LINE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AF/AS	AMPERE RATING OF FUSE/SWITCH
AT/AF	AMPERE RATING OF CIRCUIT, BREAKER TRIP/FRAME
A/V	AUDIO/VISUAL
BMS	BUILDING MANAGEMENT SYSTEM
CKT	CIRCUIT
COPS	CRITICAL OPERATIONS POWER SYSTEM
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EC	EMPTY CONDUIT
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
FCC	FIRE CONTROL CENTER
GFI	GROUND FAULT INTERRUPTOR
GND	GROUND
HVB	HIGH VOLTAGE BOX
IDF	INTERMEDIATE DISTRIBUTION FRAME ROOM
IG	ISOLATED GROUND
LVB	LOW VOLTAGE BOX
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME ROOM
MIC	MINERAL INSULATED CABLE
MS	MAIN SWITCHBOARD
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PVC	POLYVINYL CHLORIDE CONDUIT
RAC	RIGID ALUMINUM CONDUIT
RSC	RIGID STEEL CONDUIT
SCC	SECURITY CONTROL CENTER
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
TEL	TELECOM
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
WP	WEATHERPROOF
WT	WATERTIGHT
XP	EXPLOSION PROOF

HAYWARD FIRE TRAINING FACILITY
BUILDING 8 - ELECTRICAL DRAWING LIST
7/19/2019
WSP PROJECT: B17.07369.000

DRAWING NUMBER	DRAWING NAME	SCALE	50%CD	90%CD	100%CD
			1/17/2018	11/2/2018	7/19/2019
8-E0.01	ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST	NTS	X	X	X
8-E0.02	ELECTRICAL SCHEDULES	NTS	X	X	X
8-E2.01	ELECTRICAL TRAINING TOWER BUILDING FIRST LEVEL FLOOR PLAN	1/4" = 1'-0"	X	X	X
8-E2.02	ELECTRICAL TRAINING TOWER BUILDING SECOND LEVEL FLOOR PLAN	1/4" = 1'-0"	X	X	X
8-E2.03	ELECTRICAL TRAINING TOWER BUILDING THIRD LEVEL FLOOR PLAN	1/4" = 1'-0"		X	X
8-E2.04	ELECTRICAL TRAINING TOWER BUILDING FOURTH LEVEL FLOOR PLAN	1/4" = 1'-0"		X	X
8-E2.05	ELECTRICAL TRAINING TOWER BUILDING ROOF LEVEL PLAN	1/4" = 1'-0"		X	X
8-E5.01	ELECTRICAL RISER DIAGRAM	NTS	X	X	X

RACEWAY LEGEND

	CONDUIT CONCEALED ABOVE CEILING OR WITHIN WALL
	CONDUIT BELOW GRADE OR EMBEDDED WITHIN SLAB
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT STUBBED OUT WITH BUSHING NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
E	CONDUIT STUBBED OUT AND CAPPED NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
AV	AUDIO/VISUAL SYSTEM RACEWAY
E	ELECTRICAL SYSTEM RACEWAY
G	GROUNDING SYSTEM RACEWAY
FA	FIRE ALARM SYSTEM RACEWAY
S	SECURITY SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
T	TELECOM SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
	CONDUIT HOMERUN, MAXIMUM OF (3) BRANCH CIRCUITS, UON NOTE: MAXIMUM OF THREE BRANCH CIRCUITS FOR EACH HOMERUN, UON
	PHASE CONDUCTOR(S) GROUNDING CONDUCTOR ISOLATED GROUNDING CONDUCTOR NEUTRAL CONDUCTOR

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CITY OF HAYWARD HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER — AMANDA J. BROWNLEE — No. E17287 — ELECTRICAL — STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST

Drawn By: ELW
Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

8-E0.01
Drawing No.

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480V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	#12	#10	#8	#6	#4	#2	#1		
2.7	511ft	814ft	1,267ft	2,007ft	3,199ft	5,079ft	6,399ft		
5.4	255ft	407ft	633ft	1,003ft	1,600ft	2,540ft	3,199ft		
8.1	170ft	271ft	422ft	669ft	1,066ft	1,693ft	2,133ft		
10.8	128ft	204ft	317ft	502ft	800ft	1,270ft	1,600ft		
13.5	102ft	163ft	253ft	401ft	640ft	1,016ft	1,280ft		
16.2	85ft	136ft	211ft	334ft	533ft	847ft	1,066ft		
18.9	-	116ft	181ft	287ft	457ft	726ft	914ft		
21.6	-	102ft	158ft	251ft	400ft	635ft	800ft		
24.3	-	90ft	141ft	223ft	355ft	564ft	711ft		
27.0	-	-	127ft	201ft	320ft	508ft	640ft		
29.7	-	-	115ft	182ft	291ft	462ft	582ft		
32.4	-	-	106ft	167ft	267ft	423ft	533ft		
35.1	-	-	-	154ft	246ft	391ft	492ft		
37.8	-	-	-	143ft	229ft	363ft	457ft		
40.5	-	-	-	134ft	213ft	339ft	427ft		
43.2	-	-	-	125ft	200ft	317ft	400ft		
45.9	-	-	-	118ft	188ft	299ft	376ft		
48.6	-	-	-	-	178ft	282ft	355ft		
51.3	-	-	-	-	168ft	267ft	337ft		
54.0	-	-	-	-	160ft	254ft	320ft		
56.7	-	-	-	-	152ft	242ft	305ft		
59.4	-	-	-	-	-	231ft	291ft		
62.1	-	-	-	-	-	221ft	278ft		
64.8	-	-	-	-	-	212ft	267ft		
67.5	-	-	-	-	-	203ft	256ft		
70.2	-	-	-	-	-	195ft	246ft		
72.9	-	-	-	-	-	188ft	237ft		
75.6	-	-	-	-	-	181ft	229ft		
78.3	-	-	-	-	-	175ft	221ft		
81.0	-	-	-	-	-	-	213ft		
83.7	-	-	-	-	-	-	206ft		
86.4	-	-	-	-	-	-	200ft		
89.1	-	-	-	-	-	-	194ft		
91.8	-	-	-	-	-	-	-		
94.5	-	-	-	-	-	-	-		
97.2	-	-	-	-	-	-	-		
99.9	-	-	-	-	-	-	-		
102.6	-	-	-	-	-	-	-		
105.3	-	-	-	-	-	-	-		
108.0	-	-	-	-	-	-	-		

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

480V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	1/0	2/0	3/0	4/0	250KCM	300KCM	350KCM	400KCM	500KCM
7.9	2,760ft	3,483ft	4,397ft	5,539ft	6,539ft	7,850ft	9,176ft	10,491ft	13,053ft
15.8	1,380ft	1,741ft	2,198ft	2,770ft	3,270ft	3,925ft	4,588ft	5,246ft	6,527ft
23.7	920ft	1,161ft	1,466ft	1,846ft	2,180ft	2,617ft	3,059ft	3,497ft	4,351ft
31.6	690ft	871ft	1,099ft	1,385ft	1,635ft	1,963ft	2,294ft	2,623ft	3,263ft
39.5	552ft	697ft	879ft	1,108ft	1,308ft	1,570ft	1,835ft	2,098ft	2,611ft
47.4	460ft	580ft	733ft	923ft	1,090ft	1,308ft	1,529ft	1,749ft	2,176ft
55.3	394ft	498ft	628ft	791ft	934ft	1,121ft	1,311ft	1,499ft	1,865ft
63.2	345ft	435ft	550ft	692ft	817ft	981ft	1,147ft	1,311ft	1,632ft
71.1	307ft	387ft	489ft	615ft	727ft	872ft	1,020ft	1,166ft	1,450ft
79.0	276ft	348ft	440ft	554ft	654ft	785ft	918ft	1,049ft	1,305ft
86.9	251ft	317ft	400ft	504ft	594ft	714ft	834ft	954ft	1,187ft
94.8	230ft	290ft	366ft	462ft	545ft	654ft	765ft	874ft	1,088ft
102.7	212ft	268ft	338ft	426ft	503ft	604ft	706ft	807ft	1,004ft
110.6	197ft	249ft	314ft	396ft	467ft	561ft	655ft	749ft	932ft
118.5	184ft	232ft	293ft	369ft	436ft	523ft	612ft	699ft	870ft
126.4	-	218ft	275ft	346ft	409ft	491ft	574ft	656ft	816ft
134.3	-	205ft	259ft	326ft	385ft	462ft	540ft	617ft	768ft
142.2	-	193ft	244ft	308ft	363ft	436ft	510ft	583ft	725ft
150.1	-	-	231ft	292ft	344ft	413ft	483ft	552ft	687ft
158.0	-	-	220ft	277ft	327ft	393ft	459ft	525ft	653ft
165.9	-	-	209ft	264ft	311ft	374ft	437ft	500ft	622ft
173.8	-	-	-	252ft	297ft	357ft	417ft	477ft	593ft
181.7	-	-	-	241ft	284ft	341ft	399ft	456ft	568ft
189.6	-	-	-	231ft	272ft	327ft	382ft	437ft	544ft
197.5	-	-	-	-	262ft	314ft	367ft	420ft	522ft
205.4	-	-	-	-	252ft	302ft	353ft	404ft	502ft
213.3	-	-	-	-	-	291ft	340ft	389ft	483ft
221.2	-	-	-	-	-	280ft	328ft	375ft	466ft
229.1	-	-	-	-	-	271ft	316ft	362ft	450ft
237.0	-	-	-	-	-	-	306ft	350ft	435ft
244.9	-	-	-	-	-	-	296ft	338ft	421ft
252.8	-	-	-	-	-	-	287ft	328ft	408ft
260.7	-	-	-	-	-	-	-	318ft	396ft
268.6	-	-	-	-	-	-	-	309ft	384ft
276.5	-	-	-	-	-	-	-	300ft	373ft
284.4	-	-	-	-	-	-	-	-	363ft
292.3	-	-	-	-	-	-	-	-	353ft
300.2	-	-	-	-	-	-	-	-	344ft
308.1	-	-	-	-	-	-	-	-	335ft
316.0	-	-	-	-	-	-	-	-	-

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	1/0	2/0	3/0	4/0	250KCM	300KCM	350KCM	400KCM	500KCM
3.4	1,204ft	1,520ft	1,918ft	2,417ft	2,853ft	3,425ft	4,004ft	4,577ft	5,695ft
6.8	602ft	760ft	959ft	1,208ft	1,427ft	1,713ft	2,002ft	2,289ft	2,848ft
10.2	401ft	507ft	639ft	806ft	951ft	1,142ft	1,335ft	1,526ft	1,898ft
13.6	301ft	380ft	480ft	604ft	713ft	856ft	1,001ft	1,144ft	1,424ft
17.0	241ft	304ft	384ft	483ft	571ft	685ft	801ft	915ft	1,139ft
20.4	201ft	253ft	320ft	403ft	476ft	571ft	667ft	763ft	949ft
23.8	172ft	217ft	274ft	345ft	408ft	489ft	572ft	654ft	814ft
27.2	151ft	190ft	240ft	302ft	357ft	428ft	500ft	572ft	712ft
30.6	134ft	169ft	213ft	269ft	317ft	381ft	445ft	509ft	633ft
34.0	120ft	152ft	192ft	242ft	285ft	343ft	400ft	458ft	570ft
37.4	109ft	138ft	174ft	220ft	259ft	311ft	364ft	416ft	518ft
40.8	100ft	127ft	160ft	201ft	238ft	285ft	334ft	381ft	475ft
44.2	93ft	117ft	148ft	186ft	219ft	263ft	308ft	352ft	438ft
47.6	86ft	109ft	137ft	173ft	204ft	245ft	286ft	327ft	407ft
51.0	80ft	101ft	128ft	161ft	190ft	228ft	267ft	305ft	380ft
54.4	-	95ft	120ft	151ft	178ft	214ft	250ft	286ft	356ft
57.8	-	89ft	113ft	142ft	168ft	201ft	236ft	269ft	335ft
61.2	-	84ft	107ft	134ft	159ft	190ft	222ft	254ft	316ft
64.6	-	-	101ft	127ft	150ft	180ft	211ft	241ft	300ft
68.0	-	-	96ft	121ft	143ft	171ft	200ft	229ft	285ft
71.4	-	-	91ft	115ft	136ft	163ft	191ft	218ft	271ft
74.8	-	-	-	110ft	130ft	156ft	182ft	208ft	259ft
78.2	-	-	-	105ft	124ft	149ft	174ft	199ft	248ft
81.6	-	-	-	101ft	119ft	143ft	167ft	191ft	237ft
85.0	-	-	-	-	114ft	137ft	160ft	183ft	228ft
88.4	-	-	-	-	110ft	132ft	154ft	176ft	219ft
91.8	-	-	-	-	106ft	127ft	148ft	170ft	211ft
95.2	-	-	-	-	-	122ft	143ft	163ft	203ft
98.6	-	-	-	-	-	118ft	138ft	158ft	196ft
102.0	-	-	-	-	-	114ft	133ft	153ft	190ft
105.4	-	-	-	-	-	-	129ft	148ft	184ft
108.8	-	-	-	-	-	-	125ft	143ft	178ft
112.2	-	-	-	-	-	-	-	139ft	173ft
115.6	-	-	-	-	-	-	-	135ft	168ft
119.0	-	-	-	-	-	-	-	131ft	163ft
122.4	-	-	-	-	-	-	-	-	158ft
125.8	-	-	-	-	-	-	-	-	154ft
129.2	-	-	-	-	-	-	-	-	150ft
132.6	-	-	-	-	-	-	-	-	146ft
136.0	-	-	-	-	-	-	-	-	142ft

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

MOTOR CONNECTION SCHEDULE: 208V-3 PHASE

HP	SHORT-CIRCUIT & GROUND FAULT		SWITCH AMPS	OVERLOAD FUSE AMPS	BRANCH CIRCUIT AMPACITY	GROUNDING CONDUCTOR SIZE	STARTER SIZE NEMA
	CIRCUIT BREAKER	FUSE SIZE					
1/2	15A	6A	30	2.5	15	#12	1
3/4	15A	10A	30	3.5	15	#12	1
1	15A	10A	30	5	15	#12	1
1 1/2	15A	15A	30	7	15	#12	1
2	15A	15A	30	9	15	#12	1
3	20A	20A	30	15	20	#12	1
5	35A	30A	30	20	30	#10	1
7 1/2	50A	45A	60	30	40	#10	2
10	60A	60A	60	40	50	#10	3
15	90A	90A	100	60	70	#8	3
20	100A	110A	100	80	80	#6	3
25	125A	150A	100	90	100	#6	4
30	150A	175A	200	110	125	#6	4
40	200A	200A	200	150	175	#6	5
50	250A	300A	200	175	200	#4	5
60	300A	300A	400	200	225	#4	5
75	350A	400A	400	250	300	#2	6
100	450A	500A	400	350	400	#2	6
125	600A	600A	600	450	450	#1	6
150	700A	700A	600	500	600	#1/0	6

REFER TO WIRING SCHEDULE FOR BRANCH CIRCUIT REQUIREMENTS
SIZES BASED ON COPPER CONDUCTORS

MOTOR CONNECTION SCHEDULE: 480V-3 PHASE

HP	SHORT-CIRCUIT & GROUND FAULT		SWITCH AMPS	OVERLOAD FUSE AMPS	BRANCH CIRCUIT AMPACITY	GROUNDING CONDUCTOR SIZE	STARTER SIZE NEMA
	CIRCUIT BREAKER	FUSE SIZE					
1/2	15A	4A	30	1.125	15	#12	1
3/4	15A	4A	30	1.6	15	#12	1
1	15A	6A	30	2	15	#12	1
1 1/2	15A	6A	30	2.8	15	#12	1
2	15A	6A	30	4	15	#12	1
3	15A	10A	30	5.6	15	#12	1
5	15A	15A	30	9	20	#12	1
7 1/2	25A	20A	30	15	20	#10	1
10	35A	25A	30	17.5	20	#10	2
15	45A	40A	30	25	30	#10	2
20	50A	50A	60	35	40	#10	2
25	70A	60A	60	40	50	#8	3
30	70A	70A	60	45	50	#8	3
40	100A	100A	100	60	70	#8	3
50	125A	125A	100	80	90	#6	4
60	150A	150A	200	90	100	#6	4
75	150A	175A	200	110	125	#6	4
100	175A	225A	200	150	175	#4	5
125	250A	300A	200	200	200	#4	5
150	300A	350A	400	225	225	#2	5
200	400A	450A	400	300	300	#2	5

REFER TO WIRING SCHEDULE FOR BRANCH CIRCUIT REQUIREMENTS
SIZES BASED ON COPPER CONDUCTORS

LP-B8A

BUSSING: 225A, 10,000 AIC SYMMETRICAL — LOCATION:ELECTRICAL ROOM
MAIN CB: 150A/3P — MOUNTING: SURFACE

120/208V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
E		3842		1	●			2	20/1	200	BUILDING 8 SIGNAGE	E
E	CP-101	3842	50/3	3		●		4	20/1	0	SPARE	
E		3842		5			●	6	20/1	0	SPARE	
E		4443		7	●			8	20/1	0	SPARE	
E	CP-103	4443	50/3	9		●		10	20/1	0	SPARE	
E		4443		11			●	12	20/1	0	SPARE	
E	C-101	780	20/2	13	●			14	20/1	0	SPARE	
E		780		15		●		16	20/1	0	SPARE	
E	D-101	360	20/1	17			●	18	20/1	0	SPARE	
	SPARE	0	20/1	19	●			20	20/1	0	SPARE	
	SPARE	0	20/1	21		●		22	20/1	0	SPARE	
	SPARE	0	20/1	23			●	24	20/1	0	SPARE	
	SPARE	0	20/1	25	●			26	20/1	0	SPARE	
	SPARE	0	20/1	27		●		28	20/1	0	SPARE	
	SPARE	0	20/1	29			●	30	20/1	0	SPARE	
	SPARE	0	20/1	31	●			32	20/1	0	SPARE	
	SPARE	0	20/1	33		●		34	20/1	0	SPARE	
	SPARE	0	20/1	35			●	36	20/1	0	SPARE	
	SPACE	0		37	●			38		0	SPACE	
	SPACE	0		39		●		40		0	SPACE	
	SPACE	0		41			●	42		0	SPACE	
	TOTAL ALL PHASES (VA)	PHASE A (VA)		PHASE B (VA)			PHASE C (VA)				TOTAL ALL PHASES (AMPS)	
	26975	9265		9065			8645				75	

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	26975 VA	1.00	26975 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR		1.25	0 VA
R = RECEPTACLE	0 VA	NEC DEMAND	0 VA

CONNECTED LOAD SUMMARY
26975 VA
75 AMPS

NEC LOAD SUMMARY
26975 VA
75 AMPS

LP-B8B

BUSSING: 225A, 10,000 AIC SYMMETRICAL — LOCATION:ELECTRICAL ROOM
MAIN CB: 150A/3P — MOUNTING: SURFACE

120/208V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
E		1921		1	●			2	20/1	0	SPARE	
E	CP-102	1921	50/3	3		●		4	20/1	0	SPARE	
E		1921		5			●	6	20/1	0	SPARE	
E		3842		7	●			8	20/1	0	SPARE	
E	CP-104	3842	50/3	9		●		10	20/1	0	SPARE	
E		3842		11			●	12	20/1	0	SPARE	
	SPARE	0	20/1	13	●			14	20/1	0	SPARE	
	SPARE	0	20/1	15		●		16	20/1	0	SPARE	
	SPARE	0	20/1	17			●	18	20/1	0	SPARE	
	SPARE	0	20/1	19	●			20	20/1	0	SPARE	
	SPARE	0	20/1	21		●		22	20/1	0	SPARE	
	SPARE	0	20/1	23			●	24	20/1	0	SPARE	
	SPARE	0	20/1	25	●			26	20/1	0	SPARE	
	SPARE	0	20/1	27		●		28	20/1	0	SPARE	
	SPARE	0	20/1	29			●	30	20/1	0	SPARE	
	SPARE	0	20/1	31	●			32	20/1	0	SPARE	
	SPARE	0	20/1	33		●		34	20/1	0	SPARE	
	SPARE	0	20/1	35			●	36	20/1	0	SPARE	
	SPACE	0		37	●			38		0	SPACE	
	SPACE	0		39		●		40		0	SPACE	
	SPACE	0		41			●	42		0	SPACE	
	TOTAL ALL PHASES (VA)	PHASE A (VA)		PHASE B (VA)			PHASE C (VA)				TOTAL ALL PHASES (AMPS)	
	17289	5763		5763			5763				48	

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	17289 VA	1.00	17289 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR		1.25	0 VA
R = RECEPTACLE	0 VA	NEC DEMAND	0 VA

CONNECTED LOAD SUMMARY
17289 VA
48 AMPS

NEC LOAD SUMMARY
17289 VA
48 AMPS

EQUIPMENT CONNECTION DESIGNATIONS LEGEND

DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION
AC	AIR CONDITIONING UNIT	FCU	FAN COIL UNIT	P	PUMP
ACC	AIR COOLED CONDENSER	FOA	FUEL OIL ALARM PANEL	PS	PROJECTION SCREEN
AHU	AIR HANDLING UNIT	FOP	FUEL OIL PUMP	REF	REFRIGERATOR
BC	BATTERY CHARGER	FMS	FMS PANEL	RF	RETURN FAN
BMS	BMS PANEL	FP	FIRE PUMP	RTU	ROOF TOP UNIT
CH	CHILLER	FPB	FAN POWER BOX	SD	SMOKE DAMPER
COMP	COMPRESSOR	FSD	FIRE/SMOKE DAMPER	SE	SEWAGE EJECTOR
COP	COPIER	GD	GARBAGE DISPOSAL	SF	SUPPLY FAN
CP	CIRCULATING PUMP	GS	GRAPHIC SIGNAGE	SP	SUMP PUMP
CU	CONDENSING UNIT	HP	HEAT PUMP	UH	UNIT HEATER
DF	DUCT FURNACE	HV	HEATING/VENTILATING UNIT	VAV	VAV BOX ELECTRIC HEAT
DWBP	DOMESTIC WATER BOOSTER PUMP	IH	INSTANT HOT WATER HEATER	VM	VENDING MACHINE
ECH	ELECTRIC CABINET HEATER	JP	JOCKEY PUMP	VFD	VARIABLE FREQUENCY DRIVE
EDH	ELECTRIC DUCT HEATER	JWH	JACKET WATER HEATER	TYPE DP	DUPLEX PUMP
EF	EXHAUST FAN	MCS	MOTOR CONNECTION SCHEDULE	TYPE FR	FRACTIONAL HP MOTOR
EHC	ELECTRIC HEATING COIL	MD	MOTORIZED DOOR OR GATE	TYPE FWS	FURNISHED WITH STARTER
ELEV	ELEVATOR	MS	MOTORIZED SHADE	TYPE M	MOTOR WITH STARTER
EUH	ELECTRIC UNIT HEATER	MUA	MAKE UP AIR UNIT	TYPE SPC	SINGLE POINT CONNECTION
EWC	ELECTRIC WATER COOLER	MW	MICROWAVE OVEN	TYPE VFD	VARIABLE FREQUENCY DRIVE
EWH	ELECTRIC WATER HEATER	OH	OIL HEATER		

EQUIPMENT CONNECTION SCHEDULE

DESIGNATION	HP	FLA	KVA	VOLT-AGE	PH	POWER SOURCE	CONNECTION TYPE	BRANCH CIRCUIT WIRING	REMARKS
CP-101		32.00		208	3	LP-B8A	SPC	2#6, 1#10G, 1.25"C	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT.
CP-102		16.00		208	3	LP-B8B	SPC	2#6, 1#10G, 1.25"C	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
CP-103		37.0		208	3	LP-B8A	SPC	2#6, 1#10G, 1.25"C	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
CP-104		32.0		208	3	LP-B8B	SPC	2#6, 1#10G, 1.25"C	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
C-101		7.50		208	1	LP-B8A	SPC	2#12, 1#12G, 0.5"C	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
D-101		3.00		120	1	LP-B8A	SPC	2#12, 1#12G, 0.5"C	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
EF-101-1		8.8		208	1	CP-101	SPC	SEE PLANS	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
EF-101-2		8.8		208	1	CP-101	SPC	SEE PLANS	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
EF-102-1		8.8		208	1	CP-102	SPC	SEE PLANS	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
EF-103-1		8.8		208	1	CP-103	SPC	SEE PLANS	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT
EF-104-1		8.8		208	1	CP-104	SPC	SEE PLANS	OFOI EQUIPMENT. COORDINATE WITH FIRE PROP CONSULTANT

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL SCHEDULES

Drawn By: ELW — Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

8-E0.02

Drawing No.

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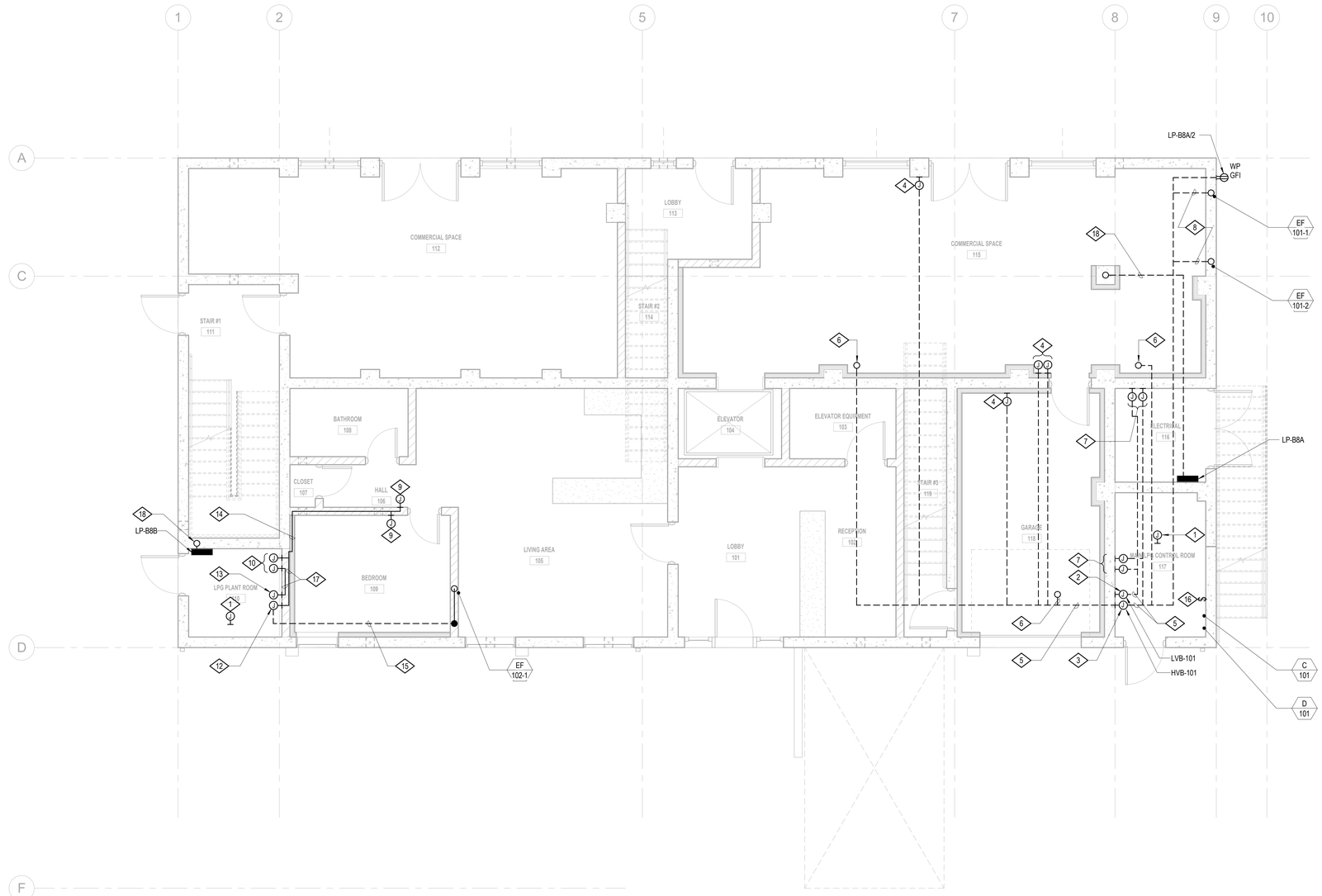

1 08-ELEC POWER TRAINING TOWER BLDG-FIRST FLOOR
1/4" = 1'-0"

SHEET NOTES:

A. ALL CONDUIT SHALL BE RIGID STEEL, UON. PROVIDE PULL-STRINGS IN ALL CONDUIT.

B. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

C. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

D. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

E. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM.

F. FOR ALL DATA CABLING, PATHWAY INFRASTRUCTURE AND DEVICES REFER TO T SERIES DRAWINGS.

G. ALL CORE DIAMETERS SHALL BE NO MORE THAN 1/4" LARGER THAN CONDUIT CORE IS INTENDED FOR.

NUMBERED NOTES:

1. PROVIDE 120/208V, 3Ø, 4W CONNECTION TO OFOI EQUIPMENT CP-101 FROM LP-B8A.
2. PROVIDE JUNCTION BOX "LVB-101" FOR LOW-VOLTAGE CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. PROVIDE NEMA 4 RATED BOX, MINIMUM. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
3. PROVIDE JUNCTION BOX "HVB-101" FOR 120V CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. PROVIDE NEMA 4 RATED BOX, MINIMUM. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
4. PROVIDE (1) 1/2" EMPTY CONDUIT FROM HVB-101 EMBEDDED IN WALL OR SLAB TO JUNCTION BOX EMBEDDED IN CONCRETE WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL.
5. TERMINATE CONDUITS IN HVB-101 OR LVB-101 AS REQUIRED. COORDINATE FINAL TERMINATIONS WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
6. PROVIDE (1) 1" EMPTY CONDUIT FROM HVB-101 EMBEDDED IN SLAB. STUB-UP CONDUIT AND CAP. COORDINATE STUB-UP LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
7. PROVIDE (2) 1/2" EMPTY CONDUIT EMBEDDED IN WALL, (1) CONDUIT FROM HVB-101 AND (1) CONDUIT FROM LVB-101. PROVIDE (2) JUNCTION BOXES EMBEDDED IN SLAB. TERMINATE (1) CONDUIT IN EACH JUNCTION BOX. COORDINATE LOCATION OF JUNCTION BOXES WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
8. PROVIDE (1)1/2" EMPTY CONDUIT FROM HVB-101 EMBEDDED IN SLAB. TRANSITION INTO WALL AND TERMINATE AT EXHAUST FAN INDICATED.
9. PROVIDE (1) 1/2" EMPTY CONDUIT FROM HVB-102 EMBEDDED IN WALL OR SLAB TO JUNCTION BOX EMBEDDED IN CONCRETE WALL, UON. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL.
10. PROVIDE (2) 1/2" EMPTY CONDUIT EMBEDDED IN WALL, (1) CONDUIT FROM HVB-102 AND (1) CONDUIT FROM LVB-102. PROVIDE (2) JUNCTION BOXES EMBEDDED IN WALL. TERMINATE (1) CONDUIT IN EACH JUNCTION BOX. COORDINATE LOCATION OF JUNCTION BOXES WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
11. TERMINATE CONDUITS IN HVB-102 OR LVB-102 AS REQUIRED. COORDINATE FINAL TERMINATIONS WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
12. PROVIDE JUNCTION BOX "HVB-102" FOR 120V CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. PROVIDE NEMA 4 RATED BOX, MINIMUM. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
13. PROVIDE JUNCTION BOX "LVB-102" FOR LOW-VOLTAGE CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. PROVIDE NEMA 4 RATED BOX, MINIMUM. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
14. ROUTE CONDUIT IN AIR-GAP BEHIND SUPER-PAGINITE WALL-COVERING.
15. PROVIDE (1)1/2" EMPTY CONDUIT FROM HVB-102 EMBEDDED IN SLAB. TRANSITION INTO WALL AND TERMINATE AT EXHAUST FAN INDICATED.
16. PROVIDE MANUAL ON/OFF SWITCH FOR ALL TRAINING AREA LIGHTS.
17. TERMINATE CONDUITS IN HVB-102 OR LVB-102 AS REQUIRED. COORDINATE FINAL TERMINATIONS WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
18. PROVIDE (1) 3/4" CONDUIT WITH (2)#10AWG + (1) #10G EMBEDDED IN SLAB. TRANSISTION INTO STRUCTURE AND EXTEND UP TO LEVEL 3.

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DEPARTMENT OF PUBLIC WORKS
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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL TRAINING TOWER BUILDING FIRST LEVEL FLOOR PLAN

Drawn By: ELW
Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

8-E2.01
Drawing No.

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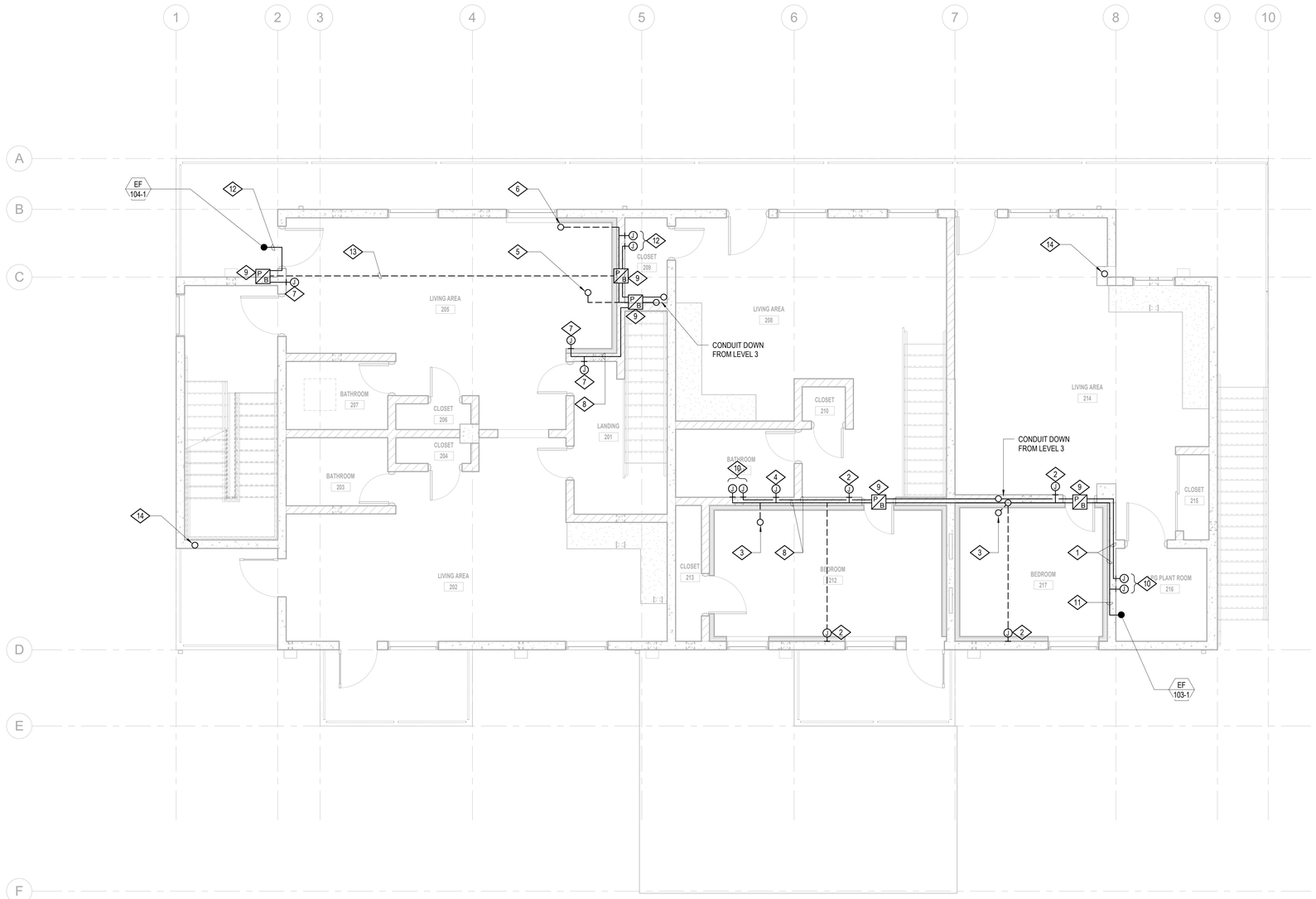

1 08-ELEC POWER TRAINING TOWER BLDG-SECOND FLOOR
1/4" = 1'-0"

SHEET NOTES:

A. ALL CONDUIT SHALL BE RIGID STEEL, UON. PROVIDE PULL-STRINGS IN ALL CONDUIT.

B. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

C. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

D. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

E. ALL CORE DIAMETERS SHALL BE NO MORE THAN 1/4" LARGER THAN CONDUIT CORE IS INTENDED FOR.

NUMBERED NOTES:

1. RUN CONDUIT IN AIR-GAP BEHIND SUPER-PAGINITE WALL-COVERING.
2. PROVIDE (1) 1/2" EMPTY CONDUIT FROM HVB-103 ON LEVEL 3 EMBEDDED IN WALL OR SLAB TO JUNCTION BOX EMBEDDED IN WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL.
3. PROVIDE (1) 1" EMPTY CONDUIT FROM HVB-103 EMBEDDED IN WALL AND SLAB. STUB-UP CONDUIT AND CAP. COORDINATE STUB-UP LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
4. PROVIDE (1) 1" EMPTY CONDUIT FROM HVB-103 ON LEVEL 3. EMBEDDED IN WALL. PROVIDE JUNCTION BOX EMBEDDED IN WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL. COORDINATE JUNCTION BOX LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
5. PROVIDE (2) 1" EMPTY CONDUIT FROM HVB-104 LOCATED ON LEVEL 4. ROUTE CONDUIT EMBEDDED IN WALL AND SLAB AS INDICATED.
6. PROVIDE (1) 1" EMPTY CONDUIT FROM HVB-104 LOCATED ON LEVEL 4. ROUTE CONDUIT EMBEDDED IN WALL AND SLAB AS INDICATED.
7. PROVIDE (1) 1/2" EMPTY CONDUIT FROM HVB-104 ON LEVEL 4 EMBEDDED IN WALL OR SLAB TO JUNCTION BOX EMBEDDED IN CONCRETE WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL.
8. EMBED CONDUIT IN WALL.
9. PROVIDE WEATHER-PROOF PULL-BOX EMBEDDED IN WALL. MOUNT SUCH THAT COVER OF PULL-BOX IS FLUSH WITH FINISHED FACE OF WALL. COVER OF PULL-BOX SHALL OPEN TO NON-BURN SIDE OF WALL.
10. PROVIDE (2) 1/2" EMPTY CONDUIT EMBEDDED IN WALL, (1) CONDUIT FROM HVB-103 AND (1) CONDUIT FROM LVB-103. PROVIDE (2) JUNCTION BOXES EMBEDDED IN SLAB. TERMINATE (1) CONDUIT IN EACH JUNCTION BOX. COORDINATE LOCATION OF JUNCTION BOXES WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
11. PROVIDE (1)1/2" EMPTY CONDUIT FROM HVB-103 TO EXHAUST FAN, RATED AS INDICATED.
12. TERMINATE CONDUITS IN HVB-104 OR LVB-104 AS REQUIRED. COORDINATE FINAL TERMINATIONS WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
13. ROUTE CONDUIT IN SLAB.
14. CONDUIT UP FROM LEVEL 1. CONTINUE UP TO LEVEL 3.

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REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNFEE
No. E17287
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STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL TRAINING TOWER BUILDING SECOND LEVEL FLOOR PLAN

Drawn By: ELW Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

8-E2.02
Drawing No.

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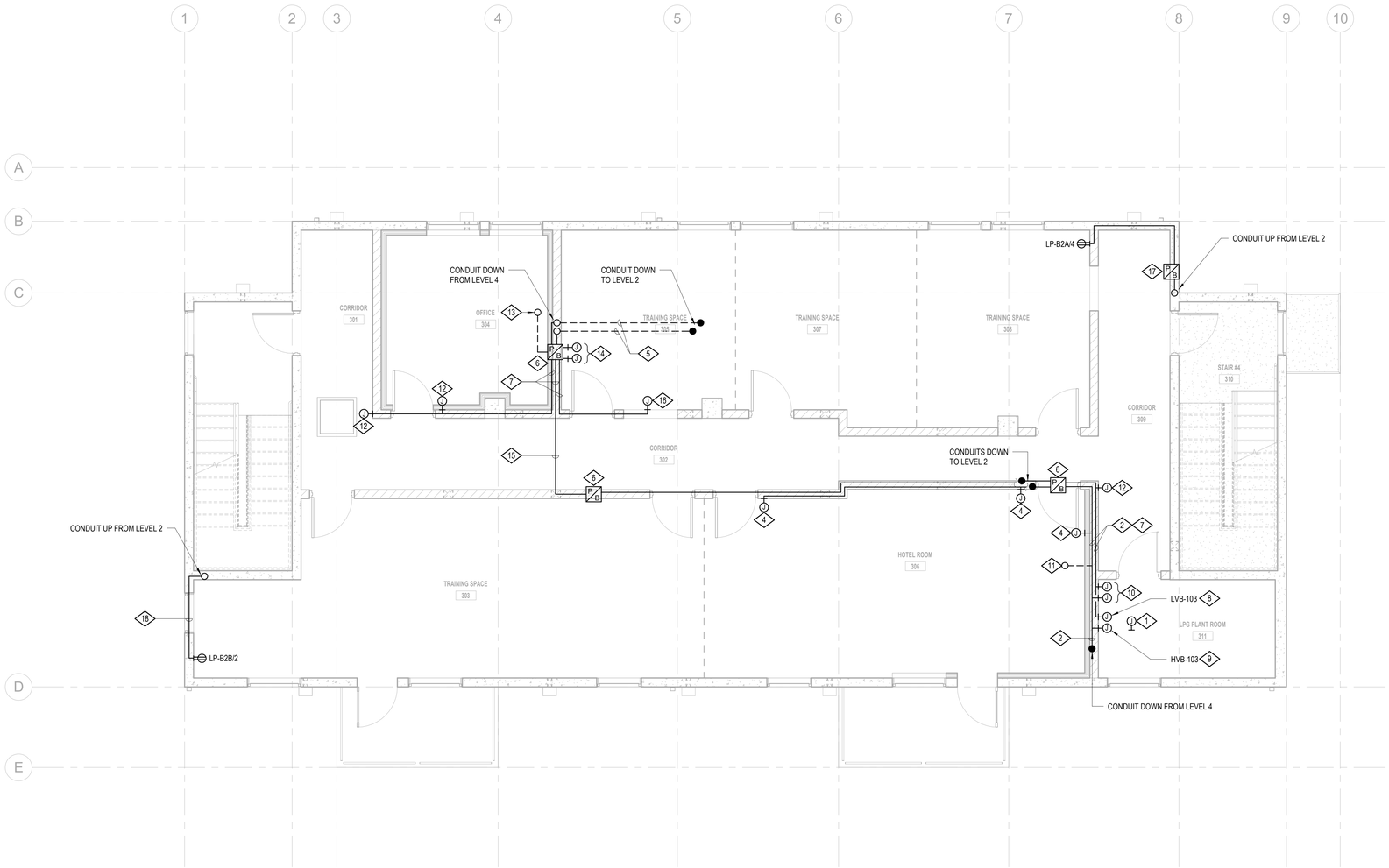

1 08-ELEC POWER TRAINING TOWER BLDG-THIRD FLOOR
1/4" = 1'-0"

SHEET NOTES:

A. ALL CONDUIT SHALL BE RIGID STEEL, UON. PROVIDE PULL-STRINGS IN ALL CONDUIT.

B. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

C. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

D. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

E. ALL CORE DIAMETERS SHALL BE NO MORE THAN 1/4" LARGER THAN CONDUIT CORE IS INTENDED FOR.

NUMBERED NOTES:

1. PROVIDE 120/208V, 3Ø, 4W CONNECTION TO OFOI EQUIPMENT CP-103 FROM LP-B8A.
2. TERMINATE CONDUITS IN HVB-103 OR LVB-103 AS REQUIRED. COORDINATE FINAL TERMINATIONS WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
3. RUN CONDUIT IN AIR-GAP BEHIND SUPER-PAGINITE WALL-COVERING.
4. PROVIDE (1) 1/2" EMPTY CONDUIT FROM HVB-103 EMBEDDED IN WALL OR SLAB TO JUNCTION BOX EMBEDDED IN CONCRETE WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL.
5. ROUTE CONDUIT IN SLAB.
6. PROVIDE WEATHER-PROOF PULL-BOX EMBEDDED IN WALL. MOUNT SUCH THAT COVER OF PULL-BOX IS FLUSH WITH FINISHED FACE OF WALL. COVER OF PULL-BOX SHALL OPEN TO NON-BURN SIDE OF WALL.
7. EMBEDDED CONDUIT IN WALL.
8. PROVIDE JUNCTION BOX "LVB-103" FOR LOW-VOLTAGE CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. PROVIDE NEMA 4 RATED BOX, MINIMUM. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
9. PROVIDE JUNCTION BOX "HVB-103" FOR 120V CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. PROVIDE NEMA 4 RATED BOX, MINIMUM. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
10. PROVIDE (2) 1/2" EMPTY CONDUIT EMBEDDED IN WALL. (1) CONDUIT FROM HVB-103 AND (1) CONDUIT FROM LVB-103. PROVIDE (2) JUNCTION BOXES EMBEDDED IN SLAB. TERMINATE (1) CONDUIT IN EACH JUNCTION BOX. COORDINATE LOCATION OF JUNCTION BOXES WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
11. PROVIDE (1) 1" EMPTY CONDUIT FROM HVB-103 EMBEDDED IN WALL AND SLAB. STUB-UP CONDUIT AND CAP. COORDINATE STUB-UP LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
12. PROVIDE (1) 1" EMPTY CONDUIT FROM HVB-104 ON LEVEL 3. EMBEDDED IN WALL. PROVIDE JUNCTION BOX EMBEDDED IN WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL. COORDINATE JUNCTION BOX LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
13. PROVIDE (1)1" EMPTY CONDUIT FROM HVB-104 ON LEVEL 4 EMBEDDED IN WALL AND SLAB. STUB-UP CONDUIT AND CAP. COORDINATE STUB-UP LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
14. PROVIDE (2) 1/2" EMPTY CONDUIT EMBEDDED IN WALL. (1) CONDUIT FROM HVB-104 AND (1) CONDUIT FROM LVB-104. PROVIDE (2) JUNCTION BOXES EMBEDDED IN SLAB. TERMINATE (1) CONDUIT IN EACH JUNCTION BOX. COORDINATE LOCATION OF JUNCTION BOXES WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
15. ROUTE IN AIR-GAP ABOVE SUPER-PAGINITE WALL-COVERING.
16. PROVIDE (1)1" EMPTY CONDUIT FROM HVB-104 EMBEDDED IN WALL. PROVIDE JUNCTION BOX EMBEDDED IN WALL. EXTEND JUNCTION BOX TO FACE OF FINISHED WALL. COORDINATE JUNCTION BOX LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
17. PROVIDE WEATHER-PROOF PULL-BOX EMBEDDED IN WALL. MOUNT SUCH THAT COVER OF PULL-BOX IS FLUSH WITH FINISHED FACE OF WALL.
18. ROUTE CONDUIT EMBEDDED IN STRUCTURE BELOW FRAMING OF WINDOW OPENING.

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DEPARTMENT OF PUBLIC WORKS
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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
ANNA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL TRAINING TOWER BUILDING THIRD LEVEL FLOOR PLAN

Drawn By: ELW
Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

8-E2.03
Drawing No.

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SHEET NOTES:

A. ALL CONDUIT SHALL BE RIGID STEEL, UON. PROVIDE PULL-STRINGS IN ALL CONDUIT.

B. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

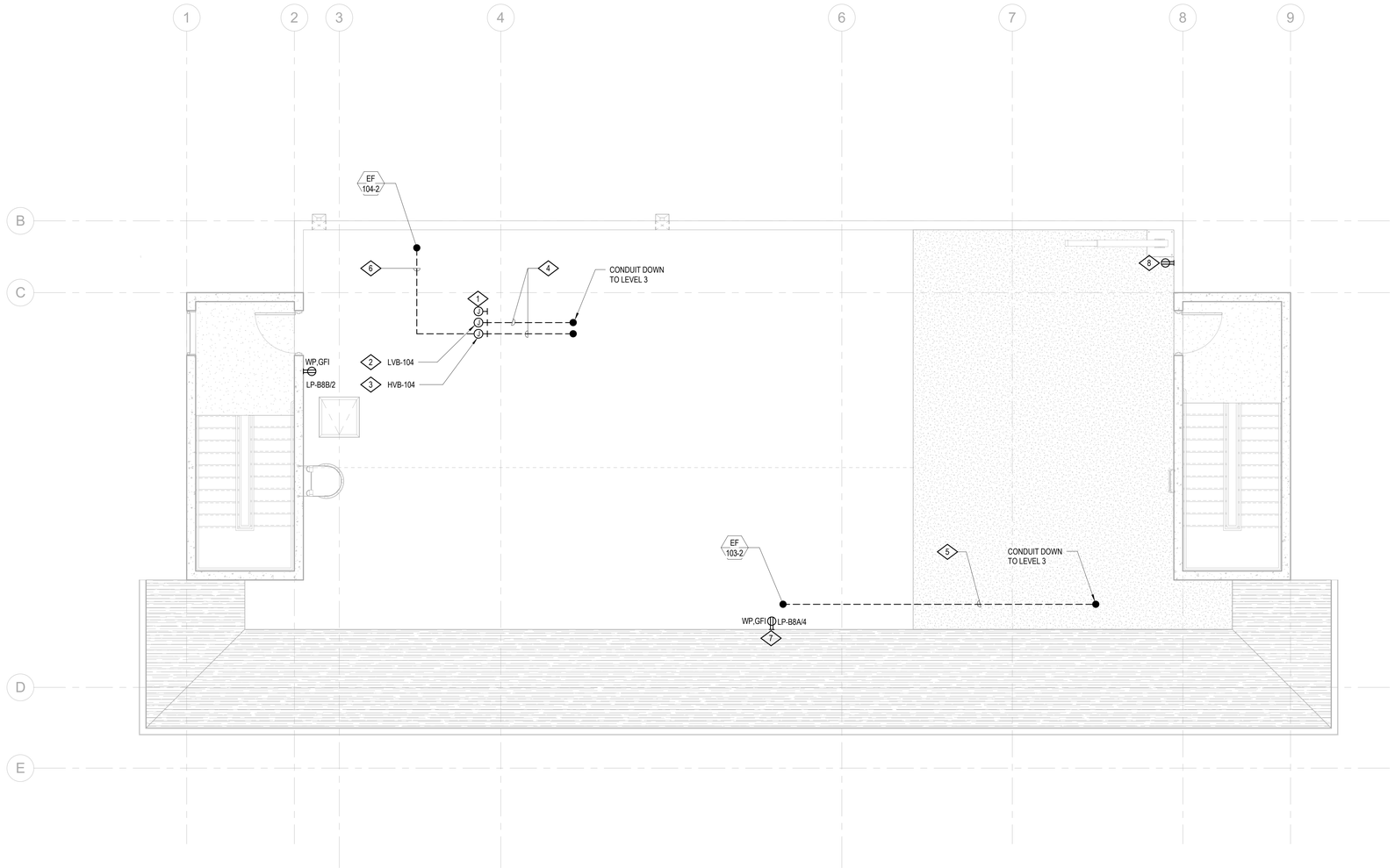
C. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

D. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

E. ALL CORE DIAMETERS SHALL BE NO MORE THAN 1/4" LARGER THAN CONDUIT CORE IS INTENDED FOR.

NUMBERED NOTES:

1. PROVIDE 120/208V, 3Ø, 4W CONNECTION TO OFOI EQUIPMENT CP-104 FROM LP-B8B.
2. PROVIDE WEATHERPROOF JUNCTION BOX LVB-104 FOR LOW-VOLTAGE CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. PROVIDE NEMA 4 RATED BOX, MINIMUM. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
3. PROVIDE WEATHERPROOF JUNCTION BOX HVB-104 FOR 120V CONDUIT TERMINATION, SIZED AS REQUIRED TO ACCOMMODATE ALL CONDUITS AS INDICATED. COORDINATE MOUNTING LOCATION WITH FIRE PROP VENDOR PRIOR TO ROUGH-IN.
4. EMBEDDED CONDUIT IN SLAB.
5. PROVIDE (1)1/2" EMPTY CONDUIT FROM HVB-103 ON THIRD LEVEL TO EXHAUST FAN, EMBEDDED IN SLAB.
6. PROVIDE (1)1/2" EMPTY CONDUIT FROM HVB-104 TO EXHAUST FAN, EMBEDDED IN SLAB.
7. MOUNT RECEPTACLE ON UNISTRUT NEAR HVAC EQUIPMENT. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
8. CONNECTION FOR DAVIT HOIST. CONNECT TO LP-B8A/6. EMBED CONDUIT FROM PANEL TO EQUIPMENT WITHIN STRUCTURE. COORDINATE ROUTING PRIOR TO ROUGH-IN.



1 08-ELEC POWER TRAINING TOWER BLDG-FOURTH FLOOR
1/4" = 1'-0"

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REVISIONS

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REGISTERED PROFESSIONAL ENGINEER
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No. E17287
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STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL TRAINING TOWER BUILDING FOURTH LEVEL FLOOR PLAN

Drawn By: ELW Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

8-E2.04
Drawing No.

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SHEET NOTES:

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B. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

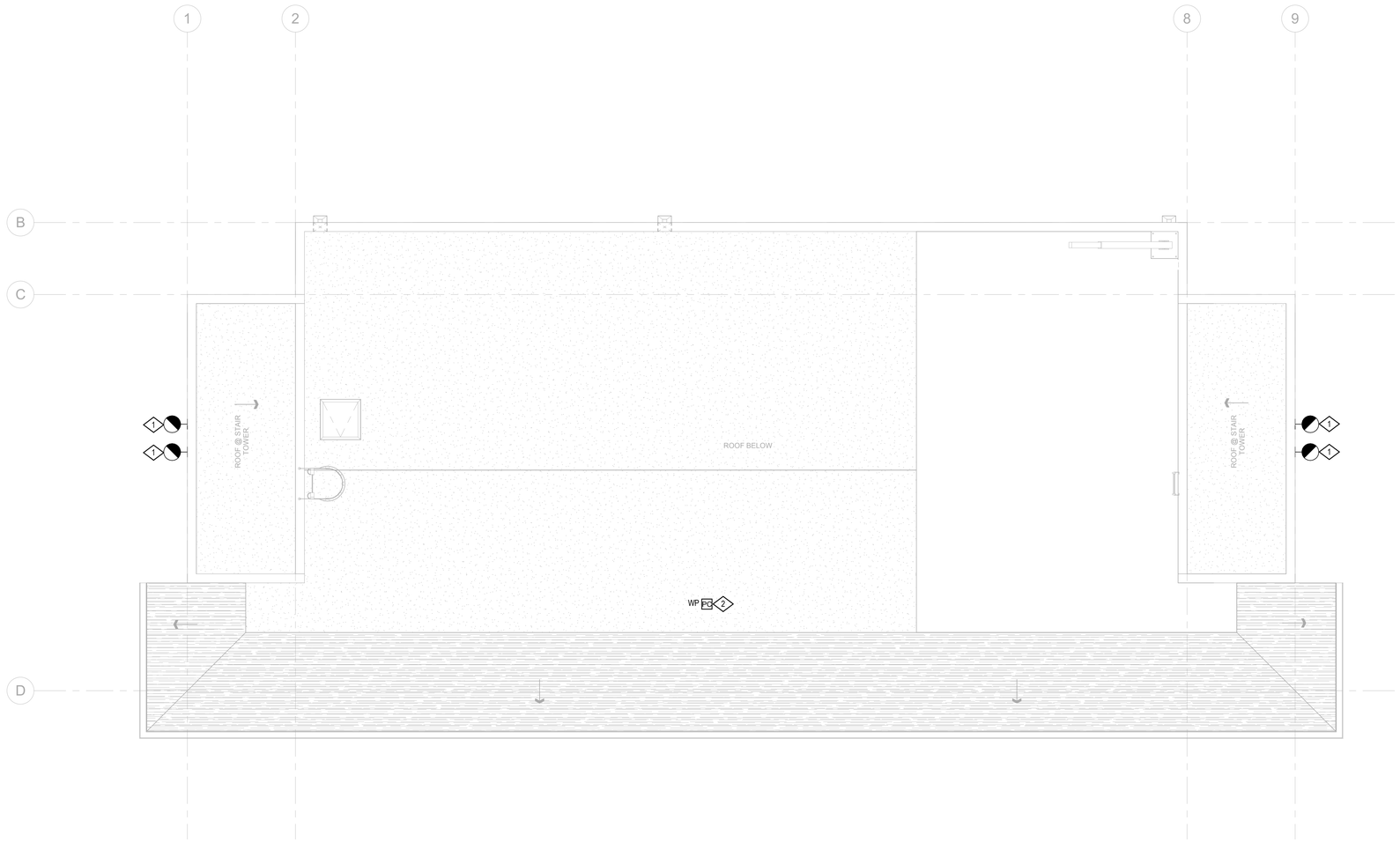
C. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

D. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

NUMBERED NOTES:

1 PROVIDE COOPER CROUSE-HINDS OX2LFDR/120(174) OR EQUAL FAA WARNING LIGHT BEACON PER FAA REQUIREMENTS. COORDINATE LOCATION WITH ARCHITECT.

2 PHOTOCELL FOR CONTROL OF FAA LIGHTING. PHOTOCELL SHALL CONTROL ALL LIGHTING ASSOCIATED WITH FAA LIGHTS.



1 08-ELEC POWER TRAINING TOWER BLDG-ROOF LEVEL
1/4" = 1'-0"

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Sheet Title

ELECTRICAL TRAINING TOWER BUILDING ROOF LEVEL PLAN

Drawn By: ELW
Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

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Drawing No.

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WIRING SCHEDULE - COPPER CONDUCTORS (0-600V)

CIRCUIT RATING	CONDUIT SIZE (INCHES)							CONDUCTOR SIZE	
	NONE	G	N	NG	NGI	NNG	NNGI	PHASE/ NEUTRAL	GND/* IG
15	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
20	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
30	0.5	0.5	0.5	0.5	0.75	0.75	0.75	10	10
40	0.75	0.75	0.75	1	1	1	1	8	10
50	1	1	1	1.25	1.25	1.25	1.25	6	10
60	1	1.25	1.25	1.25	1.5	1.5	1.5	4	10
70	1	1.25	1.25	1.25	1.5	1.5	1.5	4	8
80	1.25	1.25	1.25	1.5	2	2	2	2	8
90	1.25	1.25	1.25	1.5	2	2	2	2	8
100	1.25	1.5	1.5	2	2	2	2.5	1	8
110	1.25	1.5	1.5	2	2	2	2.5	1	6
125	1.25	1.5	1.5	2	2	2	2.5	1	6
150	1.5	2	2	2	2.5	2.5	2.5	1/0	6
175	1.5	2	2	2	2.5	2.5	2.5	2/0	6
200	2	2	2	2.5	2.5	2.5	3	3/0	6
225	2	2.5	2.5	2.5	3	3	3	4/0	4
250	2.5	2.5	2.5	3	3	3	3.5	250	4
300	2.5	3	3	3.5	3.5	3.5	4	350	4
350	3	3.5	3.5	4	4	4	5	500	2
400	2@2	2@2	2@2	2@2.5	2@2.5	2@2.5	2@3	3/0	2
450	2@2	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	4/0	2
500	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	2@3.5	250	1
600	2@2.5	2@3	2@3	2@3.5	2@3.5	2@3.5	2@4	350	1
700	2@3	2@3.5	2@3.5	2@4	2@4	2@4	2@5	500	1/0
800	3@2.5	3@3	3@3	3@3	3@3.5	3@3.5	3@3.5	300	1/0
1000	3@3	3@3	3@3	3@3.5	3@4	3@4	3@4	400	2/0
1200	4@2.5	4@3	4@3	4@3.5	4@3.5	4@3.5	4@4	350	3/0
1600	5@3	5@3	5@3	5@3.5	5@4	5@4	5@4	400	4/0
2000	6@3.5	6@3.5	6@3.5	6@4	6@4	6@4	6@5	500	250
2500	7@3.5	7@3.5	7@3.5	7@4	7@4	7@4	7@4	500	350
3000	8@3.5	8@3.5	8@3.5	8@4	8@4	8@4	8@4	500	400

SUBSCRIPT KEY

SUBSCRIPT	CONDUCTORS PER CONDUIT
NONE	3 PHASE CONDUCTORS, CONDUIT GROUND
G	3 PHASE CONDUCTORS, 1 GROUNDING CONDUCTOR
N	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, CONDUIT GROUND
NG	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR
NGI	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR
NNG	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR
NNGI	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR

* SINGLE NEUTRAL CONDUCTOR SIZES FOR CIRCUIT RATING 125 AND LESS

PARALLEL CONDUCTORS ARE NOT PERMITTED UNDER 1/0. WHERE DOUBLE NEUTRAL CONDUCTORS ARE INDICATED, PROVIDE AN OVERSIZED NEUTRAL CONDUCTOR IN ACCORDANCE WITH THE FOLLOWING TABLE:

CIRCUIT RATING	15	20	30	40	50	60
SINGLE NEUTRAL CONDUCOTR SIZE	10	8	4	2	1	1/0
CIRCUIT RATING	70	80	90	100	125	
SINGLE NEUTRAL CONDUCTOR SIZE	2/0	3/0	4/0	250	250	

EXAMPLES

CIRCUIT RATING — 225 NG — SUBSCRIPT

NOTES

1. SCHEDULE IS BASED ON 3 CURRENT CARRYING CONDUCTORS IN RACEWAY, CABLE OR EARTH, AT AMBIENT AIR TEMPERATURE OF 30°C (86°F). CONDUIT SIZES BASED ON EMT.
2. MODIFY IF USE OF 600MCM CONDUCTORS ARE DESIRED CONFIRM LUG SIZES ARE AVAILABLE.

TRANSFORMER SCHEDULE

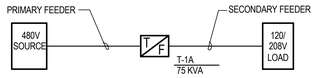
KVA	FEEDER AMPACITY			NEUTRAL GROUNDING ELECTRODE CONDUCTOR**
	PRIMARY 480V 3 PHASE-3 WIRE	SECONDARY 120/208V 3 PHASE-4 WIRE	SUPPLY SIDE BONDING JUMPER**	
3	15	15	#8	1/2"C-1#8
6	15	20	#8	1/2"C-1#8
9	15	30	#8	1/2"C-1#8
15	20	50	#8	1/2"C-1#8
30	50	100	#6	1/2"C-1#6
45	70	150	#6	1/2"C-1#6
75	110	250	#2	1/2"C-1#2
112 1/2	175	400	#1/0	3/4"C-1#3/0
150	225	500	#1/0	3/4"C-1#3/0
225	350	800	#2/0	3/4"C-1#3/0
300	450	1000	#2/0	3/4"C-1#3/0
500	800	1600	#4/0	3/4"C-1#3/0
750	1200	2500	#350	3/4"C-1#3/0

FEEDER KEY

TRANSFORMER IDENTIFICATION PREFIX	FEEDER CONFIGURATION	
	PRIMARY	SECONDARY
T	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 1 NEUTRAL CONDUCTOR 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NG***)
TK	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 2 NEUTRAL CONDUCTORS 1 GROUNDING CONDUCTOR 1 ISOLATED GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NNGI***)

** = CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS
*** = SUBSTITUTE GND/G CONDUCTOR FROM FEEDER SCHEDULE WITH SUPPLY SIDE BONDING JUMPER NOTED ABOVE

EXAMPLES



UNDERGROUND FEEDER CONDUIT SCHEDULE

TAG DESIGNATION	TO	FROM	QUANTITY	SIZE	SPARE	DESIGN FEEDER	ESTIMATED LENGTH	VOLT DROP (%)	BUILDING PACKAGE	REMARKS
F00	PG&E P/B	STREET	2	5"		PER PG&E	66'	N/A	1	
F01	PG&E TRANSF	PG&E P/B	2	5"		PER PG&E	208'	N/A	1	
F02	MS-B1A	PG&E TRANSF	7	5"		PER PG&E	40'	0.60	1	
F03	DPH-B1A	MS-B1A	1	2.5"		225NG	57'	0.12	1	
F04	FP-B1	MS-B1A	1	2.5"		70G	54'	0.29	1	LRA = 302.8A, VD_{dp}=1.7%
F05	ATS-E1B	MS-B1A	1	2"		100NG	31'	0.39	1	
F06	FP-B1	EDSH-B1A	1	2.5"		70G	138'	1.24	1	INCLUDE 1"C TO GENERATOR FOR GEN START LRA = 302.8A, VD_{dp}=6.4%
F07	ATS-E1A	MS-B1A	1	2"		150NG	33'	0.52	1	
F08	ATS-E1C	MS-B1A	2	3"		500NG	34'	0.47	1	
F09	HBI-B1	MS-B1A	1	4"	2"	300G	60'	0.35	1	
F10	CH-1	EDPH-B1A	1	2.5"		ECS	67'	0.26	1	
F11	ELEV-1	EDPH-B1A	1	1"		ECS	101'	0.18	1	
F12	FUEL	ELP-B1A	1	2"		100NG	102'	0.56	1	
F13	DPH-PV	HBI-B1	1	4"	2"	300G	77'	0.44	1	
F14	PULLBOX	MS-B1A			(2) 4"	37'	37'	N/A	1	SPARE FOR FUTURE USE
F15										NOT USED
F16										NOT USED
F17										NOT USED
F18										NOT USED
F19										NOT USED
F20	LPH-B2A	MS-B1A	2	2.5"	(2) 2.5"	400G	358'	0.86	1 / 2	
F30										NOT USED
F40	LP-B4A	DPL-B2A	1	3"	(1) 2"	250NG	150'	1.85	4	FEEDER OVERSIZED FOR VOLTAGE DROP
F50										NOT USED
F60	LP-B6A	DPL-B9A	1	2.5"		200NG	413'	1.54	6	
F70	LP-B7A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	318'	0.77	7	
F80	LP-B8A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	362'	1.06	8	
F81	LP-B8B	DPL-B9A	2	2.5"	(1) 2.5"	400NG	449'	0.84	8	
F90	LPH-B9A	MS-B1A	2	3.5"	(2) 2.5"	600G	515'	0.66	1 / 9	
F91	T-B9A	LPH-B9A	2	2.5"		450G	22'	0.04	9	
F92	DPL-B9A	T-B9A	3	3.5"		1000NG	10'	0.04	9	
F93	LP-B9A	DPL-B9A	1	2.5"		225NG	17'	0.02	9	
F94	LP-B9B	DPL-B9A	1	2.5"	(1) 2.5"	175NG	19'	0.07	9	
FE1	EDSH-B1A	GEN-B1	2	4"		700NG	20'	0.05	1	
FE2	ATS-E1A	EDSH-B1A	1	2"		150NG	100'	0.61	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE3	ATS-E1C	EDSH-B1A	2	3"		500NG	102'	0.18	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE4	ELPH-B1A	ATS-E1A	1	2"		150NG	40'	0.24	1	
FE5	EDPH-B1A	ATS-E1C	2	4"		600NG	29'	0.04	1	
FE6	UPS-B1A	ELPH-B1A	1	1.5"		70NG	70'	0.14	1	
FE7	ELP-B1A	ET-B1A	2	2.5"		400NG	69'	1.15	1	
FE8	ULP-B1A	UPS-B1A	1	1.5"		50NNGI	97'	0.25	1	
FE9	ATS-E1B	EDSH-B1A	1	2"		100NG	90'	0.04	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE10	ELPH-B1B	ATS-E1B	1	2"		100NG	56'	0.02	1	
FE11	PULLBOX	EDSH-B1A			(1) 4"			N/A	1	SPARE FOR FUTURE USE
FE12	ELPH-B2A	ELPH-B1B	1	2"		100NG	350'	0.08	2	

SHEET NOTES

A. CONFIRM AND COORDINATE ALL PG&E UTILITY ROUTING WITH PG&E PER PG&E STANDARDS AND REQUIREMENTS.

B. REFER TO "0" SERIES OF DRAWINGS FOR SITE UTILITY AND INFRASTRUCTURE INFORMATION.

C. ALL OUTDOOR EQUIPMENT SHALL BE RATED NEMA 4X, UON.

D. ALL OVERCURRENT PROTECTIVE DEVICES ASSOCIATED WITH COPS SHALL BE SELECTIVELY COORDINATED.

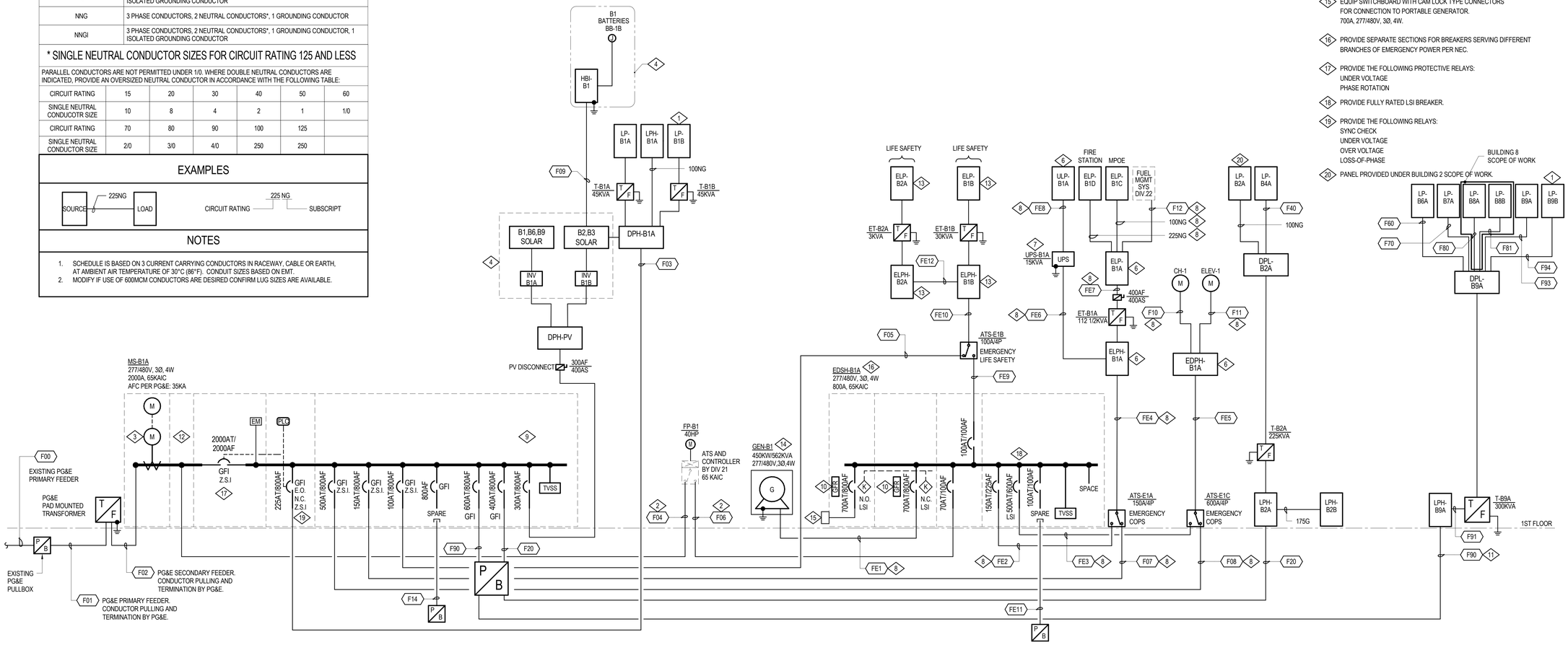
E. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM .

F. WIRING FROM AN EMERGENCY SOURCE OR EMERGENCY SOURCE DISTRIBUTION OVERCURRENT PROTECTION TO EMERGENCY LOADS SHALL BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER CEC ARTICLE 700.10.

G. ARC ENERGY REDUCTION PER CEC ARTICLE 240.87 WITH RESPECT TO DOCUMENTATION & METHOD TO REDUCE CLEARING TIES IS APPLICABLE.

NUMBERED NOTES

1. EQUIPMENT TO SERVE ELECTRIC VEHICLE CHARGERS. PROVIDE PROGRAMMABLE ELECTRONIC CIRCUIT BREAKER LEVEL SUB-METERS FOR OWNER THIRD PARTY MEASUREMENT/METERING IN THIS PANEL. CONNECT WITH 3/4"C TO NEAREST TELECOM ROOM.
2. PROVIDE 2-HR FIRE RATED ASSEMBLY FOR FEEDERS.
3. PROVIDE 2-SOCKET PG&E UTILITY METER, WITH NET METER CAPABILITY PER PG&E REQUIREMENTS.
4. REFER TO HYBRID POWER SYSTEM DRAWINGS FOR MORE INFORMATION.
5. REFER TO PHOTOVOLTAIC SYSTEM DRAWINGS FOR MORE INFORMATION.
6. PROVIDE SURGE PROTECTION DEVICE PER NEC ARTICLE 708.
7. FLOOR MOUNTED UPS WITH INTEGRAL TRANSFORMER. APC OR APPROVED EQUAL.
   INPUT VOLTAGE: 480V, 3Ø, 3W
   OUTPUT VOLTAGE: 120/208V, 3Ø, 4W
   BATTERY RUN TIME (MINIMUM): 20 MINUTES
8. PROTECT FEEDER SERVING DESIGNATED CRITICAL OPERATIONS AREA (DCOA) EQUIPMENT AS REQUIRED BY NEC ARTICLE 708.
9. PROVIDE GROUND FAULT PROTECTION FOR ALL NEXT LEVEL FEEDER DISCONNECTING MEANS IN COMPLIANCE WITH NEC ARTICLE 708.
10. GROUND FAULT INDICATION ONLY.
11. FEEDER OVERSIZED FOR VOLTAGE DROP.
12. SERVICE ENTRANCE SECTION FOR FIRE PUMP CONNECTION.
13. PROVIDE SURGE PROTECTION DEVICE PER NEC 700.
14. PROVIDE WEATHERPROOF SOUND ATTENUATING ENCLOSURE.
15. EQUIP SWITCHBOARD WITH CAM LOCK TYPE CONNECTORS FOR CONNECTION TO PORTABLE GENERATOR. 700A, 277/480V, 3Ø, 4W.
16. PROVIDE SEPARATE SECTIONS FOR BREAKERS SERVING DIFFERENT BRANCHES OF EMERGENCY POWER PER NEC.
17. PROVIDE THE FOLLOWING PROTECTIVE RELAYS:
    UNDER VOLTAGE
    PHASE ROTATION
18. PROVIDE FULLY RATED LSI BREAKER.
19. PROVIDE THE FOLLOWING RELAYS:
    SYNC CHECK
    UNDER VOLTAGE
    OVER VOLTAGE
    LOSS-OF-PHASE
20. PANEL PROVIDED UNDER BUILDING 2 SCOPE OF WORK.



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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL RISER DIAGRAM

Drawn By: ELW
Checked By: AJB

Scale: NTS

Date: October 4, 2019

Project No. B17.07369

8-E5.01
Drawing No.

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TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST

ABBREVIATIONS

AC	ABOVE COUNTER
ADA	AMERICANS WITH DISABILITIES ACT
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AMP, A	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ATR	ALL THREADED ROD
AV	AUDIOVISUAL
AWG	AMERICAN WIRE GAUGE
BDA	BI-DIRECTIONAL ANTENNA
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
BICSI	BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAT	CATEGORY
CATV	COMMUNITY ANTENNA TV (CABLE TV)
CLEC	COMPETITIVE LOCAL EXCHANGE CARRIER
CL	CLOSET
CLG	CEILING
CMP	COMMUNICATIONS PLENUM CABLE
CMR	COMMUNICATIONS RISER CABLE
CO	CENTRAL OFFICE
COAX	COAXIAL
CT	CABLE TRAY
DAS	DISTRIBUTED ANTENNA SYSTEM
DB	DECIBEL
DEMARC	DEMARCATION
DIA	DIAMETER
DWG	DRAWING
(E)	EXISTING TO REMAIN
E.G.	FOR EXAMPLE
EIA	ELECTRONICS INDUSTRY ALLIANCE
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
EP	EXPLOSION PROOF
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FCC	FEDERAL COMMUNICATIONS COMMISSION
FO	FIBER OPTIC
FR	FIRE RATED
FT	FOOT/FEET
GB	GIGABYTE
GBPS	GIGABITS PER SECOND
GC	GENERAL CONTRACTOR
GE	GROUNDING EQUALIZER
GMP	GUARANTEED MAXIMUM PRICE
GND	GROUND
GUI	GRAPHICAL USER INTERFACE
HC	HORIZONTAL CROSS-CONNECT
HVAC	HEATING, VENTILATING, AND AIR-CONDITIONING
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEC	INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT - SEE NEC ARTICLE 342
INT	INTERCOM
IP	INTERNET PROTOCOL
ISO	INTERNATIONAL ORGANIZATION OF STANDARDS
J-BOX, JB	JUNCTION BOX
KCMIL	THOUSANDS OF CIRCULAR MILLS
KM	KILOMETER
KVA	KILOVOLT AMPERES
KW	KILOWATT
LAN	LOCAL AREA NETWORK
LEC	LOCAL EXCHANGE CARRIER (OR SP)
LED	LIGHT-EMITTING DIODE
M	METER
MAG	MAGNETIC
MAN	METROPOLITAN AREA NETWORK
MAX	MAXIMUM
MB	MEGABYTE
MBPS	MEGABITS PER SECOND
MC	MAIN CROSS-CONNECT
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MI	MILE
MIN	MINIMUM
MM	MILLIMETER
MMFO	MULTIMODE FIBER OPTIC
MPOE	MAIN POINT OF ENTRY
NEC	NATIONAL ELECTRIC CODE - NFPA 70
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NETWORK INTERFACE CARD
NID	NETWORK INTERFACE DEVICE
NM	NANOMETER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER

ABBREVIATIONS

OEM	ORIGINAL EQUIPMENT MANUFACTURER
OS	OPERATING SYSTEM
OSP	OUTSIDE PLANT
PA	PUBLIC ADDRESS
PABX	PRIVATE AUTOMATIC BRANCH EXCHANGE
PBX	PRIVATE BRANCH EXCHANGE
PB	PULL-BOX (SIZED PER BICSI TDMM)
PC	PERSONAL COMPUTER
PCN	PERSONAL COMMUNICATIONS NETWORK
PCS	PERSONAL COMMUNICATIONS SYSTEMS
PIR	PASSIVE INFRARED
POTS	PLAIN OLD TELEPHONE SERVICE
PR	PAIRS (NUMBER OF PAIRS IN COPPER CABLE)
PROX	PROXIMITY
PVC	POLYVINYL CHLORIDE
PWR	POWER
RCDD	REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
RFI	RADIO FREQUENCY INTERFACE
RM	ROOM
RMC	RIGID METALLIC CONDUIT
RU	RACK UNIT; UNIT OF PATCH PANEL HEIGHT EQUAL TO 1.75 INCH
SCTP	SCREENED TWISTED PAIR
SMFO	SINGLEMODE FIBER OPTIC
SPOE	SECONDARY POINT OF ENTRY
SP	SERVICE PROVIDER
STD	STANDARD
STP	SHIELDED TWISTED PAIR
SW	SWITCH
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBD	TO BE DETERMINED
TCP/IP	TRANSMISSION CONTROL PROTOCOL W/ INTERNET PROTOCOL
TDMM	TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL
TEL	TELEPHONE
TELCO	TELEPHONE COMPANY (SP)
TELECOM	TELECOMMUNICATIONS
TEMP	TEMPERATURE
TGB	TELECOMMUNICATIONS GROUND BUS BAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUND BUS BAR
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
TYP	TYPICAL
UC	UNDER COUNTER
UG	UNDERGROUND
UL	UNDERWRITER LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
W	WATT
WAN	WIDE AREA NETWORK
WLAN	WIRELESS LOCAL AREA NETWORK
WP	WEATHERPROOF
(X)	EXISTING - TO BE DEMOLISHED

GENERAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION
TC	TELECOMMUNICATIONS CONDUIT CONCEALED
TC	TELECOMMUNICATIONS CONDUIT SURFACE MOUNTED
TC	CONDUITS BELOW GRADE/SLAB OR EMBEDDED IN SLAB
J	J-HOOK PATHWAY
I	INNERDUCT PATHWAY
CAT	COPPER CATEGORY CABLE
FO	FIBER OPTIC CABLE
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT CAPPED
	CONDUIT STUBBED OUT WITH BUSHING
	CONDUIT CROSS-SECTION
	TELECOMMUNICATIONS CABLE TRAY
	VERTICAL WALL MOUNTED CABLE LADDER
	TELECOMMUNICATIONS RACEWAY
	PULL-BOX
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
	TELECOMMUNICATIONS GROUNDING BUSBAR (PLAN VIEW)
	CABLE SERVICE LOOP # DENOTES LENGTH
	COPPER CABLE SPLICE
	FIBER OPTIC CABLE SPLICE
	COPPER CABLE TERMINATION
	FIBER OPTIC CABLE TERMINATION
X Y	DETAIL REFERENCE "X" DENOTES DETAIL NUMBER "Y" DENOTES DRAWING NUMBER
X Y	SECTION REFERENCE "X" DENOTES DETAIL NUMBER "Y" DENOTES DRAWING NUMBER
#	NUMBERED NOTE IDENTIFIER

TELECOMMUNICATIONS DEVICE LEGEND

SYMBOL	DESCRIPTION
	WALL MOUNTED DATA DEVICE WITH (2) CAT.6 U.O.N
TV	TELEVISION LOCATION, (1) SERIES-6 COAX & (2) CAT.6
	RECESSED MOUNTED MULTIMEDIA PANEL (MMP)
W	WALLPHONE OUTLET, (1) CAT.6 CABLE
# E	TELECOMMUNICATIONS OUTLET/ CONNECTIVITY TO ELEVATOR CONTROL PANEL, U.O.N # DENOTES QUANTITY OF CAT.6 CABLES
AP	WALL-MOUNTED WI-FI ACCESS POINT LOCATION , (2) CAT.6 CABLES
#	WALL-MOUNTED TELECOMMUNICATIONS OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
#	RECESSED FLOOR BOX TELECOMMUNICATIONS OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
#	CEILING-MOUNTED TELECOMMUNICATIONS OUTLET MOUNTED WITHIN CEILING SPACE , U.O.N. # DENOTES NUMBER OF CAT.6 CABLES
AP	CEILING-MOUNTED DATA OUTLET AT WI-FI ACCESS POINT LOCATION, (2) CAT.6 CABLES
#	FLOOR POKE-THRU TELECOM DATA OUTLET, # DENOTES NUMBER OF CAT.6 CABLES
P	CEILING-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	CABINET-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	WALL-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL
P	FLOOR-MOUNTED TELECOMMUNICATIONS CONSOLIDATION POINT PATCH PANEL TO BE PLACED WITHIN RAISED ACCESS FLOOR U.O.N.
#	TELECOMMUNICATIONS EQUIPMENT CONNECTION
	RECESSED WALL-MOUNTED SYSTEMS FURNITURE FEEDPOINT
	RECESSED FLOOR BOX SYSTEMS FURNITURE FEEDPOINT
	CEILING-MOUNTED SYSTEMS FURNITURE FEEDPOINT
	POKE-THRU SYSTEMS FURNITURE FEEDPOINT
MH #	UNDERGROUND MANHOLE, (#) DENOTES IDENTIFIER
HH #	UNDERGROUND HANDHOLE, (#) DENOTES IDENTIFIER
P #	PEDESTAL, (#) DENOTES IDENTIFIER
U #	UNDERGROUND PULL BOX, (#) DENOTES IDENTIFIER
	THIS SYMBOL DENOTES A TELECOMMUNICATIONS OUTLET WITH (1) COPPER TWISTED PAIR CABLE.

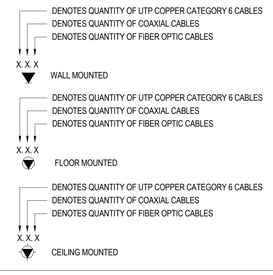
ELECTRONIC SECURITY DEVICE LEGEND

SYMBOL	DESCRIPTION
	FIXED SECURITY CAMERA
	PTZ SECURITY CAMERA
ACP	ACCESS CONTROL PANEL
GE	GUEST ENTRY PHONE
CR	CARD READER
DC	DOOR CONTACT
EL	ELECTRIFIED LOCK
IC	INTERCOM
IDM	INTERCOM MASTER
KP	KEY PAD
MON	LCD DISPLAY MONITOR
MS	MOTION SENSOR, ARROW INDICATES DIRECTION OF SENSOR
NVR	NETWORK VIDEO RECORDER
PB	PANIC BUTTON
PLC	PROGRAMMABLE LOGIC CONTROLLER
REX	REQUEST TO EXIT
RF	RADIO FREQUENCY VEHICLE GATE CONTROLLER
SS	SECURITY SERVER
WR	WIRELESS DURESS REPEATER SECURITY
WS	WORKSTATION

AUDIOVISUAL SYSTEM DEVICE LEGEND

SYMBOL	DESCRIPTION - SEE LINE DIAGRAMS FOR COORDINATION REQUIREMENTS
LS AV	LOUDSPEAKER BACKBOX: PROVIDE 2-GANG JUNCTION BOX WITH 1" CONDUIT TO EQUIPMENT HEADEND

TELECOMMUNICATIONS OUTLET CABLING LEGEND



TECHNOLOGY GENERAL NOTES

1. THE LOCATIONS AND ELEVATIONS OF TECHNOLOGY DEVICES SHOWN ON THESE DRAWINGS ARE SCHEMATIC UNLESS ACTUAL DIMENSIONS ARE SHOWN ON THE DRAWINGS. REFER TO THE ARCHITECTURAL PLANS AND OBTAIN THE APPROVAL OF THE ARCHITECT FOR THE ACTUAL LOCATIONS AND ELEVATIONS OF ALL DEVICES.
2. CONTRACTOR SHALL ENSURE THAT ALL MOUNTING HEIGHTS COMPLY WITH CURRENT ADA REQUIREMENTS.
3. ABOVE CONTER DEVICES SHALL BE MOUNTED 8" ABOVE COUNTER OR A MAXIMUM OF 44" AFF. (TO TOP OF DEVICE).
4. PROVIDE SUPPORTS AND ANCHORING FOR PIPING, CONDUIT, DUCTS, EQUIPMENT, AND OTHER NON-STRUCTURAL ELEMENTS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE SOUND PUTTY PADS IN ALL BACK BOXES.
6. FIRESTOPPING: ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS AND CONDUIT/SLEEVE OPENINGS SHALL BE SEALED WITH MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES, HOT GASSES AND SMOKE WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR ALL APPLICABLE CODES.
7. ALL COMMUNICATIONS CONDUIT, CABLE TRAYS, LADDER RACKS AND EQUIPMENT RACKS SHALL BE BONDED TO BUILDING GROUND SYSTEM PER NEC 250 AND ANSI/TIA-607-B.
8. LABEL ALL CLOSETS, RACKS, FRAMES, CABINETS, TERMINATION BLOCKS, CABLES, TERMINATIONS, RACEWAYS, ETC. IN ACCORDANCE WITH ANSI/TIA-606-B.
9. ALL COMMUNICATIONS RACEWAYS AND PATHWAYS SHALL BE INSTALLED TO MINIMIZE UNNECESSARY CABLE LENGTHS AND MAINTAIN INDUSTRY STANDARD LENGTH LIMITATIONS FOR HORIZONTAL CABLE DISTRIBUTION (E.G. CAT.6). BASIC LINK CABLE LENGTH SHALL NOT EXCEED 295-FT (90M) FOR UTP CABLE, 200-FT (60M) FOR SERIES-6 COAXIAL CABLE.
10. ALL COMMUNICATIONS CABLE SHALL BE PLENUM RATED (CMP), RISER RATED (CMR) AND UNDERGROUND RATED (WATERBLOCK) ACCORDING TO USE AND ENVIRONMENTAL CONDITIONS.
11. PROVIDE PROTECTIVE BUSHINGS ON ALL COMMUNICATIONS CONDUITS AND WHERE CABLING ROUTES THROUGH METAL STUDS.
12. ALL NON-ARMORED FIBER OPTIC CABLE SHALL BE INSTALLED IN APPROVED INNERDUCT.
13. ALWAYS INSTALL LOW-VOLTAGE CABLES IN CONDUITS, CABLE TRAYS, WIREWAYS OR OTHER APPROVED CABLE MANAGEMENT DEVICES OR SYSTEMS. NEVER INSTALL CABLES IN SUCH A MANNER THAT THEY ARE SUPPORTED BY CEILING SYSTEMS (CEILING TILE OR GRID, GYPSUM BOARD, LATH & PLASTER), HVAC DUCTS OR PIPES, LIGHTING FIXTURES, ELECTRICAL CONDUITS OR CABLES, PLUMBING/FIRE PROTECTION PIPES, OR ANY OTHER DEVICES NOT INTENDED FOR THE SUPPORT OF LOW-VOLTAGE CABLING.
14. PROVIDE WEATHERPROOF, IN-USE COVER FOR EXTERIOR DATA DEVICES.
15. ALL CABLE TRAY MOUNTING HEIGHTS INDICATED ON FLOOR PLANS ARE TO THE BOTTOM OF CABLE TRAY SUPPORTS.
16. SEISMIC BRACING FOR ALL CABLE TRAYS SHALL BE PROVIDED AS REQUIRED BY CODE, LOCAL GOVERNING JURISDICTION AND CABLE TRAY MANUFACTURER SPECIFICATIONS.
17. ALL CABLE TRAY ROUTING THROUGH ELECTRICAL ROOMS SHALL BE FULLY ENCLOSED. REFER TO CABLE TRAY DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
18. REUSABLE VELCRO TIES SHALL BE USED TO BUNDLE OR MANAGE CABLES. PLASTIC ZIP TIES ARE NOT APPROVED FOR USE.
19. SIZE AND ORIENTATION OF ALL TELECOM PULL-BOXES SHALL MEET OR EXCEED THE PER BICSI TDMM REQUIREMENTS.
20. PROVIDE PROTECTIVE BUSHINGS WHERE CABLING ROUTES THROUGH METAL STUDS.
21. ALL LOW-VOLTAGE CONDUIT LARGER THAN 2" SHALL HAVE A MINIMUM BEND RADIUS OF 10:1 OF THE INSIDE DIAMETER FOR ALL ELBOWS. ALL LOW-VOLTAGE CONDUIT 2" AND SMALLER SHALL HAVE A MINIMUM BEND RADIUS OF 6:1 OF THE INSIDE DIAMETER FOR ALL ELBOWS.
22. ALL CONDUITS SHALL BE INSTALLED WITH PULL-STRINGS.

TECHNOLOGY BUILDING 8 DRAWING LIST

SHEET NUMBER	SHEET NAME	CURRENT REVISION	50% DD - 07/05/2017	80% DD - 08/11/2017	100% DD - 08/25/2017
8-T0.01	TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST				
8-T2.01	TECHNOLOGY TRAINING TOWER BUILDING FIRST, SECOND AND THIRD LEVEL FLOOR PLANS				
8-T7.01	TECHNOLOGY DETAILS				
8-T7.02	TECHNOLOGY DETAILS				

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HEART OF THE BAY

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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REVISIONS

No.	Description	Date

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Sheet Title

TECHNOLOGY LEGEND, ABBREVIATIONS AND DRAWING LIST

Drawn By: Author
Checked By: Checker

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

8-T0.01
Drawing No.

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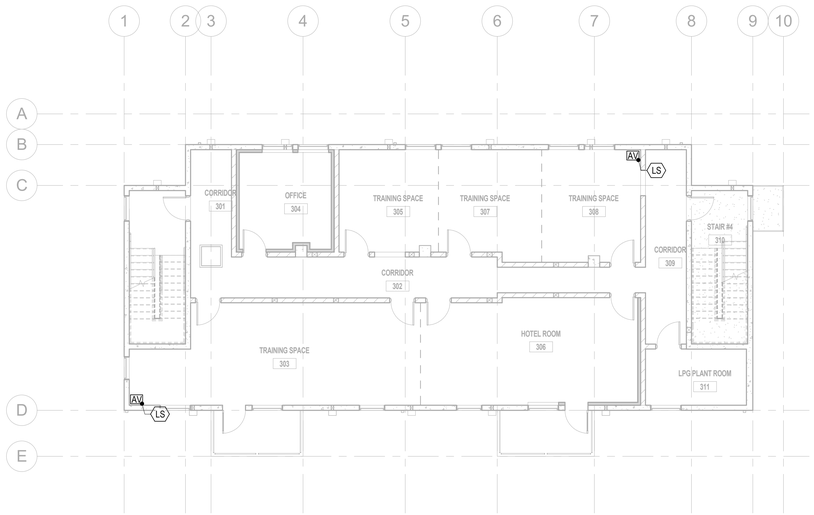
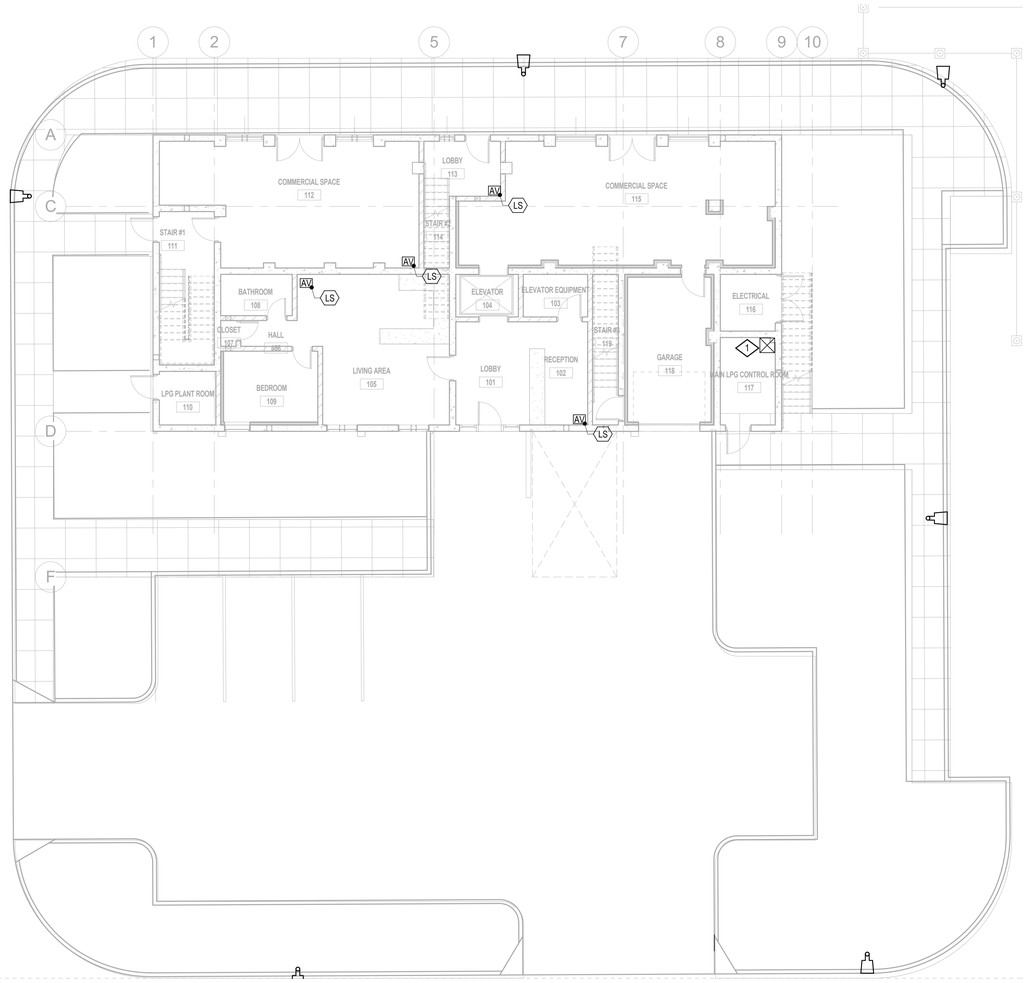
NUMBERED NOTES:

1. AUDIOVISUAL EQUIPMENT RACK AND SOUND CONTROL SYSTEM. EXACT MOUNTING LOCATION TO BE COORDINATED WITH OTHER SYSTEMS IN THIS ROOM

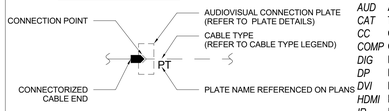


3 08- TECHNOLOGY - TRAINING TOWER BLDG-THIRD FLOOR
1/8" = 1'-0"



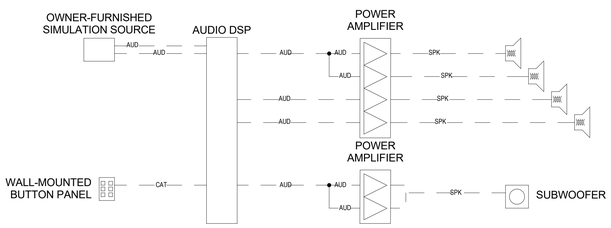
1 08- TECHNOLOGY - TRAINING TOWER BLDG-FIRST FLOOR
1/8" = 1'-0"

CABLE, CONNECTOR, AND PLATE TERMINATION LEGEND:

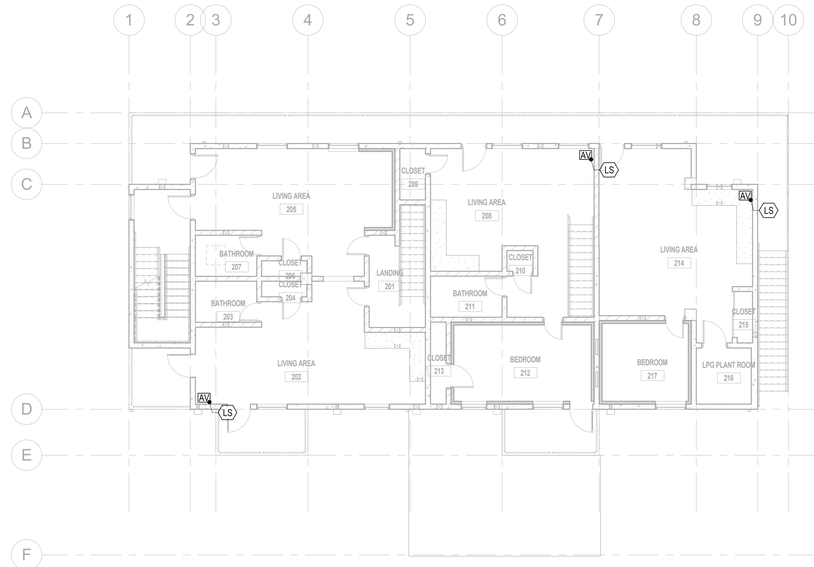


CABLE TYPE LEGEND:

232	SERIAL CONTROL (RS232, RS422, RS485)
AUD	AUDIO (LINE & MIC LEVELS)
CAT	TWISTED-PAIR
CC	CONTACT CLOSURE OR RELAY
COMP	COMPONENT VIDEO
DIG	DIGITAL AUDIO
DP	DISPLAY PORT
DVI	DVI-D OR DVI-I
HDMI	HDMI
IR	INFRARED
MMF	MULTI-MODE FIBER
RF	RADIO FREQUENCY
SDI	SDI, HD-SDI, 4G-SDI
SMF	SINGLE-MODE FIBER
SPK	LOUDSPEAKER AUDIO
SYNC	VIDEO SYNC SIGNAL
USB	USB
VGA	RGBHV / VGA
VID	COMPOSITE VIDEO



4 AUDIOVISUAL FUNCTIONAL DIAGRAM - PARKING LOT
NONE



2 08- TECHNOLOGY - TRAINING TOWER BLDG-SECOND FLOOR
1/8" = 1'-0"

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No.	Description	Date

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Sheet Title

TECHNOLOGY TRAINING TOWER BUILDING FIRST, SECOND AND THIRD LEVEL FLOOR PLANS

Drawn By: Author
Checked By: Checker

Scale:
As indicated

Date:
October 4, 2019

Project No. B17.07369

8-T2.01
Drawing No.

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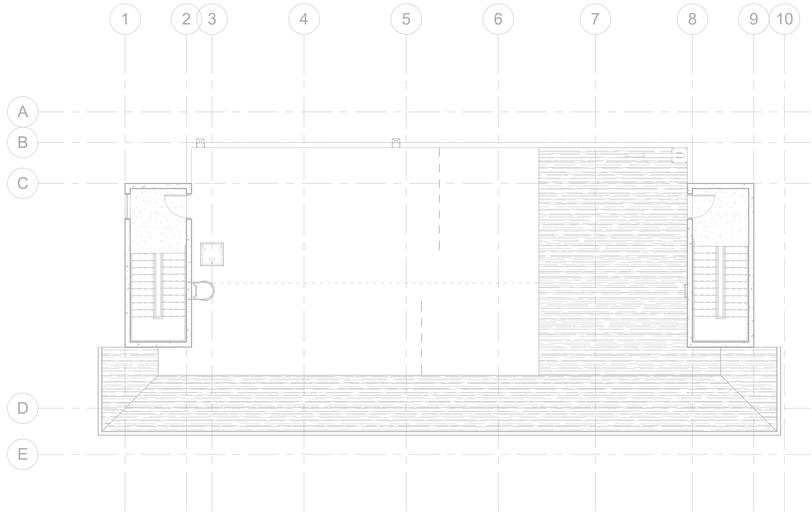
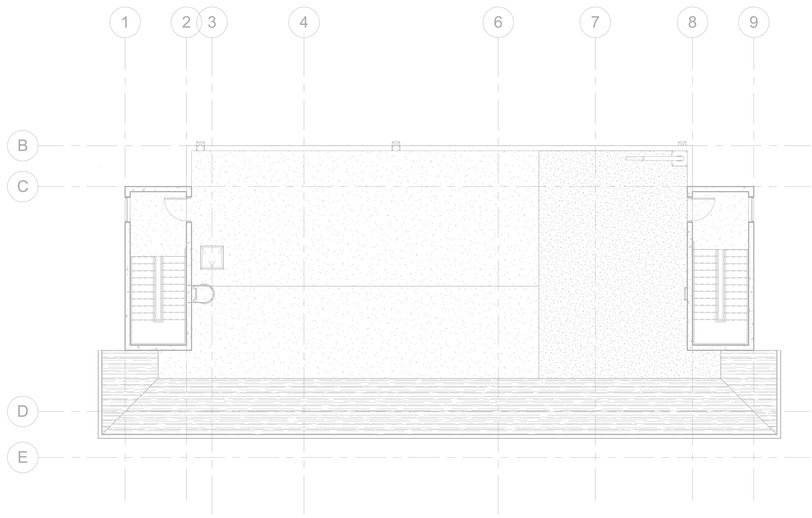


1 08-TECHNOLOGY - TRAINING TOWER BLDG-FOURTH FLOOR
1/8" = 1'-0"



2 08-TECHNOLOGY - TRAINING TOWER BLDG-ROOF LEVEL
1/8" = 1'-0"

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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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No.	Description	Date

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Sheet Title

TECHNOLGY TRAINING TOWER BUILDING FOURTH LEVEL AND ROOF PLANS

Drawn By: Author
Checked By: Checker

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

Date:
October 4, 2019

Project No. B17.07369

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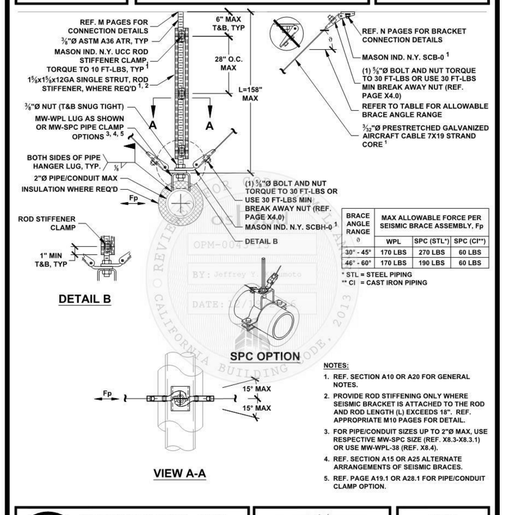
HANGER ROD DIAMETER = ⅜"

PIPING/CONDUIT TRANSVERSE SEISMIC CABLE BRACING SYSTEM 2'Ø PIPE/CONDUIT MAX

KIT OPTIONS
C0T



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp		
	WPL	SPC (STL*)	SPC (CI**)
30° - 45°	170 LBS	270 LBS	60 LBS
46° - 60°	170 LBS	190 LBS	60 LBS

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF. X8.3-X8.3.1) OR USE MW-WPL-36 (REF. X8.4).
4. REF. SECTION A15 OR A25 ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
5. REF. PAGE A19.1 OR A28.1 FOR PIPE/CONDUIT CLAMP OPTION.

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BY: Jeffrey Y. Kikumoto
DATE: 12/19/2016
CALIFORNIA BUILDING CODE, 2013

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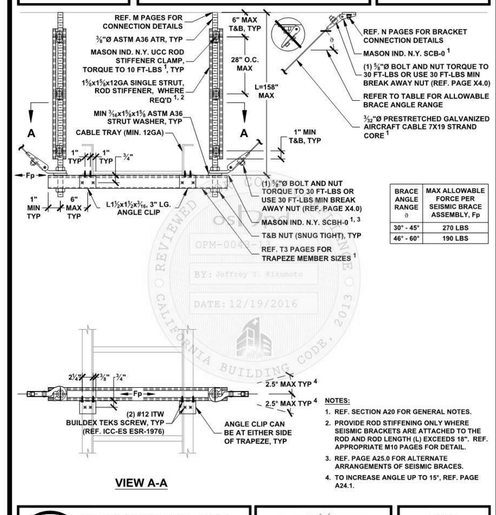
California SE No. S5270

PAGE **C2.10**

HANGER ROD DIAMETER = ⅜"

CABLE TRAY TRANSVERSE TRAPEZE SEISMIC CABLE BRACING SYSTEM 20 PLF MAX

KIT OPTIONS
TC0T



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	270 LBS
46° - 60°	190 LBS

NOTES:
1. REF. SECTION A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A25.0 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. TO INCREASE ANGLE UP TO 15°, REF. PAGE A24.1.

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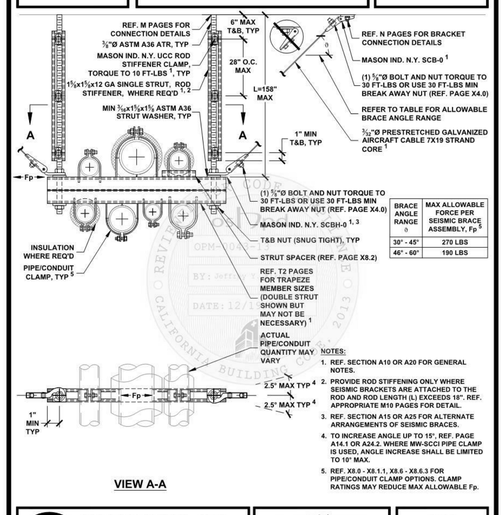
PAGE **E2.10**

HANGER ROD DIAMETER = ⅜"

PIPING/CONDUIT TRANSVERSE TRAPEZE SEISMIC CABLE BRACING SYSTEM 30 PLF MAX

KIT OPTIONS
TC0T



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp 5
30° - 45°	270 LBS
46° - 60°	190 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18", REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. TO INCREASE ANGLE UP TO 15°, REF. PAGE A14.1 OR A24.2. WHERE MW-SCCI PIPE CLAMP IS USED, ANGLE INCREASE SHALL BE LIMITED TO 10° MAX.
5. REF. X8.0 - X8.1.1, X8.6 - X8.6.3 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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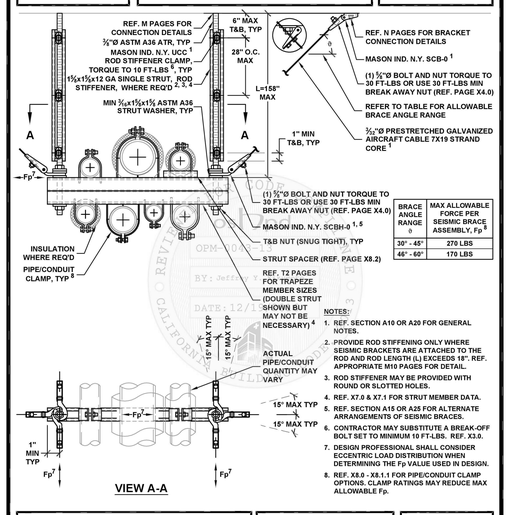
PAGE **F2.10**

HANGER ROD DIAMETER = ¾"

PIPING/CONDUIT ALL-DIRECTIONAL TRAPEZE SEISMIC CABLE BRACING SYSTEM 30 PLF MAX

KIT OPTIONS
TC0A



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp 6
30° - 45°	270 LBS
46° - 60°	170 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. ROD STIFFENER MAY BE PROVIDED WITH ROUND OR SLOTTED HOLES.
4. REF. X7.0 & X7.1 FOR STRUT MEMBER DATA.
5. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
6. CONTRACTOR MAY SUBSTITUTE A BREAK-OFF BOLT SET TO MINIMUM 10 FT-LBS. REF. X3.0.
7. DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE Fp VALUE USED IN DESIGN.
8. REF. X8.0 - X8.1.1 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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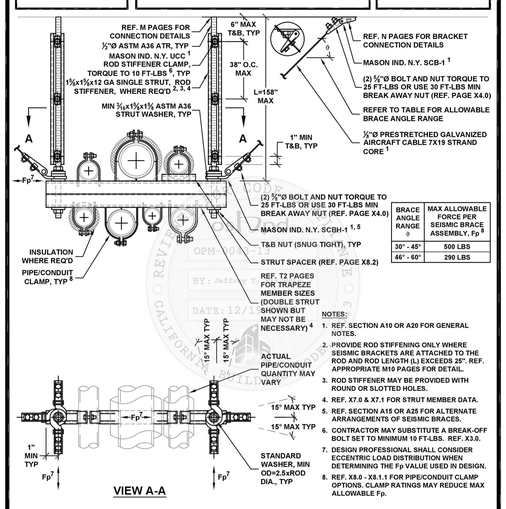
PAGE **F2.12**

HANGER ROD DIAMETER = ½"

PIPING/CONDUIT ALL-DIRECTIONAL TRAPEZE SEISMIC CABLE BRACING SYSTEM 60 PLF MAX

KIT OPTIONS
TC1A



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	500 LBS
46° - 60°	290 LBS

NOTES:
1. REF. SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. ROD STIFFENER MAY BE PROVIDED WITH ROUND OR SLOTTED HOLES.
4. REF. X7.0 & X7.1 FOR STRUT MEMBER DATA.
5. REF. SECTION A15 OR A25 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
6. CONTRACTOR MAY SUBSTITUTE A BREAK-OFF BOLT SET TO MINIMUM 10 FT-LBS. REF. X3.0.
7. DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE Fp VALUE USED IN DESIGN.
8. REF. X8.0 - X8.1.1 FOR PIPE/CONDUIT CLAMP OPTIONS. CLAMP RATINGS MAY REDUCE MAX ALLOWABLE Fp.

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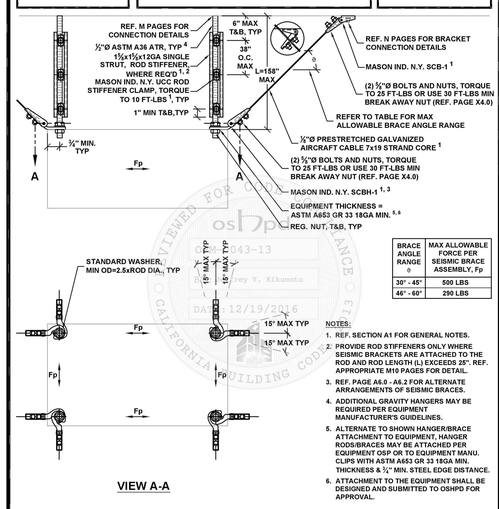
PAGE **F2.22**

HANGER ROD DIAMETER = ½"

SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 375 LB MAX VERTICAL LOAD PER HANGER

KIT OPTIONS
C1SE



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	500 LBS
46° - 60°	290 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 18GA MIN. THICKNESS ≥ ⅛" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

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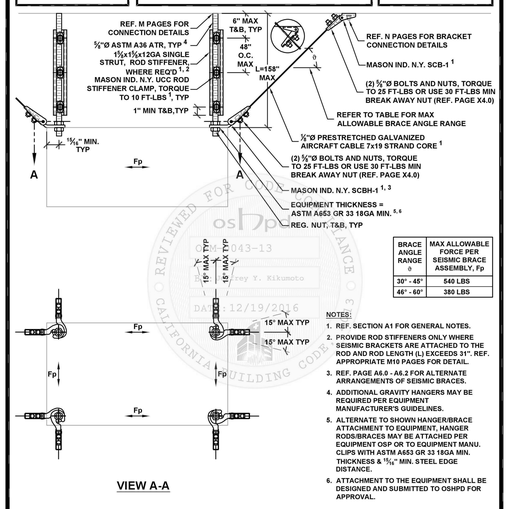
PAGE **D12.11**

HANGER ROD DIAMETER = ⅝"

SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 750 LB MAX VERTICAL LOAD PER HANGER

KIT OPTIONS
C1SE



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	540 LBS
46° - 60°	380 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 16GA MIN. THICKNESS & 1½" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

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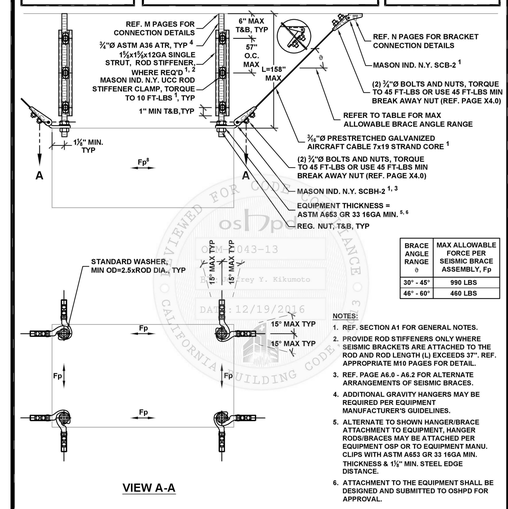
California SE No. S5270

PAGE **D12.12**

HANGER ROD DIAMETER = ¾"

SUSPENDED EQUIPMENT SEISMIC CABLE BRACING SYSTEM 1250 LB MAX VERTICAL LOAD PER HANGER

KIT OPTIONS
C2SE



BRACE ANGLE RANGE ∅	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	990 LBS
46° - 60°	460 LBS

NOTES:
1. REF. SECTION A1 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENERS ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37". REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. REF. PAGE A6.0 - A6.2 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
4. ADDITIONAL GRAVITY HANGERS MAY BE REQUIRED PER EQUIPMENT MANUFACTURER'S GUIDELINES.
5. ALTERNATE TO SHOWN HANGER/BRACE ATTACHMENT TO EQUIPMENT, HANGER RODS/BRACES MAY BE ATTACHED PER EQUIPMENT OSP OR TO EQUIPMENT MANU. CLIPS WITH ASTM A653 GR 33 16GA MIN. THICKNESS & 1½" MIN. STEEL EDGE DISTANCE.
6. ATTACHMENT TO THE EQUIPMENT SHALL BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL.

REVIEWED FOR CODE COMPLIANCE
OPM-0043-13
BY: Jeffrey Y. Kikumoto
DATE: 12/19/2016
CALIFORNIA BUILDING CODE, 2013

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PAGE **D12.13**

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA (DEP. DIR. PUBLIC WORKS)	ALEX AMERI (INTERIM DIR. PUBLIC WORKS)
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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wsp.com

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

Sheet Title

TECHNOLOGY DETAILS

Drawn By: Author
Checked By: Checker

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

8-T7.01
Drawing No.

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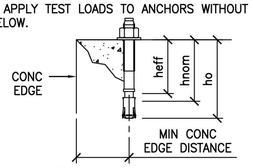
Extron Electronics
INTERFACING, SWITCHING AND CONTROL

GENERAL NOTES CONTINUED:

3E. TEST VALUES: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE, SEE TABLE BELOW.

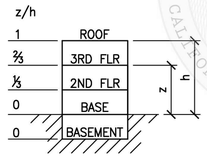


MECHANICAL ANCHOR

ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) heff	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPACING (INCH)	TEST LOAD TORQUE (FT–LBS)	CONDITION OF ANCHORAGE
⅜	2 5/16	2	2 5/8	4*	6	6¾	25	CASE 1

* SEE PAGE 11 FOR UNDERSIDE OF METAL DECK DETAIL.

4. A SINGLE CASE OF ANCHORAGE IS SPECIFIED AND PRESENTED IN THIS PRE–APPROVAL:



BUILDING ELEV

CASE 1: ANCHORAGE DETAILS LOCATED AT ANY LEVEL OF A BUILDING ($z/h<=1.0$), IT IS ASSUMED THAT THE FLOORS ARE BUILT OF A MINIMUM 3¼" SAND–LIGHT WEIGHT CONCRETE OR NORMAL WEIGHT CONCRETE TOPPING OVER METAL DECK OR 4" NORMAL WEIGHT CONCRETE SLAB ($f'c$ = 3000 PSI, MINIMUM).

5. THIS PRE–APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA. WHERE S_{DS} IS LESS THAN OR EQ TO 2.50.

REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBALD No. S4346 STRUCTURAL STATE OF CALIFORNIA

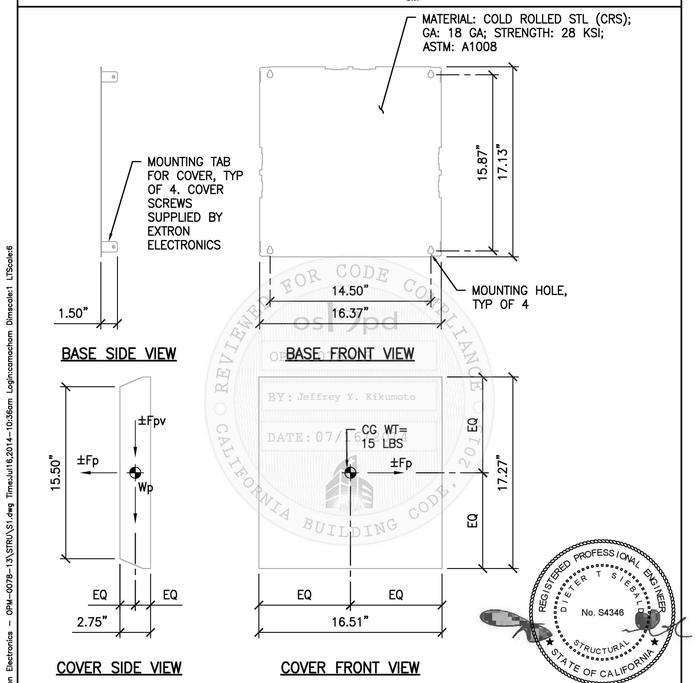
SHEET TITLE: GENERAL NOTES (CONTINUED)

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 3 of 13

L:\Jobs13\13127 Extron Electronics – OPM–0078–13\STRU\S1.dwg Time:Jul16,2014–10:36am Login:cormachom Dimscale:1 LTScale:6

Extron Electronics
INTERFACING, SWITCHING AND CONTROL



REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBALD No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: WMK 160
ELEVATIONS

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SACRAMENTO, CA 95833 www.cyseng.com

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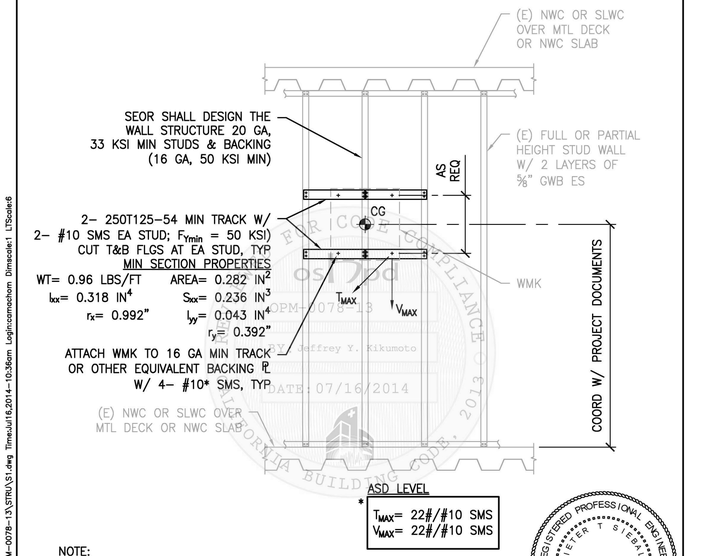
Extron Electronics
INTERFACING, SWITCHING AND CONTROL



NOTE:
AS AN ALTERNATE, THE WMK MAY BE ATTACHED DIRECTLY TO (E) WALL STUDS W/ 4– #10 SMS MIN IF THE UNIT ATTACHMENT HOLES ALIGN W/ THE ℄ OF THE STUD FLG, TYP

REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBALD No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: WMK 160
STUD WALL ATTACHMENT

CYS STRUCTURAL ENGINEERS, INC.
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CITY OF HAYWARD
HEART OF THE BAY

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DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA (DEP. DIR. PUBLIC WORKS)	ALEX AMERI (INTERIM DIR. PUBLIC WORKS)
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

**1401 W. WINTON AVE.
HAYWARD, CA 94545**

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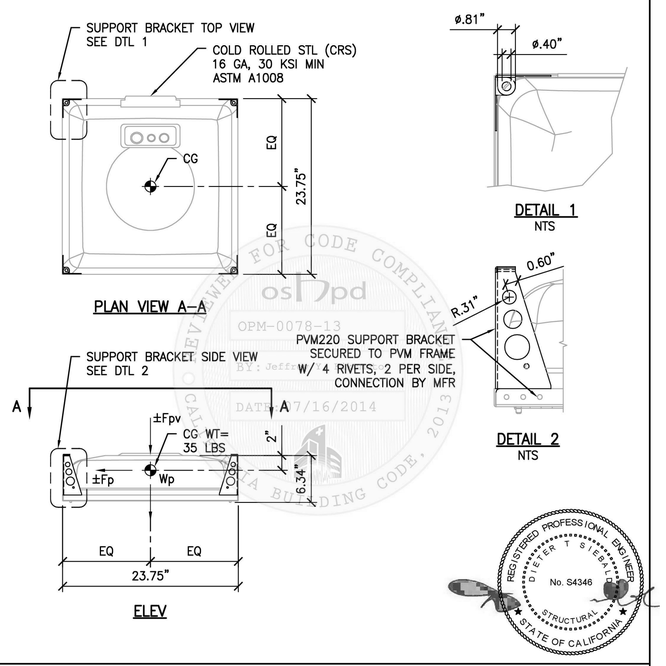

REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBALD No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: PVM 220
PLAN & ELEVATIONS

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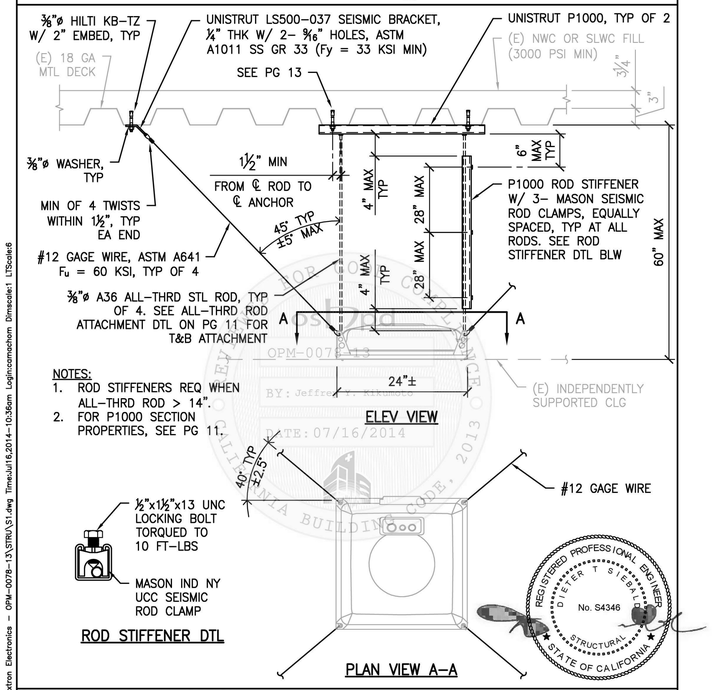
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 9 of 13

L:\Jobs13\13127 Extron Electronics – OPM–0078–13\STRU\S1.dwg Time:Jul16,2014–10:36am Login:cormachom Dimscale:1 LTScale:6

Extron Electronics
INTERFACING, SWITCHING AND CONTROL



REGISTERED PROFESSIONAL ENGINEER DIETER T SIEBALD No. S4346 STRUCTURAL STATE OF CALIFORNIA

SHEET TITLE: PVM 220 - OPTION 1:
UNDERSIDE OF METAL DECK SUPPORT & ATTACHMENT

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

Job No: 13127
Date: 06-30-2014
Page: 10 of 13

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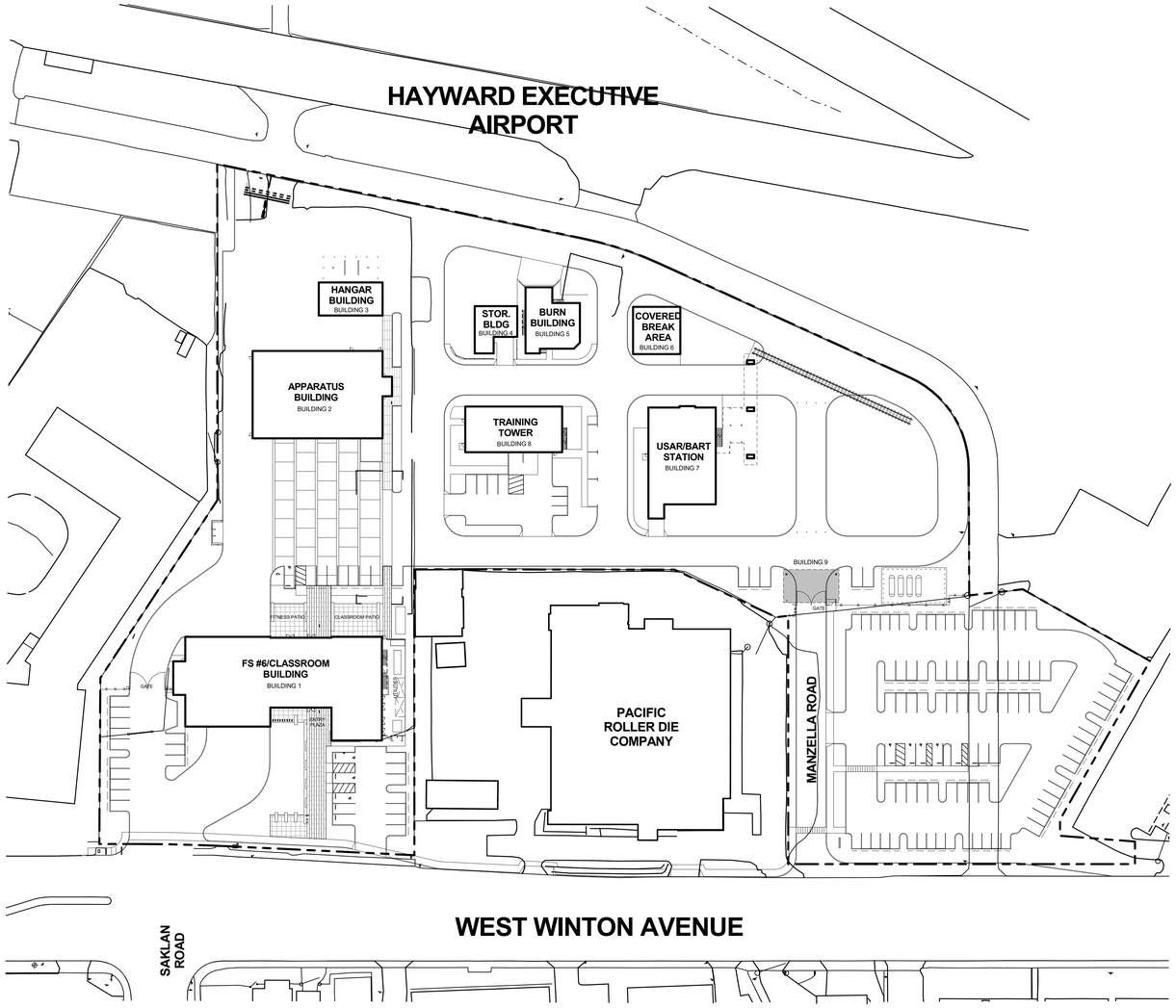
HAYWARD FIRE STATION #6
& FIRE TRAINING CENTER

BUILDING 9

PERMIT SUBMITTAL



1 SITE LOCATION PLAN
1" = 50'-0"

PROJECT INFORMATION

APN:	432-124-1-4 (PORTION)
PROJECT:	HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER BUILDING 9 1401 WEST WINTON AVENUE, HAYWARD, CA 94545
DESCRIPTION:	ROOF CANOPY (BUILDING 9)
BUILDING AREAS:	39,156 SF SITE COVERAGE 66,278 SF GROSS FLOOR AREA
TOTAL BUILDING AREA FOR THIS PERMIT:	1,333 SF
SITE:	293,364 SF (6.73 ACRES) SITE DEVELOPMENT AREA 13% LOT COVERAGE (TOTAL DEVELOPMENT)
BUILDING FLOOR AREA RATIO:	23% (TOTAL DEVELOPMENT)
FIRE SPRINKLERED:	NO (BUILDING 9)
BUILDING USE/OCCUPANCY:	U - UTILITY (CARPORT)
CONSTRUCTION TYPE:	II-B
ZONING:	AT/AC
TOTAL BUILDING STORIES:	1
DEFERRED SUBMITTALS:	TBD

BUILDING 9 SCOPE OF WORK

The general scope of work covered under this contract includes but is not limited to:

Structure
- New concrete foundation, structural steel frame, and roof.
- New standing seam metal roof.

Electrical
- New power and lighting systems.
- New roof-mounted photovoltaic system including inverter.

SHEET INDEX - BUILDING 9

NUMBER	NAME
ARCHITECTURAL	
9-A0.10	BUILDING 9 SHEET INDEX, PROJECT INFORMATION
9-A0.11	BUILDING 9 CODE ANALYSIS, EXTERIOR AXONOMETRIC VIEWS
9-A2.10	BUILDING 9 FLOOR PLAN, ROOF PLAN
9-A3.10	BUILDING 9 EXTERIOR ELEVATIONS
9-A3.40	BUILDING 9 BUILDING CROSS SECTION, ARCHITECTURAL DETAILS
9-A6.10	BUILDING 9 REFLECTED CEILING PLAN
9-A8.20	BUILDING 9 ARCHITECTURAL DETAILS
STRUCTURAL	
9-S0.10	BUILDING 9 GENERAL NOTES AND SPECIFICATIONS
9-S1.10	BUILDING 9 TYPICAL CONCRETE DETAILS
9-S1.20	BUILDING 9 STEEL FRAMING DETAILS
9-S1.50	BUILDING 9 TYPICAL METAL DECKING DETAILS
9-S2.10	BUILDING 9 FLOOR PLAN, ROOF PLAN
9-S3.10	BUILDING 9 ELEVATIONS
9-S4.10	BUILDING 9 DETAILS AND SECTIONS
ELECTRICAL	
9-E0.01	BUILDING 9 ELECTRICAL LEGEND, ABBREVIATIONS, AND DRAWING LIST
9-E0.02	BUILDING 9 ELECTRICAL SCHEDULES
9-E0.03	BUILDING 9 ELECRTICAL SCHEDULES
9-E0.10	BUILDING 9 ELECTRICAL LIGHT FIXTURE SCHEDULE
9-E0.20	BUILDING 9 ELECTRICAL TITLE 24
9-E0.21	BUILDING 9 ELECTRICAL TITLE 24
9-E2.01	BUILDING 9 ELECTRICAL ENTRY CANOPY PLAN AND LIGHTING
9-E5.01	BUILDING 9 ELECTRICAL RISER DIAGRAM
9-E5.02	BUILDING 9 ELECTRICAL GROUNDING AND FIRE ALARM RISER DIAGRAMS
9-E8.01	BUILDING 9 ELECTRICAL DETAILS
PHOTOVOLTAIC	
9-PV0.01	BUILDING 9 PHOTOVOLTAIC SYSTEM LEGEND, ABBREVIATIONS AND DRAWING LIST
9-PV0.02	BUILDING 9 PHOTOVOLTAIC SYSTEM SCHEDULES AND LABELS
9-PV1.01	BUILDING 9 PHOTOVOLTAIC SYSTEM SITE PLAN
9-PV2.01	BUILDING 9 PHOTOVOLTAIC SYSTEM ENTRY CANOPY PLAN
9-PV5.01	BUILDING 9 PHOTOVOLTAIC SINGLE LINE DIAGRAM
9-PV6.01	BUILDING 9 PHOTOVOLTAIC SYSTEM DETAILS AND DIAGRAMS

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
RENEWAL DATE 8/31/21
STATE OF CALIFORNIA

Sheet Title

BUILDING 9
SHEET INDEX, PROJECT INFORMATION

Drawn By: EW
Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

9-A0.10
Drawing No.

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Code Analysis - Hayward Fire Station #6/Fire Training Center Building 9

Project Location: 1401 West Winton Avenue, Hayward, CA 94545

Date: 09/21/2018

SUMMARY:

APPLICABLE REGULATIONS

2016 California Building Standards Code (Title 24, California Code of Regulations)
2016 California Building Standards Administrative Code (Title 24, California Code of Regulations, Part 1)
2016 California Building Code (Title 24, California Code of Regulations, Part 2)
2016 California Electrical Code (Title 24, California Code of Regulations, Part 3)
2016 California Mechanical Code (Title 24, California Code of Regulations, Part 4)
2016 California Plumbing Code (Title 24, California Code of Regulations, Part 5)
2016 California Energy Code (Title 24, California Code of Regulations, Part 6)
2016 California Fire Code (Title 24, California Code of Regulations, Part 9)
2016 California Existing Building Code (Title 24, California Code of Regulations, Part 10)
2016 California Green Building Standards Code (Title 24, California Code of Regulations, Part 11)
2016 California Reference Standards Code (Title 24, California Code of Regulations, Part 12)
Uniform Fire Code With Approved California Amendments
Title 19 - Public Safety, State Fire Marshal California Code Of Regulations
Title 24 - California Code Of Regulations, Americans With Disabilities Act Accessibility Guidelines (ADAAG) Uniform Accessibility Standards
NFPA 101, Life Safety Code, 2015 Edition - Chapters 5 And 13
NFPA 13-2015 Edition

APPLICABLE STANDARDS

UL - Underwriters Laboratories Fire Resistive Directory, 2016 Edition
UL - Underwriters Laboratory Building Materials Directory, 2006 Edition
SMACNA - Fire, Smoke & Radiation Damper Installation Guide For Hvac Systems, 5th Edition, 2002

BUILDING CODE ANALYSIS

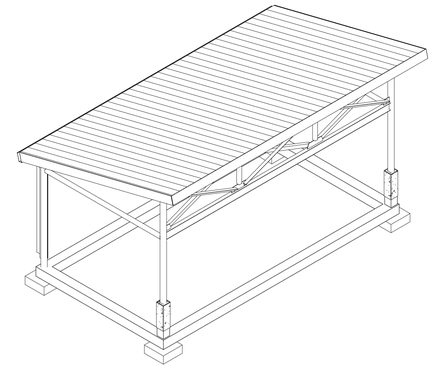
BUILDING 9: HANGER BUILDING	**NOTES**
TYPE OF CONSTRUCTION: Type II-B	
FIRE PROTECTION Non-sprinklered	
PRIMARY STRUCTURE Non-rated	Table 601
BEARING WALLS, EXTERIOR AND INTERIOR Non-Rated	Table 601
EXTERIOR WALLS (based on fire separation distance)	
1-hour rated / II-B / U Occ / Separation < 10'	Table 602
Non-rated / II-B / U Occ / Separation > 10' but < 30'	Table 602
Non-rated / II-B / U Occ / Separation > 30'	Table 602
NONBEARING INTERIOR WALLS AND PARTITIONS Non-rated	Table 601
FLOOR CONSTRUCTION & SECONDARY FRAMING Non-rated	Table 601
ROOF CONSTRUCTION & SECONDARY FRAMING Non-rated	Table 601
MECHANICAL SHAFTS Not Applicable	Single story building
ELEVATOR SHAFT AND OPENINGS Not Applicable	Single story building
ATRIUM Not Applicable	Single story building
EXIT STAIRS Not Applicable	Single story building
EXIT STAIR INTERIOR DOORS Not Applicable	Single story building
BUILDING OCCUPANCY **Single** use, U	
TOTAL OCCUPANT LOAD **3 Total Building Occupants**	
MAXIMUM BUILDING AREA PER STORY [Allowable] Ground Floor: 1,333 sq ft [8,500 sq ft]	CBC Table 506.2, NS
BUILDING HEIGHT [Allowable] 1 story, 24.0' [2 story, 55']	CBC Tables 504.3 & 504.4 NS
MIN. NUMBER OF EXITS [Required] Building is open-sided [1]	CBC 1006.2.1 & Table 1006.2.1: Exits per story; 2 required if the design occ. load exceeds the values listed in Table 1006.2.1.
MIN. EXIT SEPARATON [Required] Not Applicable - 1 exit required	CBC 1007.1.1: Greater than 1/2 the diagonal distance of the area to be served for non-sprinklered building
MAXIMUM TRAVEL DISTANCE [Allowable] Not Applicable - building is open-sided	CBC Table 1017.2: 300' is the allowable travel distance for a building without a sprinkler system for U Occupancy.
EXIT ACCESS Building is open-sided and exit directly to the building exterior	No Exit Access Hallways in building.
Corridors: Not Applicable	No cooridors in building.

OCCUPANCY LOAD FACTORS

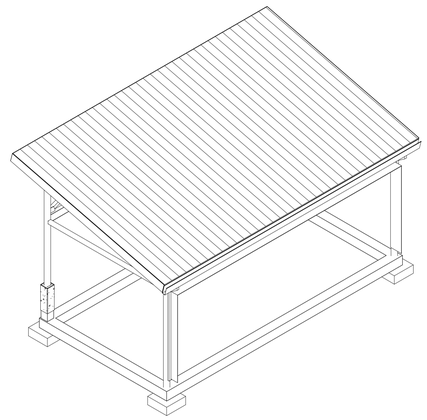
(REFERENCE: TABLE 1004.1.2)

WAREHOUSE	500

1,333 SF / 500 = 3 OCCUPANTS TOTAL



1 NORTHEAST AXONOMETRIC VIEW



2 SOUTHWEST AXONOMETRIC VIEW

GRAPHIC FOR REFERENCE ONLY

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE. HAYWARD, CA 94545

REVISIONS

No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/30/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 9 CODE ANALYSIS, EXTERIOR AXONOMETRIC VIEWS

Drawn By: EW Checked By: EW

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

Date: October 4, 2019

Project No. 2016039

9-A0.11

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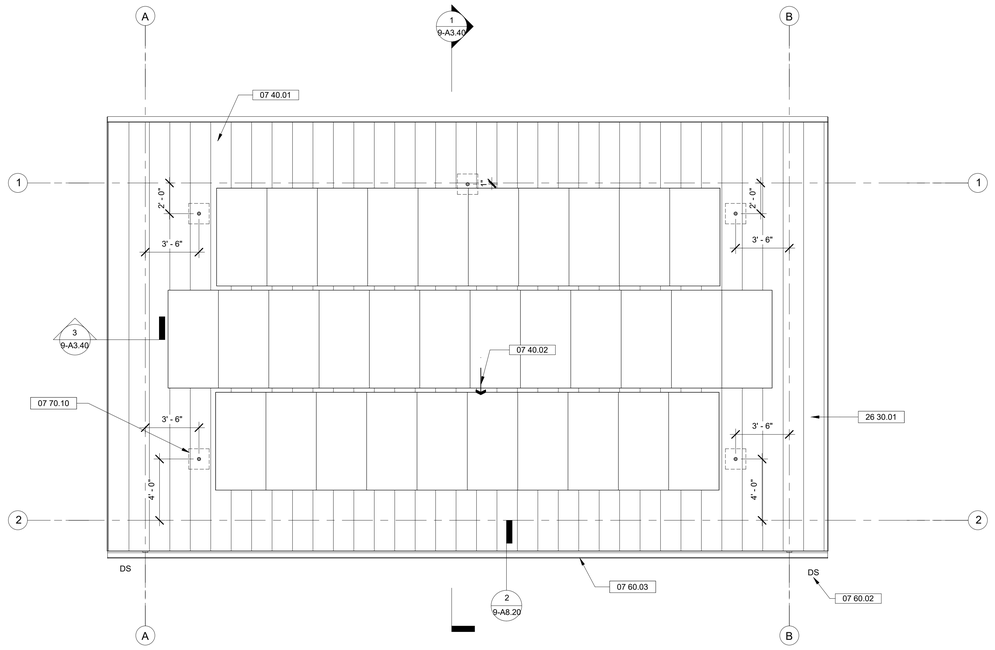
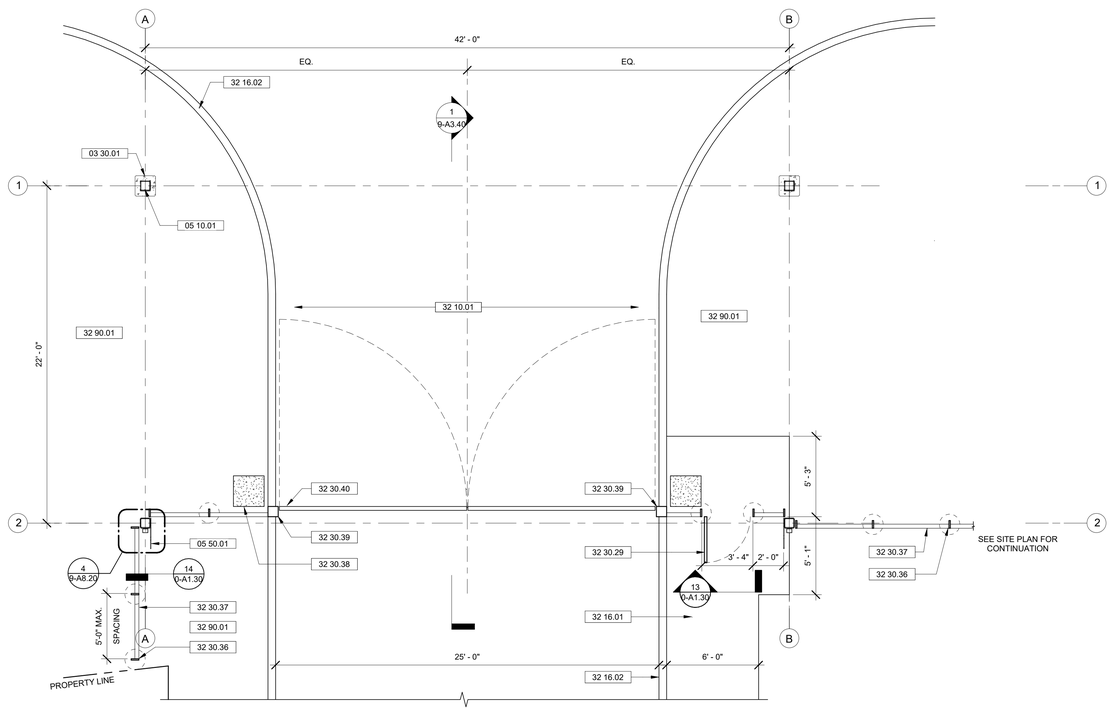


2 ROOF PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'



1 FLOOR PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. FOR LOCATION AND DETAILED INFORMATION ON SIGNAGE, REFER TO "VOLUME 5 CONSTRUCTION DOCUMENT DRAWINGS (SIGNAGE)"
2. SLOPE ARROWS @ ROOF AREAS INDICATE DOWN SLOPE, TYP.
3. PHOTOVOLTAIC ARRAY SHALL CONFORM TO THE 2016 CALIFORNIA FIRE CODE.
4. DOOR HARDWARE HEIGHT SHALL BE INSTALLED BETWEEN 34 AND 48 INCHES ABOVE THE FLOOR SURFACE IN ACCORDANCE WITH CBC 1010.1.9.2.
5. HARDWARE SHALL BE ACCESSIBLE PER CBC CHAPTER 11B AND SHALL NOT REQUIRE GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST. CBC 1010.1.9.1
6. ALUMINUM ROOFING SHALL BE INSTALLED IN A MANNER SO AS TO PROVIDE SEPARATION BETWEEN DISSIMILAR METALS

SHEET KEYNOTE LEGEND

03 30.01	PROTECTIVE CONCRETE CASING @ BASE OF STEEL COLUMN, TYPICAL U.N.O.
05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 50.01	PAINTED ALUMINUM PLATE "PORTAL" AT GRIDS A2 & B2 AND HEAD IN-BETWEEN. SEE EXTERIOR ELEVATIONS
07 40.01	PRE-FINISHED STANDING SEAM METAL ROOF PANELS, TYPICAL
07 40.02	ARROW INDICATES DOWNWARD DIRECTION OF ROOF SLOPE, TYPICAL
07 60.02	INDICATES DOWNSPOUT LOCATION, TYPICAL
07 60.03	PAINTED ALUMINUM EAVE GUTTER
07 70.10	MAINTENANCE TIE-OFF ANCHOR, SEE 8/9-S1.50 FOR DETAIL
26 30.01	ROOF-MOUNTED PHOTOVOLTAIC PANELS, TYPICAL. S.E.D.
32 10.01	CONCRETE PAVING, SEE CIVIL DRAWINGS
32 16.01	NEW CONCRETE SIDEWALK, SEE CIVIL PLANS
32 16.02	NEW CONCRETE CURB, SEE CIVIL PLANS
32 30.29	3-FOOT WIDE GATE IN SECURITY FENCE WITH HSS FRAME, SEE GATE HARDWARE LIST ON SHEET 9-A2.10
32 30.36	6' X 1" STEEL FENCE POST WITH CONCRETE FOOTING @ MAXIMUM 5' O.C. SPACING
32 30.37	DECORATIVE METAL LOUVERED FENCE PANEL WITH POWDER-COAT PAINT FINISH, TYPICAL
32 30.38	CONCRETE MOUNTING PAD FOR GATE OPERATOR, TYPICAL. VERIFY SIZE AND LOCATION WITH OPERATOR MANUFACTURER
32 30.39	8" X 8" X 3/8" HSS GATE POST WITH CAP PLATE, EMBEDDED MINIMUM 8'-6" IN CONCRETE FOOTING PER DETAILS 20 & 26/0-A1.31. PROVIDE POWDER-COAT PAINT FINISH TO MATCH FENCE PANELS.
32 30.40	8-FOOT TALL SWINGING GATE LEAF WITH 3" X 3" X 3/16" HSS PERIMETER FRAME, 2" X 2" HSS MID-VERTICALS, AND LOUVERED FENCE PANEL INFILL
32 90.01	LANDSCAPE AREA, SEE CIVIL AND LANDSCAPE DRAWINGS

GATE HARDWARE

SECURITY MAN-GATE SHALL PROHIBIT ACCESS BY THE GENERAL PUBLIC TO THE TRAINING FACILITY. PROVIDE THE FOLLOWING HARDWARE AT THE SECURITY MAN-GATE, ALLOWING KEY-ONLY ACCESS TO AUTHORIZED PERSONNEL:

3 EA. HAGAR 1850 WELDABLE HINGES
1 EA. VON DUPRIN AX-98-L-BE-17 PANIC HARDWARE
1 EA. LCN 4040XP EDA SURFACE CLOSER
1 EA. PULL HANDLE WELDED TO GATE
2 EA. IVES 8400 10" x 2" LDW B-CS KICK PLATE (1 ON EACH SIDE OF GATE)

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 9
FLOOR PLAN, ROOF PLAN

Drawn By: SF
Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

9-A2.10
Drawing No.

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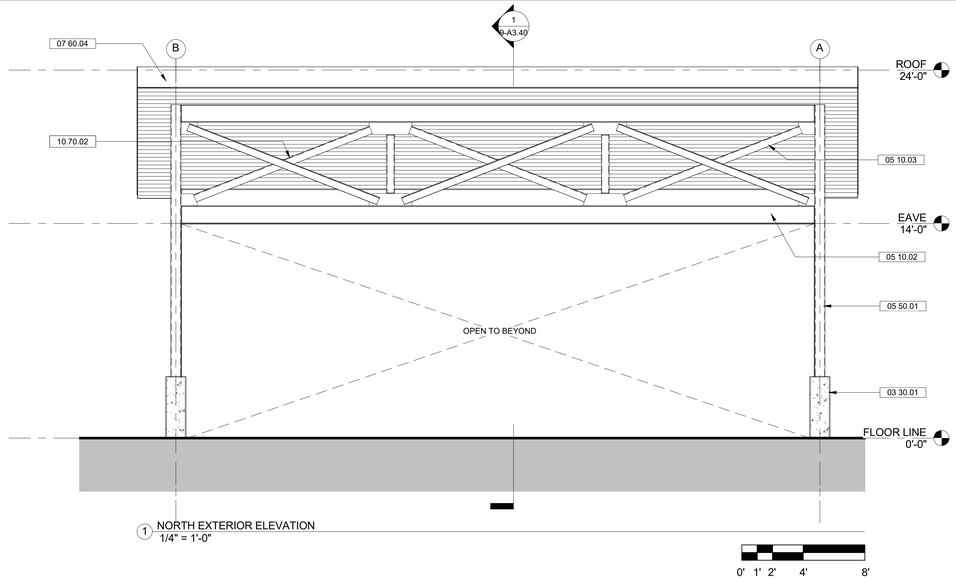
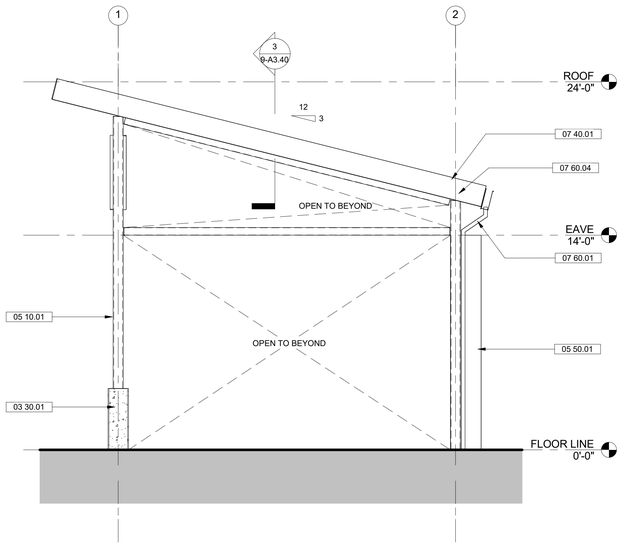


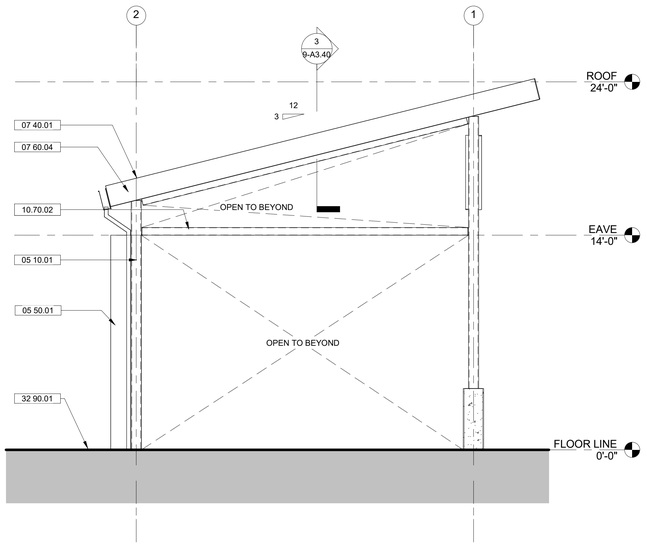
1 NORTH EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'



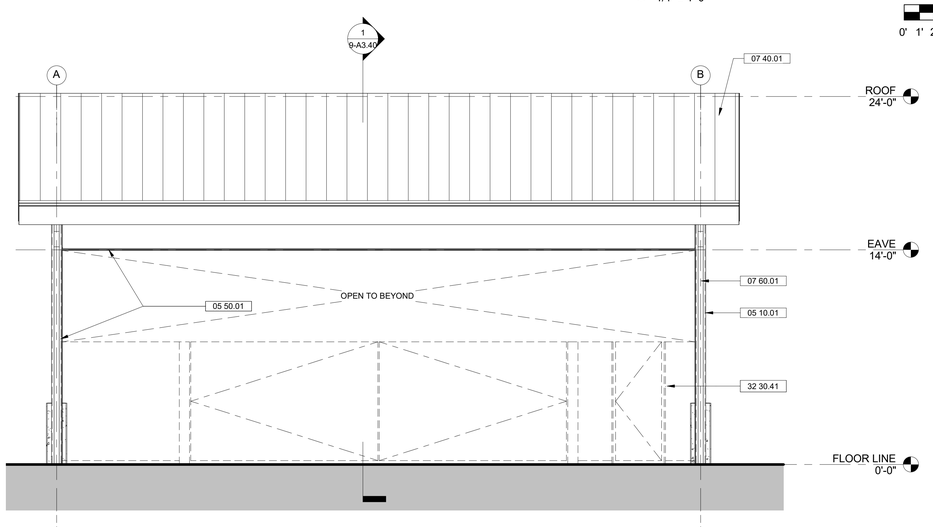
2 WEST ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'



3 EAST ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'



4 SOUTH EXTERIOR ELEVATION
1/4" = 1'-0"

0' 1' 2' 4' 8'

GENERAL SHEET NOTES

1. REFER TO DETAIL 3 ON SHEET 9-A8.20 FOR BIRD DETERRENT ASSEMBLY.
2. PHOTOVOLTAIC ARRAY SHALL COMPLY TO THE 2016 CALIFORNIA FIRE CODE.

SHEET KEYNOTE LEGEND

03 30.01	PROTECTIVE CONCRETE CASING @ BASE OF STEEL COLUMN, TYPICAL U.N.O.
05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 10.02	PAINTED STEEL BEAM, S.S.D.
05 10.03	PAINTED STEEL CROSS BRACING & CONNECTION PLATES, S.S.D.
05 50.01	PAINTED ALUMINUM PLATE "PORTAL" AT GRIDS A2 & B2 AND HEAD IN-BETWEEN. SEE EXTERIOR ELEVATIONS
07 40.01	PRE-FINISHED STANDING SEAM METAL ROOF PANELS, TYPICAL
07 60.01	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE, SECURED TO STEEL COLUMN
07 60.04	PAINTED ALUMINUM FASCIA TRIM
10.70.02	PROVIDE SPIKE BIRD DETERRENT ASSEMBLY AT TOP OF EXPOSED HORIZONTAL BEAMS AND AT VALLEYS OF CROSS BRACING, TYP.
32 30.41	DECORATIVE METAL LOUVERED GATE, FENCE, & MAN-GATE SHOWN DASHED. SEE SITE AND FLOOR PLANS
32 90.01	LANDSCAPE AREA, SEE CIVIL AND LANDSCAPE DRAWINGS

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 9
EXTERIOR ELEVATIONS

Drawn By: EW Checked By: EW

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

Date:
October 4, 2019

Project No. 2016039

9-A3.10
Drawing No.

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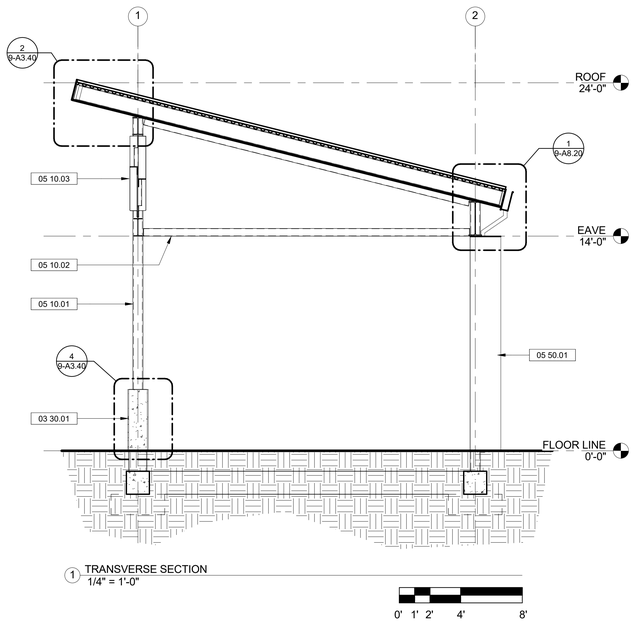
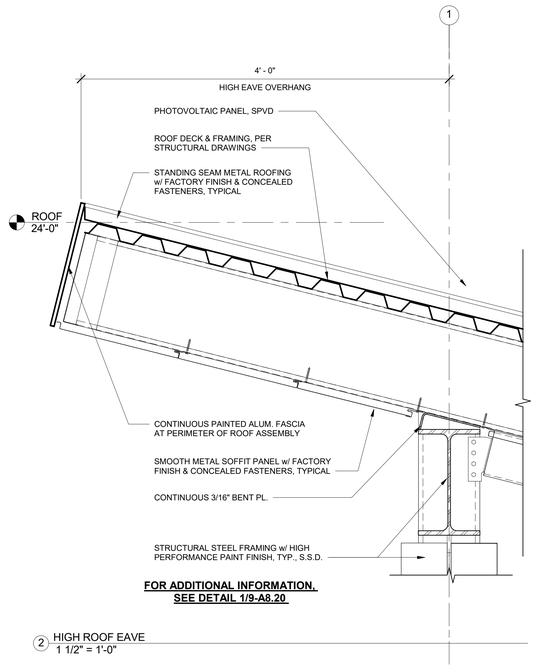
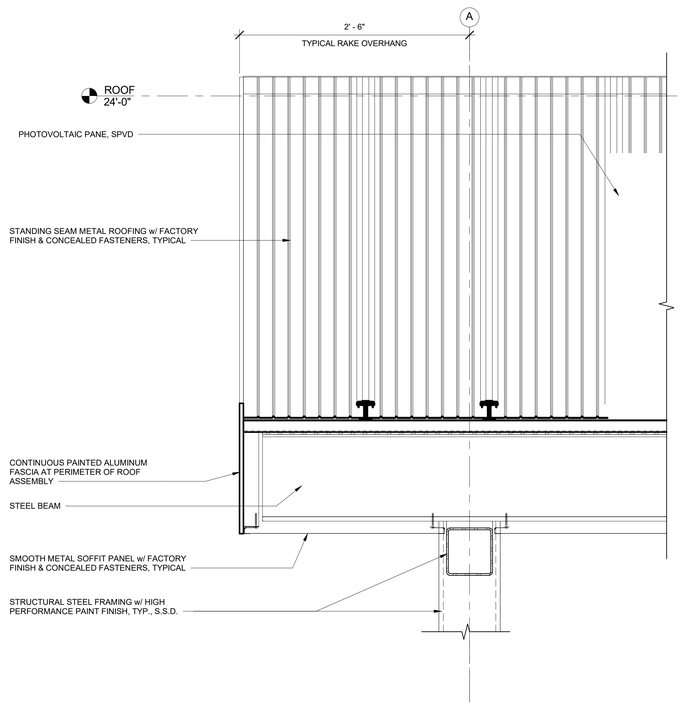


1 TRANSVERSE SECTION
1/4" = 1'-0"

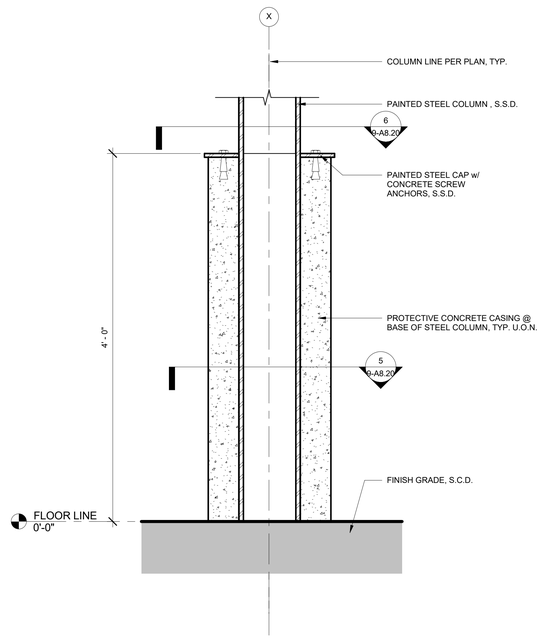
0' 1' 2' 4' 8'



2 HIGH ROOF EAVE
1 1/2" = 1'-0"



3 ROOF RAKE
1 1/2" = 1'-0"



4 STEEL COLUMN BASE
1 1/2" = 1'-0"

GENERAL SHEET NOTES

1.

SHEET KEYNOTE LEGEND

03 30.01	PROTECTIVE CONCRETE CASING @ BASE OF STEEL COLUMN, TYPICAL U.N.O.
05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 10.02	PAINTED STEEL BEAM, S.S.D.
05 10.03	PAINTED STEEL CROSS BRACING & CONNECTION PLATES, S.S.D.
05 50.01	PAINTED ALUMINUM PLATE "PORTAL" AT GRIDS A2 & B2 AND HEAD IN-BETWEEN. SEE EXTERIOR ELEVATIONS

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 9
BUILDING CROSS SECTION, ARCHITECTURAL DETAILS

Drawn By: EW Checked By: EW

Scale:
As indicated

Date:
October 4, 2019

Project No. 2016039

9-A3.40
Drawing No.

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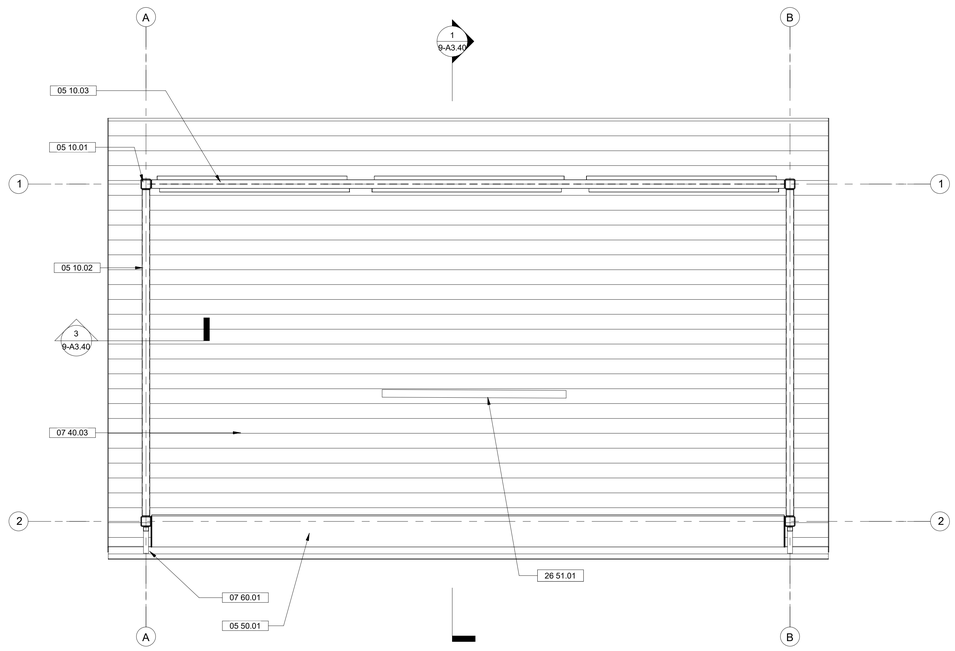
GENERAL SHEET NOTES

1. DEVICES ARE SHOWN FOR LOCATION CRITERIA ONLY, SEE ASSOCIATED CONSULTANT DRAWINGS FOR COUNT AND ADDITIONAL INFORMATION.
2. PROVIDE LAYOUT OF DEVICES FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALLATION.
3. REPORT ANY DISCREPANCIES BETWEEN CONSULTANT DRAWINGS AND ARCHITECTURAL DRAWINGS TO ARCHITECT UPON DISCOVERY.

SHEET KEYNOTE LEGEND

05 10.01	PAINTED STEEL COLUMN, S.S.D.
05 10.02	PAINTED STEEL BEAM, S.S.D.
05 10.03	PAINTED STEEL CROSS BRACING & CONNECTION PLATES, S.S.D.
05 50.01	PAINTED ALUMINUM PLATE "PORTAL" AT GRIDS A2 & B2 AND HEAD IN-BETWEEN. SEE EXTERIOR ELEVATIONS
07 40.03	PRE-FINISHED METAL SOFFIT PANELS, TYPICAL
07 60.01	PAINTED ALUMINUM DOWNSPOUT FROM GUTTER ABOVE, SECURED TO STEEL COLUMN
26 51.01	LINEAR PENDANT LIGHTING TYP., S.E.D.



1 REFLECTED CEILING PLAN
1/4" = 1'-0"

0' 1' 2' 4' 8'

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CITY OF HAYWARD
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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REVISIONS

No.	Description	Date

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LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 9
REFLECTED CEILING PLAN

Drawn By: EW Checked By: EW

Scale: **1/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 2016039

9-A6.10
Drawing No.

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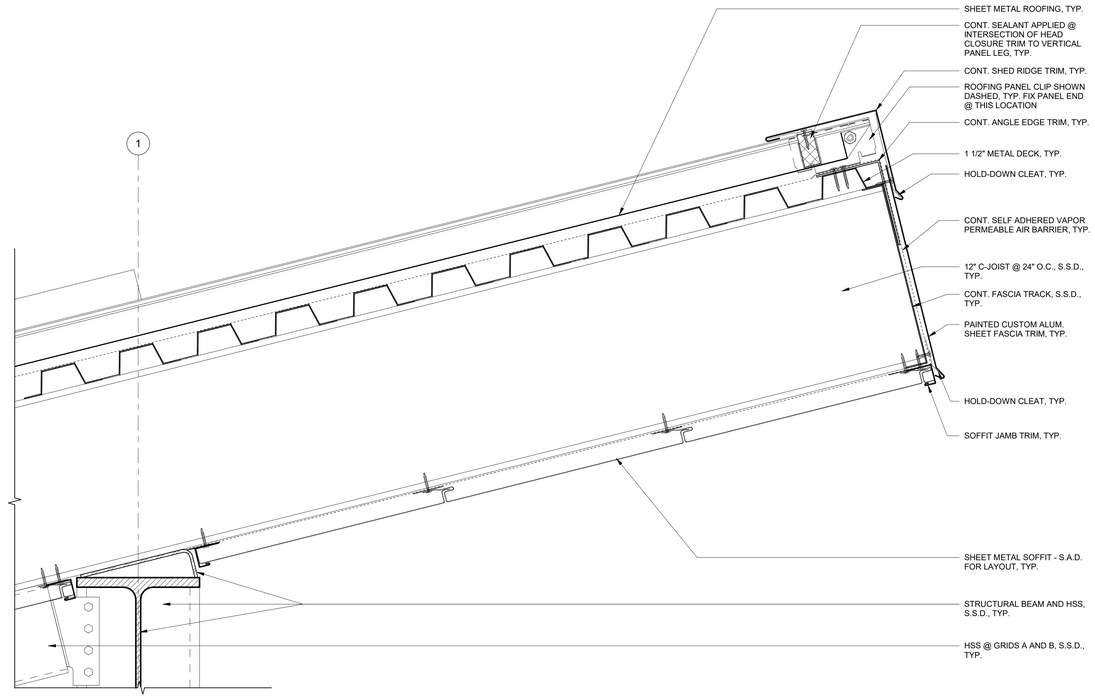
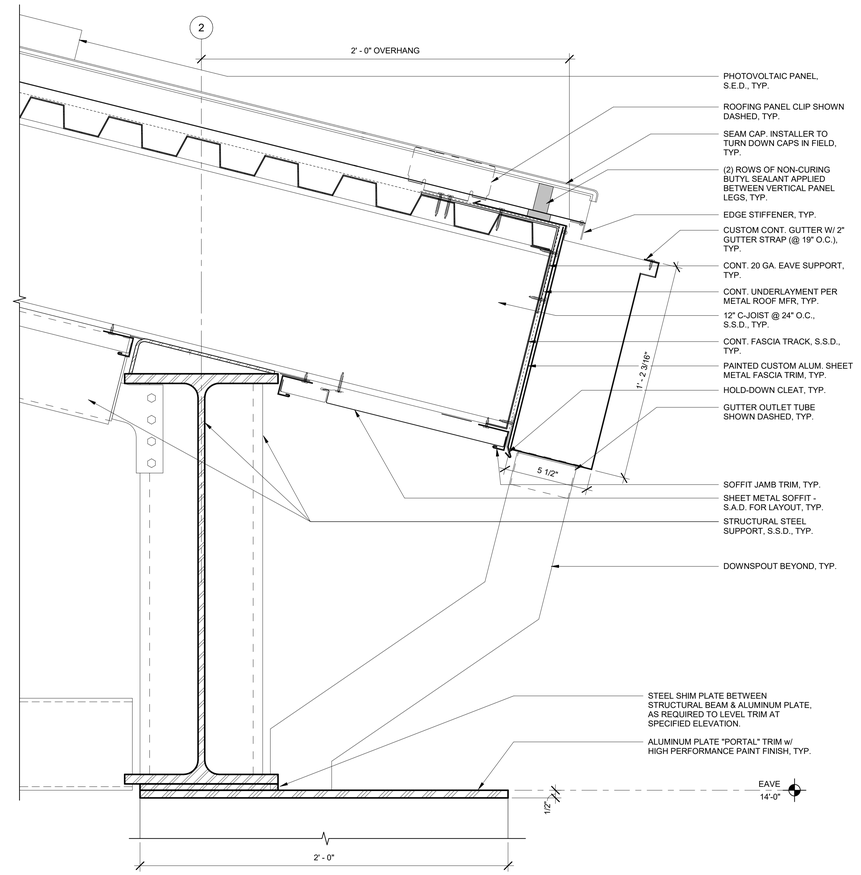
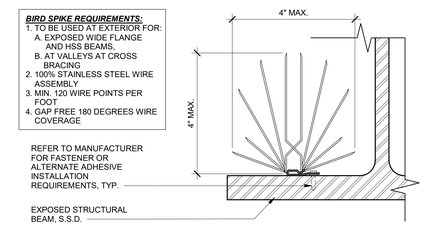


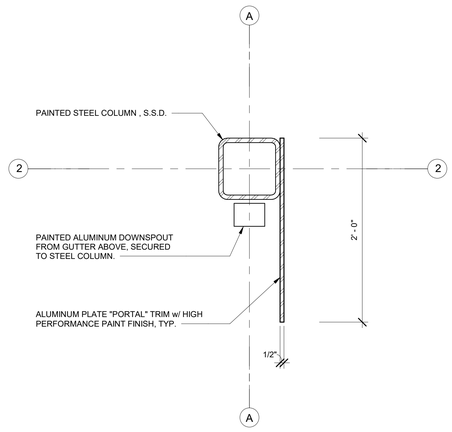
1 HIGH ROOF EAVE WITH FASCIA TRIM
3" = 1'-0"



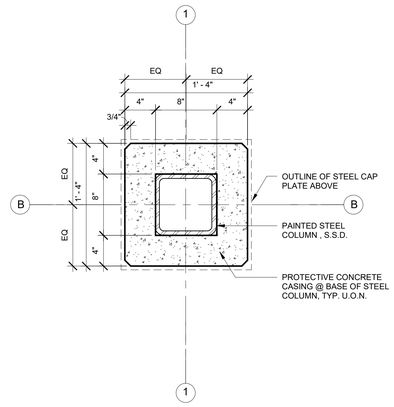
2 LOW ROOF EAVE WITH "PORTAL" TRIM
3" = 1'-0"



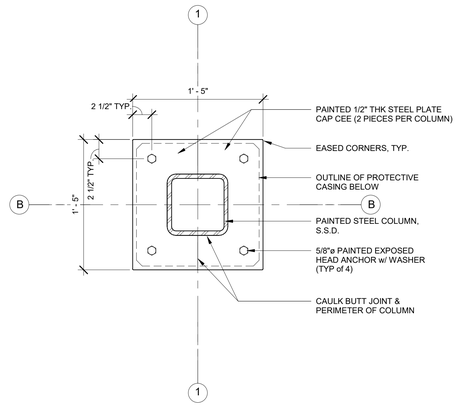
3 BIRD DETERRENT - SPIKE ASSEMBLY
6" = 1'-0"



4 STEEL FRAME DETAIL
1 1/2" = 1'-0"



5 TYPICAL COLUMN CASING
1 1/2" = 1'-0"



6 TYPICAL COLUMN CASING CAP
1 1/2" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE. HAYWARD, CA 94545

REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

LICENSED ARCHITECT
MICHAEL B. ROSS
No. C-18867
9/31/21
RENEWAL DATE
STATE OF CALIFORNIA

Sheet Title

BUILDING 9 ARCHITECTURAL DETAILS

Drawn By: EW Checked By: EW

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 2016039

9-A8.20
Drawing No.

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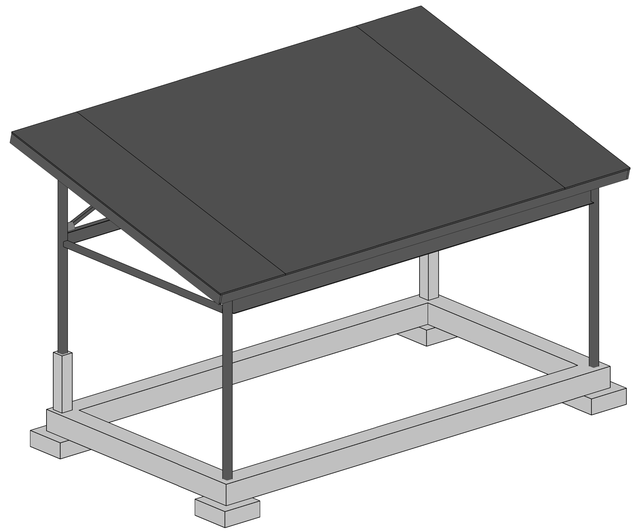
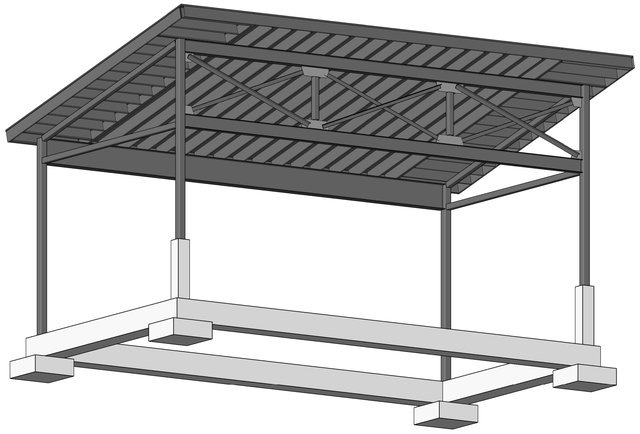
ABBREVIATIONS

AB	ANCHOR BOLT	GB	GRADE BEAM	PTDF	PRESSURE TREATED DOUGLAS FIR
ABV	ABOVE	GLB	GLUE LAMINATED BEAM	PT	POINT
AC	AIR CONDITIONING	GR	GRADE	R	RADIUS
ADJ	ADJACENT	HD	HOLD DOWN	RBS	REDUCED BEAM SECTION
ADDL	ADDITIONAL	HDG	HOT-DIP GALVANIZED	REF	REFERENCE
AFF	ABOVE FINISH	HDR	HEADER	REF	REFERENCE
ALUM	ALUMINUM	HGR	HANGER	REINF	REINFORCING
ARCH	ARCHITECT	HK	HOOK	REQD	REQUIRED
@	AT	HORIZ	HORIZONTAL	RET	RETAINING
BLDG	BUILDING	HS	HIGH STRENGTH	REV	REVISION
BLK/BLKG	BLOCK/BLOCKING	HSB	HIGH STRENGTH BOLT	RF	ROOF
BLW	BELOW	HSFB	HIGH STRENGTH FRICTION BOLT	RWD	REDWOOD
BM	BEAM	HSG	HIGH STRENGTH GROUT	S	AMERICAN STANDARD BEAM
BN	BOUNDARY NAIL	HSH	HORIZONTAL SLOTTED HOLE	SAD	SEE ARCHITECTURAL DRAWINGS
BRG	BEARING				
BTWN	BETWEEN	HSS	HOLLOW STRUCTURAL SECTION	SB	SOLID BLOCK
BU	BUILT-UP			SC	SLIP CRITICAL
BYND	BEYOND	HT	HEIGHT	SCBF	SPECIAL CONCENTRIC BRACED FRAME
C	AMERICAN STANDARD CHANNEL	ID	INSIDE DIAMETER		
CANT	CANTILEVER	U	I SHAPED WOOD BUILT UP TRUSS	SCD	SEE CIVIL DRAWINGS
CB	CARRIAGE BOLT	INT	INTERIOR	SED	SEE ELECTRICAL DRAWINGS
CIP	CAST IN PLACE	IT	INSIDE TOP	SEOR	STRUCTURAL ENGINEER OF RECORD
CGL	CERTIFIED GLUED LUMBER	JT	JOINT		
CJ	CONTROL JOINT	KP	KING POST	SFRS	SEISMIC FORCE RESISTING SYSTEM
$	CENTERLINE		STEEL ANGLE		
CJP	COMPLETE JOINT PENETRATION	Lb or #	POUND(s)	SHTG	SHEATHING
		LGMF	LIGHT GAGE METAL FRAMING	SIM	SIMILAR
CLG	CEILING			SKYLT	SKYLIGHT
CLR	CLEAR	LGMFC	LIGHT GAGE METAL FRAMING CONTRACTOR	SMF	SPECIAL MOMENT FRAME
COL	COLUMN			SMS	SHEET METAL SCREW
CONCJ	CONSTRUCTION JOINT	LL	LONG LEG	SPCD	SEE PLUMBING DRAWINGS
CONC	CONCRETE	LLH	LONG LEG HORIZONTAL	SOG	SLAB ON GRADE
CONN	CONNECTION	LLV	LONG LEG VERTICAL	SPCG	SPACING
CONT	CONTINUOUS	LOC	LOCATION	SPD	SEE PLUMBING DRAWINGS
COORD	COORDINATE/ COORDINATION	LS	LAG SCREW	SPEC	SPECIFICATION
		LSL	LAMINATED STRAND LUMBER	SQ	SQUARE
CMU	CONCRETE MASONRY UNIT	LVL	LAMINATED VENEER LUMBER	SS	SELECT STRUCTURAL or STAINLESS STEEL
CSK	COUNTERSINK	MAX	MAXIMUM		
CW	CUT WASHER	MB	MACHINE BOLT	STGR	STAGGERED
DBL	DOUBLE	MBM	MANUFACTURED BUILDING MANUFACTURER	STL	STEEL
DCW	DEMAND CRITICAL WELD			STFR	STIFFENER
DF	DOUGLAS FIR	MC	MISCELLANEOUS CHANNEL	STL	STEEL
DIA or ø	DIAMETER	MECH	MECHANICAL	STRUCT	STRUCTURAL
DIAG	DIAGONAL	MEZZ	MEZZANINE	SW	SHEAR WALL
DIM	DIMENSION	MF	MOMENT FRAME	SYM	SYMMETRICAL
DJ	DOWEL JOINT	MFR	MANUFACTURER	T&B	TOP AND BOTTOM
DL	DEAD LOAD	MIN	MINIMUM	T&G	TONGUE and GROOVE
DN	DOWN	MISC	MISCELLANEOUS	THK	THICK
DP	DEEP	MSTC	MALLEABLE IRON WASHER	THRD	THREADED
DWG	DRAWING	MTL	METAL	THRU	THROUGH
DWL	DOWEL	(N)	NEW	TL	TOTAL LOAD
EA	EACH	NIC	NOT IN CONTRACT	TN	TOE NAIL
EE	EACH END	NO or #	NUMBER	TOC	TOP OF CONCRETE
EF	EACH FACE	NS	NEAR SIDE	TOF	TOP OF FRAMING
ELEC	ELECTRICAL	NSG	NON-SHRINK GROUT	TOM	TOP OF MASONRY
ELEV	ELEVATOR/ELEVATION	NTS	NOT TO SCALE	TOP	TOP OF PLYWOOD
EMBED	EMBEDMENT	O/	OVER	TOS	TOP OF STEEL
EN	EDGE NAIL	OC	ON CENTER	TOW	TOP OF WALL
EQUIP	EQUIPMENT	OD	OUTSIDE DIAMETER	TU	TILT UP
ES	EACH SIDE	OH	OPPOSITE HAND	TYP	TYPICAL
EW	EACH WAY	OPNG	OPENING	UNO	UNLESS NOTED OTHERWISE
EXIST or (E)	EXISTING	OPP	OPPOSITE	VERT	VERTICAL
EXP	EXPANSION	OW	OTHERWISE	VIF	VERIFY IN FIELD
EXT	EXTERIOR	OWT	OPEN WEB TRUSS	VSH	VERTICAL SLOTTED HOLE
FDN	FOUNDATION	P	PLATE or PROPERTY LINE	W	WIDE FLANGE STEEL BEAM
FIN	FINISH	PA	POST ABOVE	W/	WITH
FG	FINISH GRADE	PAF	POWER ACTUATED PINS	W/O	WITHOUT
FLI	FERRULE LOOP INSERT	PEN	PANEL EDGE NAIL	WD	WOOD
FLR	FLOOR	PERP	PERPENDICULAR	WHS	WELDED HEADED STUD
FN	FACE NAIL	PES	PANEL EDGE SCREWS	WLD	WELDED
FOC	FACE OF CONCRETE	PJP	PARTIAL JOINT PENETRATION	WP	WORK POINT/WATERPROOF
FOM	FACE OF MASONRY	PLF	POUNDS PER LINEAR FOOT	WS	WOOD SCREW
FOS	FACE OF STUD	PNL	PANEL	WT	WEIGHT
FRMG	FRAMING	PSF	POUNDS PER SQUARE FOOT	WTS	WELDED THREADED STUD
FS	FAR SIDE	PSI	POUNDS PER SQUARE INCH	WWR	WELDED WIRE REINFORCEMENT
FTG	FOOTING	PSL	PARALLEL STRAND LUMBER		
GA	GAGE or GAUGE	PTB	PANEL TIE BAR		
GALV	GALVANIZED				



1 3D REFERENCE VIEW

THREE DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREE-DIMENSIONAL VIEWS.



2 3D REFERENCE VIEW

D FOUNDATION NOTES

1. FOUNDATION DESIGN PRESSURES ARE:

   2. SHALLOW FOOTINGS:
   DEAD LOAD + LIVE LOAD = 3,000 PSF
   DEAD LOAD + LIVE LOAD + LATERAL = 4,000 PSF

2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW, AND CHAPTER 18 OF THE CBC. ALL FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED, NATIVE SOILS OR ENGINEERED FILL AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. ENGINEERED FILL TO BE COMPACTED PER GEOTECHNICAL REPORT. INCREASE FILL AND OR FOOTING DEPTH AS REQUIRED BY GEOTECHNICAL ENGINEER. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. MAXIMUM OVER EXCAVATION IN WIDTH SHALL BE LESS THAN 12 INCHES OR 25% OF FOOTING WIDTH, WHICH EVER IS LESS. 6 INCHES MAXIMUM PER SIDE. LARGER OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH ADDITIONAL REINFORCED CONCRETE AS DIRECTED BY THE ENGINEER, OR FORMWORK SHALL BE PROVIDED. OVER-EXCAVATIONS IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE. GEOTECHNICAL REPORT BY:

   ROCKRIDGE GEOTECHNICAL
   PROJECT NO. 15-9198
   DATED: September 21, 2018

3. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, ETC.

E SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH CBC CHAPTER 17 AND THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY CBC SECTIONS 1704.2.3 AND 1704.3 FOR BUILDING STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. **SHOP FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES** PER CBC SECTION 1704.2.5 OR ALTERNATIVELY, APPROVED FABRICATORS SHALL SUBMIT A CERTIFICATE OF COMPLIANCE PER CBC SECTION 1704.2.5.1 INCLUDING GLULAM BEAM INSPECTION CERTIFICATES.

2. **STRUCTURAL STEEL CONSTRUCTION** PER CBC SECTIONS 1705.2, 1705.12.1, 1705.13.1, AND TABLE 1705.2.3 INCLUDING MATERIAL IDENTIFICATION, SHOP AND FIELD WELDING, AND INSTALLATION OF HIGH-STRENGTH BOLTS.

3. **CONCRETE CONSTRUCTION** PER CBC SECTIONS 1705.3, AND TABLE 1705.3 INCLUDING FORMWORK, REINFORCING STEEL, CAST-IN-PLACE BOLTS, MIX DESIGNS, CONCRETE SAMPLES, AND PLACEMENT FOR ALL CONCRETE. REINFORCING DOWELS FROM FOOTINGS TO RETAINING WALLS SHALL BE INSPECTED PRIOR TO PLACEMENT OF FOOTING CONCRETE AND WALL GROUT OR CONCRETE. CONTINUOUS OR ISOLATED SPREAD FOOTINGS WITH DESIGN STRENGTH NO GREATER THAN 2500 PSI, NON-STRUCTURAL SLABS ON GRADE, AND EXTERIOR FLATWORK DO NOT REQUIRE SPECIAL INSPECTION PER CBC SECTION 1705.3.

4. **SOILS** PER CBC SECTION 1705.6, TABLE 1705.6, AND THE APPROVED SOILS REPORT INCLUDING SUBGRADE PREPARATION, FOUNDATION BEARING MATERIALS AND DEPTH OF EXCAVATIONS, AND VERIFICATION, PLACEMENT AND TESTING OF CONTROLLED FILL.

5. **SPECIAL CASES** PER CBC SECTION 1705.1.1 AND PRODUCT ICC REPORTS FOR ALL STRUCTURAL MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE CBC OR REFERENCED STANDARDS INCLUDING POST-INSTALLED ANCHOR BOLTS IN CONCRETE AND CMU, AND PRE-MANUFACTURED SHEAR PANELS AND BRACED FRAMES.

F MATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY ULTIMATE COMPRESSIVE STRENGTH:
F'_c = 5,000 PSI FOUNDATIONS

REINFORCING STEEL YIELD STRENGTH:
F_y = 40,000 PSI AT #3 AND SMALLER
F_y = 60,000 PSI AT #4 AND LARGER

STEEL YIELD STRENGTH (UNO):
F_y = 50,000 PSI W SHAPES
F_y = 36,000 PSI ANGLES, CHANNELS, AND PLATES
F_y = 50,000 PSI PLATES AT MOMENT FRAME CONNECTIONS
F_y = 46,000 PSI RECTANGULAR HSS
F_y = 42,000 PSI ROUND HSS
F_y = 35,000 PSI PIPES

FASTENERS:
MACHINE BOLTS SHALL BE ASTM A307
HIGH STRENGTH BOLTS SHALL BE ASTM F3125 GRADE A325 OR F1852 UNO
ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNO
ARC-WELDING ELECTRODES SHALL BE E70

COLD FORMED METAL FRAMING YIELD STRENGTH:
F_y = 33,000 PSI 33 & 43 MILS (20 & 18 GAUGE)
F_y = 50,000 PSI 54, 68, & 97 MILS (16, 14, & 12 GAUGE)

FOR METAL CONNECTOR DESIGNATION REFER TO SIMPSON STRONG-TIE PER SPECIFICATIONS.

A DESIGN CRITERIA

DESIGN CRITERIA: 2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
FLOOR LIVE LOAD: 60 PSF (REDUCIBLE) + 15 PSF PARTITION
ROOF LIVE LOAD: 20 PSF (REDUCIBLE)
FUTURE SOLAR: 4 PSF
RISK CATEGORY: II
WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110
WIND EXPOSURE: C
INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18
COMPONENTS AND CLADDING DESIGN PRESSURES FOR SYSTEMS DESIGNED BY OTHERS SHALL COMPLY WITH THE "ASCE 7" DESIGN STANDARD

EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_e: 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS:
S_s = 1.923; S_1 = 0.777
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS:
S_{DS} = 1.282; S_{D1} = 0.777
SEISMIC DESIGN CATEGORY: E
SEISMIC FORCE RESISTING SYSTEM: STEEL SPECIAL CANTILEVERED COLUMN
RESPONSE MODIFICATION FACTOR(S): R = 2.5
DESIGN BASE SHEAR:
SEISMIC RESPONSE COEFFICIENT(S), C_S = 0.400 (LRFD)
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

MAXIMUM ANTICIPATED STORY DRIFT = 0.025 X HEIGHT
PROVIDE DEFORMATION COMPATIBILITY PER ASCE 7 SECTION 12.12.5 FOR NON-STRUCTURAL ITEMS, INCLUDING CLADDING, STAIRS, GLAZING, ETC.

NARRATIVE: BUILDING #9: ENTRY CANOPY

GENERAL DESCRIPTION: CANOPY STRUCTURE IS NOT INTENDED TO BE DESIGNATED AS ESSENTIAL SERVICE FACILITY AND WILL NOT BE USED FOR THAT PURPOSE.

B GENERAL NOTES

1. REFER TO SHEETS **9-S1.10** THROUGH **9-S1.50** FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.
2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.
6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
7. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL ENGAGE A LICENSED CIVIL OR STRUCTURAL ENGINEER TO PROVIDE SHORING.
8. SPECIAL INSPECTIONS ARE REQUIRED PER **E/9-S0.10** AND THE TESTING AND INSPECTION FORM.
9. STRUCTURAL OBSERVATION PER CBC SECTION 1704.6 IS NOT REQUIRED.NOTIFY ZFA FOR GENERAL REVIEW OF:
10. MINIMUM FOOTING SIZE AND REINFORCING STEEL.

    NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE.
11. SUBMIT ENGINEERING FOR DEFERRED APPROVAL ITEMS TO ARCHITECT/ENGINEER FOR REVIEW AND SUBMITTAL TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO FABRICATION. DEFERRED APPROVAL ITEMS SHALL BE DESIGNED AND DETAILED BY MANUFACTURER TO ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS AS NOTED IN STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL REVIEW AND APPROVE DIMENSIONS AND DETAILS SHOWN ON THE SHOP DRAWINGS PRIOR TO SUBMITTAL. MANUFACTURER TO PROVIDE DRAWINGS AND CALCULATIONS DESIGNED IN ACCORDANCE WITH THE CBC AND SPECIFICATIONS, PREPARED AND SIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER FOR THE FOLLOWING ITEMS, UNLESS NOTED OTHERWISE:

    A. ROOF MOUNTED SOLAR EQUIPMENT.

C STEEL NOTES

1. COORDINATE TOP OF FOOTING ELEVATIONS AS DETERMINED BY THE CONTRACTOR PER **D/9-S0.10** NOTE #3.
2. TOP OF STEEL ELEVATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS.
3. WHERE INDICATED ON PLAN "C" INDICATES MIDSPAN CAMBER IN INCHES.
4. ALL FRAMING AND CONNECTIONS ALONG GRID LINES OR OTHERWISE INDICATED AS (SFRS) ARE PART OF THE SEISMIC FORCE RESISTING SYSTEM. TESTING AND INSPECTION OF FRAMING AND CONNECTIONS INDICATED AS SFRS SHALL MEET ALL REQUIREMENTS OF AISC 341 AND AWS D1.8. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. ALL BOLTS THAT ARE A PART OF THE SFRS ARE TO BE SLIP CRITICAL.
6. DEMAND CRITICAL WELDS ARE AS INDICATED ON PLANS, ADDITIONALLY ALL COLUMN SPLICES AND COLUMN TO BASE PLATE WELDS IN THE SFRS ARE DEMAND CRITICAL. DEMAND CRITICAL WELDS AND THE TESTING AND INSPECTION OF THEM ARE TO MEET ALL REQUIREMENTS OF AISC 341, AWS D1.1, AND AWS D1.8. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

   ALL STEEL CONNECTIONS AND MEMBERS ARE PART OF THE SEISMIC FORCE RESISTANCE SYSTEM (SFRS) UNLESS SPECIFICALLY NOTED OTHERWISE.

STRUCTURAL SHEET INDEX

9-S0.10	BUILDING 9	GENERAL NOTES AND SPECIFICATIONS
9-S1.10	BUILDING 9	TYPICAL CONCRETE DETAILS
9-S1.20	BUILDING 9	STEEL FRAMING DETAILS
9-S1.50	BUILDING 9	TYPICAL METAL DECKING DETAILS
9-S2.10	BUILDING 9	FLOOR PLAN, ROOF PLAN
9-S3.10	BUILDING 9	ELEVATIONS
9-S4.10	BUILDING 9	DETAILS AND SECTIONS
9-SS2.30	BUILDING 9	SOLAR ROOF PLAN, NOTES & DETAILS
9-SS2.31	BUILDING 9	SOLAR NOTES AND DETAILS

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 WEST WINTON AVE. HAYWARD, CA 94545

REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/6/2019

PERMIT SUBMITTAL V3

ZFA STRUCTURAL ENGINEERS
1390 el camino real | suite 100 zfa.com
san carlos ca 94070 650.394.8869

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 9 GENERAL NOTES AND SPECIFICATIONS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

9-S0.10
Drawing No.

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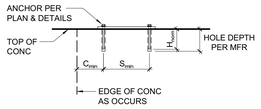
SCREW ANCHOR IN 2500 PSI MIN CONCRETE							
ANCHOR TYPE	ANCHOR AND PILOT HOLE DIA	MINIMUM EMBEDMENT H_{nom}	MINIMUM EDGE DIST C_{min}	MINIMUM SPCG S_{min}	MINIMUM CONCRETE DEPTH H_{min}	INSTALL TORQUE (FT-LB)	MAX INSTALL TORQUE (FT-LB)
SIMPSON TITEN HD (ICC-ESR 2713)	⅜"	2½"	1¾"	3"	4"	10	50
	½"	3¼"	1¾"	3"	5"	10	65
	⅝"	4"	1¾"	3"	6"	10	100
	¾"	5½"	1¾"	3"	8¾"	20	150
HILTI KH-EZ (ICC-ESR 3027)	⅜"	2½"	1½"	3"	4"	10	40
	½"	3"	1¾"	3"	4¾"	10	45
	⅝"	3¼"	1¾"	4"	5"	10	85
	¾"	4"	1¾"	4"	6"	20	115

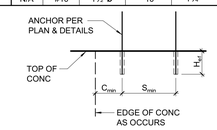


NOTES:

1. INSTALL SCREW ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 OF THE CBC AND THE REQUIREMENTS OF THE ICC REPORTS. INSTALLED ANCHORS SHALL BRING CONNECTED PLIES INTO FIRM CONTACT, MEETING THE INSTALL TORQUE BUT NOT EXCEEDING THE MAXIMUM INSTALL TORQUE.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.
5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 .

8 SCREW ANCHOR IN CONCRETE
3/4" = 1'-0"

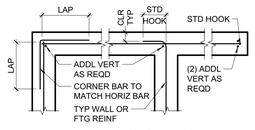
ADHESIVE ANCHOR IN 2500 PSI MIN CONCRETE							
ADHESIVE TYPE	ANCHOR THRD ROD	ANCHOR REBAR	PILOT HOLE	MIN EMBED UNO H_{ef}	MIN EDGE DISTANCE C_{min}	MIN SPCG S_{min}	MIN CONC DEPTH H_{min}
SIMPSON SET-XP (ICC-ESR 2508)	⅜"ø	#3	½"ø	3"	1¾"	3"	5"
	½"ø	#4	⅝"ø	4"	1¾"	3"	6½"
	⅝"ø	#5	¾"ø	5"	1¾"	3"	8½"
	¾"ø	#6	⅞"ø	6"	1¾"	3"	9½"
	⅞"ø	#7	1"ø	7"	1¾"	3"	11½"
	1"ø	#8	1⅛"ø	8"	1¾"	3"	13"
	1¼"ø	#10	1⅜"ø	10"	2½"	6"	16½"
HILTI HIT-HY 200R (ICC-ESR 3187)	⅜"ø	N/A	⅞"ø	3"	1¾"	1¾"	4½"
	N/A	#3	½"ø	3"	1¾"	1¾"	4½"
	½"ø	N/A	⅝"ø	4"	1¾"	2½"	5½"
	N/A	#4	⅝"ø	4"	1¾"	2½"	5½"
	⅝"ø	#5	¾"ø	5"	1¾"	3¼"	6½"
	¾"ø	#6	⅞"ø	6"	1¾"	3¾"	7¾"
	⅞"ø	#7	1"ø	7"	1¾"	4⅜"	9"
	1"ø	#8	1⅛"ø	8"	1¾"	5"	10¼"
	N/A	#9	1⅜"ø	9"	1¾"	5⅝"	11¾"
	1¼"ø	N/A	1⅜"ø	10"	1¾"	6¼"	12¾"
	N/A	#10	1½"ø	10"	1¾"	6¼"	13"



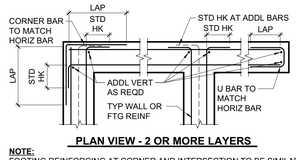
NOTES:

1. INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING, AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORTS. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND ADHESIVE INJECTION. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910.5 . SEE DRAWINGS FOR SPECIFIC TENSION TEST LOADS FOR ANCHORS.

9 ADHESIVE ANCHOR IN CONCRETE
3/4" = 1'-0"



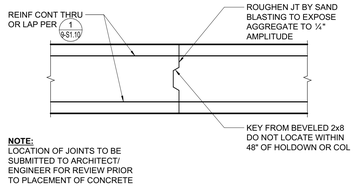
PLAN VIEW - SINGLE LAYER



PLAN VIEW - 2 OR MORE LAYERS

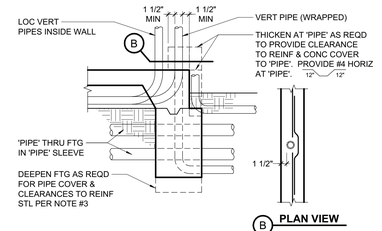
NOTE:
FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

5 TYPICAL CORNER, INTERSECTION AND END REINFORCING
3/4" = 1'-0"



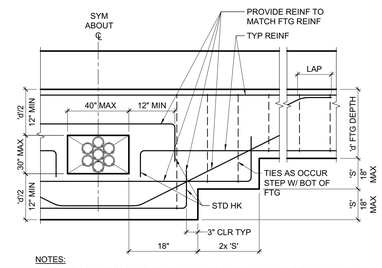
NOTE:
LOCATION OF JOINTS TO BE SUBMITTED TO ARCHITECT/ ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE

6 FOOTING CONSTRUCTION JOINT
3/4" = 1'-0"



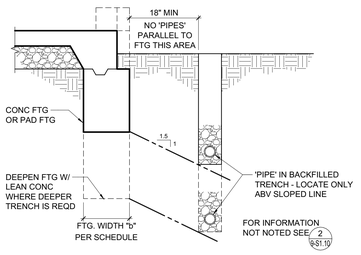
NOTES:
1. 'PIPE' = ANY PENETRATION THRU OR EMBEDDED IN FOUNDATION.
2. ALL PIPES THROUGH FOOTINGS TO BE WRAPPED OR SLEEVED AS FOLLOWS:
   a. SLEEVES: PROVIDE 1" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE, UNO. SEAL SLEEVE ENDS W/ MASTIC OR PLASTIC BITUMINOUS CEMENT.
   b. WRAPPED VERTICAL PIPES: PROVIDE ¼" NOMINAL SHEET FOAM W/ (3) WRAPS MINIMUM, UNO.
   c. WRAPPED HORIZONTAL PIPES: PROVIDE ¼" NOMINAL SHEET FOAM W/ (8) WRAPS MINIMUM, UNO.
   d. UNDERGROUND FIRE LINES 4" AND LARGER:
      1. SLEEVES: PROVIDE 2" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE. SEAL ENDS PER ABOVE.
      2. WRAPPED: PROVIDE ¼" NOMINAL SHEET FOAM W/ (16) WRAPS MINIMUM.
3. WRAPPED AND SLEEVED PIPES SHALL HAVE 1½" MIN CLEAR TO REINF STEEL. MINIMUM CONCRETE COVER AT PIPES TO BE 3".
4. CLEARANCE BETWEEN 'PIPES' TO BE 3d MIN TYP W/ A MAXIMUM OF (8) PIPES PER 48". GROUPS OF PIPES MAY BE BUNDLED AS SHOWN, EXCEPT IN PAD FOOTINGS.
5. NO 'PIPE' TO RUN PARALLEL IN FOOTINGS, STEM OR CURB.
6. PVC CONDUIT ('PIPE') EMBEDDED IN CURB/STEM MAY BE WIRE TIED TO HORIZONTAL REINF.
7. NO HORIZONTAL PIPES ALLOWED THROUGH FOOTING WITHIN 2'-0" EACH SIDE OF HOLDOWNS OR STEEL COLUMNS. NO VERTICAL PIPES ALLOWED IN FOOTINGS AT BRACED FRAMES.
8. PROVIDE 18" MIN OF COMPACTED FILL ABOVE PIPES UP TO 12"ø, FOR LARGER PIPES INCREASE COMPACTED FILL DEPTH 1'-0" OF FOR EACH 6" INCREASE IN PIPE DIAMETER. OTHERWISE DEEPEN FOOTING AS SHOWN.

2 PIPES THRU FOOTING
3/4" = 1'-0"



NOTES:
1. DO NOT LOCATE BLOCKOUT WITHIN 48" OF SHEAR WALL HOLD DOWN, IN FRAME FOUNDATIONS OR COLUMN PAD FOOTINGS.
2. MINIMUM DISTANCE BETWEEN BLOCKOUTS OR OTHER PIPES TO BE 48".

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



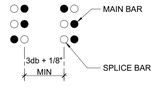
4 TRENCHING ADJACENT TO FOOTING
3/4" = 1'-0"

DEVELOPMENT LENGTHS (ld) GR60										
	LOCATION	SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'_c = 3000 PSI AT 28 DAYS	TOP	12"	22"	32"	43"	69"	86"	103"	122"	141"
	OTHER	12"	17"	25"	33"	53"	66"	80"	94"	109"
CONCRETE f'_c = 4000 PSI AT 28 DAYS	TOP	12"	19"	28"	37"	60"	74"	90"	106"	122"
	OTHER	12"	15"	21"	29"	46"	57"	69"	81"	94"
CONCRETE f'_c = 5000 PSI AT 28 DAYS	TOP	12"	17"	25"	34"	54"	67"	80"	95"	109"
	OTHER	12"	13"	19"	26"	42"	51"	62"	73"	84"

HOOKED DEVELOPMENT LENGTHS (Ldh)										
	LOCATION	SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'_c = 3000 PSI AT 28 DAYS	ANY	9"	11"	14"	17"	20"	22"	25"	28"	-
CONCRETE f'_c = 4000 PSI AT 28 DAYS	ANY	8"	10"	12"	15"	17"	19"	22"	24"	-
CONCRETE f'_c = 5000 PSI AT 28 DAYS	ANY	7"	9"	11"	13"	15"	17"	20"	22"	-

LAP SPLICE LENGTHS (Ls) GR60										
	LOCATION	SIZE								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE f'_c = 3000 PSI AT 28 DAYS	TOP	17"	28"	41"	56"	90"	112"	134"	158"	183"
	OTHER	13"	22"	32"	43"	69"	86"	103"	122"	141"
CONCRETE f'_c = 4000 PSI AT 28 DAYS	TOP	15"	25"	36"	49"	78"	97"	116"	137"	159"
	OTHER	12"	19"	28"	37"	60"	74"	90"	106"	122"
CONCRETE f'_c = 5000 PSI AT 28 DAYS	TOP	13"	22"	32"	44"	70"	87"	104"	123"	142"
	OTHER	12"	17"	25"	34"	54"	67"	80"	95"	109"

NOTES:
1. TOP REINFORCING IS HORIZONTAL REINFORCEMENT WITH MORE THAN TWELVE INCHES (12") OF CONCRETE PLACED BELOW IT.
2. IF THE LAP SPLICE REINFORCEMENT DOES NOT HAVE A MINIMUM SPACING 3db + 1/8 INCHES & A MINIMUM COVER OF db + 1/8 INCHES, USE WELDED SPLICE OR MECHANICAL CONNECTOR.



3. HOOKED DEVELOPMENT LENGTHS (Ldh) MAY BE USED IN LIEU OF DEVELOPMENT LENGTH (Ld) IF STANDARD HOOK IS PROVIDED AT END OF BAR.
4. MECHANICAL CONNECTORS SHALL BE TENSION-COMPRESSION TYPE WITH THE ABILITY TO DEVELOP 125% OF THE YIELD STRENGTH FOR THE SPLICED REINFORCEMENT (75 KSI). MECHANICAL CONNECTORS SHALL HAVE & BE INSTALLED PER AN ICC EVALUATION REPORT.
5. WWR SHALL LAP MINIMUM (3) BAR CROSSINGS.

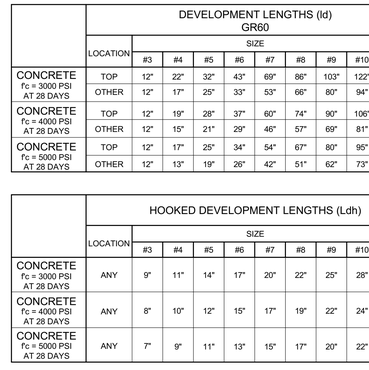
CONCRETE COVER FOR REINFORCING STEEL 'CLR'

CAST AGAINST EARTH OR GRADE . . . . . 3"

EXPOSED TO EARTH (FORMED) OR WEATHER;
#5 AND SMALLER . . . . . 1½"
#6 AND LARGER . . . . . 2"

NOT EXPOSED TO EARTH OR WEATHER;
#5 AND SMALLER . . . . . 1"
#6 AND LARGER, AND ALL BEAM STIRRUPS, COLUMN TIES AND SPIRALS . . . . . 1½"

ALL REINFORCING BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN A STANDARD 90° OR 180° HOOK UNLESS DETAILED OTHERWISE.



PRINCIPAL REINF

REINF	Dmin
#3 TO #8	6 db
#9 TO #11	8 db
#14 TO #18	10 db

CROSSTIES, HOOPS & STIRRUPS

REINF	Dmin
#3	1 1/2"
#4	2"
#5	2 1/2"

NOTE:
1. ALL BENDS SHALL BE MADE COLD.

1 REINFORCING LAPS AND SPLICES AND BENDS
1" = 1'-0"

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HEART OF THE BAY

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 9 TYPICAL CONCRETE DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

9-S1.10
Drawing No.

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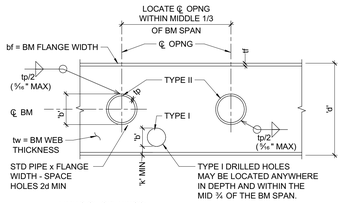


LIMITS OF OPENINGS:
TYPE I: b = 1/5d MAX.
SPACED A MINIMUM OF 2d APART
TYPE II:b = 2/3d MAX
SPACED A MINIMUM 2d APART

NOTES:
1. PROVIDE HOLES IN BEAMS ONLY WHERE SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS.
2. DO NOT TORCH CUT OPENINGS ON SITE. TORCH CUT OPENINGS MADE IN SHOP TO BE GROUND SMOOTH. NO OVERCUTS OF ANY TYPE ALLOWED WITHOUT REPAIR.

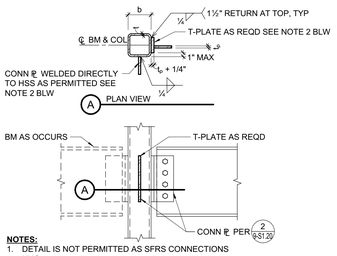
11 OPENING IN STEEL BEAM
3/4" = 1'-0"

SEE 2 9-S1.20 FOR CONN ℄, BOLTS, & WELD

12 TYPICAL BEAM TO BEAM CONNECTION
3/4" = 1'-0"

SEE 2 9-S1.20 FOR CONN ℄, BOLTS, & WELD

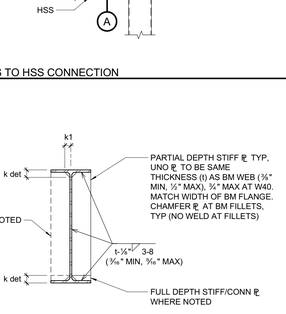
13 TYPICAL FULL DEPTH BEAM TO BEAM CONNECTION
3/4" = 1'-0"



NOTES:
1. DETAIL IS NOT PERMITTED AS SFRS CONNECTIONS UNO.
2. IT IS PERMITTED TO OMIT T-PLATE AND WELD CONN ℄ DIRECTLY TO FACE OF HSS COL WHERE BOTH OF THE FOLLOWING ARE SATISFIED:
   a. bt ≤ 33.7 AND
   b. t ≤ ⅜t_b (OR ¼t_b FOR 50 KSI ℄)

FOR CONN ℄, BOLTS & WELD SEE 2 9-S1.20

6 BEAM TO HSS COLUMN ('T' PLATE)
3/4" = 1'-0"



7 BEAM TO HSS COLUMN (2-WAY)
3/4" = 1'-0"

8 HSS BEAM TO HSS COLUMN
3/4" = 1'-0"

9 TYPICAL HSS TO HSS CONNECTION
3/4" = 1'-0"

10 TYPICAL BEAM WEB STIFFENER PLATE DETAIL
3/4" = 1'-0"

BM DEPTH	NO. BOLTS PER ROW	CONN. PLATE	WELD SIZE
W8, W10	2	℄ ¾"	⅜"
W12, W14	3	℄ ¾"	⅜"
W16	4	℄ ¾"	⅜"
W18	5	℄ ⅝"	⅜"
W21	6	℄ ⅝"	⅜"
W24	6	℄ ½"	⅜"
W27	7	℄ ½"	⅜"
W30	8	℄ ½"	⅜"
W33	9	℄ ½"	⅜"
W36	10	℄ ½"	⅜"

NOTES:
1. R = 1½" SEE TYP CONNECTION DETAILS. BOLT SPACING AND EDGE DISTANCE SHALL CONFORM TO AISC SPECIFICATIONS.
2. A COMPLETE PENETRATION BEVEL WELD MAY BE SUBSTITUTED FOR THE FILLET WELDS SPECIFIED.
3. USE ASTM A36 CONNECTION PLATES, UNO.
4. HOLE SIZE = BOLT SIZE + ⅛". SHORT SLOTTED HOLES (+ ¼" VERT, + ¼" HORIZ) MAY BE SUBSTITUTED (EXCEPT AS NOTED).

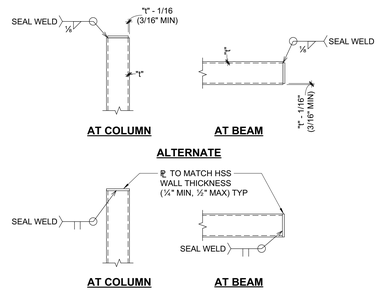
1 ¾"ø MACHINE BOLT (MB) CONNECTION SCHEDULE

BM DEPTH	NO. BOLTS PER ROW	CONN. PLATE	WELD SIZE
W8, W10	2	℄ ¾"	⅜"
W12, W14	3	℄ ¾"	5⁄16"
W16	4	℄ ¾"	5⁄16"
W18	5	℄ ¾"	5⁄16"
W21	5	℄ ½"	⅜"
W24	6	℄ ½"	⅜"
W27	7	℄ ½"	⅜"
W30	8	℄ ½"	⅜"
W33	9	℄ ½"	⅜"
W36	10	℄ ½"	⅜"

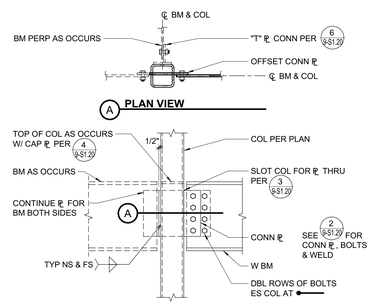
NOTES:
1. R = 1¾" SEE TYP CONNECTION DETAILS. BOLT SPACING AND EDGE DISTANCE SHALL CONFORM TO AISC SPECIFICATIONS.
2. HIGH STRENGTH BOLTS (HSB) ARE GRADE A325-N UNO. PREPARE MATING SURFACES & TIGHTEN "SNUG TIGHT" AS DEFINED IN THE SPECIFICATIONS.
3. USE ASTM A36 CONNECTION PLATES, UNO.
4. A COMPLETE PENETRATION BEVEL WELD MAY BE SUBSTITUTED FOR THE FILLET WELDS SPECIFIED.
5. HOLE SIZE = BOLT SIZE +⅛". SHORT SLOTTED HOLES (+⅛" VERT, + ¼" HORIZ) MAY BE SUBSTITUTED (EXCEPT AS NOTED) ROUND HOLES ARE REQUIRED AT SFRS CONNECTIONS..

2 ⅞"ø HIGH STRENGTH BOLT (HSB) CONNECTION SCHEDULE
3/4" = 1'-0"

3 TYPICAL SLOTTED HSS FOR GUSSET CONNECTION
1 1/2" = 1'-0"



4 TYPICAL CAP PLATE
3/4" = 1'-0"



5 BEAM EACH SIDE TO HSS COLUMN
3/4" = 1'-0"

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Sheet Title

BUILDING 9
STEEL FRAMING DETAILS

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

9-S1.20
Drawing No.

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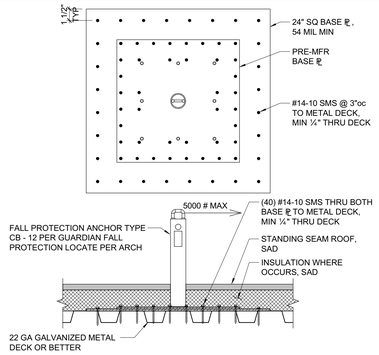
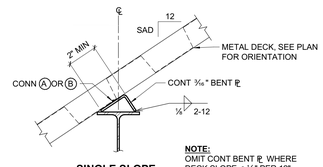


8 FALL RESTRAINT ANCHOR
1 1/2" = 1'-0"

MARK	STEEL DECK GAGE & PROFILE TYPE SEE 4/S1.50	DECK CONNECTIONS						MINIMUM SLAB FILL THICKNESS ABV DECK	MINIMUM SLAB FILL REINFORCING	REMARKS
		END/INT BEARING CONN Ⓐ		SIDE BEARING CONN Ⓑ		SIDELAP CONNECTION Ⓒ				
		SIZE & TYPE	PATTERN	SIZE & TYPE	SPACING	SIZE & TYPE	SPACING			
4	G - 22 GA	¾"ø PW	36/9	¾"ø PW	12"	1½" TSW OR ¾"x1½" ASW	12"	NO CONCRETE COVER. SAD FOR INSUL	N/A	SEE 2/9-S1.50 FOR SCREW CONNECTION

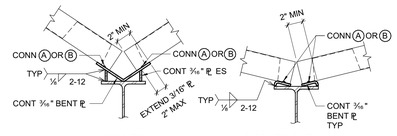
NOTES:
1. PUDDLE WELD WITH ⅝" ø MIN OF FUSION (EFFECTIVE WELD). ATTACH DECK TO ALL STEEL SUPPORT FRAMING AS OCCURS.
2. PW= ½" ø MIN OF FUSION (EFFECTIVE WELD).
3. TSW= TOP SEAM WELD (¼" FILLET).
4. ASW= ARC SEAM WELD.
5. BP = BUTTON PUNCH.
6. VSC2 = VERCO SIDE LAP CONNECTION.
7. PINS = HILTI X-ENP-19 PER ICC ESR-2197.
8. ABOVE REFERENCED DECKS AND COMPOSITE DEPTHS ARE BASED ON ALLOWABLE DESIGN LOADS PER IAPMO ER-0217 VERCO MANUFACTURING, ESR-2047 EPIC METAL DECK CORP - EQUIVALENT DECK MUST HAVE EQUIVALENT ALLOWABLE VERTICAL LOADS, DIAPHRAGM SHEAR VALUES, AND FLEXIBILITY FACTORS.
9. SHORING OF DECK REQUIRED AT SINGLE SPAN & 2 SPAN CONDITIONS. NOT REQUIRED AT 3 SPAN CONDITIONS. AT CONTRACTOR'S OPTION, HEAVIER DECK MAY BE USED TO AVOID SHORING PER SEOR WRITTEN APPROVAL.

1 DECKING SCHEDULE
3/4" = 1'-0"



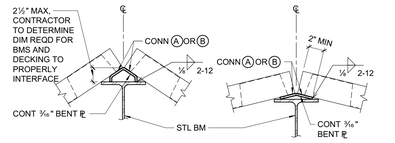
SINGLE SLOPE

NOTE:
OMIT CONT BENT ℄ WHERE DECK SLOPE < ½" PER 12"



VALLEY

VALLEY ALT



RIDGE/HIP

RIDGE/HIP ALT

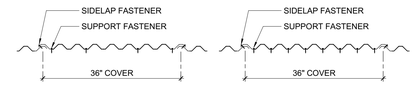
NOTE:
OMIT CONTINOUS BENT ℄ WHERE DECK SLOPE < ½" PER 12"

5 TYPICAL SLOPED DECK SUPPORT
1 1/2" = 1'-0"

1. SCHEDULED OR REFERENCED DECKS ARE BASED ON ALLOWABLE DESIGN LOADS PER IAPMO ER-0217 VERCO MANUFACTURING PHOENIX, ARIZONA - EQUIVALENT DECK MUST HAVE EQUIVALENT ALLOWABLE LOADS.
2. SCREWS FOR DECK TO DECK SEAM FASTENING SHALL BE No. 12-14 x ¾" TEKS 1. SCREWS FOR DECK SUPPORT FASTENING SHALL BE ONE OF THE FOLLOWING:

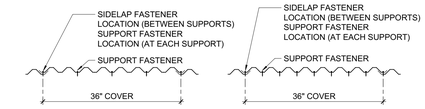
FASTENER DESCRIPTION	SUPPORT THICKNESS
#12-14 x ¾" TEKS 3	16 GAGE TO ⅛"
#12-24 x ⅛" TEKS 4	⅛" TO ¼"
#12-24 x 1¼" TEKS 5	⅛" TO ½"

3. SEE ICC-ES ER-3056 AND ESR-1976 FOR ADDITIONAL DETAILS ON TEKS SCREWS.
4. DECK SUPPORT FASTENER PATTERNS ARE AS DESCRIBED IN (A).
5. EIGHT OR FOUR SCREWS USED FOR INVERTED 1⅝" VERCOR. NINE OR FIVE SCREWS USED FOR "NORMAL" 1⅝" VERCOR.



36/4 PATTERN - INVERTED 1⅝" VERCOR

36/8 PATTERN - INVERTED 1⅝" VERCOR

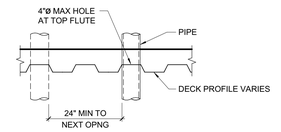


36/5 PATTERN - "NORMAL" 1⅝" VERCOR

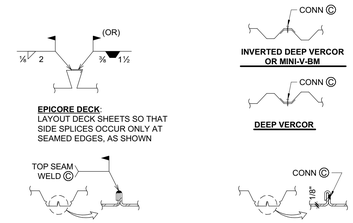
36/9 PATTERN - "NORMAL" 1⅝" VERCOR

A TEKS FASTENER PATTERN FOR 1⅝" VERCOR

2 DECKING SCHEDULE - SCREW CONNECTIED
3/4" = 1'-0"

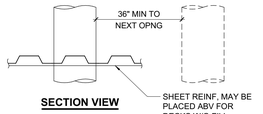


6 TYPICAL UNREINFORCED OPENING IN DECK (≤ 4")
3/4" = 1'-0"

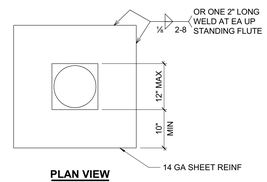


NOTE:
BUTTON PUNCH AND VERCO SIDE LAP CONN NOT SHOWN.

3 TYPICAL DECK SIDE LAP CONNECTION
3" = 1'-0"

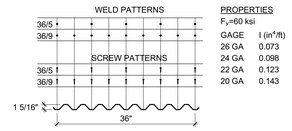


SECTION VIEW



PLAN VIEW

7 TYPICAL REINFORCED OPENING IN DECK (LESS THAN 12")
3/4" = 1'-0"



TYPE "G" DECK
VERCO DEEP VERCOR OR APPROVED EQUAL

4 DECKING TYPE AND CONNECTION PATTERN
3/4" = 1'-0"

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APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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Sheet Title

BUILDING 9 TYPICAL METAL DECKING DETAILS

Drawn By: LS Checked By: SRP

Scale: As indicated

Date: October 4, 2019

Project No. 17143

9-S1.50
Drawing No.

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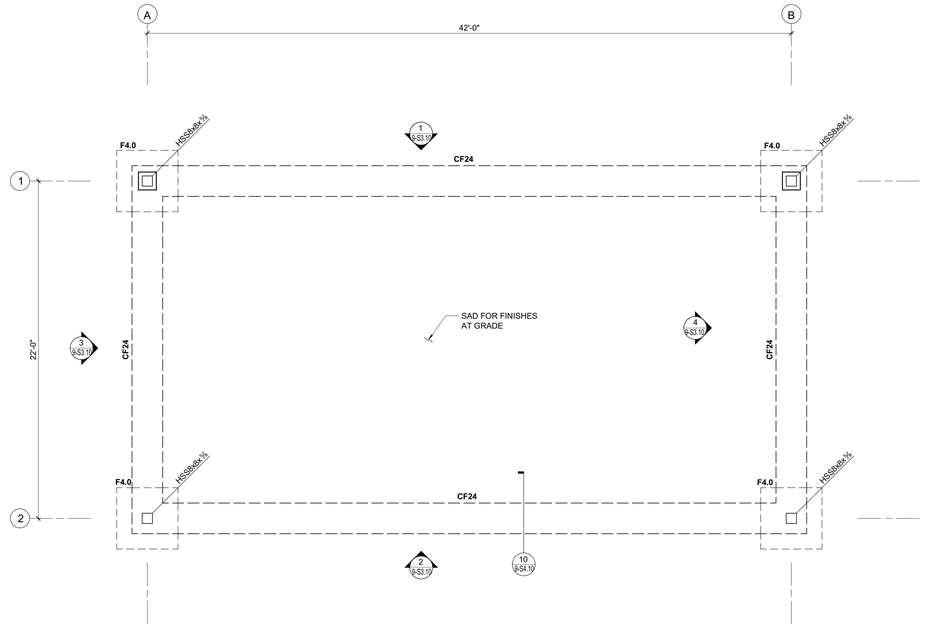
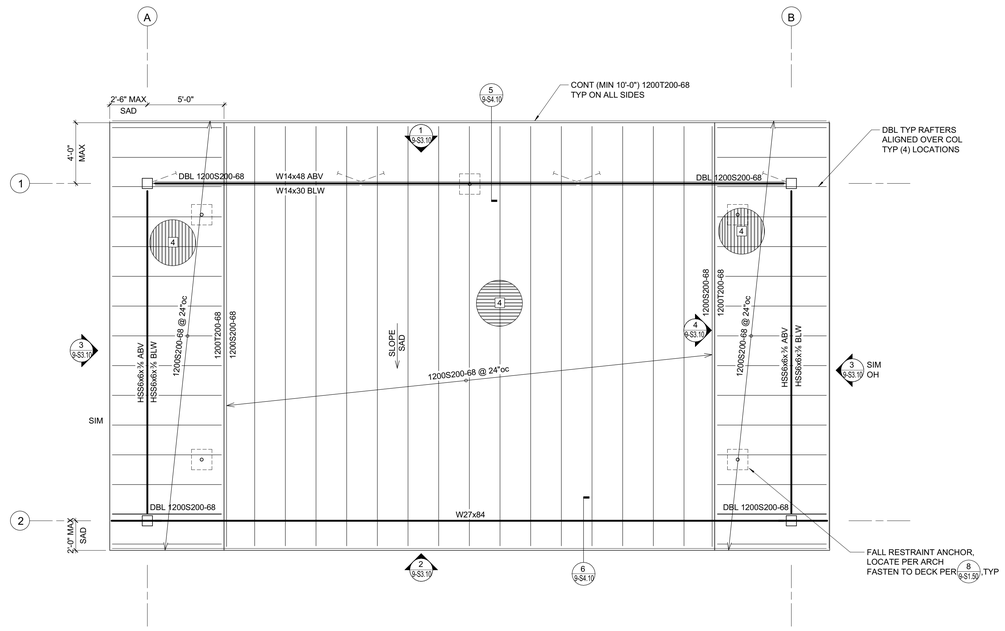


NORTH

FOUNDATION PLAN

1/4" = 1'-0"



NORTH

ROOF FRAMING PLAN

1/4" = 1'-0"

FOUNDATION PLAN NOTES:

1. REFER TO SHEETS **9-S0.10** THROUGH **9-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. SEE DETAILS OR CURB PLAN FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
4. PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO PIPES OR CONDUITS THRU SILL PLATES SHALL BE WITHIN 12" OF HOLDOWN BOLTS. NO MECHANICAL, ELECTRICAL, OR PLUMBING OPENINGS SHALL BE LOCATED IN SHEAR WALLS UNLESS SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

   PIPES THROUGH FOOTINGS SHALL BE PER **2/9-S1.10** AND **3/9-S1.10** .

   PIPES PARALLEL TO FOOTINGS SHALL BE PER **4/9-S1.10** .
5. ELEVATION OF THE TOP OF FINISHED SLAB = 0'-0", UNLESS NOTED OTHERWISE.

PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
		INDICATES CONCRETE CASING @ COL BASE.
		INDICATES STEEL COLUMN.
		INDICATES FOUNDATION.
CF24		INDICATES CONTINUOUS FOOTING SIZE AND REINFORCING PER SCHEDULE.
F1		INDICATES PAD FOOTING SIZE AND REINFORCING PER SCHEDULE
88		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
1 S3.1		INDICATES ELEVATION.
		INDICATES ANGLE BRACED BELOW.
TOF - 10"		INDICATES TOP OF FOOTING RELATIVE TO 0'-0". TOP OF FOOTING SHALL BE -10", UNLESS NOTED OTHERWISE. TOP OF FOOTING ELEVATIONS ARE TO BE COORDINATED BY THE CONTRACTOR UTILIZING THE STRUCTURAL, CIVIL, GEOTECHNICAL, AND LANDSCAPE DRAWINGS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO CONSTRUCTION.
1	**1/9-S1.50**	INDICATES BARE METAL DECK AND DIRECTION OF DECK SPAN. SEE SCHEDULE FOR ADDITIONAL INFORMATION.

PAD FOOTING SCHEDULE			
MARK	**WIDTH "b"**	**DEPTH "d"**	**REINFORCING**
F4.0	4'-0" SQ	18"	(4) #6 EW T & B

GRADE BEAM SCHEDULE				
MARK	**WIDTH**	**DEPTH**	**REINF BARS**	**TIES**
CF24	24"	24"	(4) #6 T&B	#4 @ 12" oc

FRAMING PLAN NOTES:

1. REFER TO SHEETS REFER TO SHEETS **9-S0.10** THROUGH **9-S1.50** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMING, COLUMNS, OR ASE PLATES. CONDUIT OR PLUMBING NOT ALLOWED WITHIN CONCRETE FILL ON METAL DECK. PROVIDE FURRING WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE RESTRICTIONS.
4. SEE ARCHITECTURAL & CIVIL DRAWINGS FOR EDGE OF SLAB, FACE OF WALL, ETCETERA.
5. SEE ARCHITECTURAL DRAWINGS FOR TOP OF STEEL ELEVATION.
6. BEAM CENTERLINES TO ALIGN WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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REGISTERED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4861 STATE OF CALIFORNIA

Sheet Title

BUILDING 9
FLOOR PLAN, ROOF PLAN

Drawn By: LS Checked By: SRP

Scale: **As indicated**

Date: **October 4, 2019**

Project No. 17143

9-S2.10
Drawing No.

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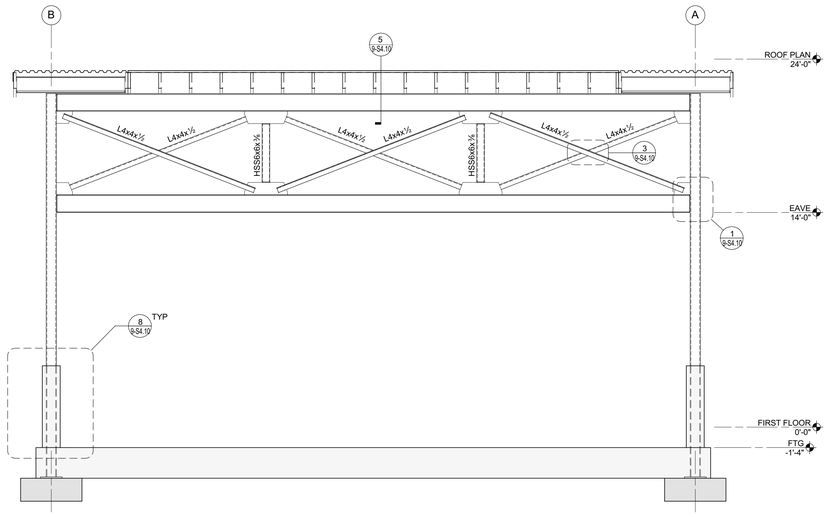
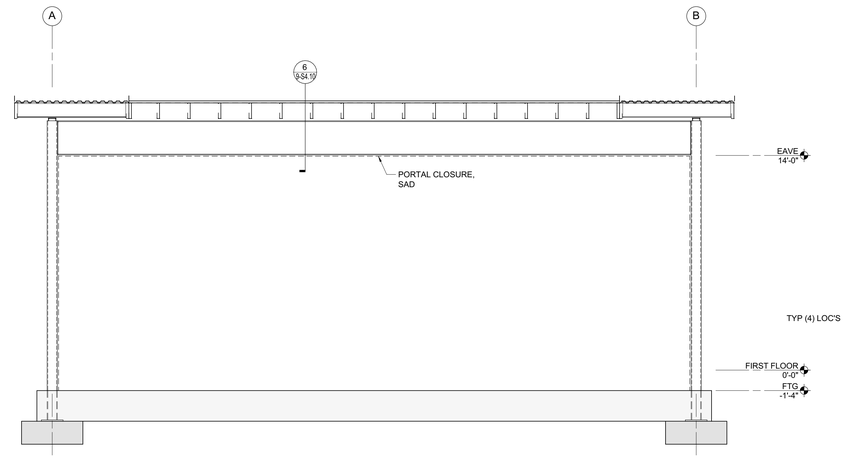
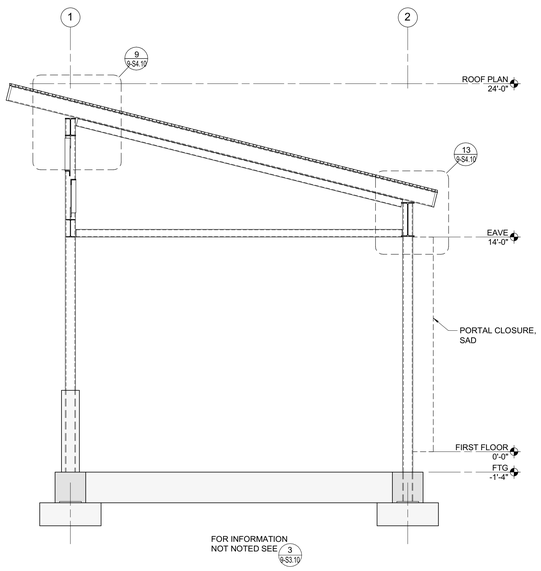


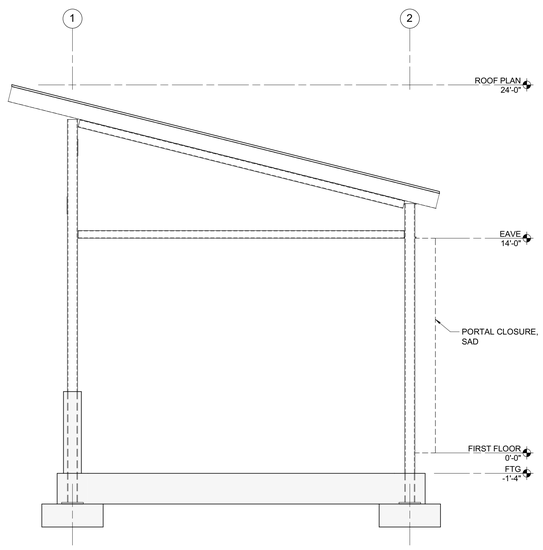
1 ELEVATION AT GRID 1
1/4" = 1'-0"



2 ELEVATION AT GRID 2
1/4" = 1'-0"



4 ELEVATION AT GRID B
1/4" = 1'-0"



3 ELEVATION AT GRID A
1/4" = 1'-0"

FRAME ELEVATION NOTES:

1. ELEVATIONS ARE SCHEMATIC. SEE PLANS FOR ADDITIONAL INFORMATION.
2. SEE PLANS FOR ALL COLUMN AND BEAM SIZES.
3. SEE SHEET **9-S4.10** FOR BRACED FRAME DETAILS.
4. SAD FOR FRAMING HEIGHTS, BEAM SLOPES AND ALL DIMENSIONS.
5. NO COLUMN SPLICES PERMITTED EXCEPT WHERE NOTED.
6. ALL CONNECTIONS INDICATED ON ELEVATIONS ARE PART OF THE SFRS, ALL WELDS ARE DEMAND CRITICAL.

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ARCHITECTURE

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HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

Sheet Title

BUILDING 9 ELEVATIONS

Drawn By: LS Checked By: SRP

Scale:
As indicated

Date:
October 4, 2019

Project No. 17143

9-S3.10
Drawing No.

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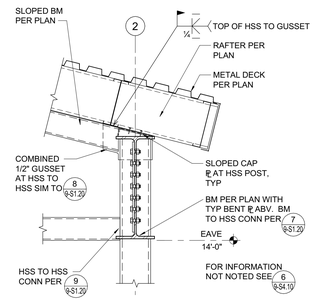
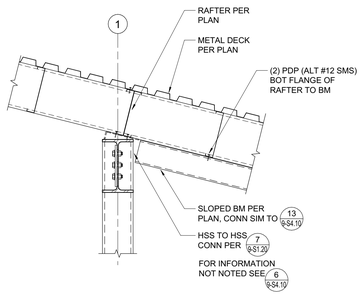
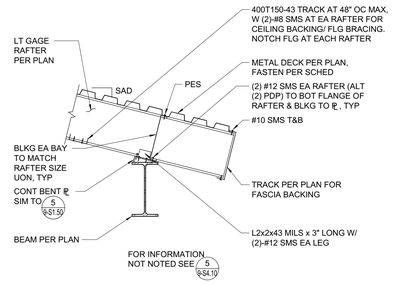


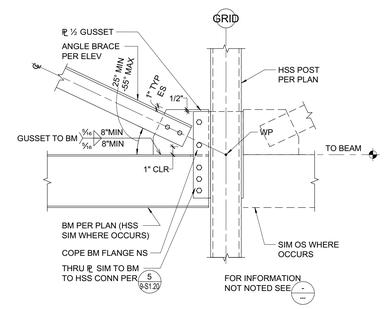
13 CONNECTION DETAIL AT GRID 2
3/4" = 1'-0"



9 CONNECTION DETAIL AT GRID 1
3/4" = 1'-0"

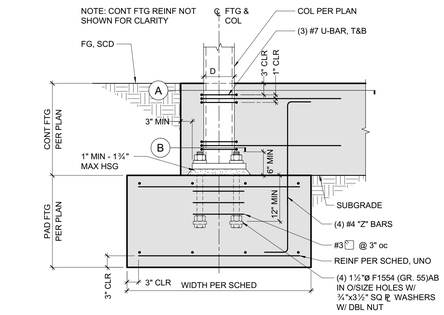


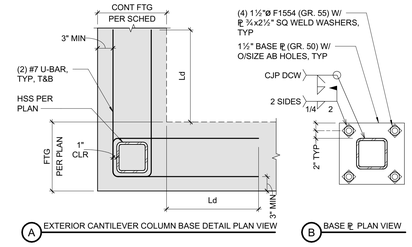
6 ROOF DETAIL AT EAVE OVERHANG
3/4" = 1'-0"



1 BRACED - BEAM TO COLUMN CONNECTION
3/4" = 1'-0"

10 TYPICAL FOUNDATION DETAIL
3/4" = 1'-0"

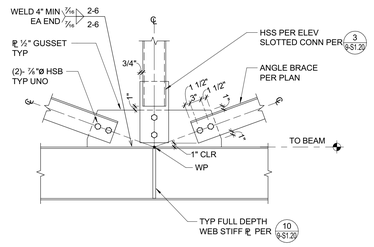


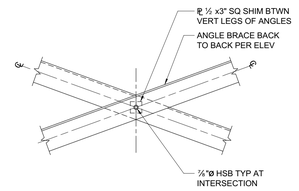


A EXTERIOR CANTILEVER COLUMN BASE DETAIL PLAN VIEW

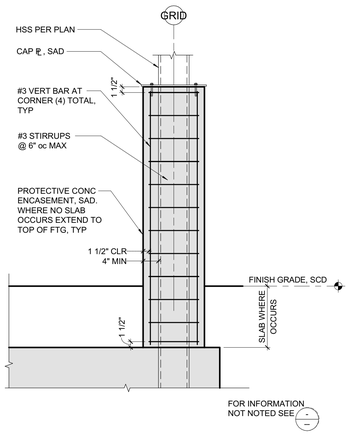
B BASE ℄ PLAN VIEW

2 BRACE TO BEAM CONNECTION
3/4" = 1'-0"

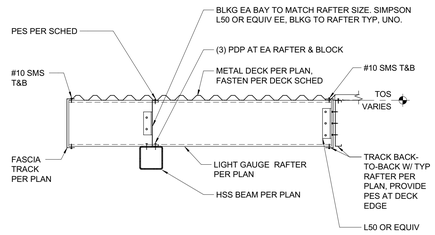




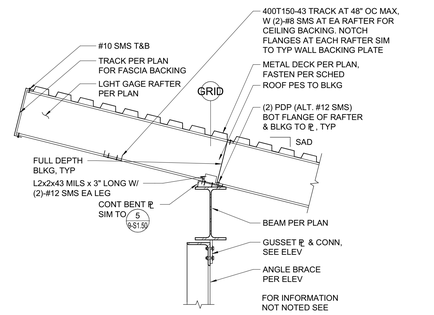
7 HSS COLUMN TO FOOTING
3/4" = 1'-0"



8 TYPICAL PROTECTIVE COLUMN BASE DETAIL
3/4" = 1'-0"



4 HIGH ROOF FRAMING DETAIL
3/4" = 1'-0"



5 ROOF DETAIL AT EAVE OVERHANG
3/4" = 1'-0"

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Sheet Title

BUILDING 9 DETAILS AND SECTIONS

Drawn By: LS Checked By: SRP

Scale: **3/4" = 1'-0"**

Date: **October 4, 2019**

Project No. 17143

9-S4.10
Drawing No.

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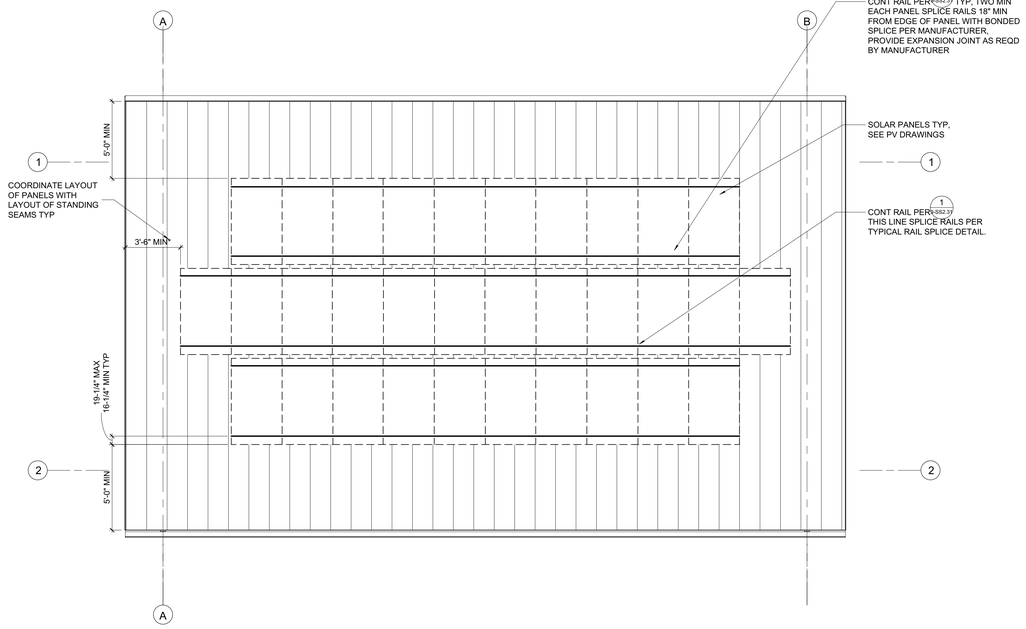
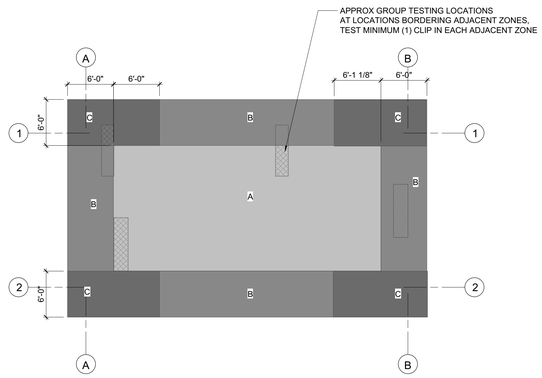


ROOF PLAN B9 - SOLAR LAYOUT

1/4" = 1'-0"



TESTING KEY PLAN - ROOF B9

1/8" = 1'-0"

A DESIGN CRITERIA

DESIGN CRITERIA:	2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
ROOF LIVE LOAD:	20 PSF (REDUCIBLE)
RISK CATEGORY:	II
WIND DATA:	ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110 WIND EXPOSURE: C INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18
EARTHQUAKE DATA:	SEISMIC IMPORTANCE FACTOR, I_e: 1.0 COMPONENT IMPORTANCE FACTOR, I_C: 1.50 MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_{MS} = 2.0; S_{MS} = 2.0 MCE SITE SPECIFIC SPECTRAL RESPONSE ACCELERATIONS: S_{MS} = 1.99; S_{M1} = 1.97 SITE CLASS: D SITE SPECIFIC DESIGN SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 1.32; S_{D1} = 1.43 SEISMIC DESIGN CATEGORY: F SEISMIC FORCE RESISTING SYSTEM(S): SPECIAL REINFORCED NON-BEARING CONCRETE SHEAR WALLS RESPONSE MODIFICATION FACTOR(S): R = 5
SCOPE:	ROOF TOP SOLAR PANELS INSTALLATION ONTO STANDING METAL SEAM ROOFS.

B GENERAL NOTES

1. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) OR PV DRAWINGS FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
2. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
3. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
4. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED.
5. SPECIAL INSPECTIONS ARE REQUIRED PER THE TESTING AND INSPECTION FORM.
6. STRUCTURAL OBSERVATION PER CBC SECTION 1704A.6 IS REQUIRED.
7. FIELD TEST THE INSTALLED S-5 CLAMPS PER **D/3-SS2.30** AND DSA IR 16-8 2.3.3b.
8. THE SOLAR PANEL DESIGN AND CONNECTIONS ARE BASED ON ATTACHMENT TO R-MER SPAN 0.040 ALUMINUM STANDING SEAM METAL ROOF BY GARLAND COMPANY WITH 16" SEAM SPACING. THE CONTRACTOR AND INSPECTOR OF RECORD SHALL VERIFY THAT THE ABOVE STANDING SEAM METAL ROOF WAS INSTALLED PER INCREMENT 1 CONSTRUCTION DOCUMENT PRIOR TO INSTALLATION OF THE SOLAR PANELS. SUBMIT PRODUCT COMPARISON FOR ENGINEER'S EVALUATION OF ANY SUBSTITUTE ROOFING. ANY CHANGE IN THE ROOFING MANUFACTURER AND/OR SYSTEM WILL REQUIRE REVIEW AND APPROVAL BY THE DSA.
9. DEFERRED SUBMITTAL ITEMS: NONE
10. SOLAR PANELS ARE TO BE BY CANADIAN SOLAR RATED FOR A MINIMUM OF 75PSF WIND UPLIFT. ANCHORAGE CONNECTIONS BASED ON KUMAX CS3U-P PANELS (79"X39")

C STRUCTURAL SPECIFICATIONS

METAL FRAMING

1. ALUMINUM YIELD STRENGTHS SHALL BE:

   F_y = 34,000 PSI

2. FRAMING AND FASTENERS TO BE MANUFACTURED BY IRONRIDGE OR SUBMIT MANUFACTURER'S INFORMATION (ICC REPORTS) AND PRODUCT COMPARISON FOR ENGINEER'S EVALUATION OF ANY SUBSTITUTE. ANY CHANGE IN MANUFACTURER AND /OR SYSTEM WILL REQUIRE REVIEW AND APPROVAL BY THE DSA.
3. ALL FRAMING MEMBERS AND CLIPS SHALL BE ALUMINUM. ALL FASTENERS SHALL BE STAINLESS STEEL.

D FIELD TESTING

1. FIELD TEST THE INSTALLED S-5 CLAMPS PER DSA IR 16-8 SECTION 2.3.3b AND AS FOLLOWS:
   - A. SUBMIT PROPOSED PERSONNEL TO COMPLETE IN FIELD TESTING. ALL TESTING SHALL BE PERFORMED BY PERSONNEL APPROVED BY THE AOR/SEOR.
   - B. THE IOR OR SPECIAL INSPECTOR SHALL OBSERVE INSTALLATION OF ALL S-5! CLAMPS.
   - C. TEST (5) AREAS OF THREE ADJACENT CLAMPS ON A SINGLE SEAM AS INDICATED ON THE ROOF KEY PLAN. THESE CLAMPS SHALL BE TESTED SIMULTANEOUSLY, WITH THE REACTION BRIDGING OVER THE SEAMS ADJACENT TO THE SEAM BEING TESTED, REFERENCE IR 16-8 APPENDIX C PHOTO #2.
   - D. TEST 10% OF REMAINING CLAMPS.
   - E. PULL TEST CLAMP LOADS ARE TO BE AS FOLLOWS, ZONE ARE AS NOTED ON THE KEY PLAN:
     - 867 LBS AT ZONE C
     - 500 LBS AT ZONE B
     - 416 LBS AT ZONE A
   - F. IF FAILURE OCCURS NOTIFY THE SEOR FOR EVAULATION, ADDITIONAL TESTING WILL BE REQUIRED.

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

Sheet Title

BUILDING 9 SOLAR ROOF PLAN, NOTES & DETAILS

Drawn By: Author Checked By: Checker

Scale: **As indicated**

Date: **July 29, 2019**

Project No. 17143

9-SS2.30

Drawing No.

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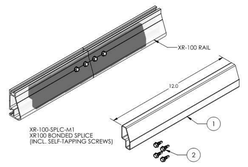
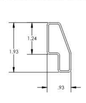


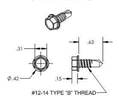
1) Splice, XR100, Mill 12" long

Property	Value
Material	6000 Series Aluminum
Finish	Mill

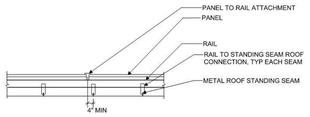


2) Screw, Self Drilling

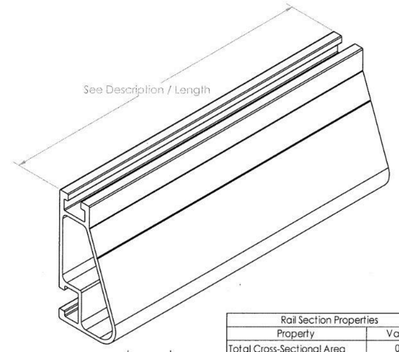
Property	Value
Material	300 Series Stainless Steel
Finish	Clear

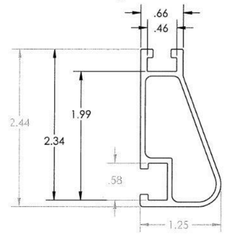


7 RAIL BONDED SPLICE DETAIL
3/8" = 1'-0"



8 RAIL TO SEAM DETAIL
1/4" = 1'-0"

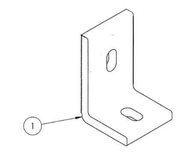




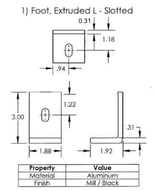
Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.582 in²
Section Modulus (X-axis)	0.297 in³
Moment of Inertia (X-axis)	0.390 in⁴
Moment of Inertia (Y-axis)	0.085 in⁴
Torsional Constant	0.214 in⁴
Polar Moment of Inertia	0.126 in⁴

APPROVED MATERIALS:
6005-T6, 6005A-T61, 6105-T5, 6N01-T6
(34,000 PSI YIELD STRENGTH MINIMUM)

5 MOUNTING RAIL DETAIL
3/8" = 1'-0"

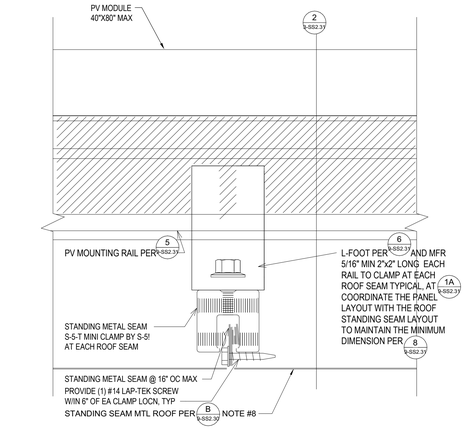


1) Foot, Extruded L - Slotted

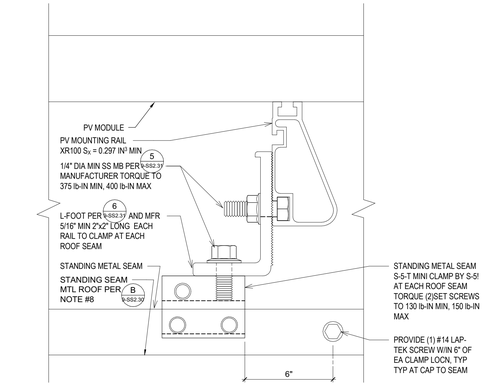


Property	Value
Material	Aluminum
Finish	Mill / Black

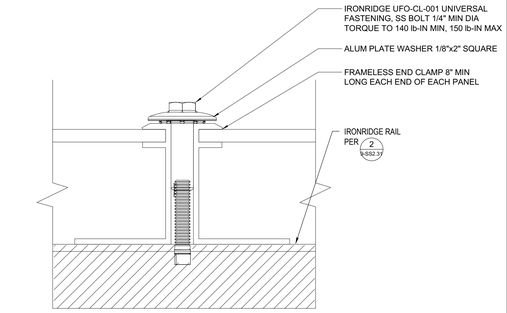
6 L FOOT DETAIL
1/4" = 1'-0"



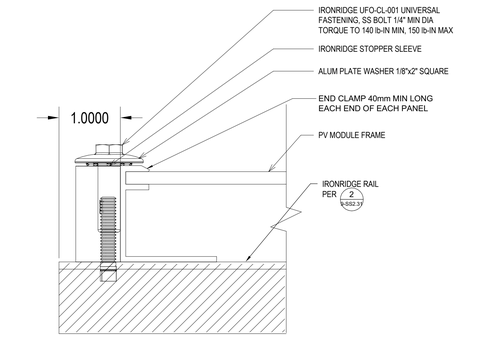
1 STANDING METAL SEAM PV MOUNTING
1 : 1



2 STANDING METAL SEAM PV MOUNTING
1 : 1



3 MID CLAMP
1 : 1



4 END CLAMP
1 : 1

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ARCHITECTURE

CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 WEST WINTON AVE. HAYWARD, CA 94545

REVISIONS

No.	Description	Date
1	INC 01_ADD 01_V1	12/6/2019

PERMIT SUBMITTAL - V3

ZFA STRUCTURAL ENGINEERS
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san carlos ca 94070 650.394.8869
zfa job no.17143

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LICENSED PROFESSIONAL ENGINEER KEVIN G. ZUCCO STRUCTURAL No. 4961 STATE OF CALIFORNIA

Sheet Title

SOLAR NOTES AND DETAILS

Drawn By: Author Checked By: Checker

Scale: **As indicated**

Date: **July 29, 2019**

Project No. 17143

9-SS2.31
Drawing No.

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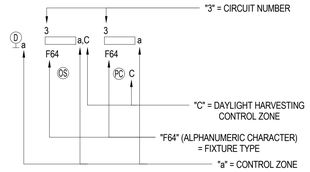
ELECTRICAL LEGEND AND ABBREVIATIONS

LIGHTING & CONTROL DEVICE SUBSCRIPT LEGEND



NOTE: OCCUPANCY SENSOR TYPICALLY CONTROLS ALL LIGHTS IN ROOM, UON.

CONTROL ZONE SUBSCRIPT KEY

a-z =	ZONE CONTROLLED BY MANUAL DEVICES AND OCCUPANCY SENSORS INDICATED
A-Z =	DAYLIGHT HARVESTING ZONE CONTROLLED BY PHOTOCELL INDICATED

EQUIPMENT NAMING LEGEND

E ATS - B 2 A / 1,3,5

E = ATS, BUS, DPH, DPL, DSH, DSL, LP, LPH, LRC, MCC, MP, MS, PDU, T, TB, TC

- 1,3,5 = CIRCUIT NUMBER(S)
- A = FIRST OF THIS TYPE ON FLOOR
- 2 = BUILDING NUMBER
- B = BUILDING

ATS	AUTOMATIC TRANSFER SWITCH
BUS	BUSWAY
DPH	DISTRIBUTION PANEL 277/480V
DPL	DISTRIBUTION PANEL 120/208V
DSH	DISTRIBUTION SWITCHBOARD 277/480V
DSL	DISTRIBUTION SWITCHBOARD 120/208V
LP	BRANCH CIRCUIT PANELBOARD 120/208V
LPH	BRANCH CIRCUIT PANELBOARD 277/480V
LRC	LIGHTING RELAY CABINET
MCC	MOTOR CONTROL CENTER
MP	MECHANICAL EQUIPMENT PANELBOARD
MS	MAIN SWITCHBOARD
PDU	POWER DISTRIBUTION UNIT
T	TRANSFORMER
TB	TELECOM BACKBOARD
TC	TELECOM CABINET

E	EMERGENCY LIFE SAFETY
O	POWER OPTIONAL STANDBY
U	UPS POWER
S	LEGALLY REQUIRED STANDBY

WIRING DEVICE LEGEND

	SINGLE RECEPTACLE OUTLET: 125V; WALL MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
	DUPLEX RECEPTACLE OUTLET: 125V TOP HALF SWITCHED
	DUPLEX RECEPTACLE OUTLET: 125V, DEDICATED; WALL MOUNTED
	DOUBLE DUPLEX RECEPTACLE OUTLET: 125V; WALL MOUNTED
LV	LOW VOLTAGE SWITCH
PC	PHOTOCELL
OS	OCCUPANCY SENSOR; WALL MOUNTED
OS	2 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	1 WAY OCCUPANCY SENSOR; CEILING MOUNTED

WIRING DEVICE SUBSCRIPT LEGEND

AC	AC = ABOVE COUNTER
GFI	GFI = GROUND FAULT INTERRUPTER
WP	WP = WEATHERPROOF
a	a = LOWER CASE LETTER INDICATES SWITCH CONTROL
6	6 = NUMBER INDICATES CIRCUIT NUMBER
$_a$	a = LOWER CASE INDICATES SWITCH CONTROL

FIRE ALARM LEGEND

FCIP	FIREFIGHTER'S CONTROL AND INDICATING PANEL
FPSP	FIRE PUMP REMOTE STATUS PANEL
GSP	GENERATOR REMOTE STATUS PANEL

SECURITY LEGEND

	FIXED CCTV CAMERA
DC	DOOR CONTACT
RTE	REQUEST TO EXIT DEVICE
MS	MOTION SENSOR
ML	MAGNETIC LOCK
PD	PRESSURE DETECTOR (PRESSURE PAD)
KP	KEYPAD
DA	ELECTRONIC SOUNDER FOR DOOR BREACH (DOOR ALARM)
DR	REMOTE DOOR RELEASE
PB	PUSH BUTTON REQUEST TO EXIT DEVICE
CR	CARD READER
EL	ELECTRIC LOCK
ES	ELECTRIC STRIKE
IC	REMOTE VIDEO INTERCOM SYSTEM
IC M	INTERCOM MASTER STATION
IC V	VIDEO INTERCOM

PROGRAMMABLE LIGHTING & RECEPTACLE CONTROL SYSTEM DEVICE LEGEND

S	SWITCH
D	DIMMER
PC	PHOTOCELL
OS	OCCUPANCY SENSOR; WALL MOUNTED
OS	2 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	1 WAY OCCUPANCY SENSOR; CEILING MOUNTED
OS	CORRIDOR OCCUPANCY SENSOR; CEILING MOUNTED
#B	MULTI-BUTTON KEYPAD, # INDICATES QTY OF BUTTONS
#S	MULTI-BUTTON PRESET SCENE CONTROLLER WITH MASTER RAISE/LOWER, # INDICATES QTY OF SCENE BUTTONS
C	GRAPHICAL INTERFACE CONTROLLER

POWER LEGEND

	ATS, CPC, DPH, DPL, DSH, DSL, MCC OR MS: SIZE APPROXIMATELY AS SHOWN. DOUBLE LINE INDICATES FRONT.
	SURFACE MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LPH, LRC, MP OR TC: SIZE APPROXIMATELY AS SHOWN
	SURFACE MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	RECESSED MOUNTED LP: SIZE APPROXIMATELY AS SHOWN
	TB: LENGTH APPROXIMATELY AS SHOWN
T F	STEP DOWN TRANSFORMER
G	GENERATOR IN WP ENCLOSURE
	AUTOMATIC TRANSFER SWITCH
	HEAVY DUTY DISCONNECT SWITCH
	HEAVY DUTY DISCONNECT SWITCH WITH FUSE
	MOTOR STARTER
	MOTOR STARTER, NOT PROVIDED UNDER ELECTRICAL SCOPE
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITH DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
VFD	VFD WITHOUT DISCONNECT, NOT PROVIDED UNDER ELECTRICAL SCOPE
EPO	EMERGENCY POWER OFF BUTTON
$_{MD}$	MOTORIZED DOOR CONTROLLER (FURNISHED WITH DOOR)
$_{MS}$	MOTORIZED SHADE CONTROLLER (FURNISHED WITH SHADES)
$_{PS}$	PROJECTION SCREEN CONTROLLER (FURNISHED WITH SCREEN)
$_{T}$	THERMAL OVERLOAD/DISCONNECT SWITCH
M	MOTOR CONNECTION
J	JUNCTION BOX, CEILING MOUNTED
J	JUNCTION BOX, WALL MOUNTED
P B	PULL BOX
S B	SPLICE BOX
G	GROUND BUS CABINET
	GROUND ROD
	GROUND TEST WELL
	CIRCUIT BREAKER
	SWITCH AND FUSE
	CIRCUIT BREAKER IN ENCLOSURE
M	CURRENT TRANSFORMER COMPARTMENT AND KWH METER
GFR	GROUND FAULT RELAY
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	TRANSFORMER
CT 1-1	EQUIPMENT DESIGNATION — EQUIPMENT TYPE; NUMERICAL DESIGNATION REFER TO EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION DETAILS

LIGHTING LEGEND

	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; CEILING MOUNTED
	LIGHTING FIXTURE, SIZE APPROXIMATELY AS SHOWN; WALL MOUNTED
	LIGHTING FIXTURE CONNECTED TO EMERGENCY POWER SYSTEM
2 a A	LIGHTING FIXTURE SUBSCRIPTIONS: NUMBER INDICATES CIRCUIT, LOWERCASE LETTER INDICATES SWITCH CONTROL UPPERCASE LETTER INDICATES FIXTURE TYPE
EXIT SIGNS	ARROWS AS SHOWN. ILLUMINATED FACE AS INDICATED BY SHADING, CONNECT TO EMERGENCY POWER SYSTEM
	EXIT SIGN; WALL MOUNTED
	EXIT SIGN; CEILING MOUNTED
R	EXIT SIGN; RECESSED IN WALL
P	EXIT SIGN; PENDENT MOUNTED
L	EXIT SIGN, LOW LEVEL; RECESSED IN WALL

ABBREVIATIONS

℄	CENTER LINE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AF/AS	AMPERE RATING OF FUSE/SWITCH
AT/AF	AMPERE RATING OF CIRCUIT, BREAKER TRIP/FRAME
A/V	AUDIO/VISUAL
BMS	BUILDING MANAGEMENT SYSTEM
CKT	CIRCUIT
COPS	CRITICAL OPERATIONS POWER SYSTEM
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EC	EMPTY CONDUIT
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
FCC	FIRE CONTROL CENTER
GFI	GROUND FAULT INTERRUPTOR
GND	GROUND
IDF	INTERMEDIATE DISTRIBUTION FRAME ROOM
IG	ISOLATED GROUND
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME ROOM
MIC	MINERAL INSULATED CABLE
MS	MAIN SWITCHBOARD
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PVC	POLYVINYL CHLORIDE CONDUIT
RAC	RIGID ALUMINUM CONDUIT
RSC	RIGID STEEL CONDUIT
SCC	SECURITY CONTROL CENTER
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
TEL	TELECOM
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
WP	WEATHERPROOF
WT	WATERTIGHT
XP	EXPLOSION PROOF

HAYWARD FIRE TRAINING FACILITY

BUILDING 9 - ELECTRICAL DRAWING LIST

7/19/2019

WSP PROJECT: B17.07369.000

DRAWING NUMBER	DRAWING NAME	SCALE	50%CD	90%CD	100%CD
			1/17/2018	11/2/2018	7/19/2019
9-E0.01	ELECTRICAL LEGEND, ABBREVIATIONS AND DRAWING LIST	NTS	X	X	X
9-E0.02	ELECTRICAL SCHEDULES	NTS	X	X	X
9-E0.03	ELECTRICAL SCHEDULES	NTS		X	X
9-E0.10	ELECTRICAL LIGHT FIXTURE SCHEDULE	NTS	X	X	X
9-E0.20	ELECTRICAL TITLE 24	NTS		X	X
9-E0.21	ELECTRICAL TITLE 24	NTS		X	X
9-E2.01	ELECTRICAL ENTRY CANOPY PLAN AND LIGHTING	1/8" = 1'	X	X	X
9-E5.01	ELECTRICAL RISER DIAGRAM	NTS	X	X	X
9-E5.02	ELECTRICAL GROUNDING DIAGRAM	NTS	X	X	X
9-E6.01	ELECTRICAL DETAILS	NTS		X	X

RACEWAY LEGEND

	CONDUIT CONCEALED ABOVE CEILING OR WITHIN WALL
	CONDUIT BELOW GRADE OR EMBEDDED WITHIN SLAB
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT STUBBED OUT WITH BUSHING NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
	CONDUIT STUBBED OUT AND CAPPED NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
AV	AUDIO/VISUAL SYSTEM RACEWAY
E	ELECTRICAL SYSTEM RACEWAY
G	GROUNDING SYSTEM RACEWAY
FA	FIRE ALARM SYSTEM RACEWAY
S	SECURITY SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
T	TELECOM SYSTEM RACEWAY NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
	CONDUIT HOMERUN, MAXIMUM OF (3) BRANCH CIRCUITS, UON NOTE: MAXIMUM OF THREE BRANCH CIRCUITS FOR EACH HOMERUN, UON
	PHASE CONDUCTOR(S) GROUNDING CONDUCTOR ISOLATED GROUNDING CONDUCTOR NEUTRAL CONDUCTOR

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CITY OF HAYWARD HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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(415) 243-4600
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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

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HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL LEGEND, ABBREVIATIONS, AND DRAWING LIST

Drawn By: ELW Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

9-E0.01
Drawing No.

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480V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	#12	#10	#8	#6	#4	#2	#1		
2.7	511ft	814ft	1,267ft	2,007ft	3,199ft	5,079ft	6,399ft		
5.4	255ft	407ft	633ft	1,003ft	1,600ft	2,540ft	3,199ft		
8.1	170ft	271ft	422ft	669ft	1,066ft	1,693ft	2,133ft		
10.8	128ft	204ft	317ft	502ft	800ft	1,270ft	1,600ft		
13.5	102ft	163ft	253ft	401ft	640ft	1,016ft	1,280ft		
16.2	85ft	136ft	211ft	334ft	533ft	847ft	1,066ft		
18.9	-	116ft	181ft	287ft	457ft	726ft	914ft		
21.6	-	102ft	158ft	251ft	400ft	635ft	800ft		
24.3	-	90ft	141ft	223ft	355ft	564ft	711ft		
27.0	-	-	127ft	201ft	320ft	508ft	640ft		
29.7	-	-	115ft	182ft	291ft	462ft	582ft		
32.4	-	-	106ft	167ft	267ft	423ft	533ft		
35.1	-	-	-	154ft	246ft	391ft	492ft		
37.8	-	-	-	143ft	229ft	363ft	457ft		
40.5	-	-	-	134ft	213ft	339ft	427ft		
43.2	-	-	-	125ft	200ft	317ft	400ft		
45.9	-	-	-	118ft	188ft	299ft	376ft		
48.6	-	-	-	-	178ft	282ft	355ft		
51.3	-	-	-	-	168ft	267ft	337ft		
54.0	-	-	-	-	160ft	254ft	320ft		
56.7	-	-	-	-	152ft	242ft	305ft		
59.4	-	-	-	-	-	231ft	291ft		
62.1	-	-	-	-	-	221ft	278ft		
64.8	-	-	-	-	-	212ft	267ft		
67.5	-	-	-	-	-	203ft	256ft		
70.2	-	-	-	-	-	195ft	246ft		
72.9	-	-	-	-	-	188ft	237ft		
75.6	-	-	-	-	-	181ft	229ft		
78.3	-	-	-	-	-	175ft	221ft		
81.0	-	-	-	-	-	-	213ft		
83.7	-	-	-	-	-	-	206ft		
86.4	-	-	-	-	-	-	200ft		
89.1	-	-	-	-	-	-	194ft		
91.8	-	-	-	-	-	-	-		
94.5	-	-	-	-	-	-	-		
97.2	-	-	-	-	-	-	-		
99.9	-	-	-	-	-	-	-		
102.6	-	-	-	-	-	-	-		
105.3	-	-	-	-	-	-	-		
108.0	-	-	-	-	-	-	-		

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

480V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	1/0	2/0	3/0	4/0	250KCM	300KCM	350KCM	400KCM	500KCM
7.9	2,760ft	3,483ft	4,397ft	5,539ft	6,539ft	7,850ft	9,176ft	10,491ft	13,053ft
15.8	1,380ft	1,741ft	2,198ft	2,770ft	3,270ft	3,925ft	4,588ft	5,246ft	6,527ft
23.7	920ft	1,161ft	1,466ft	1,846ft	2,180ft	2,617ft	3,059ft	3,497ft	4,351ft
31.6	690ft	871ft	1,099ft	1,385ft	1,635ft	1,963ft	2,294ft	2,623ft	3,263ft
39.5	552ft	697ft	879ft	1,108ft	1,308ft	1,570ft	1,835ft	2,098ft	2,611ft
47.4	460ft	580ft	733ft	923ft	1,090ft	1,308ft	1,529ft	1,749ft	2,176ft
55.3	394ft	498ft	628ft	791ft	934ft	1,121ft	1,311ft	1,499ft	1,865ft
63.2	345ft	435ft	550ft	692ft	817ft	981ft	1,147ft	1,311ft	1,632ft
71.1	307ft	387ft	489ft	615ft	727ft	872ft	1,020ft	1,166ft	1,450ft
79.0	276ft	348ft	440ft	554ft	654ft	785ft	918ft	1,049ft	1,305ft
86.9	251ft	317ft	400ft	504ft	594ft	714ft	834ft	954ft	1,187ft
94.8	230ft	290ft	366ft	462ft	545ft	654ft	765ft	874ft	1,088ft
102.7	212ft	268ft	338ft	426ft	503ft	604ft	706ft	807ft	1,004ft
110.6	197ft	249ft	314ft	396ft	467ft	561ft	655ft	749ft	932ft
118.5	184ft	232ft	293ft	369ft	436ft	523ft	612ft	699ft	870ft
126.4	-	218ft	275ft	346ft	409ft	491ft	574ft	656ft	816ft
134.3	-	205ft	259ft	326ft	385ft	462ft	540ft	617ft	768ft
142.2	-	193ft	244ft	308ft	363ft	436ft	510ft	583ft	725ft
150.1	-	-	231ft	292ft	344ft	413ft	483ft	552ft	687ft
158.0	-	-	220ft	277ft	327ft	393ft	459ft	525ft	653ft
165.9	-	-	209ft	264ft	311ft	374ft	437ft	500ft	622ft
173.8	-	-	-	252ft	297ft	357ft	417ft	477ft	593ft
181.7	-	-	-	241ft	284ft	341ft	399ft	456ft	568ft
189.6	-	-	-	231ft	272ft	327ft	382ft	437ft	544ft
197.5	-	-	-	-	262ft	314ft	367ft	420ft	522ft
205.4	-	-	-	-	252ft	302ft	353ft	404ft	502ft
213.3	-	-	-	-	-	291ft	340ft	389ft	483ft
221.2	-	-	-	-	-	280ft	328ft	375ft	466ft
229.1	-	-	-	-	-	271ft	316ft	362ft	450ft
237.0	-	-	-	-	-	-	306ft	350ft	435ft
244.9	-	-	-	-	-	-	296ft	338ft	421ft
252.8	-	-	-	-	-	-	287ft	328ft	408ft
260.7	-	-	-	-	-	-	-	318ft	396ft
268.6	-	-	-	-	-	-	-	309ft	384ft
276.5	-	-	-	-	-	-	-	300ft	373ft
284.4	-	-	-	-	-	-	-	-	363ft
292.3	-	-	-	-	-	-	-	-	353ft
300.2	-	-	-	-	-	-	-	-	344ft
308.1	-	-	-	-	-	-	-	-	335ft
316.0	-	-	-	-	-	-	-	-	-

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

208V, 3-PHASE COPPER WIRE

MAXIMUM LENGTH OF CONDUCTOR IN FT TO BE USED PER VA AND WIRE SIZE

kVA	CONDUCTOR SIZE								
	1/0	2/0	3/0	4/0	250KCM	300KCM	350KCM	400KCM	500KCM
3.4	1,204ft	1,520ft	1,918ft	2,417ft	2,853ft	3,425ft	4,004ft	4,577ft	5,695ft
6.8	602ft	760ft	959ft	1,208ft	1,427ft	1,713ft	2,002ft	2,289ft	2,848ft
10.2	401ft	507ft	639ft	806ft	951ft	1,142ft	1,335ft	1,526ft	1,898ft
13.6	301ft	380ft	480ft	604ft	713ft	856ft	1,001ft	1,144ft	1,424ft
17.0	241ft	304ft	384ft	483ft	571ft	685ft	801ft	915ft	1,139ft
20.4	201ft	253ft	320ft	403ft	476ft	571ft	667ft	763ft	949ft
23.8	172ft	217ft	274ft	345ft	408ft	489ft	572ft	654ft	814ft
27.2	151ft	190ft	240ft	302ft	357ft	428ft	500ft	572ft	712ft
30.6	134ft	169ft	213ft	269ft	317ft	381ft	445ft	509ft	633ft
34.0	120ft	152ft	192ft	242ft	285ft	343ft	400ft	458ft	570ft
37.4	109ft	138ft	174ft	220ft	259ft	311ft	364ft	416ft	518ft
40.8	100ft	127ft	160ft	201ft	238ft	285ft	334ft	381ft	475ft
44.2	93ft	117ft	148ft	186ft	219ft	263ft	308ft	352ft	438ft
47.6	86ft	109ft	137ft	173ft	204ft	245ft	286ft	327ft	407ft
51.0	80ft	101ft	128ft	161ft	190ft	228ft	267ft	305ft	380ft
54.4	-	95ft	120ft	151ft	178ft	214ft	250ft	286ft	356ft
57.8	-	89ft	113ft	142ft	168ft	201ft	236ft	269ft	335ft
61.2	-	84ft	107ft	134ft	159ft	190ft	222ft	254ft	316ft
64.6	-	-	101ft	127ft	150ft	180ft	211ft	241ft	300ft
68.0	-	-	96ft	121ft	143ft	171ft	200ft	229ft	285ft
71.4	-	-	91ft	115ft	136ft	163ft	191ft	218ft	271ft
74.8	-	-	-	110ft	130ft	156ft	182ft	208ft	259ft
78.2	-	-	-	105ft	124ft	149ft	174ft	199ft	248ft
81.6	-	-	-	101ft	119ft	143ft	167ft	191ft	237ft
85.0	-	-	-	-	114ft	137ft	160ft	183ft	228ft
88.4	-	-	-	-	110ft	132ft	154ft	176ft	219ft
91.8	-	-	-	-	106ft	127ft	148ft	170ft	211ft
95.2	-	-	-	-	-	122ft	143ft	163ft	203ft
98.6	-	-	-	-	-	118ft	138ft	158ft	196ft
102.0	-	-	-	-	-	114ft	133ft	153ft	190ft
105.4	-	-	-	-	-	-	129ft	148ft	184ft
108.8	-	-	-	-	-	-	125ft	143ft	178ft
112.2	-	-	-	-	-	-	-	139ft	173ft
115.6	-	-	-	-	-	-	-	135ft	168ft
119.0	-	-	-	-	-	-	-	131ft	163ft
122.4	-	-	-	-	-	-	-	-	158ft
125.8	-	-	-	-	-	-	-	-	154ft
129.2	-	-	-	-	-	-	-	-	150ft
132.6	-	-	-	-	-	-	-	-	146ft
136.0	-	-	-	-	-	-	-	-	142ft

BASED ON 2% VOLTAGE DROP ALLOWED FOR FEEDERS PER TITLE 24 2016.

VOLTAGE DROP = (CIRCUIT AMPS) X (TWICE THE LENGTH OF CONDUCTOR) X (WIRE RESISTANCE)

EQUIPMENT CONNECTION DESIGNATIONS LEGEND

DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION
AC	AIR CONDITIONING UNIT	FCU	FAN COIL UNIT	P	PUMP
ACC	AIR COOLED CONDENSER	FOA	FUEL OIL ALARM PANEL	PS	PROJECTION SCREEN
AHU	AIR HANDLING UNIT	FOP	FUEL OIL PUMP	REF	REFRIGERATOR
BC	BATTERY CHARGER	FMS	FMS PANEL	RF	RETURN FAN
BMS	BMS PANEL	FP	FIRE PUMP	RTU	ROOF TOP UNIT
CH	CHILLER	FPB	FAN POWER BOX	SD	SMOKE DAMPER
COMP	COMPRESSOR	FSD	FIRE/SMOKE DAMPER	SE	SEWAGE EJECTOR
COP	COPIER	GD	GARBAGE DISPOSAL	SF	SUPPLY FAN
CP	CIRCULATING PUMP	GS	GRAPHIC SIGNAGE	SP	SUMP PUMP
CU	CONDENSING UNIT	HP	HEAT PUMP	UH	UNIT HEATER
DF	DUCT FURNACE	HV	HEATING/VENTILATING UNIT	VAV	VAV BOX ELECTRIC HEAT
DWBP	DOMESTIC WATER BOOSTER PUMP	IH	INSTANT HOT WATER HEATER	VM	VENDING MACHINE
ECH	ELECTRIC CABINET HEATER	JP	JOCKEY PUMP	VFD	VARIABLE FREQUENCY DRIVE
EDH	ELECTRIC DUCT HEATER	JWH	JACKET WATER HEATER	TYPE DP	DUPLEX PUMP
EF	EXHAUST FAN	MCS	MOTOR CONNECTION SCHEDULE	TYPE FR	FRACTIONAL HP MOTOR
EHC	ELECTRIC HEATING COIL	MD	MOTORIZED DOOR OR GATE	TYPE FWS	FURNISHED WITH STARTER
ELEV	ELEVATOR	MS	MOTORIZED SHADE	TYPE M	MOTOR WITH STARTER
EUH	ELECTRIC UNIT HEATER	MUA	MAKE UP AIR UNIT	TYPE SPC	SINGLE POINT CONNECTION
EWC	ELECTRIC WATER COOLER	MW	MICROWAVE OVEN	TYPE VFD	VARIABLE FREQUENCY DRIVE
EWH	ELECTRIC WATER HEATER	OH	OIL HEATER		

MOTOR CONNECTION SCHEDULE: 208V-3 PHASE

HP	SHORT-CIRCUIT & GROUND FAULT		SWITCH AMPS	OVERLOAD FUSE AMPS	BRANCH CIRCUIT AMPACITY	GROUNDING CONDUCTOR SIZE	STARTER SIZE NEMA
	CIRCUIT BREAKER	FUSE SIZE					
1/2	15A	6A	30	2.5	15	#12	1
3/4	15A	10A	30	3.5	15	#12	1
1	15A	10A	30	5	15	#12	1
1 1/2	15A	15A	30	7	15	#12	1
2	15A	15A	30	9	15	#12	1
3	20A	20A	30	15	20	#12	1
5	35A	30A	30	20	30	#10	1
7 1/2	50A	45A	60	30	40	#10	2
10	60A	60A	60	40	50	#10	3
15	90A	90A	100	60	70	#8	3
20	100A	110A	100	80	80	#6	3
25	125A	150A	100	90	100	#6	4
30	150A	175A	200	110	125	#6	4
40	200A	200A	200	150	175	#6	5
50	250A	300A	200	175	200	#4	5
60	300A	300A	400	200	225	#4	5
75	350A	400A	400	250	300	#2	6
100	450A	500A	400	350	400	#2	6
125	600A	600A	600	450	450	#1	6
150	700A	700A	600	500	600	#1/0	6

REFER TO WIRING SCHEDULE FOR BRANCH CIRCUIT REQUIREMENTS
SIZES BASED ON COPPER CONDUCTORS

MOTOR CONNECTION SCHEDULE: 480V-3 PHASE

HP	SHORT-CIRCUIT & GROUND FAULT		SWITCH AMPS	OVERLOAD FUSE AMPS	BRANCH CIRCUIT AMPACITY	GROUNDING CONDUCTOR SIZE	STARTER SIZE NEMA
	CIRCUIT BREAKER	FUSE SIZE					
1/2	15A	4A	30	1.125	15	#12	1
3/4	15A	4A	30	1.6	15	#12	1
1	15A	6A	30	2	15	#12	1
1 1/2	15A	6A	30	2.8	15	#12	1
2	15A	6A	30	4	15	#12	1
3	15A	10A	30	5.6	15	#12	1
5	15A	15A	30	9	20	#12	1
7 1/2	25A	20A	30	15	20	#10	1
10	35A	25A	30	17.5	20	#10	2
15	45A	40A	30	25	30	#10	2
20	50A	50A	60	35	40	#10	2
25	70A	60A	60	40	50	#8	3
30	70A	70A	60	45	50	#8	3
40	100A	100A	100	60	70	#8	3
50	125A	125A	100	80	90	#6	4
60	150A	150A	200	90	100	#6	4
75	150A	175A	200	110	125	#6	4
100	175A	225A	200	150	175	#4	5
125	250A	300A	200	200	200	#4	5
150	300A	350A	400	225	225	#2	5
200	400A	450A	400	300	300	#2	5

REFER TO WIRING SCHEDULE FOR BRANCH CIRCUIT REQUIREMENTS
SIZES BASED ON COPPER CONDUCTORS

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CITY OF HAYWARD
HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL SCHEDULES

Drawn By: ELW
Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

9-E0.02
Drawing No.

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LP-B9A

BUSSING: 225A, 10,000 AIC SYMMETRICAL
MAIN CB: 150A/3P
LOCATION:ELECTRICAL ROOM
MOUNTING: SURFACE

120/208V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
E	BUILDING 9 TELECOM	2496	30/2	1	●			2	20/1	800	LPG E-STOP	E
E		2496		3		●		4	20/1	0	SHUNT TRIP	
R	EXTERIOR RECEPTACLE	180	20/1	5			●	6	20/1	180	EXTERIOR CONVENIENCE RECEPT	R
E	SIGNAGE	180	20/1	7	●			8	20/1	0	SPARE	
	SPARE	0	20/1	9		●		10	20/1	0	SPARE	
	SPARE	0	20/1	11			●	12	20/1	0	SPARE	
	SPARE	0	20/1	13	●			14	20/1	0	SPARE	
	SPARE	0	20/1	15		●		16	20/1	0	SPARE	
	SPARE	0	20/1	17			●	18	20/1	0	SPARE	
	SPARE	0	20/1	19	●			20	20/1	0	SPARE	
	SPARE	0	20/1	21		●		22	20/1	0	SPARE	
	SPARE	0	20/1	23			●	24	20/1	0	SPARE	
	SPARE	0	20/1	25	●			26	20/1	0	SPARE	
	SPARE	0	20/1	27		●		28	20/1	0	SPARE	
	SPARE	0	20/1	29			●	30	20/1	0	SPARE	
	SPARE	0	20/1	31	●			32	20/1	0	SPARE	
	SPARE	0	20/1	33		●		34	20/1	0	SPARE	
	SPARE	0	20/1	35			●	36	20/1	0	SPARE	
	SPACE	0		37	●			38		0	SPACE	
	SPACE	0		39		●		40		0	SPACE	
	SPACE	0		41			●	42		0	SPACE	
	TOTAL ALL PHASES (VA)	PHASE A (VA)		PHASE B (VA)			PHASE C (VA)				TOTAL ALL PHASES (AMPS)	
	6332	3476		2496			360				18	

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	5972 VA	1.00	5972 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR		1.25	0 VA
R = RECEPTACLE	360 VA	NEC DEMAND	360 VA

CONNECTED LOAD SUMMARY
6332 VA
18 AMPS

NEC LOAD SUMMARY
6332 VA
18 AMPS

DPL-B9A

BUS AMPACITY: 1200A
MAIN: 1000A
120/208V, 3 PHASE, 4 WIRE
LOCATION: ELECTRICAL ROOM
AIC RMS: 65,000

CIRCUIT	LOAD SERVED	DEVICE RATING	LOAD (VA)	REMARKS
1	LP-B6A	100AT/100AF	17,097	
2	LP-B7A	150AT/225AF	22,404	
3	LP-B8A	150AT/225AF	26,975	
4	LP-B8B	150AT/225AF	17,289	
5	LP-B9A	150AT/225AF	6,332	
6	LP-B9B	150AT/225AF	13,312	
7	SPACE	100AF	0	
8	SPACE	225AF	0	
9	SPACE		0	
10	SPACE		0	
11	SPACE		0	
12	SPACE		0	
		TOTAL	103,409	

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	76548 VA	1.00	76548 VA
H = ELECTRIC HEAT	6240 VA	1.00	6240 VA
K = KITCHEN	0 VA	1.00	0 VA
L = LIGHTING	1185 VA	1.25	1481 VA
M = MOTOR	16016 VA	1.00	16016 VA
M = LARGEST MOTOR		1.25	0 VA
R = RECEPTACLE	3420 VA	NEC DEMAND	3420 VA
EL = ELEVATOR	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY
103409 VA
287 A

NEC LOAD SUMMARY
103705 VA
288 A

LP-B9B

BUSSING: 225A, 10,000 AIC SYMMETRICAL
MAIN CB: 150A/3P
LOCATION:ELECTRICAL ROOM
MOUNTING: SURFACE

120/208V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
E		3328		1	●			2	20/1	0	SPARE	
E	EV CHARGING	3328	40/2	3		●		4	20/1	0	SPARE	
E		3328		5			●	6	20/1	0	SPARE	
E	EV CHARGING	3328	40/2	7	●			8	20/1	0	SPARE	
	SPARE	0	20/1	9		●		10	20/1	0	SPARE	
	SPARE	0	20/1	11			●	12	20/1	0	SPARE	
	SPARE	0	20/1	13	●			14	20/1	0	SPARE	
	SPARE	0	20/1	15		●		16	20/1	0	SPARE	
	SPARE	0	20/1	17			●	18	20/1	0	SPARE	
	SPARE	0	20/1	19	●			20	20/1	0	SPARE	
	SPARE	0	20/1	21		●		22	20/1	0	SPARE	
	SPARE	0	20/1	23			●	24	20/1	0	SPARE	
	SPARE	0	20/1	25	●			26	20/1	0	SPARE	
	SPARE	0	20/1	27		●		28	20/1	0	SPARE	
	SPARE	0	20/1	29			●	30	20/1	0	SPARE	
	SPARE	0	20/1	31	●			32	20/1	0	SPARE	
	SPARE	0	20/1	33		●		34	20/1	0	SPARE	
	SPARE	0	20/1	35			●	36	20/1	0	SPARE	
	SPACE	0		37	●			38		0	SPACE	
	SPACE	0		39		●		40		0	SPACE	
	SPACE	0		41			●	42		0	SPACE	
	TOTAL ALL PHASES (VA)	PHASE A (VA)		PHASE B (VA)			PHASE C (VA)				TOTAL ALL PHASES (AMPS)	
	13312	6656		3328			3328				37	

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	13312 VA	1.25	16640 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR		1.25	0 VA
R = RECEPTACLE	0 VA	NEC DEMAND	0 VA

CONNECTED LOAD SUMMARY
13312 VA
37 AMPS

NEC LOAD SUMMARY
16640 VA
46 AMPS

LPH-B9A

BUSSING: 400A 14,000 AIC SYMMETRICAL
MAIN CB: 400A/3P
LOCATION:ELECTRICAL ROOM
MOUNTING: SURFACE

277/480V, 3 PHASE, 4 WIRE
100% RATED NEUTRAL + GROUND

TYPE	DESCRIPTION	LOAD	DEVICE	CKT	A	B	C	CKT	DEVICE	LOAD	DESCRIPTION	TYPE
L	SITE LIGHTING	760	20/1	1	●			2		26259		E
L	SITE LIGHTING	1664	20/1	3		●		4	125/3	26259	LPG VAPORIZER	E
	SPARE	0	20/1	5			●	6		26259		E
	SPARE	0	20/1	7	●			8	20/1	0	SPARE	
	SPARE	0	20/1	9		●		10	20/1	0	SPARE	
	SPARE	0	20/1	11			●	12	20/1	0	SPARE	
	SPARE	0	20/1	13	●			14	20/1	0	SPARE	
	SPARE	0	20/1	15		●		16	20/1	0	SPARE	
	SPARE	0	20/1	17			●	18	20/1	0	SPARE	
	SPARE	0	20/1	19	●			20	20/1	0	SPARE	
	SPARE	0	20/1	21		●		22	20/1	0	SPARE	
	SPARE	0	20/1	23			●	24	20/1	0	SPARE	
	SPARE	0	20/1	25	●			26		0		E
	SPARE	0	20/1	27		●		28	15/3	0	B9 PV METER	E
	SPARE	0	20/1	29			●	30		0		E
E		0		31	●			32		0		E
E	B6 PV METER	0	15/3	33		●		34	60/3	0	B9 PV INVERTERS	E
E		0		35			●	36		0		E
E		0		37	●			38		34470		E
E	B6 PV INVERTERS	0	25/3	39		●		40	450/3	34470	DPL-B9A (VIA T-B9A)	E
E		0		41			●	42		34470		E
	TOTAL ALL PHASES (VA)	PHASE A (VA)		PHASE B (VA)			PHASE C (VA)				TOTAL ALL PHASES (AMPS)	
	184609.9	61488.63333		62392.63333			60728.63333				222	

LOAD SUMMARY BY TYPE	CONN. LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	155325 VA	1.00	155325 VA
H = ELECTRIC HEAT	6240 VA	1.00	6240 VA
K = KITCHEN EQUIPMENT	0 VA	1.00	0 VA
L = LIGHTING	3609 VA	1.25	4511 VA
M = MOTOR	16016 VA	1.00	16016 VA
M = LARGEST MOTOR		1.25	0 VA
R = RECEPTACLE	3420 VA	NEC DEMAND	3420 VA

CONNECTED LOAD SUMMARY
184610 VA
222 AMPS

NEC LOAD SUMMARY
185512 VA
223 AMPS

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
KATHY GARCIA DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL SCHEDULES

Drawn By: ELW
Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

9-E0.03
Drawing No.

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LIGHTING FIXTURE SCHEDULE

PROJECT: HAYWARD FIRE TRAINING CENTER
ISSUE: PERMIT SUBMITTAL V2 - INCREMENT #1
DATE: 7/16/2019

FIXTURE TYPE	DESCRIPTION	LOCATION	LIGHT SOURCE	COLOR TEMPERATURE (K)	INPUT WATTS (W)	UNIT	BALLAST / TRANSFORMER / DRIVER	VOLTAGE	REFLECTOR	MOUNTING	SHIELDING	FINISH	MANUFACTURER / CATALOG #	REMARKS
FE1	WET LISTED SURFACE MOUNTED LENSED LINEAR LED LIGHT	SECURITY GATE SCANOPY	WHITE LED MODULE, 83CRI, 5909 DELIVERED LUMENS PER 4FT, L70 110,000 HOURS	4000K	30	PER 4 FOOT	INTEGRAL, ELECTRONIC, 0-10V	120-277V	22 GA STEEL, WHITE POWERED COAT	SURFACE MOUNTED TO ROOF CANOPY	FROSTED POLYCARBONATE	GRAY (STANDARD) OR WHITE (OPTION)	BEGHELLI LUCE, ILLUMINA SERIES BS100LED-LENGTH-HT-LO-WT40-120-277V-MOUNTING	1. FINISH TO BE SELECTED BY ARCHITECT. 2. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE LENGTHS AND LENGTHS OF CONTINUOUS RUNS. FIXTURES TO BE MOUNTED END TO END FOR CONTINUOUS RUN.

GENERAL NOTES:
1. REFER TO SPECIFICATION SECTION 26 51 00 ARCHITECTURAL LIGHTING FOR ADDITIONAL REQUIREMENTS.
2. REFER TO SPECIFICATION SECTION 26 09 26 FOR NETWORKED LIGHTING CONTROL.
3. FIXTURE SHALL BE ORDERED WITH NECESSARY POWER SUPPLIES, DRIVERS, LEADER CABLES, JUMPER CABLES, POWER FEEDS, TERMINATORS AND CONTROL INTERFACES FOR INSTALLATION OF A COMPLETE WORKING SYSTEM.

LIGHTING CONTROL INTENT MATRIX AND SEQUENCE OF OPERATIONS

SPACE TYPE	LED DIMMING				AUTOMATIC CONTROL: OCCUPANCY SENSOR				PHOTOCELL		CONTROL DEVICE LOCATION		NORMAL BUSINESS HOURS		AFTER HOURS		OVERRIDE			EMERGENCY LTG STRATEGY	AUTOMATIC DEMAND RESPONSE
	MINIMUM AS REQUIRED BY TITLE-24 (2016)	MINIMUM AS REQUIRED BY LEED BD+C V4	DIMMING PERCENTAGE DOWN TO	WSP RECOMMENDATION	MINIMUM AS REQUIRED BY TITLE-24 (2016)	SENSOR DELAY SETPOINT	WSP RECOMMENDATION	AS REQUIRED BY T-24	PHOTOCELL SETPOINT	REMARKS	MINIMUM AS REQUIRED BY LEED BD+C V4	WSP RECOMMENDATION	LIGHTING	RECEPTACLES	LIGHTING	RECEPTACLES	LIGHTING	RECEPTACLES	DURATION	LIGHTING	
BLDG.9 - GATE																					
COVERED GATE	EXEMPT	N/A	--	SUGGEST NO DIMMING IF NOT REQUIRED BY CODE	N/A	NO SENSORS	AUTO ON AUTO OFF	REQUIRED IN DAYLIGHT ZONES	TBD	DAYLIGHT DIMMING RESPONSE	N/A	N/A								N/A	NOT REQUIRED

NOTES:
1. THE INTENT OF THIS SCHEDULE IS TO CLARIFY THE PROGRAMMING AND FUNCTION OF CONTROLS THAT MAY BE LOCATED IN EACH SPACE TYPE.
2. THIS SCHEDULE IS NOT INTENDED TO DEFINE WHICH CONTROLS ARE TO BE INSTALLED IN EACH SPACE TYPE.
3. FOR ACTUAL CONTROL DEVICES TO BE INSTALLED IN EACH SPACE, REFER TO PLANS.
4. ALL SETPOINTS AND TIME SCHEDULES TO BE VERIFIED WITH OWNER PRIOR TO PROGRAMMING.
5. FOOTCANDLE LEVELS ARE BASED ON THE IESNA LIGHTING STANDARDS AND ARE TO BE USED AS A BASELINE DEFAULT FOR PROGRAMMING. LEVELS SUBJECT TO CHANGE PER ENERGY CODE COMPLIANCE AND OWNER REQUEST.
6. PER TITLE 24, BUILDING LIGHTING CONTROL SYSTEM TO BE DEMAND RESPONSE CAPABLE AND ABLE TO REDUCE TOTAL LIGHTING POWER BY AT LEAST 15%.
7. NA = NOT APPLICABLE WITH CONTROL DESIGN.

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CITY OF HAYWARD
HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

WSP USA Buildings Inc.
425 Market St. 17th Floor
San Francisco, CA 94105
(415) 243-4600
wsp.com

HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNEE
No. E17267
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL LIGHT FIXTURE SCHEDULE

Drawn By: ELW
Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

9-E0.10
Drawing No.

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STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 3 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

I. Outdoor Lighting Schedule and Field Inspection Energy Checklist

	Luminaire Schedule			Installed Watts				Location	Cutoff	Field Inspector
	01	02	03	How wattage was determined		05	06	07	08	09
	Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	CEC Default from NAB	According to §130.0(c)	Number of Luminaires	Total Installed Watts in this area (3 x 5)	Primary Function area in which the luminaires are installed (Outdoor Lighting Zone)	BUG Rating	Pass / Fail
	FE1 (1')	FE1 (1')	7.5	☐	☑	24	180	Service Station Canopy		
									BH: n/a FH: n/a BVH: n/a FVH: n/a UL: n/a UH: n/a	☐ Pass ☐ Fail
									BH: FH: BVH: FVH: UL: UH:	☐ ☐
									BH: FH: BVH: FVH: UL: UH:	☐ ☐
INSTALLED WATTS PAGE TOTAL:							180	Enter sum total of all pages (Sum Total) **INSTALLED** Outdoor lighting wattage) into NRCC-LTO-01-E, page 1.		180

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 2 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

G. Schedule of Luminaires Exempt from the Cutoff Requirements in §130.2(b)

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

H. Schedule of Luminaires Exempt from the Outdoor Lighting Control Requirements in §130.2(c)

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 1 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared:

A. General Information

Project Address: 1401 W. Winton Ave. Hayward, CA 94545	Total Illuminated Hardscape Area: 0
Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration	
Outdoor Lighting Zone (LZ) ☐ LZ-1 ☐ LZ-2 ☑ LZ-3 ☐ LZ-4	
I have confirmed with the AHJ which LZ applies to this site. For default lighting zone designations, see Title 24 Part 6, §10-114	

B. Lighting Compliance Documents (check box for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

☑	NRCC-LTO-01-E	Certificate of Compliance
☑	NRCC-LTO-02-E	Outdoor Lighting Controls Certificate of Compliance
☑	NRCC-LTO-03-E	Outdoor Lighting Power Allowance Certificate of Compliance
☐	NRCC-LTO-04-E	Outdoor Lighting Existing Conditions Certificate of Compliance

C. Summary of Allowed Outdoor Lighting Power

		Watts
01	**Sum Total ALLOWED** Outdoor Lighting Wattage from NRCC-LTO-03-E, page 1 Alterations with NO increase of connected lighting load may instead use the allowed wattage from NRCC-LTO-04, page 2.	180
	Complies ONLY if **Installed** (Box 02) ≤ **Allowed** (Box 01)	
02	**Sum Total INSTALLED** Outdoor Lighting Wattage from NRCC-LTO-01-E, page 3.	180

D. Declaration of Required Installation Certificates
Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify compliance documents are completed and signed.)

☑ NRCI-LTO-01-E - Must be submitted for all buildings	☐ Field Inspector
☑ NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector

E. Declaration of Required Certificates of Acceptance
Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify compliance documents are completed and signed.)

☑ NRCA-LTO-02-A - Must be submitted for outdoor lighting controls.	☐ Field Inspector

F. Schedule of Luminaires Exempt from the Outdoor Lighting Power Requirements in §140.7

01	02
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 6 of 6)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Hayley Vero	Documentation Author Signature: Hayley Vero
Company: WSP	Signature Date: 7/16/2019
Address: 425 Market Street, 17th floor	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Francisco, CA 94105	Phone: 415-243-4600

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Amanda Brownlee	Responsible Designer Signature: Amanda Brownlee
Company: WSP	Date Signed: 7/16/2019
Address: 425 Market Street, 17th Floor	License: E17287
City/State/Zip: San Francisco, CA 94105	Phone: 415-243-4600

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 5 of 6)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

C. Voltage Drop
Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(c).

	Enforcement Agency Check that the system complies
☒ The electrical power distribution system meets the voltage drop requirement of Section 130.5(c). The maximum combined voltage drop on feeder conductors and branch circuit conductors to the farthest connected load or outlet, do not exceed 5%.	☐
☒ Voltage drop calculation documents showing compliance to Section 130.5(c) are submitted as part of the compliance document submittal.	☐

D. Circuit Controls for 120-Volt Receptacles and Controlled Receptacles
Check one or more boxes below for applicable requirements of Section 130.5(d) for the electrical power distribution system.

	Field Inspector Check that the system complies
☒ The control is capable of automatically shutting OFF the controlled receptacles when the space is typically unoccupied, either at the receptacle or circuit level. For the automatic time switch control, it incorporates an override control that allows the controlled receptacle to remain ON for no more than 2 hours when an override is initiated and an automatic holiday "shut-OFF" feature that turns OFF all loads for at least 24 hours and then resumes the normally scheduled operation. Countdown timer switches are not be used to comply with the automatic time switch control requirements. The controls meet the requirement of Section 130.5(d)1.	☐
☐ There is at least one controlled receptacle within 6 ft from each uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☐ There are installed split wired receptacles with at least one controlled and one uncontrolled receptacle. Where receptacles are installed in modular furniture in open office area, at least one controlled receptacle is installed at each workstation. The receptacles meet the requirement of Section 130.5(d)2.	☐
☒ Permanent and durable marking for controlled receptacles or circuits to differentiate them from uncontrolled receptacles or circuits is provided. The markings meet the requirement of Section 130.5(d)3.	☐
☐ For hotel and motel guest rooms, there are controlled receptacles for at least one-half of the 120-volt receptacles in each guest room. Electric circuits serving controlled receptacles in guestrooms are installed to have captive key controls, occupancy sensing controls, or automatic controls so the power is switched off no longer than 30 minutes after the guest room has been vacated. The receptacles meet the requirement of Section 130.5(d)4.	☐
☐ Receptacles that are only for the following purposes are excepted from Section 130.5(d): -Receptacles specifically for refrigerators and water dispensers in kitchen areas. -Receptacles located a minimum of six ft above the floor that are specifically for clocks. -Receptacles for network copiers, fax machines, A/V and data equipment other than personal computers in copy rooms. -Receptacles on circuits rated more than 20 amperes. -Receptacles connected to an uninterruptible power supply (UPS) that are intended to be in continuous use, 24 hours per day/365 days per year, and are marked to differentiate them from other uncontrolled receptacles or circuits.	☐

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 4 of 6)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

B. Separation of Electrical Circuits for Electrical Energy Monitoring
Check all boxes below if the electrical power distribution system is in compliance with Section 130.5(b).

☒ The electrical power distribution system meets the separation of electrical circuits for electrical energy monitoring requirement of Section 130.5(b). The electrical power distribution systems is designed so that measurement devices can monitor the electrical energy usage of load types according to TABLE 130.5-B.

☒ Describe the electrical power distribution system installed and the compliance method chosen in meeting the requirement of Section 130.5(b). Use the space below to include the information. Examples of compliance methods are detailed in Nonresidential Compliance Manual Chapter 8.

Fill out Column 1 thru 3 with the compliance information.

General information	Electrical Power Distribution System information and Method of compliance	Electrical Service Rating	Enforcement Agency
01	02	03	04
Electrical Service Designation/Location/Description	Describe the electrical power distribution system installed and the compliance method used.	kVA	Check that the system complies
LPH-B9A	PANELBOARD DISAGGREGATION	186	☐
DPL-B9A	PANELBOARD DISAGGREGATION	104	
LP-B9A	PANELBOARD DISAGGREGATION	7	
LP-B9B	PANELBOARD DISAGGREGATION	17	

Field Inspector Notes:

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 3 of 6)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

A. Service Electrical Metering

Check one of the three boxes below if the electrical power distribution system is in compliance with Section 130.5(a).

☒ For newly installed electrical service in newly constructed buildings, Service Electrical Metering is required according to Section 130.5(a). *Fill out Column 1 thru 6 of table below.*

☐ For new or replacement electrical service equipment in existing buildings, Service Electrical Metering is required according to Section 141.0(b)2Pi. *Fill out Column 1 thru 6 of table below.*

☒ EXCEPTION to Electrical Service Metering: Service or feeder for which the utility company provides a metering system that indicates instantaneous kW demand and kWh for a utility-defined period. *Fill out Column 1, 2 and 6 of table below with the compliance information.*

Fill out a separate line for each electrical service that is connected to the building. If additional table space is needed for electrical service information, submit additional page with the information.

Electrical Service Schedule	Electrical Service Rating	Metering Capabilities (check all that are present)				Exception to 130.5(a)	Field Inspector
01	02	03	04	05	06	07	08
Electrical Service Designation/Location/Description	kVA	Instantaneous kW (at the time)	Historical peak kW	Tracking kWh for a user-definable period	kWh per time period	Utility metering system	Check that the metering complies
REFER TO PACKAGE 1 FOR ELECTRICAL SERVICE SCHEDULE		☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 2 of 6)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Applicable subsection of Section 130.5

STATE OF CALIFORNIA
Electrical Power Distribution
CEC-NRCC-ELC-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ELC-01-E
Electrical Power Distribution	(Page 1 of 6)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

General Information

Project Address: 1401 W. Winton Ave.		Climate Zone: 3	Conditioned Floor Area: 0 Unconditioned Floor Area: 0
Building Type:	☐ Nonresidential ☐ Schools	☐ High-Rise Residential ☐ Relocatable Public Schools	☐ Hotel/Motel
Phase of Construction:	☑ New Construction	☐ Addition	☐ Alteration

In the table below identify all applicable construction documents that specify the requirements for the scope of responsibility reported by this certificate. Use additional pages as needed to list all construction documents related to compliance of Section 130.5.

Document Number	Document Title / Descriptions (include description information for Table or Schedule if it contains compliance information)	Document Sheet # or Page #	Indicate which subsection of Section 130.5 is related to the document (e.g. 130.5(a) for service electrical metering)
9-E0-02	ELECTRICAL SCHEDULES		c
9-E5-01	ELECTRICAL RISER DIAGRAM		a,b

PERMIT SUBMITTAL V3

REGISTERED PROFESSIONAL ENGINEER — AMANDA J. BROWNLEE — No. E17287 — CIVIL — ELECTRICAL — STATE OF CALIFORNIA

Sheet Title
ELECTRICAL TITLE 24

Drawn By: ELW — Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No: B17.07369

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Drawing No.

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER
1401 W. WINTON AVE. HAYWARD, CA 94545

No.	Description	Date
	REVISIONS	

CITY OF HAYWARD — HEART OF THE BAY
DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL RECD:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 3 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

C-3. WATTAGE ALLOWANCE PER SQUARE FOOT OF HARDSCAPE AREA (Ornamental Lighting) – Table 140.7-B

☐ Allowance for the total site illuminated hardscape area. Luminaires qualifying for this allowance shall be rated for 100 watts or less as determined in accordance with Section 130.0(c), and shall be post-top luminaires, lanterns, pendant luminaires, or chandeliers.

☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of area for which ornamental allowance is claimed	Square Feet of Hardscape	Wattage Allowance per Square Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
							Sum total allowance for ornamental lighting on the site:		0

C-4. WATTAGE ALLOWANCE PER SQUARE FOOT OF SPECIFIC AREA - Table 140.7-B

☐ Allowances for Building Facades; Outdoor Sales Lots; Vehicle Service Station Hardscape; Vehicle Service Station Canopies; Sales Canopies; Non-sales Canopies; Tunnels; Guard Stations; Student Pick-up/Drop-off zone: Outdoor Dining; Special Security Lighting for Retail Parking and Pedestrian Hardscape.

☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Illuminated Area of Application	Wattage Allowance per square Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
Service Station Can	1,352	1.300	1,758	FE1 (1')	FE1 (1')	24	7.5	180	180
							Sum total allowance for specific area on the site:		180

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 08/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 3 of 3)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Hayley Vero	Documentation Author Signature:	Hayley Vero
Company:	WSP	Signature Date:	7/16/2019
Address:	425 Market Street, 17th floor	CEA Certification Identification (if applicable):	
City/State/Zip:	San Francisco, CA 94105	Phone:	415-243-4600

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Amanda Brownlee	Responsible Designer Signature:	Amanda Brownlee
Company :	WSP	Date Signed:	7/16/2019
Address:	425 Market Street, 17th Floor	License:	E17287
City/State/Zip:	San Francisco, CA 94105	Phone:	415-243-4600

STATE OF CALIFORNIA
OUTDOOR LIGHTING
CEC-NRCC-LTO-01-E (Revised 02/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 4 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Hayley Vero	Documentation Author Signature:	Hayley Vero
Company:	WSP	Signature Date:	7/16/2019
Address:	425 Market Street, 17th floor	CEA Certification Identification (if applicable):	
City/State/Zip:	San Francisco, CA 94105	Phone:	415-243-4600

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Amanda Brownlee	Responsible Designer Signature:	Amanda Brownlee
Company :	WSP	Date Signed:	7/16/2019
Address:	425 Market Street, 17th Floor	License:	E17287
City/State/Zip:	San Francisco, CA 94105	Phone:	415-243-4600

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 4 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Hayley Vero	Documentation Author Signature:	Hayley Vero
Company:	WSP	Signature Date:	7/16/2019
Address:	425 Market Street, 17th floor	CEA Certification Identification (if applicable):	
City/State/Zip:	San Francisco, CA 94105	Phone:	415-243-4600

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Amanda Brownlee	Responsible Designer Signature:	Amanda Brownlee
Company :	WSP	Date Signed:	7/16/2019
Address:	425 Market Street, 17th Floor	License:	E17287
City/State/Zip:	San Francisco, CA 94105	Phone:	415-243-4600

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 1 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

A. OUTDOOR LIGHTING POWER ALLOWANCE SUMMARY

1. General Hardscape Lighting Power Allowance (Site Total from Section B of NRCC-LTO-03-E)							1.	0
2. Additional Specific "use it or lose it" Lighting Power Allowances listed in each of these cells shall be identical to total allowed watts determined in Section C-1 to C-4 of NRCC-LTO-03-E.								
PER APPLICATION from Section C-1		PER UNIT LENGTH (SALES FRONTAGE) from Section C-2		PER HARDSCAPE AREA (ORNAMENTAL LIGHTING) from Section C-3		PER SPECIFIC AREA from Section C-4.			
0	+	0	+	0	+	180	=	2.	180
3. **Sum Total ALLOWED** Outdoor Lighting Wattage (add rows 1 and 2)								3.	180

B. GENERAL HARDSCAPE LIGHTING POWER ALLOWANCE FROM TABLE 140.7-A

Area Wattage Allowance (AWA)				Linear Wattage Allowance (LWA)			Initial Wattage Allowance (IWA)	Total General Hardscape Lighting Allowance
01	02	03	04	05	06	07	08	09
Name of Area	Illuminated Hardscape Area	AWA Per Square Foot	AWA (B02 x B03)	Perimeter Length of General Hardscape	LPA per Linear Foot	LWA (B05 x B06)	IWA (Watts)	B04 + B07 + B08
							TOTAL	0

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 08/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 1 of 3)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

A. Mandatory Outdoor Lighting Control Declaration Statements

Check all that apply:

- ☑ Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with §110.9(a).
- ☑ Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with §130.4(b).
- ☑ All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with §130.0(d).
- ☐ Part-Night Outdoor Lighting Controls, as defined in Section 100.1(b), shall meet the requirements in Section 110.9(b)5.
- ☐ All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c), shall be controlled by a motion sensor.
- ☑ All outdoor luminaires rated for use with lamps greater than 150 lamp watts, determined in accordance with Section 130.0(c), shall comply with Uplight and Glare requirements in accordance with Section 130.2(b).
- ☑ All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control, or other control capable of automatically switching OFF in accordance with Section 130.2(c)1.
- ☑ All installed outdoor lighting shall be independently controlled from other electrical loads by an automatic scheduling control in accordance with Section 130.2(c)2.
- ☑ All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground, shall be controlled with automatic lighting controls in accordance with Section 130.2(c)3.
- ☐ For Outdoor Sales Frontage, an automatic lighting control shall be installed in accordance with Section 130.2(c)4.
- ☐ For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control shall be installed in accordance with Section 130.2(c)5.
- ☑ Before an occupancy permit is granted for the newly constructed building or for the addition, or for any altered outdoor lighting, the outdoor lighting controls shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with §130.4.(a). Outdoor lighting controls shall comply with the applicable requirements of Section 130.2(c) and Reference Nonresidential Appendix NA7.8.

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-03-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-03-E
Outdoor Lighting Power Allowances	(Page 2 of 4)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

C. ADDITIONAL "USE IT OR LOSE IT" OUTDOOR LIGHTING POWER ALLOWANCES FOR SPECIFIC APPLICATIONS

☐ The additional specific outdoor lighting power allowance shall be the smaller of the allowed lighting power or the actual lighting power used.

☐ Use Outdoor Lighting Zone (OLZ) that is documented on page 1 of NRCC-LTO-01-E to calculate the specific wattage allowances.

C-1. WATTAGE ALLOWANCE PER APPLICATION – Table 140.7-B

☐ Available only for qualifying locations, which include Building Entrances or Exits; Primary Entrances to Senior Care Facilities, Police Stations, Hospitals, Fire Stations, and Emergency Vehicle Facilities; Drive Up Windows; Vehicle Service Station Uncovered Fuel Dispenser, ATM Machine Lighting

☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Number of Qualifying Locations	Wattage Allowance per Qualifying Location	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
							Sum total allowance per application on this site:		0

C-2. WATTAGE ALLOWANCE PER UNIT LENGTH (Sales Frontage) from Table 140.7-B

☐ If more than one luminaire type is used per location, use multiple rows for that location

01	02	03	04	05	06	07	08	09	10
	ALLOTTED WATTS			DESIGN WATTS					
Name of Location for Which Allowance is Claimed	Linear Feet of Sales Frontage	Wattage Allowance per Linear Foot	Allotted Watts (02 x 03)	Luminaire Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per Luminaire	Design Watts (07 x 08)	Allowed Watts (smaller of 04 or 09)
							Sum total allowance for sales frontage on the site:		0

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 08/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 2 of 3)
Project Name: Hayward Fire Training Center - Building 9	Date Prepared: 7/16/2019

B. Mandatory Outdoor Lighting Control Schedule and Field Inspection Checklist

Outdoor Lighting Control Schedule		Standards Complying With (✓ all that apply, or enter 'E' if Exempted)							✓ if Acceptance Test Required	Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	
Location and Application of Luminaires Being Controlled	Type/ Description of Lighting Control (i.e. outdoor motion sensor, outdoor photocontrol, outdoor astronomical time-switch control, automatic scheduling control, part-night outdoor lighting control)	# of Units	§130.2(a)	§130.2(c)1	§130.2(c)2	§130.2(c)3	§130.2(c)4	§130.2(c)5		Pass	Fail
CANOPY	PHOTOCONTROL, MOTION SENSOR	SEE PLAN	NA	✓	✓	✓	NA	NA	☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐
									☐	☐	☐

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DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

DESIGNED BY:	CHECKED BY:
DRAWN BY:	APPROVAL REC'D:
APPROVED BY: KATHY GARCIA, DEP. DIR. PUBLIC WORKS	ALEX AMERI, INTERIM DIR. PUBLIC WORKS
PROJ. NO. 07481 & 07482	FILE NO. E-2157

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HAYWARD FIRE STATION #6 & FIRE TRAINING CENTER

1401 W. WINTON AVE.
HAYWARD, CA 94545

REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER — AMANDA J. BROWNLEE — No. E17287 — ELECTRICAL — STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL TITLE 24

Drawn By: ELW — Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

9-E0.21
Drawing No.

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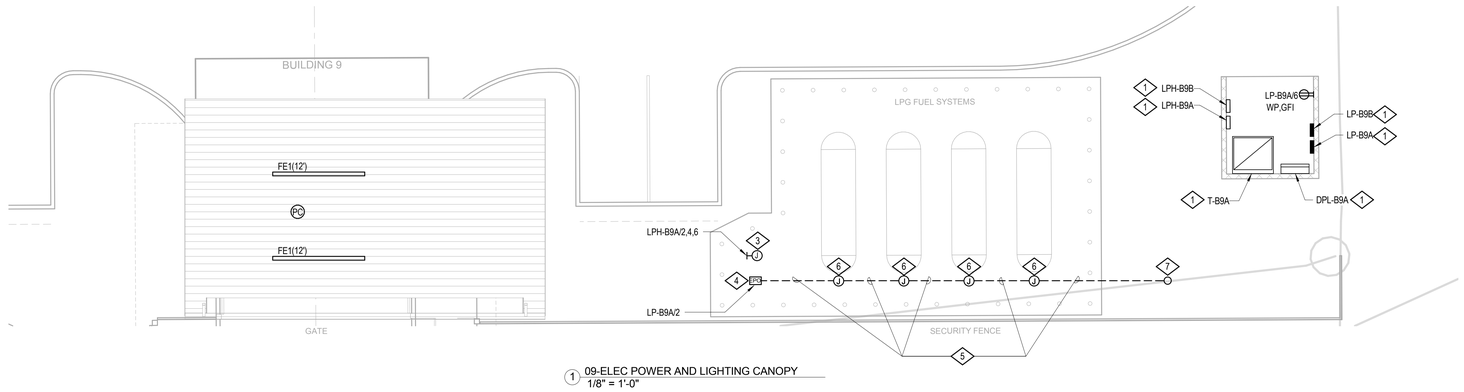

1 09-ELEC POWER AND LIGHTING CANOPY
1/8" = 1'-0"

2 09-ELEC POWER CANOPY-ROOF
1/8" = 1'-0"

SHEET NOTES:

A. PROVIDE CONDUIT AND WIRE FOR CIRCUITING AND SWITCHING SHOWN.

B. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES, SWITCHES, AND LIGHT FIXTURES WITH ARCHITECT.

C. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM.

D. ALL DIMMERS ARE TO HAVE A MASTER RAISE/LOWER.

E. FOR ALL DATA CABLING, PATHWAY INFRASTRUCTURE AND DEVICES REFER TO T SERIES DRAWINGS.

NUMBERED NOTES:

1. PROVIDE NEMA 4X RATED ENCLOSURE.
2. REFER TO BUILDING 9 PHOTOVOLTAIC SYSTEM DRAWINGS FOR PHOTOVOLTAIC PANEL LAYOUT AND DETAILS.
3. PROVIDE CONNECTION TO LPG VAPORIZER. PROVIDE 2"C. REFER TO FUEL SYSTEM CONSULTANT DRAWINGS FOR MORE INFORMATION.
4. PROVIDE EPO TO SHUT-DOWN LPG FUEL SYSTEM. REFER TO FUEL SYSTEM CONSULTANT DRAWINGS FOR MORE INFORMATION.
5. PROVIDE 1"C TO LPG TANK SOLENOID VALVES. REFER TO FUEL SYSTEM CONSULTANT DRAWINGS FOR MORE INFORMATION.
6. PROVIDE 120V CONNECTION TO SOLENOID VALVE FROM LP-B9A/2. REFER TO FUEL SYSTEM CONSULTANT DRAWINGS FOR MORE INFORMATION.
7. PROVIDE (1) 1" EMPTY CONDUIT TO FUTURE SOLENOID VALVE LOCATION. STUB-UP CONDUIT AND CAP. COORDINATE STUB-UP LOCATION WITH FUEL SYSTEM CONSULTANT PRIOR TO ROUGH-IN. REFER TO FUEL SYSTEM CONSULTANT DRAWINGS FOR MORE INFORMATION.

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HEART OF THE BAY

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APPROVED BY: **KATHY GARCIA** DEP. DIR. PUBLIC WORKS	**ALEX AMERI** INTERIM DIR. PUBLIC WORKS
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REVISIONS

No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNFEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL ENTRY CANOPY PLAN AND LIGHTING

Drawn By: ELW Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

9-E2.01
Drawing No.

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WIRING SCHEDULE - COPPER CONDUCTORS (0-600V)

CIRCUIT RATING	CONDUIT SIZE (INCHES)							CONDUCTOR SIZE	
	NONE	G	N	NG	NGI	NNG	NNGI	PHASE/ NEUTRAL	GND/* IG
15	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
20	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
30	0.5	0.5	0.5	0.5	0.75	0.75	0.75	10	10
40	0.75	0.75	0.75	1	1	1	1	8	10
50	1	1	1	1.25	1.25	1.25	1.25	6	10
60	1	1.25	1.25	1.25	1.5	1.5	1.5	4	10
70	1	1.25	1.25	1.25	1.5	1.5	1.5	4	8
80	1.25	1.25	1.25	1.5	2	2	2	2	8
90	1.25	1.25	1.25	1.5	2	2	2	2	8
100	1.25	1.5	1.5	2	2	2	2.5	1	8
110	1.25	1.5	1.5	2	2	2	2.5	1	6
125	1.25	1.5	1.5	2	2	2	2.5	1	6
150	1.5	2	2	2	2.5	2.5	2.5	1/0	6
175	1.5	2	2	2	2.5	2.5	2.5	2/0	6
200	2	2	2	2.5	2.5	2.5	3	3/0	6
225	2	2.5	2.5	2.5	3	3	3	4/0	4
250	2.5	2.5	2.5	3	3	3	3.5	250	4
300	2.5	3	3	3.5	3.5	3.5	4	350	4
350	3	3.5	3.5	4	4	4	5	500	2
400	2@2	2@2	2@2	2@2.5	2@2.5	2@2.5	2@3	3/0	2
450	2@2	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	4/0	2
500	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	2@3.5	250	1
600	2@2.5	2@3	2@3	2@3.5	2@3.5	2@3.5	2@4	350	1
700	2@3	2@3.5	2@3.5	2@4	2@4	2@4	2@5	500	1/0
800	3@2.5	3@3	3@3	3@3	3@3.5	3@3.5	3@3.5	300	1/0
1000	3@3	3@3	3@3	3@3.5	3@4	3@4	3@4	400	2/0
1200	4@2.5	4@3	4@3	4@3.5	4@3.5	4@3.5	4@4	350	3/0
1600	5@3	5@3	5@3	5@3.5	5@4	5@4	5@4	400	4/0
2000	6@3.5	6@3.5	6@3.5	6@4	6@4	6@4	6@5	500	250
2500	7@3.5	7@3.5	7@3.5	7@4	7@4	7@4	7@4	500	350
3000	8@3.5	8@3.5	8@3.5	8@4	8@4	8@4	8@4	500	400

SUBSCRIPT KEY

SUBSCRIPT	CONDUCTORS PER CONDUIT
NONE	3 PHASE CONDUCTORS, CONDUIT GROUND
G	3 PHASE CONDUCTORS, 1 GROUNDING CONDUCTOR
N	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, CONDUIT GROUND
NG	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR
NGI	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR
NNG	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR
NNGI	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR

* SINGLE NEUTRAL CONDUCTOR SIZES FOR CIRCUIT RATING 125 AND LESS

PARALLEL CONDUCTORS ARE NOT PERMITTED UNDER 1/0. WHERE DOUBLE NEUTRAL CONDUCTORS ARE INDICATED, PROVIDE AN OVERSIZED NEUTRAL CONDUCTOR IN ACCORDANCE WITH THE FOLLOWING TABLE:

CIRCUIT RATING	15	20	30	40	50	60
SINGLE NEUTRAL CONDUCOTR SIZE	10	8	4	2	1	1/0
CIRCUIT RATING	70	80	90	100	125	
SINGLE NEUTRAL CONDUCTOR SIZE	2/0	3/0	4/0	250	250	

EXAMPLES

NOTES

1. SCHEDULE IS BASED ON 3 CURRENT CARRYING CONDUCTORS IN RACEWAY, CABLE OR EARTH, AT AMBIENT AIR TEMPERATURE OF 30°C (86°F). CONDUIT SIZES BASED ON EMT.
2. MODIFY IF USE OF 600MCM CONDUCTORS ARE DESIRED CONFIRM LUG SIZES ARE AVAILABLE.

TRANSFORMER SCHEDULE

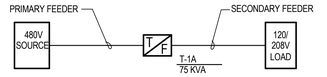
KVA	FEEDER AMPACITY			NEUTRAL GROUNDING ELECTRODE CONDUCTOR**
	PRIMARY 480V 3 PHASE-3 WIRE	SECONDARY 120/208V 3 PHASE-4 WIRE	SUPPLY SIDE BONDING JUMPER**	
3	15	15	#8	1/2"C-1#8
6	15	20	#8	1/2"C-1#8
9	15	30	#8	1/2"C-1#8
15	20	50	#8	1/2"C-1#8
30	50	100	#6	1/2"C-1#6
45	70	150	#6	1/2"C-1#6
75	110	250	#2	1/2"C-1#2
112 1/2	175	400	#1/0	3/4"C-1#3/0
150	225	500	#1/0	3/4"C-1#3/0
225	350	800	#2/0	3/4"C-1#3/0
300	450	1000	#2/0	3/4"C-1#3/0
500	800	1600	#4/0	3/4"C-1#3/0
750	1200	2500	#350	3/4"C-1#3/0

FEEDER KEY

TRANSFORMER IDENTIFICATION PREFIX	FEEDER CONFIGURATION	
	PRIMARY	SECONDARY
T	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 1 NEUTRAL CONDUCTOR 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NG***)
TK	3 PHASE CONDUCTORS 1 GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: G)	3 PHASE CONDUCTORS 2 NEUTRAL CONDUCTORS 1 GROUNDING CONDUCTOR 1 ISOLATED GROUNDING CONDUCTOR (CIRCUIT SUBSCRIPT: NNGI***)

** = CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS
*** = SUBSTITUTE GNDIG CONDUCTOR FROM FEEDER SCHEDULE WITH SUPPLY SIDE BONDING JUMPER NOTED ABOVE

EXAMPLES



UNDERGROUND FEEDER CONDUIT SCHEDULE

TAG DESIGNATION	TO	FROM	QUANTITY	SIZE	SPARE	DESIGN FEEDER	ESTIMATED LENGTH	VOLT DROP (%)	BUILDING PACKAGE	REMARKS
F00	PG&E P/B	STREET	2	5"		PER PG&E	66'	N/A	1	
F01	PG&E TRANSF	PG&E P/B	2	5"		PER PG&E	208'	N/A	1	
F02	MS-B1A	PG&E TRANSF	7	5"		PER PG&E	40'	0.60	1	
F03	DPH-B1A	MS-B1A	1	2.5"		225NG	57'	0.12	1	
F04	FP-B1	MS-B1A	1	2.5"		70G	54'	0.29	1	LRA = 302.8A, VD_{at}=1.7%
F05	ATS-E1B	MS-B1A	1	2"		100NG	31'	0.39	1	
F06	FP-B1	EDSH-B1A	1	2.5"		70G	138'	1.24	1	INCLUDE 1"C TO GENERATOR FOR GEN START LRA = 302.8A, VD_{at}=6.4%
F07	ATS-E1A	MS-B1A	1	2"		150NG	33'	0.52	1	
F08	ATS-E1C	MS-B1A	2	3"		500NG	34'	0.47	1	
F09	HBI-B1	MS-B1A	1	4"	2"	300G	60'	0.35	1	
F10	CH-1	EDPH-B1A	1	2.5"		ECS	67'	0.26	1	
F11	ELEV-1	EDPH-B1A	1	1"		ECS	101'	0.18	1	
F12	FUEL	ELP-B1A	1	2"		100NG	102'	0.56	1	
F13	DPH-PV	HBI-B1	1	4"	2"	300G	77'	0.44	1	
F14	PULLBOX	MS-B1A			(2) 4"	37'	37'	N/A	1	SPARE FOR FUTURE USE
F15										NOT USED
F16										NOT USED
F17										NOT USED
F18										NOT USED
F19										NOT USED
F20	LPH-B2A	MS-B1A	2	2.5"	(2) 2.5"	400G	358'	0.86	1 / 2	
F30										NOT USED
F40	LP-B4A	DPL-B2A	1	3"	(1) 2"	250NG	150'	1.85	4	FEEDER OVERSIZED FOR VOLTAGE DROP
F50										NOT USED
F60	LP-B6A	DPL-B9A	1	2.5"		200NG	413'	1.54	6	
F70	LP-B7A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	318'	0.77	7	
F80	LP-B8A	DPL-B9A	2	2.5"	(1) 2.5"	400NG	362'	1.06	8	
F81	LP-B8B	DPL-B9A	2	2.5"	(1) 2.5"	400NG	449'	0.84	8	
F90	LPH-B9A	MS-B1A	2	3.5"	(2) 2.5"	600G	515'	0.66	1 / 9	
F91	T-B9A	LPH-B9A	2	2.5"		450G	22'	0.04	9	
F92	DPL-B9A	T-B9A	3	3.5"		1000NG	10'	0.04	9	
F93	LP-B9A	DPL-B9A	1	2.5"		225NG	17'	0.02	9	
F94	LP-B9B	DPL-B9A	1	2.5"	(1) 2.5"	175NG	19'	0.07	9	
FE1	EDSH-B1A	GEN-B1	2	4"		700NG	20'	0.05	1	
FE2	ATS-E1A	EDSH-B1A	1	2"		150NG	100'	0.61	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE3	ATS-E1C	EDSH-B1A	2	3"		500NG	102'	0.18	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE4	ELPH-B1A	ATS-E1A	1	2"		150NG	40'	0.24	1	
FE5	EDPH-B1A	ATS-E1C	2	4"		600NG	29'	0.04	1	
FE6	UPS-B1A	ELPH-B1A	1	1.5"		70NG	70'	0.14	1	
FE7	ELP-B1A	ET-B1A	2	2.5"		400NG	69'	1.15	1	
FE8	UPS-B1A	UPS-B1A	1	1.5"		50NNGI	97'	0.25	1	
FE9	ATS-E1B	EDSH-B1A	1	2"		100NG	90'	0.04	1	INCLUDE 1"C TO GENERATOR FOR GEN START
FE10	ELPH-B1B	ATS-E1B	1	2"		100NG	56'	0.02	1	
FE11	PULLBOX	EDSH-B1A			(1) 4"			N/A	1	SPARE FOR FUTURE USE
FE12	ELPH-B2A	ELPH-B1B	1	2"		100NG	350'	0.08	2	

SHEET NOTES

A. CONFIRM AND COORDINATE ALL PG&E UTILITY ROUTING WITH PG&E PER PG&E STANDARDS AND REQUIREMENTS.

B. REFER TO "0" SERIES OF DRAWINGS FOR SITE UTILITY AND INFRASTRUCTURE INFORMATION.

C. ALL OUTDOOR EQUIPMENT SHALL BE RATED NEMA 4X, UON.

D. ALL OVERCURRENT PROTECTIVE DEVICES ASSOCIATED WITH COPS SHALL BE SELECTIVELY COORDINATED.

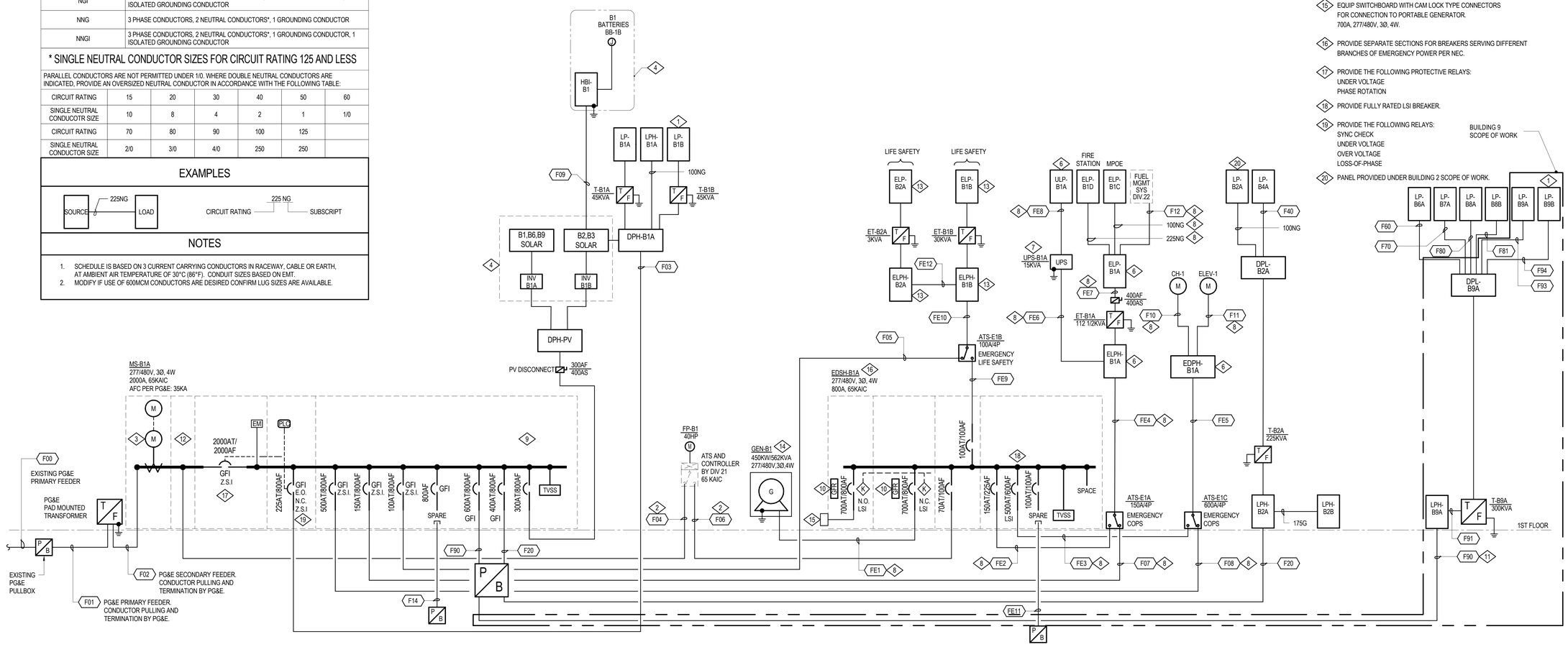
E. RUN IN-GROUND CONDUIT 24" BELOW GRADE, MINIMUM .

F. WIRING FROM AN EMERGENCY SOURCE OR EMERGENCY SOURCE DISTRIBUTION OVERCURRENT PROTECTION TO EMERGENCY LOADS SHALL BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER CEC ARTICLE 700.10.

G. ARC ENERGY REDUCTION PER CEC ARTICLE 240.87 WITH RESPECT TO DOCUMENTATION & METHOD TO REDUCE CLEARING TIES IS APPLICABLE.

NUMBERED NOTES

1. EQUIPMENT TO SERVE ELECTRIC VEHICLE CHARGERS. PROVIDE PROGRAMMABLE ELECTRONIC CIRCUIT BREAKER LEVEL SUB-METERS FOR OWNER THIRD PARTY MEASUREMENT/METERING IN THIS PANEL. CONNECT WITH 3/4"C TO NEAREST TELECOM ROOM.
2. PROVIDE 2-HR FIRE RATED ASSEMBLY FOR FEEDERS.
3. PROVIDE 2-SOCKET PG&E UTILITY METER, WITH NET METER CAPABILITY PER PG&E REQUIREMENTS.
4. REFER TO HYBRID POWER SYSTEM DRAWINGS FOR MORE INFORMATION.
5. REFER TO PHOTOVOLTAIC SYSTEM DRAWINGS FOR MORE INFORMATION.
6. PROVIDE SURGE PROTECTION DEVICE PER NEC ARTICLE 708.
7. FLOOR MOUNTED UPS WITH INTEGRAL TRANSFORMER. APC OR APPROVED EQUAL.
   INPUT VOLTAGE: 480V, 3Ø, 3W
   OUTPUT VOLTAGE: 120/208V, 3Ø, 4W
   BATTERY RUN TIME (MINIMUM): 20 MINUTES
8. PROTECT FEEDER SERVING DESIGNATED CRITICAL OPERATIONS AREA (DCOA) EQUIPMENT AS REQUIRED BY NEC ARTICLE 708.
9. PROVIDE GROUND FAULT PROTECTION FOR ALL NEXT LEVEL FEEDER DISCONNECTING MEANS IN COMPLIANCE WITH NEC ARTICLE 708.
10. GROUND FAULT INDICATION ONLY.
11. FEEDER OVERSIZED FOR VOLTAGE DROP.
12. SERVICE ENTRANCE SECTION FOR FIRE PUMP CONNECTION.
13. PROVIDE SURGE PROTECTION DEVICE PER NEC 700.
14. PROVIDE WEATHERPROOF SOUND ATTENUATING ENCLOSURE.
15. EQUIP SWITCHBOARD WITH CAM LOCK TYPE CONNECTORS FOR CONNECTION TO PORTABLE GENERATOR. 700A, 277/480V, 3Ø, 4W.
16. PROVIDE SEPARATE SECTIONS FOR BREAKERS SERVING DIFFERENT BRANCHES OF EMERGENCY POWER PER NEC.
17. PROVIDE THE FOLLOWING PROTECTIVE RELAYS:
    UNDER VOLTAGE
    PHASE ROTATION
18. PROVIDE FULLY RATED LSI BREAKER.
19. PROVIDE THE FOLLOWING RELAYS:
    SYNC CHECK
    UNDER VOLTAGE
    OVER VOLTAGE
    LOSS-OF-PHASE
20. PANEL PROVIDED UNDER BUILDING 2 SCOPE OF WORK.



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PROJ. NO. 07481 & 07482	FILE NO. E-2157

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REVISIONS

No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL RISER DIAGRAM

Drawn By: ELW
Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

9-E5.01
Drawing No.

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SHEET NOTES

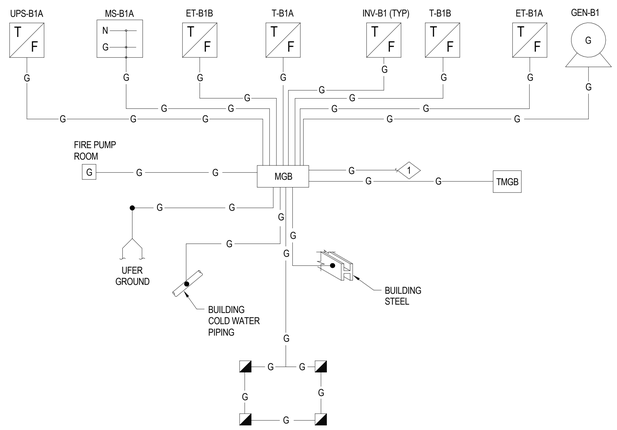
A. REFER SHEET E5.01 FOR TRANSFORMER SCHEDULE AND GROUNDING REQUIREMENTS.

B. CONTRACTOR TO COORDINATE EXACT LOCATION OF CONNECTIONS BETWEEN DIFFERENT CONSTRUCTION PACKAGES AND DIVISION OF WORK BETWEEN SUBCONTRACTORS.

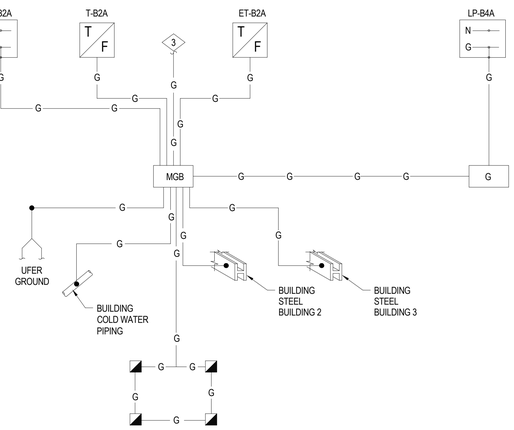
NUMBERED NOTES

1. PROVIDE CONNECTION TO HYBRID POWER SYSTEM. REFER TO SHEET 1-H5.01.
2. DIAGRAM IS FOR ILLUSTRATION OF OVERALL GROUNDING ELECTRODE SYSTEM. SEE RISER DIAGRAMS, GROUND BUS DETAILS AND SPECIFICATIONS FOR ADDITIONAL GROUNDING CONNECTIONS AND REQUIREMENTS.
3. PROVIDE CONNECTION TO PV SYSTEM. REFER TO SHEETS 2-PV5.01 AND 3-PV5.01.
4. PROVIDE CONNECTION TO PV SYSTEM. REFER TO SHEETS 6-PV5.01 AND 9-PV5.01.
5. DO NOT BOND NEUTRAL.

BUILDING 1

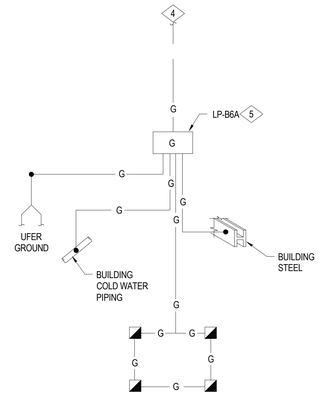


BUILDING 2

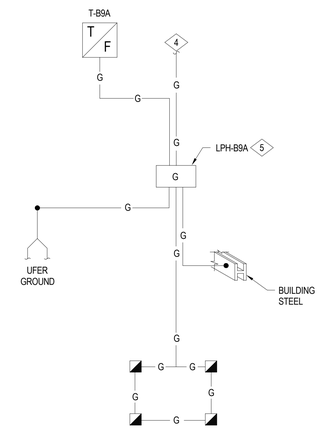


BUILDING 4

BUILDING 6



BUILDING 9



1 GROUNDING RISER DIAGRAM 2
NTS

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Sheet Title

ELECTRICAL GROUNDING DIAGRAM

Drawn By: ELW Checked By: AJB

Scale: **NTS**

Date: **October 4, 2019**

Project No. B17.07369

9-E5.02
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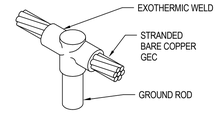
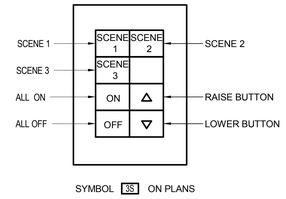


3 GROUNDING ELECTRODE CONDUCTOR TAP DETAIL (TYP)

NO SCALE



SYMBOL 3S ON PLANS

LOW VOLTAGE SCENE CONTROL DETAILS

NTS

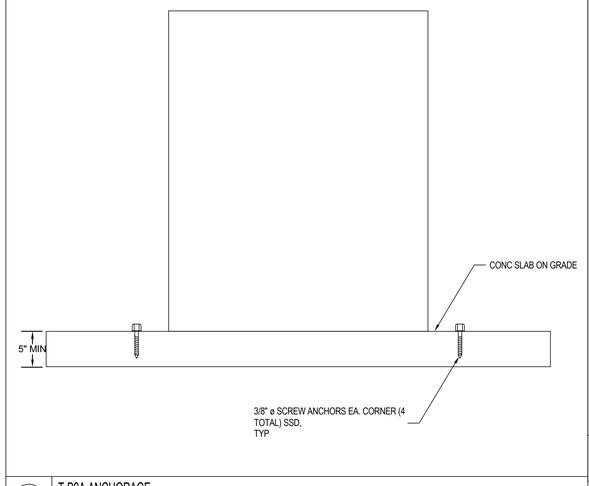
DETAIL NOTES

A. WHERE DEVICES ARE LOCATED NEXT TO EACH OTHER ON PLANS, COMBINE UNDER COMMON COVER PLATE.

B. REFER TO SHEET E0.10 FOR ADDITIONAL INFORMATION.

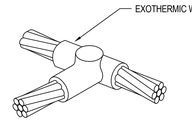
1 LIGHTING KEYPAD ELEVATIONS

NO SCALE



4 T-B9A ANCHORAGE

NO SCALE



2 GROUNDING ELECTRODE CONDUCTOR TAP DETAIL (TYP)

NO SCALE

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STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

ELECTRICAL DETAILS

Drawn By: ELW Checked By: AJB

Scale:
NTS

Date:
October 4, 2019

Project No. B17.07369

9-E6.01
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RACEWAY LEGEND

	CONDUIT EXPOSED AT PV ARRAY OR WITHIN WALL IN BUILDING
	CONDUIT BELOW GRADE OR EMBEDDED WITHIN SLAB
	CONDUIT UP
	CONDUIT DOWN
	CONDUIT STUBBED OUT WITH BUSHING NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
E	CONDUIT STUBBED OUT AND CAPPED NOTE: PROVIDE PULLSTRING IN EACH EMPTY RACEWAY
	DAS DATA, CAT-5E, SHIELDED
CT	CABLE TRAY
G	GROUNDING SYSTEM RACEWAY
	CONDUIT HOMERUN, MAXIMUM OF (3) BRANCH CIRCUITS, UON NOTE: MAXIMUM OF THREE BRANCH CIRCUITS FOR EACH HOMERUN, UON
	PHASE CONDUCTOR(S) GROUNDING CONDUCTOR
	ISOLATED GROUNDING CONDUCTOR
	NEUTRAL CONDUCTOR

EQUIPMENT NAMING LEGEND

E O U S ATS BUS DPH DPL DSH DSL LP LPH LRC MCC MP MS PDU T TB TC - B 2 A / 1,3,5

- 1,3,5 — CIRCUIT NUMBER(S)
- A — FIRST OF THIS TYPE ON FLOOR
- 2 — BUILDING NUMBER
- B — BUILDING

ATS	AUTOMATIC TRANSFER SWITCH
BUS	BUSWAY
DPH	DISTRIBUTION PANEL 277/480V
DPL	DISTRIBUTION PANEL 120/208V
DSH	DISTRIBUTION SWITCHBOARD 277/480V
DSL	DISTRIBUTION SWITCHBOARD 120/208V
INV	INVERTER
LP	BRANCH CIRCUIT PANELBOARD 120/208V
LPH	BRANCH CIRCUIT PANELBOARD 277/480V
LRC	LIGHTING RELAY CABINET
MCC	MOTOR CONTROL CENTER
MP	MECHANICAL EQUIPMENT PANELBOARD
MS	MAIN SWITCHBOARD
PDU	POWER DISTRIBUTION UNIT
T	TRANSFORMER
TB	TELECOM BACKBOARD
TC	TELECOM CABINET

E	EMERGENCY LIFE SAFETY
O	POWER OPTIONAL STANDBY
U	UPS POWER
S	LEGALLY REQUIRED STANDBY

PV SYSTEM LEGEND

15M	PV MODULE SOURCE CIRCUIT #M = NUMBER OF MODULES IN SERIES #O - NUMBER OF OPTIMIZERS IN SERIES
DCDC-1 11P 15AF 150AS	DISCONNECTING DC COMBINER BOX DCDC-1 = EQUIPMENT LABEL #P = NUMBER OF POLES #AF = DC FUSE RATING #AS = SWITCH SIZE
INV-1 75KW 480VAC	PV INVERTER INV-1 = EQUIPMENT LABEL #KW = NAMEPLATE AC POWER RATING #VAC = OUTPUT VOLTAGE

15AT/
15AF
NC
	CIRCUIT BREAKER
	#AT = TRIP RATING
	#AF = FRAME SIZE
	NC = NORMALLY CLOSED
	NO = NORMALLY OPEN
	S.T. = SHUNT TRIP

TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
15AE/ 15AS	FUSED AC DISCONNECT - 4 WIRE, 3 BLADE SAFETY SWITCH #AF = FUSE SIZE #AS = SWITCH SIZE
M	DAS ENCLOSURE WITH REVENUE GRADE KWH METER
	DAS WEATHER STATION (INCLUDES ANEMOMETER, PYRANOMETER, BACK OF MODULE TEMP. SENSOR, AND THERMOMETER FOR AMBIENT TEMP. MEASUREMENT)
BB-1 25.9KWh 48VDC	BATTERY BANK BB-1 = EQUIPMENT LABEL #KWh = NAMEPLATE ENERGY RATING #VDC = OUTPUT VOLTAGE
M	CURRENT TRANSFORMER COMPARTMENT AND KWH METER
SF-1 MCC-1A	EQUIPMENT DESIGNATION POWER SOURCE

GENERAL NOTES

1. ALL EQUIPMENT SHALL RESIDE WITHIN REQUIRED SETBACK AND HEIGHT RESTRICTIONS.
2. ALL WORK SHALL COMPLY WITH CALIFORNIA BUILDING CODE (2016). CALIFORNIA ELECTRICAL CODE (2016), AND ALL MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS.
3. DC WIRING LOCATED INSIDE THE BUILDING SHALL RUN IN METALLIC CONDUIT OR RACEWAYS AND SHALL RUN ALONG THE BOTTOM OF LOAD-BEARING STRUCTURAL FRAMING MEMBERS WHEREVER FEASIBLE.
4. ALL OUTDOOR CONDUIT SHALL BE PVC AND INDOOR CONDUIT SHALL BE EMT.
5. ALL OUTDOOR DC WIRING SHALL BE PV WIRE, USE-2/RHW-2 DUAL RATED, UV RATED CONDUCTORS OR BETTER.
6. SOLAR ARRAY LAYOUT SUBJECT TO FIELD ADJUSTMENT WITHIN CBC, CEC AND FIRE DEPARTMENT REQUIREMENTS.
7. FOR CIRCUITS OVER 250 VOLTS TO GROUND, THE ELECTRICAL CONTINUITY OF METAL RACEWAYS SHALL BE ENSURED BY CONNECTION UTILIZING BUSHING WITH BONDING JUMPERS.
8. RACEWAY FOR GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED AT EACH END.
9. THE CONTRACTOR SHALL MAINTAIN THE UNIFORMITY AND CONTINUITY OF THE GROUNDING SYSTEM.
10. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, EXCEPT AS NOTED, AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORY AND SHALL BEAR THE INSPECTION LABEL UL WHERE SUBJECT TO SUCH APPROVAL.
11. ALL CONDUCTORS SHALL BE COPPER AND RATED MINIMUM 600 VOLTS. SIZES NO. 10 AWG AND LARGER SHALL BE STRANDED AND NO. 12 AWG AND SMALLER SHALL BE SOLID.
12. FOR ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED FLOOR SLABS, SHAFTS AND WALLS SHALL BE SEALED AGAINST THE SPREAD OF FIRE OR SMOKE WITH APPROVED CABLE-&-CONDUIT FIRE STOPS. REFERENCE DIV 26 SPECIFICATIONS.
13. ALL SURFACE-MOUNTED ELECTRICAL EQUIPMENT AND DEVICES SHALL BE PROPERLY SECURED.
14. HYBRID POWER SYSTEM SHALL BE GRID INTERCONNECTED, TESTED, AND COMMISSIONED FOR ON-AND OFF-GRID OPERATION IN CONFORMANCE WITH HYBRID POWER CONTROL STRATEGY BEFORE SYSTEM ACCEPTANCE IS GRANTED. MAKE NECESSARY CORRECTIONS AND LEAVE SYSTEM READY FOR OPERATION.
15. ALL OUTDOOR EQUIPMENT SHALL BE IN CORROSION RESISTANT, WEATHERPROOF NEMA 3R ENCLOSURE. ALL EQUIPMENT AND DEVICES ACCESSIBLE TO PUBLIC SHALL BE PAD LOCKED WITH 3 KEYS SUBMITTED TO THE OWNER AFTER ACCEPTANCE.
16. ALL O.C.P. DEVICES USED FOR D.C. IN ANY PORTION OF THE PHOTOVOLTAIC AND BATTERY POWER SYSTEMS SHALL BE LISTED FOR USE (NEC 690.9 D).
17. ELECTRICAL EQUIPMENT SHALL BE LISTED BY A CITY OF HAYWARD RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE AUTHORITY HAVING JURISDICTION.
18. SWITCHBOARDS AND PANEL BOARDS THAT ARE LIKELY TO BE ENERGIZED WHILE BEING MAINTAINED SHALL BE LABELED IN ACCORDANCE WITH DIV 26 SPECIFICATIONS.
19. COORDINATE FINAL PV MOUNTING SYSTEM AND BIRD PROOFING DETAILS WITH ARCHITECT, MANUFACTURER, STRUCTURAL ENGINEER, ARCHITECT, AND ROOFING CONTRACTOR MANUFACTURER AND PROVIDE SHOP DRAWINGS FOR CONSTRUCTION.
20. ROOF PENETRATIONS PROVIDED BY ROOFING CONTRACTOR.
21. INSTALLATION SHALL BE IN COMPLIANCE WITH REQUIREMENTS ASSOCIATED WITH SEISMIC DESIGN CATEGORY F AND IMPORTANCE FACTOR 1.5.

ABBREVIATIONS

AC	ALTERNATING CURRENT
DAS	DATA ACQUISITION SYSTEM
DC	DIRECT CURRENT
OCP	OVER CURRENT PROTECTION
PV	PHOTOVOLTAIC

HAYWARD FIRE TRAINING FACILITY
BUILDING 9 - PHOTOVOLTAIC SYSTEM DRAWING LIST
7/19/2019
WSP PROJECT: B17.07369.000

DRAWING NUMBER	DRAWING NAME	SCALE	50%CD	90%CD	100%CD
			1/17/2018	11/30/2018	7/19/2019
9-PV0.01	PHOTOVOLTAIC SYSTEM LEGEND, ABBREVIATIONS AND DRAWING LIST	NTS	X	X	X
9-PV0.02	PHOTOVOLTAIC SYSTEM SCHEDULES AND LABELS	NTS	X	X	X
9-PV1.01	PHOTOVOLTAIC SYSTEM SITE PLAN	1" = 30'	X	X	X
9-PV2.01	PHOTOVOLTAIC SYSTEM ENTRY CANOPY PLAN	1/8" = 1'	X	X	X
9-PV5.01	PHOTOVOLTAIC SYSTEM SINGLE LINE DIAGRAM	NTS	X	X	X
9-PV6.01	PHOTOVOLTAIC SYSTEM DETAILS AND DIAGRAMS	NTS	X	X	X

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Sheet Title

PHOTOVOLTAIC SYSTEM LEGEND, ABBREVIATIONS AND DRAWING LIST

Drawn By: ELW
Checked By: AJB

Scale: **12" = 1'-0"**

Date: **October 4, 2019**

Project No. B17.07369

9-PV0.01
Drawing No.

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AC WIRING SCHEDULE - COPPER CONDUCTORS (0-600V)

CIRCUIT RATING	CONDUIT SIZE (INCHES)							CONDUCTOR SIZE	
	NONE	G	N	NG	NGI	NNG	NNGI	PHASE/ NEUTRAL	GND/* IG
15	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
20	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12	12
30	0.5	0.5	0.5	0.5	0.75	0.75	0.75	10	10
40	0.75	0.75	0.75	1	1	1	1	8	10
50	1	1	1	1.25	1.25	1.25	1.25	6	10
60	1	1.25	1.25	1.25	1.5	1.5	1.5	4	10
70	1	1.25	1.25	1.25	1.5	1.5	1.5	4	8
80	1.25	1.25	1.25	1.5	2	2	2	2	8
90	1.25	1.25	1.25	1.5	2	2	2	2	8
100	1.25	1.5	1.5	2	2	2	2.5	1	8
110	1.25	1.5	1.5	2	2	2	2.5	1	6
125	1.25	1.5	1.5	2	2	2	2.5	1	6
150	1.5	2	2	2	2.5	2.5	2.5	1/0	6
175	1.5	2	2	2	2.5	2.5	2.5	2/0	6
200	2	2	2	2.5	2.5	2.5	3	3/0	6
225	2	2.5	2.5	2.5	3	3	3	4/0	4
250	2.5	2.5	2.5	3	3	3	3.5	250	4
300	2.5	3	3	3.5	3.5	3.5	4	350	4
350	3	3.5	3.5	4	4	4	5	500	2
400	2@2	2@2	2@2	2@2.5	2@2.5	2@2.5	2@3	3/0	2
450	2@2	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	4/0	2
500	2@2.5	2@2.5	2@2.5	2@3	2@3	2@3	2@3.5	250	1
600	2@2.5	2@3	2@3	2@3.5	2@3.5	2@3.5	2@4	350	1
700	2@3	2@3.5	2@3.5	2@4	2@4	2@4	2@5	500	1/0
800	3@2.5	3@3	3@3	3@3	3@3.5	3@3.5	3@3.5	300	1/0
1000	3@3	3@3	3@3	3@3.5	3@4	3@4	3@4	400	2/0
1200	4@2.5	4@3	4@3	4@3.5	4@3.5	4@3.5	4@4	350	3/0
1600	5@3	5@3	5@3	5@3.5	5@4	5@4	5@4	400	4/0
2000	6@3.5	6@3.5	6@3.5	6@4	6@4	6@4	6@5	500	250
2500	7@3.5	7@3.5	7@3.5	7@4	7@4	7@4	7@4	500	350
3000	8@3.5	8@3.5	8@3.5	8@4	8@4	8@4	8@4	500	400

SUBSCRIPT KEY

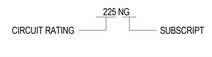
SUBSCRIPT	CONDUCTORS PER CONDUIT
NONE	3 PHASE CONDUCTORS, CONDUIT GROUND
G	3 PHASE CONDUCTORS, 1 GROUNDING CONDUCTOR
N	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, CONDUIT GROUND
NG	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR
NGI	3 PHASE CONDUCTORS, 1 NEUTRAL CONDUCTOR, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR
NNG	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR
NNGI	3 PHASE CONDUCTORS, 2 NEUTRAL CONDUCTORS*, 1 GROUNDING CONDUCTOR, 1 ISOLATED GROUNDING CONDUCTOR

* SINGLE NEUTRAL CONDUCTOR SIZES FOR CIRCUIT RATING 125 AND LESS

PARALLEL CONDUCTORS ARE NOT PERMITTED UNDER 1/0. WHERE DOUBLE NEUTRAL CONDUCTORS ARE INDICATED, PROVIDE AN OVERSIZED NEUTRAL CONDUCTOR IN ACCORDANCE WITH THE FOLLOWING TABLE:

CIRCUIT RATING	15	20	30	40	50	60
SINGLE NEUTRAL CONDUCOTR SIZE	10	8	4	2	1	1/0
CIRCUIT RATING	70	80	90	100	125	
SINGLE NEUTRAL CONDUCTOR SIZE	2/0	3/0	4/0	250	250	

EXAMPLES



NOTES

1. SCHEDULE IS BASED ON 3 CURRENT CARRYING CONDUCTORS IN RACEWAY, CABLE OR EARTH, AT AMBIENT AIR TEMPERATURE OF 30°C (86°F).
2. MODIFY IF USE OF 600MCM CONDUCTORS ARE DESIRED CONFIRM LUG SIZES ARE AVAILABLE.

DC WIRING SCHEDULE - COPPER CONDUCTORS (0-600V)

CIRCUIT RATING	CONDUIT SIZE (INCHES)	CONDUCTOR SIZE	
		POS / NEG	G
D10	1/2	10	6
D20	1/2	10	6
D30	1/2	10	6
D40	1/2	8	6
D50	1/2	8	6
D60	3/4	6	6
D70	1	4	6
D80	1	4	6
D90	1	3	6
D110	1	2	6
D130	1 1/4	1	6
D150	1 1/4	1/0	6
D175	1 1/2	2/0	6
D200	1 1/2	3/0	6
D225	2	4/0	4
D250	2	250	4
D275	2 1/2	300	4
D300	2 1/2	350	4
D325	2 1/2	400	2
D350	3	500	2

SUBSCRIPT KEY

SUBSCRIPT	CONDUCTORS PER CONDUIT
NONE	2 POLE CONDUCTORS (+/-)
G	2 POLE CONDUCTORS (+/-), 1 GROUNDING CONDUCTOR

DAS WIRING DETAILS

ID	CABLE TYPE	CONDUIT SIZE (INCHES)	FUNCTION
Ⓐ	CAT5E, SHIELDED	3/4	DATA CONNECTION TO WEATHER STATION
Ⓑ	#14 AWG, TWHN-2	3/4	CURRENT TRANSFORMERS (CTs)
Ⓒ	#14 AWG, TWHN-2	3/4	PV SYSTEM VOLTAGE TAPS

SITE CONDITIONS

LOCATION	HAYWARD,CA
MAX AVG. TEMP.	14.95
MIN EXPECTED TEMP.	0.28

PV ARRAY CONFIGURATION

MODULE B.O.D. MANUFACTURER	REC
MODULE B.O.D. MODEL	REC355TP2S72
MODULE NAMEPLATE RATING	355W
MODULE NO. OF CELLS	72
MODULE QTY.	608
SPARE MODULE QTY.	6
MODULES PER SOURCE CIRCUIT	28-42
TOTAL NO. OF SOURCE CIRCUITS	18
OPTIMIZER MANUFACTURER	SOLAREDGE
OPTIMIZER MODEL	P730
OPTIMIZER QUANTITY	304

PV MODULE OUTPUT

Voc	43.3 VDC
Voc (TEMP. ADJUSTED)	46.7 VDC
Isc	7.95 ADC
Vmp	36.2 VDC
Imp	7.39 ADC

SOURCE CIRCUIT OUTPUT

Voc	980 VDC
Voc (TEMP. ADJUSTED)	980 VDC
Isc	30 ADC
Vmp	850 VDC
Imp	18 ADC

INVERTER B1A,B1B OUTPUT

INVERTER B.O.D. MANUFACTURER	SOLAREDGE
INVERTER B.O.D. MODEL	SE100KUS
MAX. RATED POWER	100 KWAC
OPERATING VOLTAGE (PHASE-TO-PHASE)	480 VAC, 3PH
MAX. CURRENT (PER PHASE)	120 AAC
OUTPUT FREQUENCY	60 HZ

TEMP. ADJUSTED DC OPEN CIRCUIT VOLTAGE CALCULATION

PV MODULE	REC355TP2S72
Voc	43.3 VDC
VOLTAGE TEMP. COEFFICIENT	-0.32 %/°C
MIN. EXPECTED AMBIENT TEMP.	0.28 °C
DESIGN CALCULATION	43.3 x [(1+(0.28-25)(-0.32))/100]
Voc (TEMP. ADJUSTED)	46.7 VDC

INVERTER KEY

INV-B9A	INVERTER 1

PV SYSTEM LABELS

ALL LABELS SHALL COMPLY WITH NEC (690) AND (705)
RED BACKGROUND, WHITE LETTERING
MINIMUM 3/8" LETTER HEIGHT
ALL CAPS, ARIAL OR SIMILAR FONT
WEATHER RESISTANT MATERIAL SUITABLE FOR OUTDOOR MOUNTING (UL969)
INPUT SYSTEM OPERATING VALUES AS REQUIRED BELOW

Code Reference	LOCATION	TEXT
NEC 690.5 (C)	INVERTERS	WARNING ELECTRIC SHOCK HAZARD IF A GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED
NEC 690.31 (3)	DC JUNCTION BOXES, EXPOSED DC RACEWAYS (EVERY 10 FEET)	PHOTOVOLTAIC POWER SOURCE
NEC 690.53	DC DISCONNECT, DC COMBINER, SOLAR INVERTER	RATED MAX. POWER-POINT CURRENT: RATED MAX. POWER-POINT VOLTAGE: MAX. SYSTEM VOLTAGE: SHORT CIRCUIT CURRENT:
NEC 691.53	DC COMBINER (VALUES PER STRING)	RATED MAX. POWER-POINT CURRENT: RATED MAX. POWER-POINT VOLTAGE: MAX. SYSTEM VOLTAGE: SHORT CIRCUIT CURRENT:
NEC 690.54	SOLAR INVERTER POINT OF INTERCONNECTION (BREAKER)	POWER SOURCE AC OUTPUT CURRENT: NOM. AC OPERATING VOLTAGE:
	BATTERY INVERTER POINT OF INTERCONNECTION (BREAKER)	
NEC 705.12 (4)	SOLAR INVERTER POINT OF INTERCONNECTION (PANELBOARD)	THIS PANEL IS FED FROM TWO SOURCES: PHOTOVOLTAIC SYTEM AND UTILITY
	BATTERY INVERTER POINT OF INTERCONNECTION (MSB)	
NEC 705.12 (7)	SOLAR INVERTER POINT OF INTERCONNECTION (PANELBOARD)	WARNING INVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE
	BATTERY INVERTER POINT OF INTERCONNECTION (MSB)	
NEC 690.17	DC DISCONNECT, INVERTERS	WARNING ELECTRIC SHOCK HAZARD DO NOT TOUCH TERMINALS. TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.
NEC 480.6	BATTERY DC CONTROLLER	BATTERY SYSTEM DC DISCONNECT
NEC 690.13(B)	SOLAR INVERTER	PV SYSTEM DC DISCONNECT
	SOLAR INVERTER	PV SYSTEM AC DISCONNECT
NFPA 53.3.8	BATTERY CLOSET DOOR	CONTAINS STATIONARY STORAGE BATTERY SYSTEM BATTERY ROOM CONTAINS ENERGIZED CIRCUITS

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CITY OF HAYWARD
HEART OF THE BAY

DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

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DRAWN BY:	APPROVAL REC'D:
APPROVED BY:	
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PROJ. NO. 07481 & 07482	**FILE NO. E-2157**

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REVISIONS

No.	Description	Date

PERMIT SUBMITTAL V3

Sheet Title

PHOTOVOLTAIC SYSTEM SCHEDULES AND LABELS

Drawn By: ELW
Checked By: AJB

Scale:
12" = 1'-0"

Date:
October 4, 2019

Project No. B17.07369

9-PV0.02

Drawing No.

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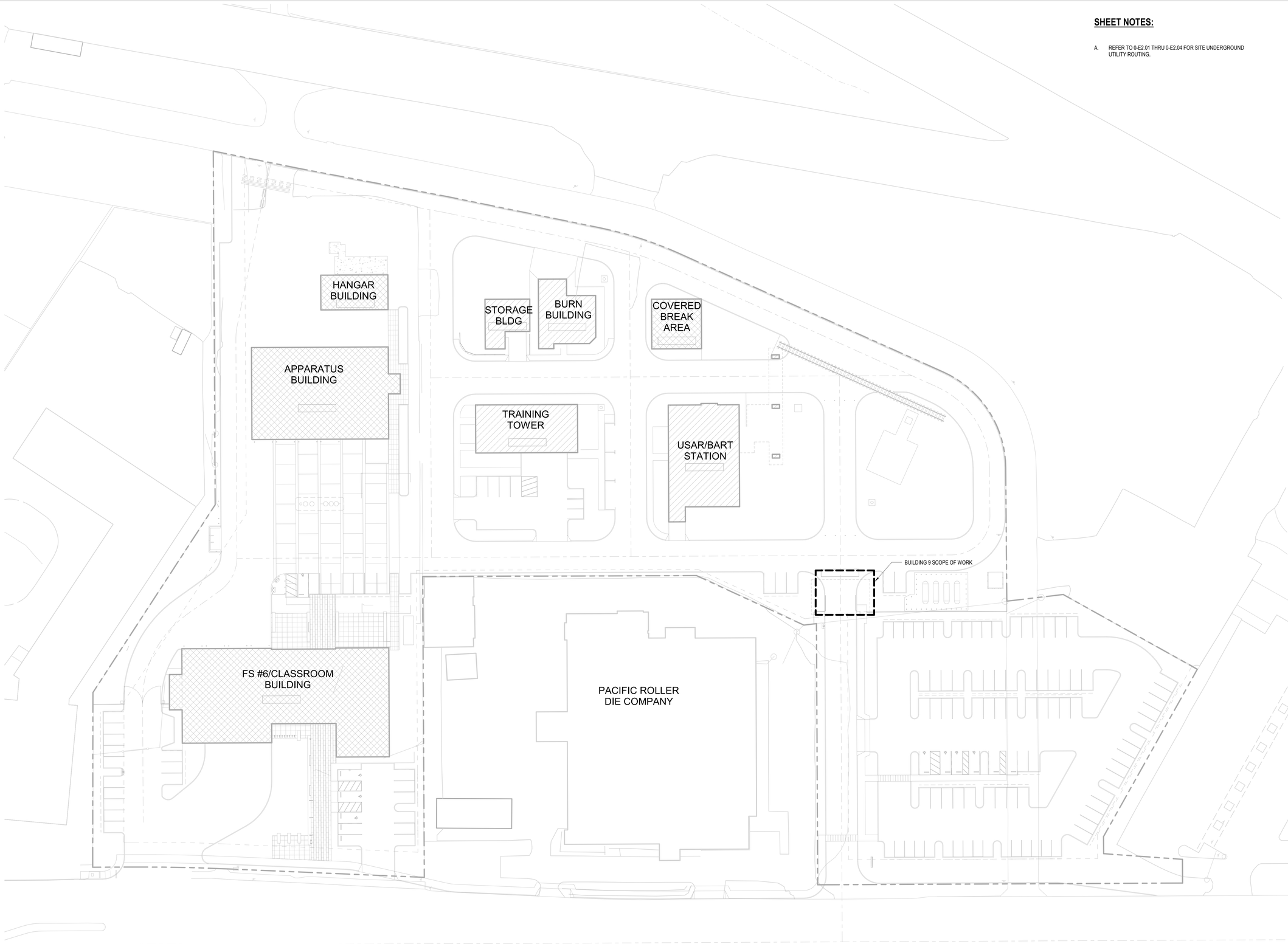
SHEET NOTES:

A. REFER TO 0-E2.01 THRU 0-E2.04 FOR SITE UNDERGROUND UTILITY ROUTING.



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No.	Description	Date

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
No. E17287
ELECTRICAL
STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

PHOTOVOLTAIC SYSTEM SITE PLAN

Drawn By: ELW
Checked By: AJB

Scale:
1" = 30'-0"

Date:
October 4, 2019

Project No. B17.07369

9-PV1.01

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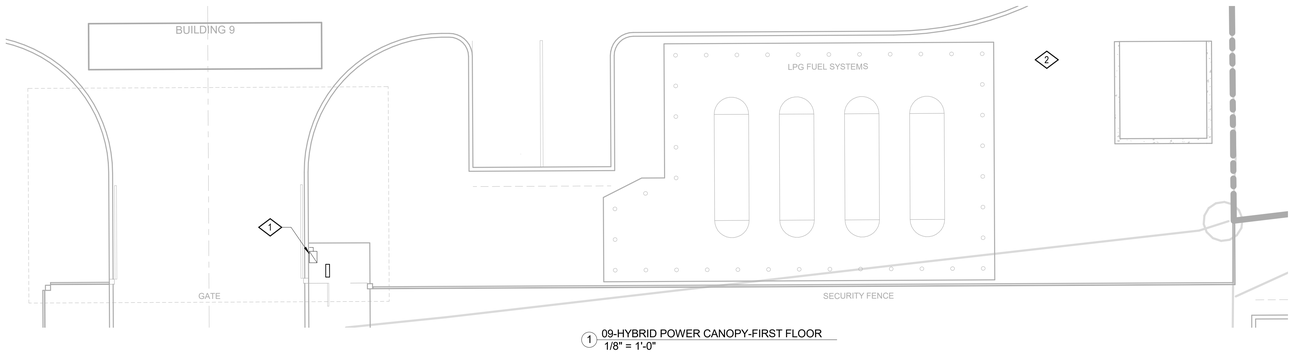
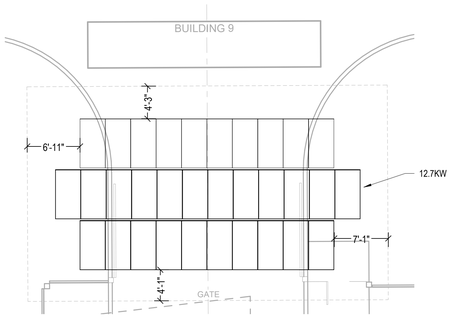


1 09-HYBRID POWER CANOPY-FIRST FLOOR
1/8" = 1'-0"



2 09-PHOTOVOLTAIC POWER CANOPY BUILDING-ROOF
1/8" = 1'-0"

SHEET NOTES:

A. SEE DRAWING 9-PV5.01 FOR PV SYSTEM ELECTRICAL ONE LINE DIAGRAM.

B. SEE DRAWING 9-PV6.01 FOR STANDING METAL SEAM DETAILS.

NUMBERED NOTES:

1 PROVIDE NEMA 3R RATED ENCLOSURE.

2 PROVIDED AS PART OF BUILDING 9 PACKAGE. REFER TO BUILDING 9 PACKAGE FOR ADDITIONAL INFORMATION.

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No.	Description	Date
1	INC 01_ADD_01_V1	12/06/2019

REGISTERED PROFESSIONAL ENGINEER
AMANDA J. BROWNLEE
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PERMIT SUBMITTAL V3

Sheet Title

PHOTOVOLTAIC SYSTEM ENTRY CANOPY PLAN

Drawn By: ELW
Checked By: AJB

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

Date:
October 4, 2019

Project No. B17.07369

9-PV2.01

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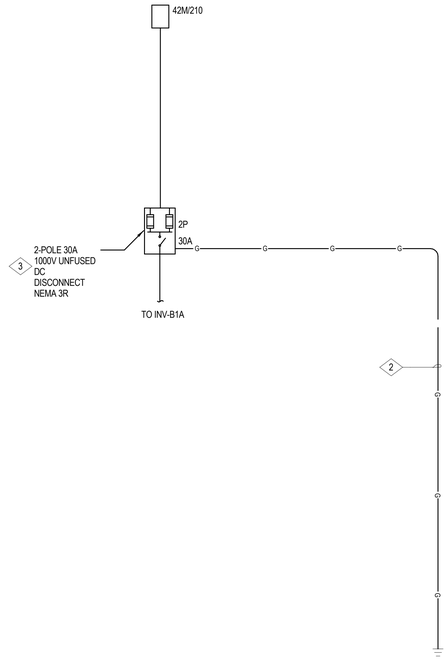

TYPICAL STRING CONFIGURATION
(1) OR (2) MODULES PER OPTIMIZER

2 STRINGING SCHEMATIC
NTS

SHEET NOTES

A. ALL HOMERUN WIRES FROM SOURCE CIRCUITS TO INVERTER ARE #10 AWG PV WIRE ROUTED AS REQUIRED.

B. PROVIDE BARE COPPER PV ARRAY EQUIPMENT GROUNDING CONDUCTOR, BONDED TO EQUIPMENT AS REQUIRED.

C. CONDUIT TYPES: PVC OUTSIDE, EMT INSIDE.

D. ALL EQUIPMENT SHALL BE LABELED PER NEC REQUIREMENTS. SEE LABEL DETAILS ON SHEET 6-PV0.02.

E. ALL PERFORMANCE AND OUTPUT VALUES PROVIDED ARE BASED ON STANDARD TEST CONDITIONS (STC).

F. VOLTAGE DROP CALCULATIONS ARE BASED ON THE LONGEST WIRE RUN.

G. ALL CONDUCTORS SHALL BE COPPER 90 C RATED.

H. REFER TO SHEET 9-PV0.01 FOR ALL CONDUCTOR SYMBOLS..

NUMBERED NOTES

1 BUILDING 6 SCOPE OF WORK.

2 SUPPLY DC GEC TO GROUND ROD AT DC DISCONNECT LOCATION

3 DISCONNECT FOR RAPID SHUTDOWN PER NEC 690.12.

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STATE OF CALIFORNIA

PERMIT SUBMITTAL V3

Sheet Title

PHOTOVOLTAIC SYSTEM SINGLE LINE DIAGRAM

Drawn By: ELW Checked By: AJB

Scale:
12" = 1'-0"

Date:
October 4, 2019

Project No. B17.07369

9-PV5.01
Drawing No.

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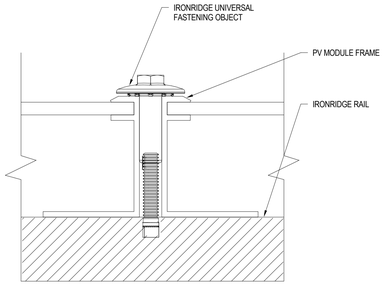
SHEET NOTES

A. CONSULT PV MODULE AND MOUNTING EQUIPMENT MANUFACTURER'S INSTALLATION MANUAL FOR SPECIFIC ASSEMBLY AND GROUNDING REQUIREMENTS.

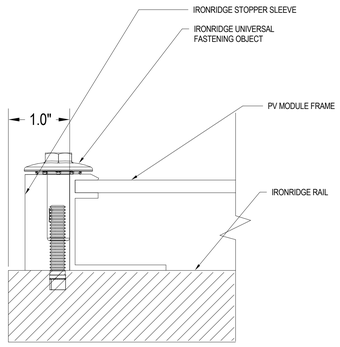
B. SUPPLY FASTENING HARDWARE PER STRUCTURAL DRAWINGS AND PV MOUNTING SYSTEM MANUFACTUER'S RECOMMENDATIONS.

C. RACKING SYSTEM TO BE LISTED TO UL2703 STANDARD.

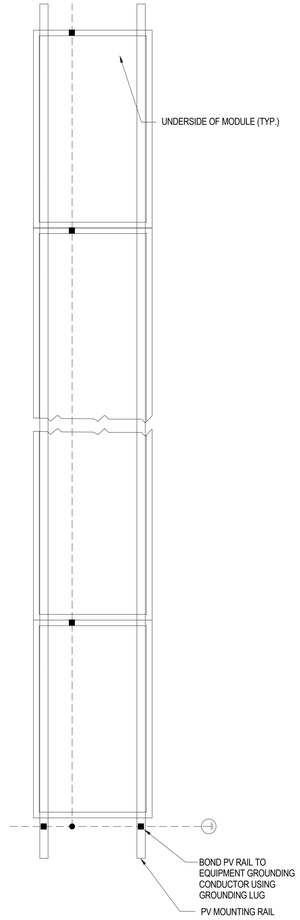
D. FOLLOW GROUNDING INSTRUCTIONS PER RACKING MANUFACTURER.



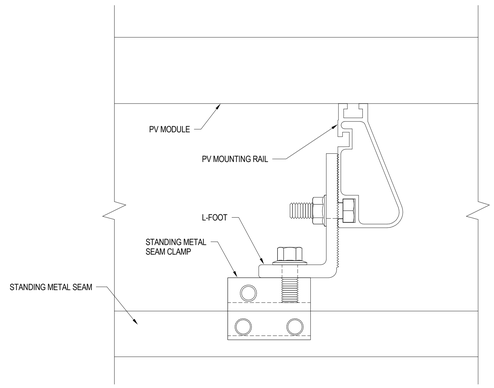
3 MID CLAMP FRONT
NTS



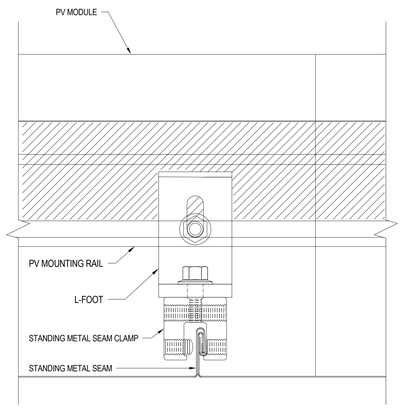
4 END CLAMP (UFO) FRONT
NTS



1 ARRAY GROUNDING DETAIL
NTS



5 STANDING METAL SEAM PV MOUNTING SCHEME, DETAIL
NTS



2 STANDING METAL SEAM PV MOUNTING SCHEME, DETAIL
NTS

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Sheet Title

PHOTOVOLTAIC SYSTEM DETAILS AND DIAGRAMS

Drawn By: ELW
Checked By: AJB

Scale:
12" = 1'-0"

Date:
October 4, 2019

Project No. B17.07369

9-PV6.01
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