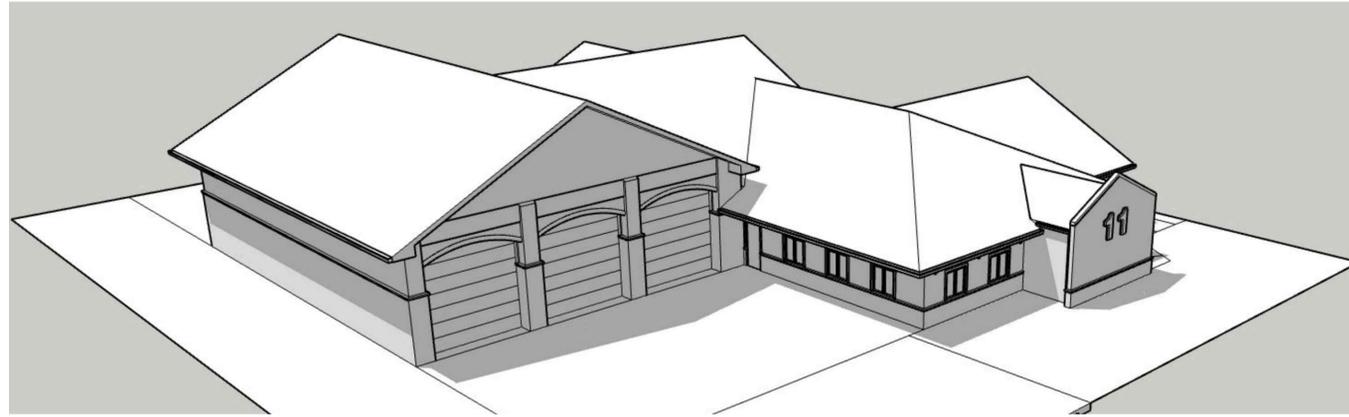


# THE CITY OF COLUMBIA FIREHOUSE 11

## COLUMBIA, MISSOURI

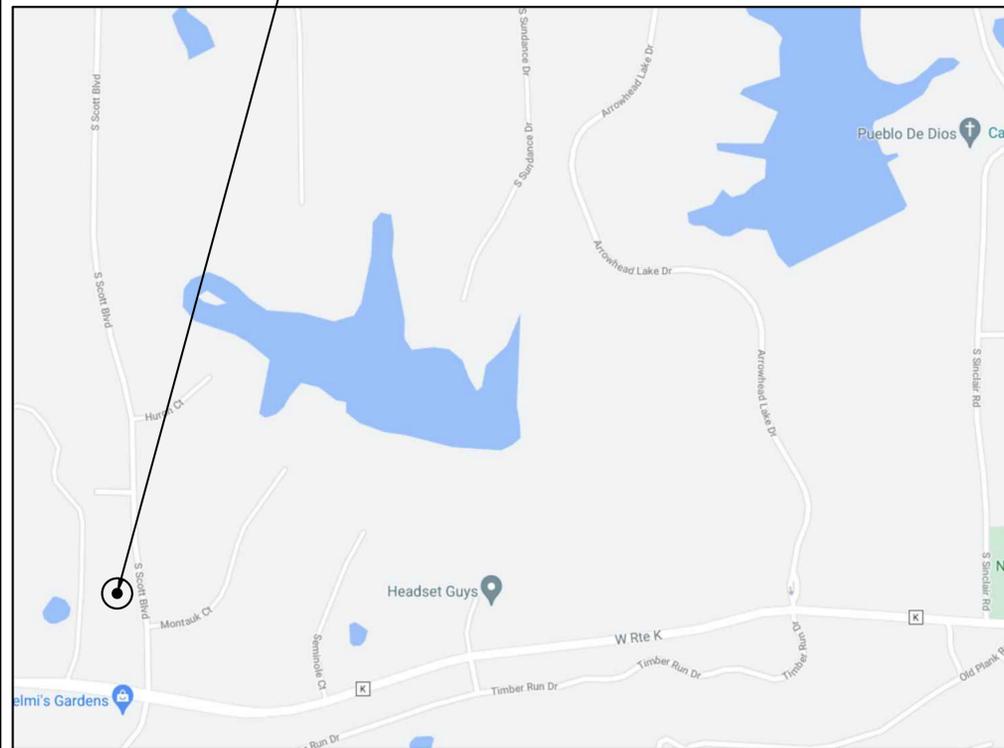
### DESIGN DEVELOPMENT



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The City of Columbia - Fire House 11  
Scott Boulevard  
Columbia, Missouri



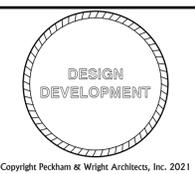
<b>DRAWING BULLET WITH NORTH ARROW</b>	
	GRID REFERENCE
	DRAWING TITLE
	ARCH. SCALE
	NORTH ARROW
<b>DRAWING BULLET WITHOUT NORTH ARROW</b>	
	GRID REFERENCE
	DRAWING TITLE
	ARCH. SCALE
	PAGE FIRST REFERENCED (IF APPLICABLE)
<b>ELEVATION BULLETS</b>	<b>PLAN/ELEVATION DETAIL BULLET</b>
<b>ONE ELEVATION</b>	<b>SECTION BULLET</b>
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	LARGE SCALE	SMALL SCALE
BRICK MASONRY UNIT		
CONCRETE MASONRY UNIT		
CONCRETE		
GYPSUM BOARD		
GRAOUTED AREA OF CALCULATED DOOR FRAME		
MISCELLANEOUS ITEMS: AS NOTED ON EACH SHEET		
INSULATION		
ROOF SHINGLES		
CONTINUOUS WOOD FRAMING		
WOOD BLOCKING		
PLYWOOD		
EXISTING BUILDING		

**A1** LOCATION MAP  
SCALE: N.T.S.

**A7** SYMBOL LEGEND  
SCALE: N.T.S.

**A11** MATERIAL LEGEND  
SCALE: N.T.S.



CITY OF COLUMBIA, MISSOURI  
FIRE STATION #11  
SCOTT BOULEVARD  
COLUMBIA, MISSOURI

Drawn: ER  
Checked: EM  
Drawing Title: COVER, LOCATION MAP, LIST OF DRAWINGS, LEGENDS

No.	Revisions:	Date:

Submission Date: 07/02/2021  
Plot Date: 08/20/2021  
Project Number: 202020  
CAD File Name (Number): G001.DWG  
Drawing Number: G001

**Required Fixture Calculations**

Use	Occ. Load	Water Closets		Lavatories		Bathtub or Shower	Drinking Fountain	Service Sink
		M	F	M	F			
Business (B)		1	1	1	1		0.00	1
Residential (R-3)		0.00	0.00	0.00	0.00	0.00	0.00	
Storage (S-1)		0.00	0.00	0.00	0.00		0.00	1
<b>Total Required Fixtures:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

**Total Occupants:**  
First:

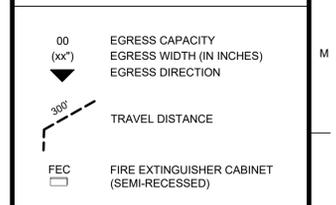
**Required Egress Width**  
Stairways: First  
All Other: NA  
0 in.

**Provided Egress Width**  
Stairways: NA  
All Other:

**Code Summary**

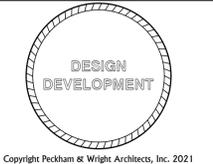
Code Requirement	2018 International Building Code
Main Use Group(s)	304; Business B; 310; Residential R-3; 311; Storage S-1
- Mixed-use, Non-separated	508.3
Automatic Sprinklers	903.2 Yes
Minimum Construction Classification	602 5B
<b>Floor Area (Tenant Infill)</b>	
- Area (Square Feet) per Floor Permitted - 'B' use	T. 506.2 (5) 36,000 SF
- Area (Square Feet) per Floor Permitted - 'R-3' use	UL
- Area (Square Feet) per Floor Permitted - 'S-1' use	36,000 SF
- Area (Square Feet) per Floor Proposed	
- 'B' use	
- 'R-3' use	
- 'S-1' use	
<b>Total First Floor proposed Area:</b>	
<b>Number of Stories</b>	
- Stories Permitted - 'B'	T. 504.4 3 Stories
- Stories Permitted - 'R-3'	4 Stories
- Stories Permitted - 'S-1'	2 Stories
- Stories Proposed	1 Story
<b>Maximum Height</b>	
- Max. Height (Ft.) Permitted - 'B' use	T. 504.3 60'-0"
- Max. Height (Ft.) Permitted - 'R-3' use	60'-0"
- Max. Height (Ft.) Permitted - 'S-1' use	60'-0"
- Max. Height (Ft.) Proposed	
<b>Travel Distance</b>	
- 'B' use	T. 1017.2 300'-0" Maximum (Sprinkled)
- 'R-3' and 'S-1' use	250'-0" Maximum (Sprinkled)
Dead End	1020.4 50'-0" Maximum (Sprinkled)
<b>Emergency Escape and Rescue</b>	
	1030.2 (1) per sleeping room; 20-inches wide, 24-inches high; 5.0 SF
<b>Total No. of Occupants</b>	
- 'B' use	
- 'R-3' use	
- 'S-1' use (garage)	
- 'S-1' use (storage/mechanical)	
<b>Total Occupants</b>	
<b>Occupant Load Factors</b>	
- Business	T. 1004.5 150 sq. ft./person (gross)
- Residential	200 sq. ft./person (gross)
- Garage	200 sq. ft./person (gross)
- Storage / Mechanical	300 sq. ft./person (gross)

**LEGEND: LIFE SAFETY PLANS**



**G101 SCOPE-OF-WORK NOTES**

1 ??



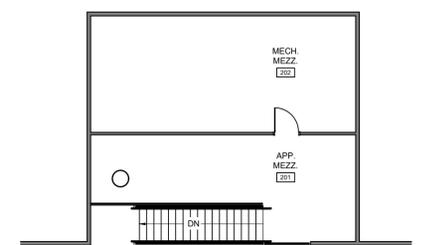
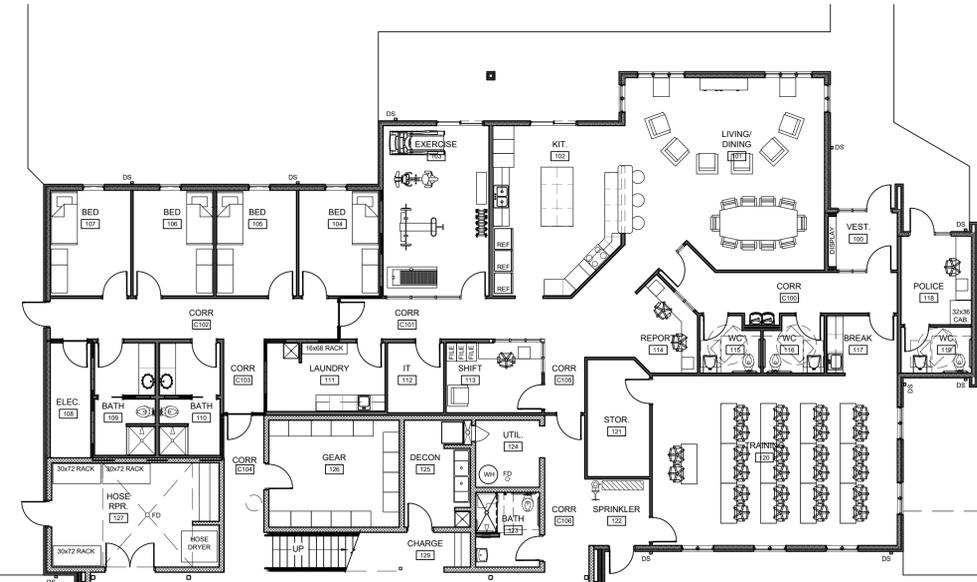
**CITY OF COLUMBIA, MISSOURI  
FIRE STATION #11  
SCOTT BOULEVARD  
COLUMBIA, MISSOURI**

Drawn: ER	Project Number: 202020
Checked: EM	CAD File Name (Number): G101.DWG

Drawing Title:  
**LIFE SAFETY INFORMATION**

No.	Revisions:	Date:

Submission Date: 07/02/2021	Drawing Number: <b>G101</b>
Plot Date: 08/20/2021	



**C10 LIFE SAFETY MEZZANINE PLAN**  
SCALE: 3/32" = 1'-0"

**A1 LIFE SAFETY FLOOR PLAN**  
SCALE: 3/32" = 1'-0"

# COLUMBIA FIRE STATION #11

## LOCATION MAP



## PROJECT BENCHMARK:

BM #1 - "4" MARK ON THE SOUTHWEST TOP FLANGE BOLT OF A FIRE HYDRANT LOCATED ON THE EAST SIDE OF SCOTT BOULEVARD ACROSS FROM THE SOUTHEAST CORNER OF THE PROPERTY.  
ELEVATION = 720.79

## FLOOD PLAIN STATEMENT:

NO PART OF THIS TRACT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN AS PER THE CITY OF COLUMBIA FIRM MAP #29019C0280E DATED 04/19/2017.

THIS TRACT IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA SUBJECT TO SEC 29-2.3(D)(4)(I) OF THE CODE OF ORDINANCES AND AS SHOWN ON THE FEMA F.I.R.M. PANEL #XXXXXXXE, DATED APRIL 19, 2017.

## LEGAL DESCRIPTION:

DEERFIELD RIDGE PLAT 2-A, LOT 53B

## UTILITY COMPANIES:

### LOCATES:

MISSOURI ONE CALL INC.  
1022 B NORTHEAST DRIVE  
JEFFERSON CITY, MO 65109  
1-800-344-7483



### TELEPHONE:

CENTURYLINK  
625 CHERRY STREET  
COLUMBIA, MO 65205  
573-886-3700

### NATURAL GAS:

AMEREN MISSOURI  
2001 MAGUIRE BLVD.  
COLUMBIA, MO 65201  
573-876-3030

### CABLE TELEVISION:

CHARTER COMMUNICATIONS  
1510 CHARTER BOONE  
INDUSTRIAL BOULEVARD  
COLUMBIA, MO 65202  
573-875-8875

### WATER/ELECTRIC:

CITY OF COLUMBIA  
P.O. BOX 6015  
WATER & LIGHT DEPARTMENT  
COLUMBIA, MO 65205  
573-874-7325

### SANITARY SEWER:

CITY OF COLUMBIA  
P.O. BOX 6015  
UTILITIES DEPARTMENT  
COLUMBIA, MO 65205  
573-874-7250

### ELECTRIC:

BOONE ELECTRIC COOPERATIVE  
1413 RANGE LINE STREET  
COLUMBIA, MO 65201  
573-449-4181

## GENERAL NOTES:

ALL STREET, STORM DRAIN, AND SANITARY SEWER CONSTRUCTION TO BE IN ACCORDANCE WITH THE CITY OF COLUMBIA "STREET, STORM DRAIN, AND SANITARY SEWER SPECIFICATIONS AND STANDARDS" (CURRENT EDITION).

ANY CITY DETAILS SHOWN ON THIS SET OF PLANS ARE FOR REFERENCE ONLY. CONTRACTOR TO HAVE A COPY OF THE CITY'S LATEST EDITION OF SPECIFICATIONS AND STANDARDS FOR ALL STREET, STORM, AND SANITARY CONSTRUCTION ON SITE AT ALL TIMES DURING CONSTRUCTION. REFER TO <https://www.como.gov/publicworks/specs-and-standards/>.

CONTRACTOR WILL BE RESPONSIBLE FOR PLACEMENT AND MAINTENANCE OF TRAFFIC CONTROL DEVICES NECESSARY TO COMPLETE THEIR PORTION OF WORK. THE DEVICES AND METHODS EMPLOYED WILL COMPLY WITH THE CURRENT VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THIS PLAT CONTAINS APPROXIMATELY 2.50 ACRES.

THIS TRACT IS ZONED R-1.

THE STORM SEWER NETWORK DESIGN FOR THIS PROJECT IS BASED ON OPEN CHANNEL FLOW; THEREFORE THE HYDRAULIC GRADE LINE IS AT OR LESS THAN THE CROWN OF THE PIPE.

EXISTING UTILITIES SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL COORDINATE LOCATES (HORIZONTAL AND VERTICAL) PRIOR TO ANY EXCAVATION.

ALL EXCAVATION TO BE IN ACCORDANCE WITH SECTIONS 319.010-319.050, REVISED STATUTES OF THE STATE OF MISSOURI SUCH COMPLIANCE SHALL NOT, HOWEVER, EXCUSE ANY PERSON MAKING ANY EXCAVATION FROM DOING SO IN A CAREFUL AND PRUDENT MANNER, NOR SHALL IT EXCUSE SUCH PERSON FROM LIABILITY FOR ANY DAMAGE OR INJURY TO UNDERGROUND UTILITIES RESULTING FROM THE EXCAVATION.

A GEOTECHNICAL EVALUATION HAS BEEN PERFORMED BY CROCKETT GEOTECHNICAL TESTING LAB (GTL). REFER TO REPORT NUMBER G21682 DATED 7/21/2021 BY CROCKETT GTL.

ALL LAND DISTURBANCE ACTIVITIES SHALL BE IN ACCORDANCE WITH CHAPTER 12A OF THE CITY OF COLUMBIA CODE OF ORDINANCES.

THERE IS NO REGULATED STREAM BUFFER WITHIN THE LIMITS OF THIS PROJECT AS DETERMINED BY THE USGS MAP FOR COLUMBIA QUADRANGLE, BOONE COUNTY, MISSOURI AND ARTICLE X OF CHAPTER 12A OF THE CITY OF COLUMBIA CODE OF ORDINANCES.

THERE IS NO CLIMAX FOREST, AS DEFINED BY THE CITY OF COLUMBIA, LOCATED WITHIN THE LIMITS OF THIS PLAT.

ANY FILL PLACEMENT WITHIN STREET RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY OF COLUMBIA.

REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR NARRATIVE REPORT AND BMP DESCRIPTIONS AND DETAILS.

ALL SLOPES ARE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.

IT IS THE INTENT OF THESE PLANS TO COMPLY WITH THE REQUIREMENTS OF THE MDNR CLEAN WATER COMMISSION.

ALL DISTURBED AREAS WITHIN THE "LIMITS OF DISTURBANCE" SHALL BE FINE GRADED, SEEDED, AND MULCHED.

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL DEVICES AND REMOVING THEM ONCE THE SITE IS STABILIZED.

A 5' SIDEWALK WILL BE CONSTRUCTED ADJACENT TO ALL STREETS.

ALL SERVICE LATERALS SHALL BE INSTALLED AS PER CITY OF COLUMBIA REQUIREMENTS AT 1.0% (MIN.) GRADE WHEN CROSSING STREETS.

ALL EXCAVATION WITHIN THE STREET RIGHT-OF-WAY SHALL BE BACKFILLED PER CURRENT CITY OF COLUMBIA SPECIFICATIONS.

ALL SEWERLINES SHALL BE CONSTRUCTED AT LEAST 10 FEET HORIZONTALLY, EDGE TO EDGE, FROM ANY WATERLINE AND AT LEAST 24 INCHES VERTICALLY BETWEEN THE OUTSIDE LIMITS OF THE SANITARY SEWER AND WATERLINE. FOR CONDITIONS OTHER THAN THOSE IDENTIFIED ABOVE, CONTACT THE ENGINEER FOR SPECIFIC INSTRUCTIONS.

ALL STANDARD CLEANOUTS (STD CO) ARE TO BE CONSTRUCTED PER DETAIL 15 SHOWN IN THE CITY OF COLUMBIA SANITARY SEWER SPECIFICATIONS AND STANDARDS (CURRENT EDITION).

ALL LATERAL LINES SHALL HAVE TRACER WIRE INSTALLED PER ADDENDUM #4 TO THE STREET, STORM SEWER & SANITARY SEWER SPECIFICATIONS AND STANDARDS (JANUARY 2012)

ALL HDPE PIPE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DETAIL FOR PIPE BEDDING REQUIREMENTS.

IN ORDER TO TERMINATE A STATE OPERATING PERMIT THE MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR) REQUIRES THAT THE PERMITTEE SUBMIT A COMPLETED FORM H (INCLUDED WITH THE APPROVAL PERMIT) TO THE MDNR. A PERMIT IS ELIGIBLE FOR TERMINATION WHEN EITHER PERENNIAL VEGETATION, PAVEMENT, BUILDINGS, OR STRUCTURES USING PERMANENT MATERIALS COVER ALL AREAS THAT HAVE BEEN DISTURBED. VEGETATIVE COVER SHALL BE AT LEAST 70% OF FULLY ESTABLISHED PLANT DENSITY OVER 100% OF THE DISTURBED AREA. A COPY OF FORM H SHOULD BE SUBMITTED TO THE CITY AT WHICH TIME THE CITY WILL REMOVE THE PROJECT FROM ITS INSPECTION SCHEDULE.

LAND DISTURBANCE SITES SHOULD BE INSPECTED ON A REGULAR SCHEDULE AND WITHIN A REASONABLE TIME PERIOD (NOT TO EXCEED 48 HOURS) FOLLOWING HEAVY RAINS. REGULARLY SCHEDULED INSPECTIONS SHALL BE AT A MINIMUM OF ONCE PER WEEK. ANY DEFICIENCIES SHALL BE NOTED IN A WEEKLY REPORT OF THE INSPECTION AND CORRECTED WITHIN SEVEN CALENDAR DAYS OF THE REPORT. CONTRACTORS ARE REQUIRED TO SUBMIT TO CITY INSPECTION STAFF COPIES OF THEIR INSPECTION REPORTS REQUIRED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) ON A MONTHLY BASIS IF REQUESTED.

CONTRACTOR SHALL NOTIFY ADJOINING PROPERTY OWNERS IN WRITING 30 DAYS PRIOR TO CONSTRUCTION BEGINNING.

TOTAL DISTURBED AREA ON SITE = 1.76 AC.

MISSOURI DNR LAND DISTURBANCE PERMIT NUMBER TBD.

REVISION KEY			COVER	CE1	CE2	CE3	CE4	CE5	CE6	CE7	CE8	CE9
REV #	DATE	COMMENTS										
---	08-20-2021	ORIGINAL SUBMITTAL	X	X	X	X	X	X	X	X	X	X

## SHEET INDEX:

CE 1 - EROSION CONTROL PLAN

CE 2 - GRADING PLAN

CE 3 - UTILITY PLAN

CE 4 - STORM SEWER PROFILE - LINES 1, 2 & 3

CE 5 - SITE PLAN

CE 6 - BIORETENTION PLAN

CE 7 - LANDSCAPING PLAN

CE 8 - CONSTRUCTION DETAILS, SHEET 1 OF 2

CE 9 - CONSTRUCTION DETAILS, SHEET 2 OF 2

## LEGEND OF SYMBOLS:

=====	EXISTING CURB	FF=XXXX	FINISH FLOOR OF STRUCTURE
-----	PROPOSED CURB	XXXX TC	PROPOSED TOP OF CURB ELEVATION
XXXXXX	RIP RAP	XXXX TP	PROPOSED TOP OF PAVEMENT ELEVATION
=====	EXISTING STRUCTURE	XXXX FD	PROPOSED FINISH GRADE ELEVATION
=====	EXISTING TREELINE	XXXX TW	PROPOSED TOP OF WALL
=====	PROPOSED TREELINE	XX	LOT NUMBER
-----	EDGE OF WATERWAY	X	STORM SEWER STRUCTURE LABEL
--- W ---	EXISTING WATERLINE	X	SANITARY SEWER STRUCTURE LABEL
--- W ---	PROPOSED WATERLINE	HP.	HIGH POINT
--- G ---	EXISTING GAS LINE	LP.	LOW POINT
--- G ---	PROPOSED GAS LINE	EXISTING SIGNS	EXISTING SIGNS
--- UT ---	EXISTING UNDERGROUND TELEPHONE	EXISTING POWER POLE	EXISTING POWER POLE
--- UTV ---	EXISTING UNDERGROUND CABLE TELEVISION	EXISTING GAS VALVE	EXISTING GAS VALVE
--- HVE ---	EXISTING HIGH VOLTAGE ELECTRIC	EXISTING UNDERGROUND ELECTRIC	EXISTING UNDERGROUND ELECTRIC
--- OE ---	EXISTING OVERHEAD ELECTRIC	EXISTING WATER VALVE	EXISTING WATER VALVE
--- UE ---	EXISTING UNDERGROUND ELECTRIC	EXISTING GAS METER	EXISTING GAS METER
--- OEV ---	EXISTING OVERHEAD ELEC. & TV	EXISTING WATER METER	EXISTING WATER METER
--- OEVTV ---	EXISTING OVERHEAD ELEC., TV & TELE.	EXISTING FIRE HYDRANT	EXISTING FIRE HYDRANT
--- S ---	EXISTING SANITARY SEWER	MANHOLE	MANHOLE
--- S ---	PROPOSED SANITARY SEWER	EXISTING SANITARY SEWER LATERAL	EXISTING SANITARY SEWER LATERAL
.....	EXISTING MINOR CONTOUR	PROPOSED SANITARY SEWER LATERAL	PROPOSED SANITARY SEWER LATERAL
--- XXX ---	EXISTING MAJOR CONTOUR	PROPOSED TRACER WIRE TEST STATION BOX	PROPOSED TRACER WIRE TEST STATION BOX
--- XXX ---	PROPOSED MINOR CONTOUR	EXISTING AIR CONDITIONER	EXISTING AIR CONDITIONER
--- XXX ---	PROPOSED MAJOR CONTOUR	EXISTING TELEPHONE PEDESTAL	EXISTING TELEPHONE PEDESTAL
TTTTTT	100 YEAR FLOOD PLAIN	EXISTING ELECTRICAL TRANSFORMER	EXISTING ELECTRICAL TRANSFORMER
TTTTTTTT	FLOODWAY	EXISTING ELECTRIC METER	EXISTING ELECTRIC METER
---	ORDINARY HIGH WATER MARK	EXISTING LIGHT POLE	EXISTING LIGHT POLE
---	STREAM SIDE BUFFER	EXISTING GUY WIRE	EXISTING GUY WIRE
-----	OUTER STREAM BUFFER		

IMPERVIOUS AREA TABLE	
PRE DEVELOPMENT	0.0 SQ. FT.
POST DEVELOPMENT	33,745 SQ. FT.

## REVISIONS:

NO.	DATE
DESIGN DRAWINGS	08/20/2021

THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY

**PRELIMINARY**  
(NOT FOR CONSTRUCTION)

KYLE R. MILLER  
MO LICENSE 20070803

PREPARED BY:  
**CROCKETT**  
ENGINEERS & ARCHITECTS  
1000 W. WILSON BLVD., SUITE 300  
COLUMBIA, MISSOURI 65203  
(573) 487-0299  
www.crockettingeering.com  
Crockett Engineering Consultants, LLC  
Missouri Certificate of Authority  
#000000001

OWNER:  
CITY OF COLUMBIA  
PO BOX 6015  
COLUMBIA, MO 65205

**COLUMBIA FIRE STATION #11**  
COLUMBIA, MISSOURI

## DRAWING INCLUDES:

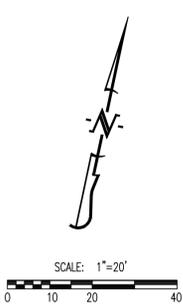
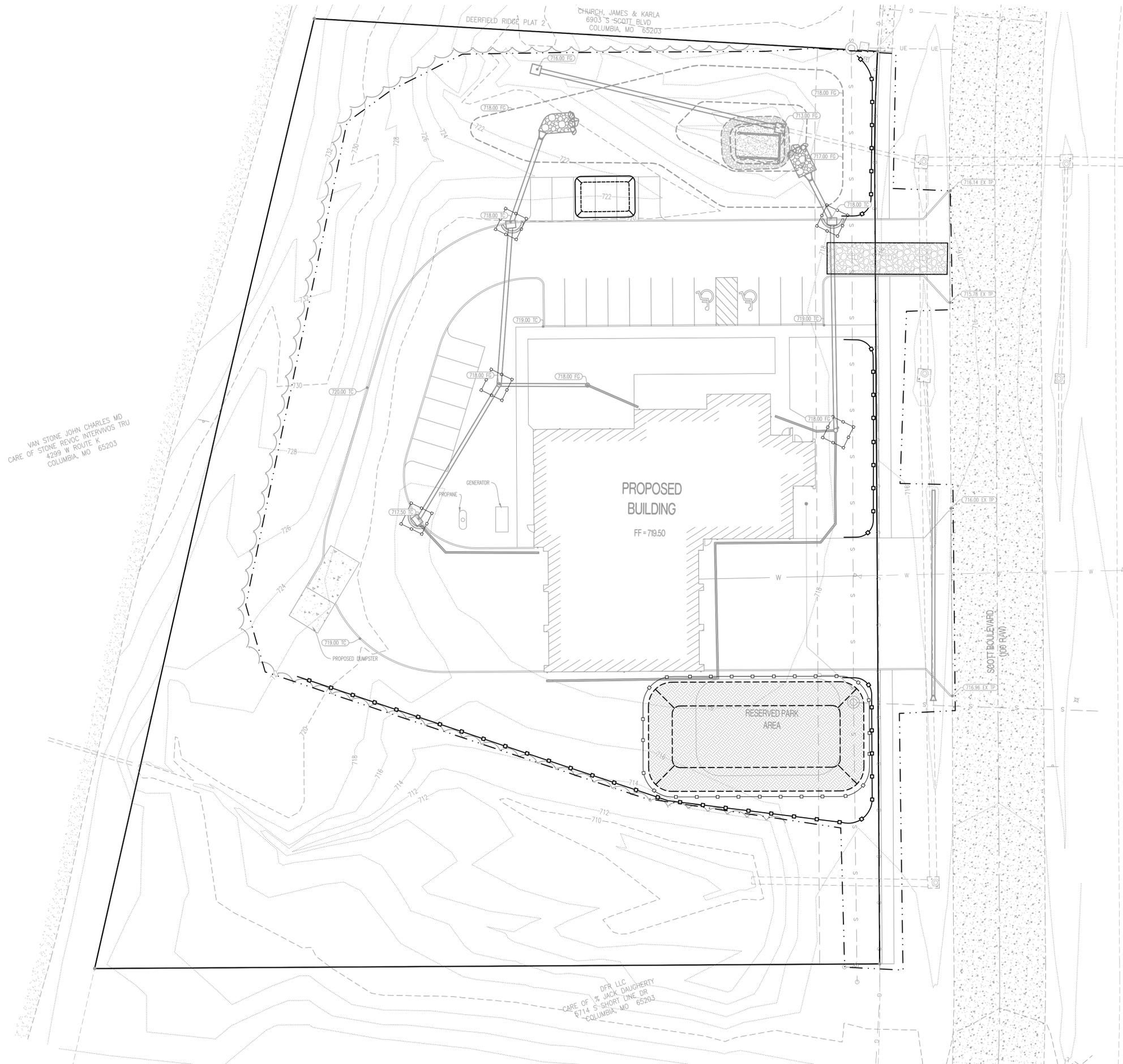
COVER SHEET

DESIGNED: KRM

DRAWN: KRM

PROJECT NO: 200642

SHEET:  
CE 0



**LEGEND OF LABELS:**

- (A) LIMITS OF DISTURBANCE.
- (B) INSTALL 3" CRUSHED STONE FOR CONSTRUCTION EXIT (6" THICK x 12'W x 50'L). ALL CONSTRUCTION TRAFFIC SHALL LEAVE THE SITE VIA THIS EXIT.
- (C) TOP SOIL STOCKPILE.
- (D) INSTALL SILT FENCE AROUND INLET DURING ROUGH GRADING. REFER TO DETAIL IN PROJECT SWPPP.
- (E) 15' X 20' X 3' MIN CONCRETE WASHOUT FACILITY. THE WASHOUT FACILITY IS TO BE LINED WITH A PLASTIC LINING MATERIAL (10 MIL POLYETHYLENE SHEETING MIN.) FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COULD COMPROMISE THE IMPERMEABILITY OF THE MATERIAL. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL. A SIGN SHALL BE INSTALLED ADJACENT TO FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.
- (F) INSTALL SILT FENCE AS SHOWN. REFER TO DETAIL IN PROJECT SWPPP.
- (G) USE DETENTION BASIN AS TEMPORARY SEDIMENT TRAP AS SHOWN.

**STOCKPILE NOTES:**

STOCKPILE SHALL NOT EXCEED THREE (3) ACRES IN AREA OR TEN (10) FEET IN HEIGHT.

THE SIDE SLOPE OF A STOCKPILE OF SOIL SHALL NOT EXCEED A 3:1 RATIO.

STOCKPILES OF SOIL SHALL BE TEMPORARILY SEEDED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL MANUAL ISSUED BY THE DIRECTOR. THE WORKING FACE OF THE STOCKPILE, HOWEVER, NEED NOT BE SEEDED. STOCKPILES OF SOIL THAT MEET THE REQUIREMENTS OF THIS SECTION MAY REMAIN IN PLACE FOR UP TO THREE (3) YEARS AFTER ISSUANCE OF A LAND DISTURBANCE PERMIT.

WHEN THE TIME LIMIT FOR A STOCKPILE OF SOIL HAS EXPIRED AND NO EXTENSION HAS BEEN GRANTED, THE PROPERTY OWNER MUST EITHER REMOVE THE STOCKPILE OR GRADE IT TO A SLOPE OF NO GREATER THAN A 4:1 RATIO AND PERMANENTLY SEED IT IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL MANUAL ISSUED BY THE DIRECTOR.

<b>REVISIONS:</b>	
NO.	DATE
ORIGINAL	08/20/2021
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY	
<b>PRELIMINARY (NOT FOR CONSTRUCTION)</b>	
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 <small>ENGINEERS &amp; ARCHITECTS 1000 W. MISSOURI BLVD. COLUMBIA, MISSOURI 65205 (314) 487-0299 www.crockettengineering.com Crockett Engineering Consultants, LLC Missouri Certificate of Authority #000000001</small>	
OWNER: CITY OF COLUMBIA PO BOX 6016 COLUMBIA, MO 65205	
<b>COLUMBIA FIRE STATION #11</b> COLUMBIA, MISSOURI	
<b>DRAWING INCLUDES:</b>	
EROSION CONTROL PLAN	
<b>DESIGNED:</b> KRM	
<b>DRAWN:</b> KRM	
<b>PROJECT NO.:</b> 200642	
<b>SHEET:</b> CE1	

VAN STONE JOHN CHARLES MD  
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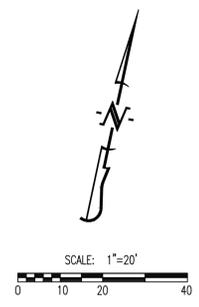
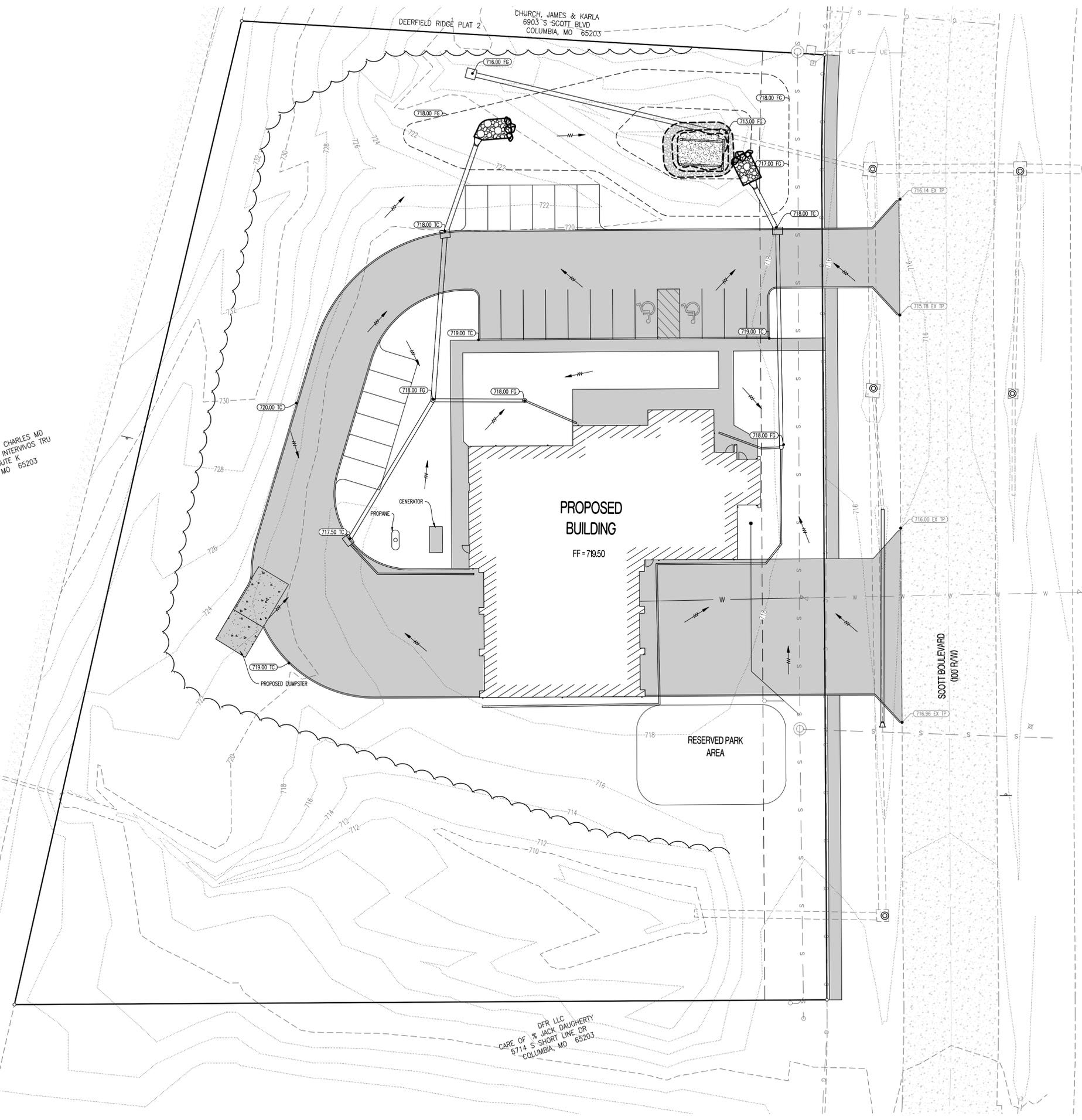
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8903 S SCOTT BLVD  
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DFR LLC  
CARE OF % JACK DAUGHERTY  
8714 S SHORT LINE DR  
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DEERFIELD RIDGE PLAT 2  
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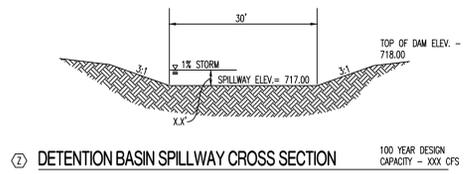


**LEGEND OF SYMBOLS:**

- EXISTING MINOR CONTOUR
- - - EXISTING MAJOR CONTOUR
- - - - PROPOSED MINOR CONTOUR
- — — PROPOSED MAJOR CONTOUR
- FF-XXXX FINISHED FLOOR OF STRUCTURE
- (XXX.XX TC) PROPOSED TOP OF CURB ELEVATION  
TC = (TP+6") UNLESS NOTED OTHERWISE
- (XXX.XX TP) PROPOSED TOP OF PAVEMENT ELEVATION
- (XXX.XX FG) PROPOSED FINISH GRADE ELEVATION
- (XXX.XX FF) PROPOSED FINISH FLOOR AT DOOR
- (XXX.XX TW) PROPOSED FINISH GRADE AT TOP OF WALL

**LEGEND OF LABELS:**

- (A) FINE GRADE AS SHOWN BY PROPOSED CONTOURS. PLACE MINIMUM OF 6" TOP SOIL. SEED AND MULCH ALL DISTURBED AREAS.
- (B) GRADE ACCESSIBLE PARKING STALLS AND ROUTES AS SHOWN. SLOPE OF THE PAVEMENT AT ALL ACCESSIBLE PARKING STALLS SHALL NOT EXCEED 1:50 IN ALL DIRECTIONS. ALL ACCESSIBLE ELEMENTS SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.
- (C) AREAS OF FUTURE PAVEMENT AND BUILDING PAD NOT TO HAVE TOPSOIL, RESPREAD, SEED AND AND MULCH ALL DISTURBED AREAS.



**REVISIONS:**

NO.	DATE
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 1000 W. MISSOURI BLVD.  
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 (314) 487-0299  
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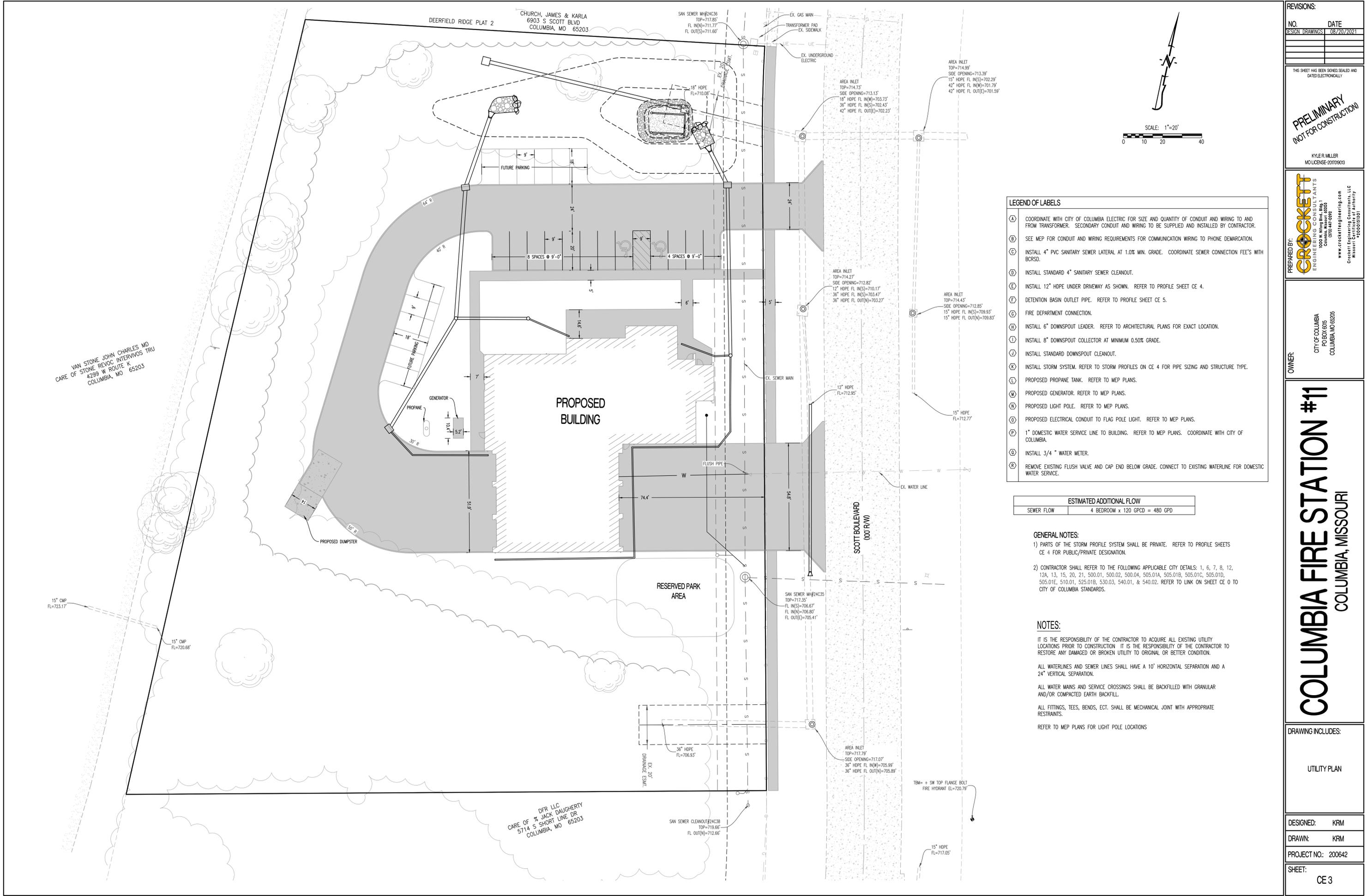
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**COLUMBIA FIRE STATION #11**  
 COLUMBIA, MISSOURI

**DRAWING INCLUDES:**

GRADING PLAN

**DESIGNED:** KRM  
**DRAWN:** KRM  
**PROJECT NO.:** 200642  
**SHEET:** CE 2



**REVISIONS:**

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DESIGN DRAWINGS	08/20/2021

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MO LICENSE 20070903

**PREPARED BY:**  
**CROCKETT**  
ENGINEERS & ARCHITECTS  
1000 W. N. Highway, Suite 100  
Columbia, Missouri 65203  
(573) 487-0299  
www.crockettengineering.com  
Crockett Engineering Consultants, LLC  
Missouri Certificate of Authority  
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**OWNER:**  
CITY OF COLUMBIA  
PO BOX 6016  
COLUMBIA, MO 65205

**COLUMBIA FIRE STATION #11  
COLUMBIA, MISSOURI**

**DRAWING INCLUDES:**

UTILITY PLAN

**DESIGNED:** KRM  
**DRAWN:** KRM  
**PROJECT NO.:** 200642  
**SHEET:** CE 3

- LEGEND OF LABELS**
- (A) COORDINATE WITH CITY OF COLUMBIA ELECTRIC FOR SIZE AND QUANTITY OF CONDUIT AND WIRING TO AND FROM TRANSFORMER. SECONDARY CONDUIT AND WIRING TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
  - (B) SEE MEP FOR CONDUIT AND WIRING REQUIREMENTS FOR COMMUNICATION WIRING TO PHONE DEMARCATION.
  - (C) INSTALL 4" PVC SANITARY SEWER LATERAL AT 1.0% MIN. GRADE. COORDINATE SEWER CONNECTION FEE'S WITH BCRSD.
  - (D) INSTALL STANDARD 4" SANITARY SEWER CLEANOUT.
  - (E) INSTALL 12" HDPE UNDER DRIVEWAY AS SHOWN. REFER TO PROFILE SHEET CE 4.
  - (F) DETENTION BASIN OUTLET PIPE. REFER TO PROFILE SHEET CE 5.
  - (G) FIRE DEPARTMENT CONNECTION.
  - (H) INSTALL 6" DOWNSPOUT LEADER. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
  - (I) INSTALL 8" DOWNSPOUT COLLECTOR AT MINIMUM 0.50% GRADE.
  - (L) INSTALL STANDARD DOWNSPOUT CLEANOUT.
  - (X) INSTALL STORM SYSTEM. REFER TO STORM PROFILES ON CE 4 FOR PIPE SIZING AND STRUCTURE TYPE.
  - (1) PROPOSED PROPANE TANK. REFER TO MEP PLANS.
  - (M) PROPOSED GENERATOR. REFER TO MEP PLANS.
  - (N) PROPOSED LIGHT POLE. REFER TO MEP PLANS.
  - (O) PROPOSED ELECTRICAL CONDUIT TO FLAG POLE LIGHT. REFER TO MEP PLANS.
  - (P) 1" DOMESTIC WATER SERVICE LINE TO BUILDING. REFER TO MEP PLANS. COORDINATE WITH CITY OF COLUMBIA.
  - (Q) INSTALL 3/4" WATER METER.
  - (R) REMOVE EXISTING FLUSH VALVE AND CAP END BELOW GRADE. CONNECT TO EXISTING WATERLINE FOR DOMESTIC WATER SERVICE.

ESTIMATED ADDITIONAL FLOW	
SEWER FLOW	4 BEDROOM x 120 GPCD = 480 GPD

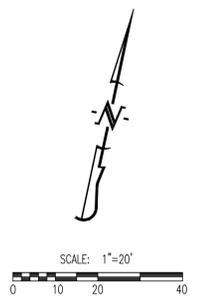
- GENERAL NOTES:**
- PARTS OF THE STORM PROFILE SYSTEM SHALL BE PRIVATE. REFER TO PROFILE SHEETS CE 4 FOR PUBLIC/PRIVATE DESIGNATION.
  - CONTRACTOR SHALL REFER TO THE FOLLOWING APPLICABLE CITY DETAILS: 1, 6, 7, 8, 12, 12A, 13, 15, 20, 21, 500.01, 500.02, 500.04, 505.01A, 505.01B, 505.01C, 505.01D, 505.01E, 510.01, 525.01B, 530.03, 540.01, & 540.02. REFER TO LINK ON SHEET CE 0 TO CITY OF COLUMBIA STANDARDS.

- NOTES:**
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUIRE ALL EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE ANY DAMAGED OR BROKEN UTILITY TO ORIGINAL OR BETTER CONDITION.
  - ALL WATERLINES AND SEWER LINES SHALL HAVE A 10' HORIZONTAL SEPARATION AND A 24" VERTICAL SEPARATION.
  - ALL WATER MAINS AND SERVICE CROSSINGS SHALL BE BACKFILLED WITH GRANULAR AND/OR COMPACTED EARTH BACKFILL.
  - ALL FITTINGS, TEES, BENDS, ECT. SHALL BE MECHANICAL JOINT WITH APPROPRIATE RESTRAINTS.
  - REFER TO MEP PLANS FOR LIGHT POLE LOCATIONS

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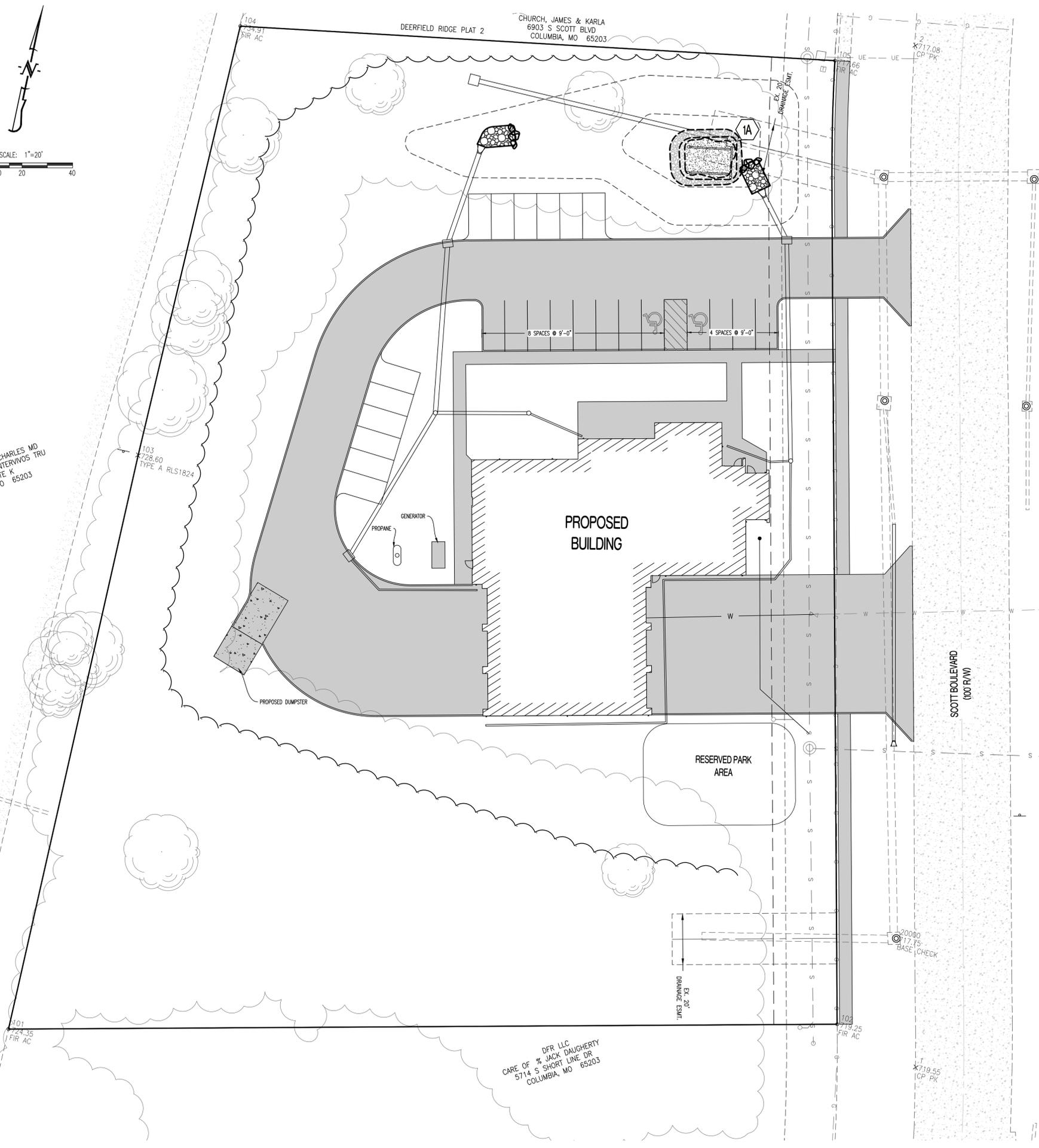
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101  
724.35  
FIR AC

102  
719.25  
FIR AC

X719.55  
CP PK



**CALCULATIONS:**

LAND AREA:	
TOTAL LAND AREA:	2.50 AC
LOT COVERAGES:	
NET LAND AREA:	2.45 AC. 100%
PREDEVELOPMENT:	
TOTAL IMPERVIOUS SURFACE AREA:	1.84 AC. 75%
TOTAL OPEN SPACE:	0.61 AC. 25%
POST DEVELOPMENT:	
TOTAL IMPERVIOUS SURFACE AREA:	1.11 AC. 45%
TOTAL OPEN SPACE:	1.34 AC. 55%

**LANDSCAPE COMPLIANCE:**

**29-4.4(c) - GENERAL PROVISIONS:**

EXISTING CLIMAX FOREST:	0 AC.
CLIMAX FOREST TO REMAIN:	0 AC.
REQUIRED 15% OF TOTAL SITE TO BE LANDSCAPED:	0.37 AC.
PROPOSED AREA OF TOTAL SITE TO BE LANDSCAPED:	0.37 AC.

**29-4.4(d) - STREET FRONTAGE LANDSCAPING:**

(1) LENGTH OF PAVED AREA (OVER 40' IN LENGTH) WITHIN 25' OF R/W TO HAVE 6' WIDE LANDSCAPED BUFFER: (REFER TO TYPICAL SCREENING BED PLANTING DETAIL)	449 L.F. 449 L.F. x 6' WIDE = 2,694 S.F.
(A) 1 TREE (2" CALIPER, 10' TALL AT TIME OF PLANTING) PER 200 S.F. OF BUFFER AREA	14 TREES
(B) (2)(i) 1 TREE PER 40' STREET FRONTAGE: (748' STREET FRONTAGE)	19 TREES
(ii) 30% LARGE TREES MIN.	6 TREES
(ii) 30% MEDIUM TREES MIN.	6 TREES

**29-4.4(e) - PROPERTY EDGE BUFFERING:**

(1) SEE PLAN FOR TABLE 4.4-4 DETERMINED LEVEL OF SCREENING AND BUFFERING. SEE TYPICAL LANDSCAPING BED PLANTING DETAIL BELOW	
--	--

**29-4.4(f) - PARKING AREA LANDSCAPING:**

(1) IF PARKING AREA CONTAINS MORE THAN 100 SPACES, PARKING SPACE AREA TO INCLUDE LANDSCAPING AREA EQUAL TO 10% OF PAVED AREA, WITH 1 TREE PER 40' L.F. OF LANDSCAPED AREA.	N/A - 41 SPACES
(4) 1 TREE PER 4,000 S.F. OF PARKING PAVED AREA - 41,232 S.F.	11 TREES
0 EXISTING PARKING LOT TREES	-0 TREES
NET PARKING LOT TREES TO BE PLANTED	11 TREES
(5) MIN. 30% TOTAL TREES TO BE MEDIUM SHADE TREES	4 TREES
MIN. 40% TOTAL TREES TO BE LARGE SHADE TREES	5 TREES

**29-4.4(g) - PRESERVATION OF EXISTING LANDSCAPING:**

TOTAL SIGNIFICANT TREES: 10 TREES	
(3)(i) MINIMUM OF 25% OF SIGNIFICANT TREES TO BE PRESERVED (3 TREES)	
(ii) SIGNIFICANT TREES REMOVED - 6 (REPLACE WITH 3 LARGE TO MEDIUM TREES PER TREE REMOVED): 18 TREES	
(2) CREDIT FOR PRESERVING SIGNIFICANT TREES (3 CREDITS x 4 TREES @ 15" DBH):	-12 TREES
(E) TOTAL TREES TO BE PLANTED FOR SIGNIFICANT TREE CONFORMANCE	6 TREES

**PLANTING NOTES:**

ALL PLANT MATERIALS AND FINAL LANDSCAPE PLAN SHALL BE IN ACCORDANCE WITH THE LANDSCAPING GUIDELINES AND STANDARDS OF THE CITY OF COLUMBIA.

LANDSCAPING SHALL COMPLY WITH SECTIONS 12A-49 (e) AND (f), 29-13.1 (d) (6), AND 29-25 (e) (3) AND (4) OF THE CITY OF COLUMBIA CODE OF ORDINANCES.

LANDSCAPING CONTRACTOR SHALL COORDINATE UTILITY LOCATES AND IDENTIFY ALL UNDERGROUND UTILITIES WITHIN THE LIMITS OF THEIR WORK AREA BEFORE ANY EXCAVATION MAY BEGIN.

SHRUB BEDS & TREE RINGS SHALL BE MULCHED WITH 3" OF DYED BROWN HARDWOOD MULCH.

LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF TWELVE MONTHS.

ALL PLANT MATERIALS MUST MEET THE SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF NURSERYMEN.

LANDSCAPE BEDS SHALL CONFORM TO SCREENING REQUIREMENTS FOR THE CITY OF COLUMBIA. 1' TALL MULCH BERM WITH LANDSCAPED BED SHALL CONTAIN SMALL ORNAMENTAL TREES, DECORATIVE GRASSES, DECIDUOUS SHRUBS, AND EVERGREEN SHRUBS AS LISTED IN THE PLANTING NOTES ABOVE. SCREENING SHALL REACH 50% OPACITY IN THE SPACE BETWEEN 1' AND 5' ABOVE GRADE AT THE SCREEN LINE.

**REVISIONS:**

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MO LICENSE 200709003

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**CROCKETT**  
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1000 W. MISSOURI BLVD.  
COLUMBIA, MISSOURI 65203  
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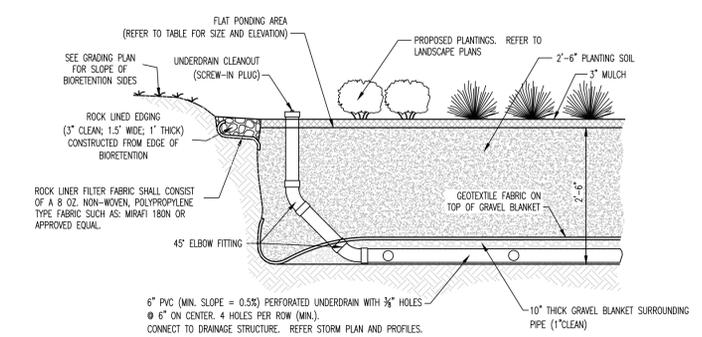
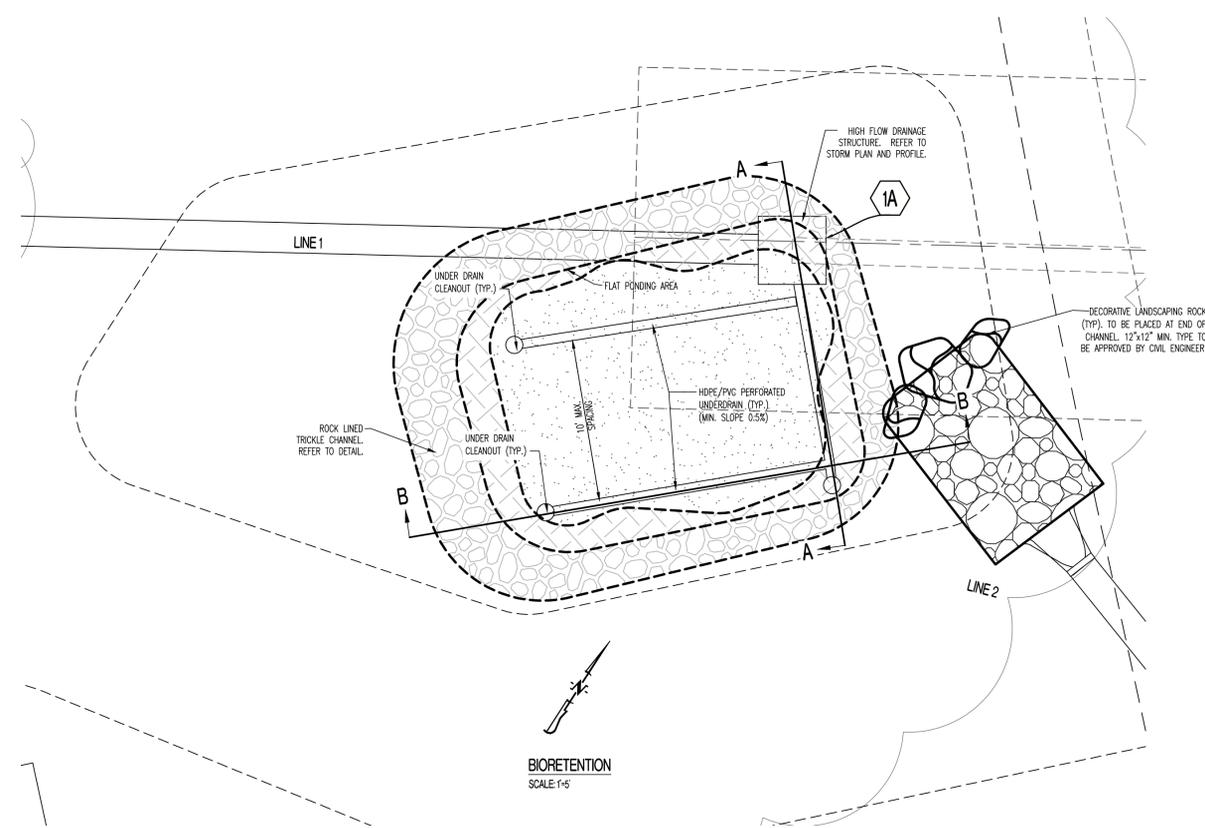
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**COLUMBIA FIRE STATION #11  
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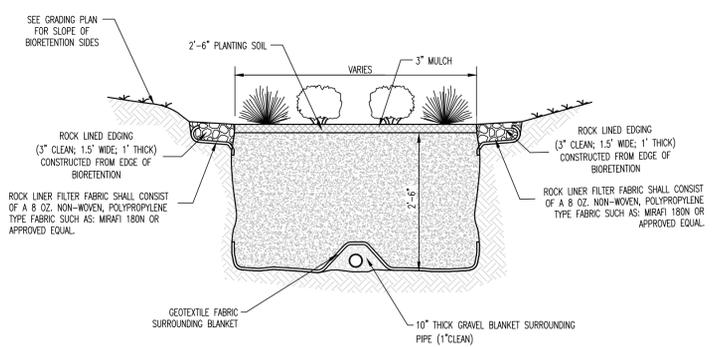
**DRAWING INCLUDES:**

LANDSCAPING PLAN

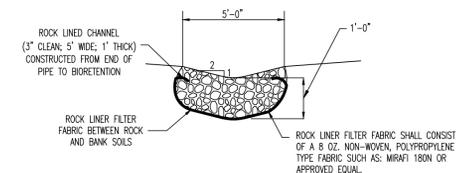
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**PROJECT NO.:** 200642  
**SHEET:** CE 6



**BIORETENTION CROSS SECTION A-A**



**BIORETENTION CROSS SECTION B-B**



**ROCK LINED TRICKLE CHANNEL**

**LEGEND OF LABELS:**

- (A) HDPE/PVC PERFORATED UNDERDRAIN (TYP.) (MIN. SLOPE 0.5%)
- (B) FLAT PONDING AREA
- (C) UNDERDRAIN CLEANOUT (TYP.)
- (D) EDGE PLANTINGS. SEE PLANTINGS CHART FOR EXACT QUANTITIES.
- (E) BOTTOM PLANTINGS. SEE PLANTINGS CHART FOR EXACT QUANTITIES.
- (F) ROCK LINED EDGING. REFER TO DETAIL.
- (G) HIGHFLOW DRAINAGE STRUCTURE.
- (H) ROCK LINED TRICKLE CHANNEL. REFER TO DETAIL.
- (I) DECORATIVE LANDSCAPING ROCK (TYP.) TO BE PLACED AT ENTRANCE TO BIORETENTION CELL. 12" X 12" MIN. TYPE TO BE APPROVED BY CIVIL ENGINEER.

BIORETENTION CELL	
BASIN 1	FLAT PONDING AREA ( SQ. FT. MIN.)
	FLAT PONDING AREA ELEV.
	OVERFLOW STRUCTURE TOP
BIORETENTION BASIN PLANTINGS	
QUANTITY	BOTTOM PLANTING
##	BLAZING STAR - LIATRIS SPICATA
##	SOUTHERN BLUE FLAG IRIS - IRIS VIRGINICA
##	TUSsock SEDGE - CAREX STRICTA
##	SWEET FLAG - ACORUS GRAMINEUS
##	PALM SEDGE - CAREX MUSKINGUMENSIS
##	CARDINAL FLOWER - LOBELIA CARDINALIS
##	PRAIRIE CORDGRASS - SPARTINA PECTINATA
QUANTITY	EDGE PLANTING
##	SWITCHGRASS - PANICUM VIRGATUM
##	SIDE OATS GRAMMA - BOUTELOUA CURTIPENDULA
##	BIG BLUEGRASS - POA AMPLA
##	LITTLE BLUESTEM - SCHIZACHYRIUM SCOPARIUM
QUANTITY	TOTAL GRASSES/FLOWERS REQUIRED
##	##
QUANTITY	SHRUBS AND TREES
##	SMALL SHRUBS (<10' TALL)*
##	LARGE SHRUBS/SMALL TREES (10'-25' TALL)*
##	LARGE TREES* REQUIRED

NOTE: EXACT QUANTITIES OF EACH TYPE OF EDGE PLANTINGS AND BASIN PLANTINGS MAY VARY. CONTRACTOR SHOULD SUPPLY A PROPORTIONAL MIX OF THE TOTAL QUANTITIES INDICATED. ANY PLANT SUBSTITUTION SHALL BE APPROVED BY ENGINEER IN WRITING.

\* REFER TO NOTE AND SPECIES BELOW

**TREE & SHRUBS**

**SMALL SHRUBS**

- (3) BLACK CHOKEBERRY - ARONIA MELANOCARPA
- (3) GOLDEN CURRANT - RIBES ODORATUM

**LARGE SHRUBS/SMALL TREES**

- (2) SERVICEBERRY - AMELANCHIER ARBOREA
- (1) PAWPAW - ASIMINA TRILOBA
- (1) RED BUCKEYE - AESCULUS PAVA
- (0) HOPIREE - PTELEA TRIFOLIATA

**LARGE TREES**

- (0) WHITE OAK - QUERCUS ALBA

**CONSTRUCTION OF PLANTING BED NOTES**

THE CONTRIBUTING AREA MUST BE STABILIZED BEFORE FINAL EXCAVATION AND INSTALLATION OF THE BIORETENTION FACILITY. A PARTIAL HOLE, 2 FEET, DEEP MAY BE DUG AND USED AS A SEDIMENT TRAP, WITH THE SEDIMENT AND REMAINDER OF SOIL DUG OUT JUST BEFORE INSTALLING PLANTING SOIL. DO NOT ALLOW MACHINERY ON BOTTOM SURFACE OF RAIN GARDEN. IF MACHINERY MUST ENTER BIORETENTION FACILITY AREA, START DIGGING AT ONE END AND WORK OUT SO THAT MACHINERY DOES NOT TRACK ON BOTTOM OF FINISHED EXCAVATION. EXCAVATION MUST BE FLAT BUT NOT SMOOTH. DO NOT SCRAPE THE BOTTOM SMOOTH SINCE THIS WILL HARM INFILTRATION. CONTRACTOR TO CONTACT ENGINEER TO APPROVE SOIL AT BOTTOM OF PLANTING BED.

THE PLANTING SOIL MIX FOR THE BASINS SHALL BE 10% SANDY LOAM TOPSOIL, 10% COMPOST AND 80% SAND AS PER THE COLUMBIA PARKS AND RECREATION SPECIFICATIONS. PLANTING SOIL SHALL BE MIXED OUTSIDE OF THE BASIN AND PLACED IN THE BASIN IN LIFTS OF 8". LIGHTLY TAMP OR LIGHTLY WATER EACH LIFT TO ENCOURAGE SETTLING OF THE FILL. AVOID OVERTAMPING OR OVERWATERING (AND CAUSING PONDING) BEFORE BASIN IS FINISHED.

A 3-INCH LAYER OF SHREDDED HARDWOOD MULCH IS TO BE PLACED ON THE SURFACE.

**PLANTING NOTES:**

PLANTS ARE NECESSARY FOR THE PROPER FUNCTION OF A BIORETENTION AREA. A MINIMUM PLANT DENSITY MUST BE ACHIEVED IN ACCORDANCE WITH THE FOLLOWING TABLE. ACTUAL LOCATION AND SPACING OF THE PLANTS SHOULD BE DETERMINED BASED ON AESTHETICS AND THE HEALTH OF THE PLANTS AS WELL AS CONSIDERATIONS OF OTHER INFRASTRUCTURE CONFLICTS.

**PLANT DENSITY TABLE**

PLANT TYPES	PLANT SPACING	TO BE PLANTED IN AREAS GREATER THAN
GRASSES/FLOWERS	1.5 FEET	7 SQ. FT.
SMALL SHRUBS (<10 FEET TALL)	6 FEET	75 SQ. FT.
LARGE SHRUBS / SMALL TREES (10 TO 25 FEET TALL)	8 FEET	135 SQ. FT.
LARGE TREES*	16 FEET	540 SQ. FT.

\*LARGE TREES MUST BE INSTALLED 3-5 FEET BEYOND THE EDGE OF THE RAIN GARDEN.

GENERALLY, A MIX OF TYPES IS BEST TO HELP THE BASIN FUNCTION OPTIMALLY. PLANTS IN A BIORETENTION FACILITY MUST BE ABLE TO WITHSTAND VERY WET PERIODS AS WELL AS HOT, DRY PERIODS. NATIVE PLANTS THAT ARE ADAPTED TO WETLAND OR MESIC WETLAND SITES WILL GENERALLY PERFORM BEST. CONSULT APPENDIX D IN THE CITY OF COLUMBIA STORMWATER MANAGEMENT AND WATER QUALITY MANUAL, DATED FEBRUARY 1, 2009.

BIORETENTION FACILITIES WHICH COLLECT WATER FROM PAVEMENT SHOULD HAVE SALT TOLERANT PLANTS.

PLANTING PLAN AND PLANT LIST FOR BIORETENTION FACILITIES WILL BE PROVIDED TO CITY OF COLUMBIA PUBLIC WORKS BEFORE PLANTING TAKES PLACE.

PLANT MATERIAL SIZES SHALL BE AS FOLLOWS: SHRUBS - 2 GALLON, GROUND COVER - PLUGS, TREES - 2" CALIPER, GRASS - SEED OR SOD, CONIFERS - 6 FT.

**REVISIONS:**

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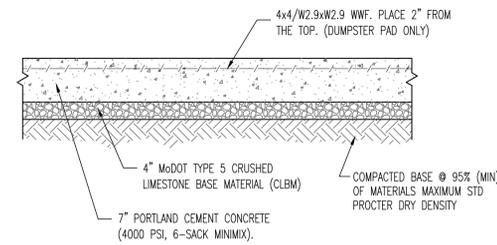
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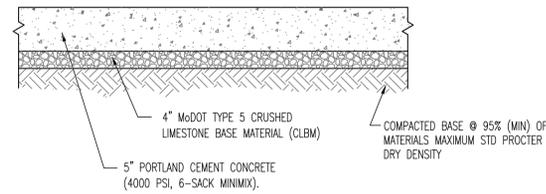
**COLUMBIA FIRE STATION #11**  
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**DRAWING INCLUDES:**  
BIORETENTION PLAN

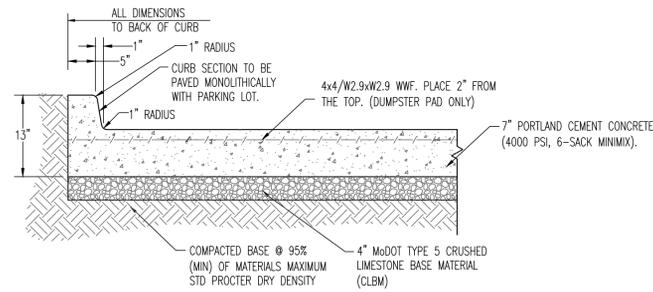
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**SHEET:** CE 7



TYPICAL CONCRETE PAVEMENT CROSS SECTION (HEAVY DUTY)

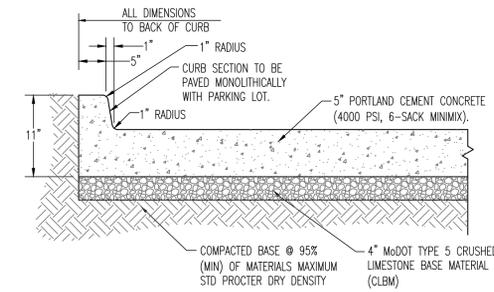


TYPICAL CONCRETE PAVEMENT CROSS SECTION (LIGHT DUTY)



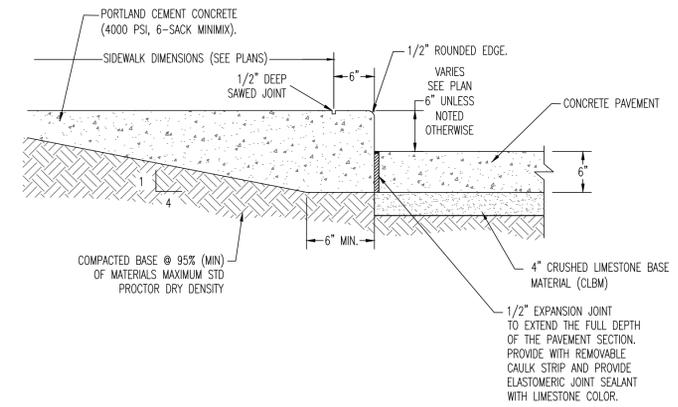
6" BARRIER CURB CROSS-SECTION (HEAVY DUTY)

HEAVY DUTY PAVEMENT

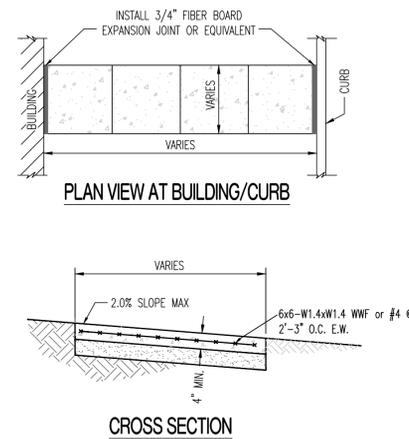


6" BARRIER CURB CROSS-SECTION (LIGHT DUTY)

LIGHT DUTY PAVEMENT

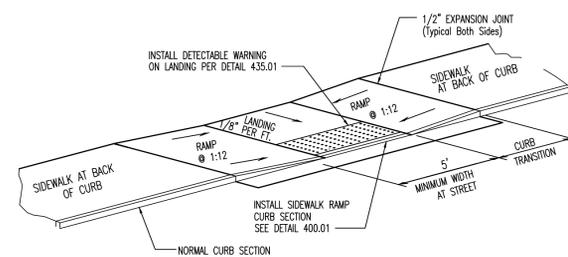


CONCRETE THICKENED EDGE SIDEWALK



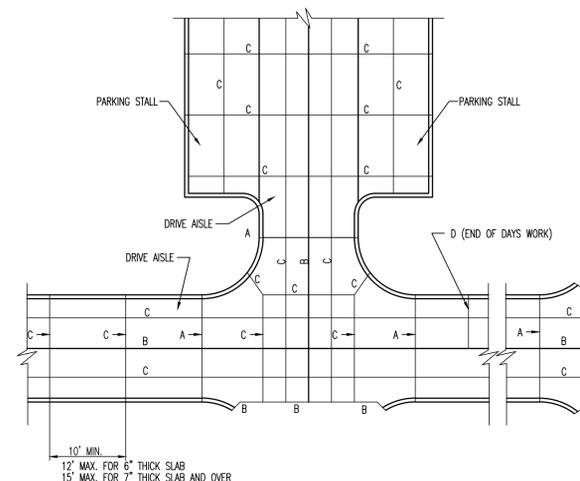
- NOTE:
- SIDEWALK SHALL BE 4" THICK CLASS A CONCRETE ON 4" AGGREGATE BASE.
  - INSTALL 3/4" EXPANSION JOINTS AT INTERSECTIONS, RAMPS, STRUCTURES, AND DRIVEWAY APPROACHES. MAX. EXPANSION JOINT SPACING = 200'
  - INSTALL TRANSVERSE SAW JOINTS AT SPACING = SIDEWALK WIDTH.

TYPICAL SIDEWALK



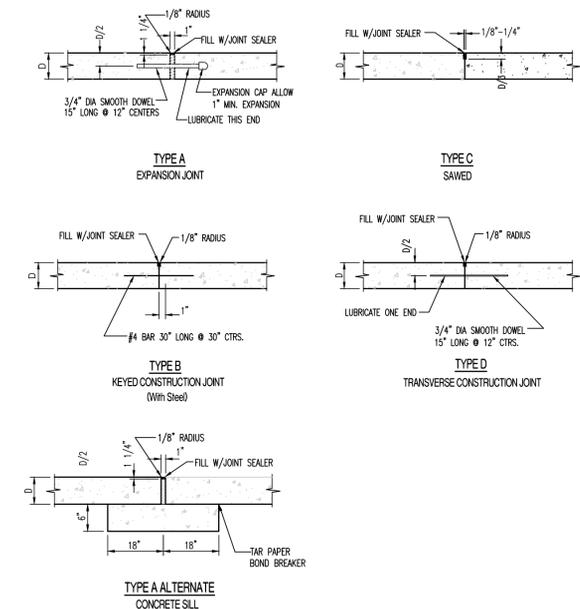
- NOTE:
- RAMP SHALL BE 4" THICK CLASS A CONCRETE REINFORCED SAME AS SIDEWALK.
  - EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
  - MAXIMUM RAMP CROSS SLOPE IS 2.00%.
  - ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
  - REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION - DETAIL 400.01
  - RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
  - LANDING AREA SHALL BE 4'-0" MIN WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 2.00%.
  - TYPE "A" RAMP NOT APPLICABLE WHEN NORMAL SIDEWALK WIDTH DOES NOT PROVIDE 4'-0" LANDING AT THE TOP OF RAMP, WIDEN SIDEWALK OR USE TYPE "B" RAMP.
  - 1:10 FLARES ARE REQUIRED ON TYPE "A" RAMPS.

MIDBLOCK SIDEWALK RAMP Sidewalk at Back of Curb (433.01)



- NOTE:
- TRANSVERSE TYPE C JOINTS SHALL BE SAWS AS SOON AS CONCRETE CAN WITHSTAND TRAVELING. JOINTS SHALL BE CLEANED AND FILLED WITH BITUMINOUS COMPOUND IMMEDIATELY FOLLOWING SAWING.
  - INSTALL TYPE A EXPANSION JOINTS AT INTERSECTIONS, AND AT STRUCTURES.
  - USE TYPE D JOINT AT END OF DAYS WORK.

JOINT DETAILS (P.C. CONCRETE PAVEMENT) (PRIVATE)



JOINT DETAILS (P.C. CONCRETE PAVEMENT) (PRIVATE)

REVISIONS:

NO.	DATE
DESIGN DRAWINGS	08/20/2021

THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY

**PRELIMINARY**  
(NOT FOR CONSTRUCTION)

KYLER MILLER  
MO LICENSE 20109803

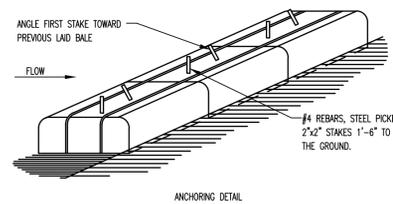
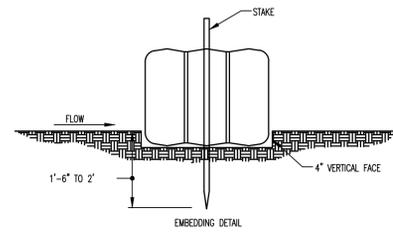
PREPARED BY:  
**CROCKETT**  
ENGINEERS & ARCHITECTS  
1008 W. Walnut Street, Suite 100  
Columbia, Missouri 65203  
(314) 487-0299  
www.crockettengineering.com  
Crockett Engineering Consultants, LLC  
Missouri Certificate of Authority  
#000001001

OWNER:  
CITY OF COLUMBIA  
PO BOX 6016  
COLUMBIA, MISSOURI 65206

**COLUMBIA FIRE STATION #11**  
COLUMBIA, MISSOURI

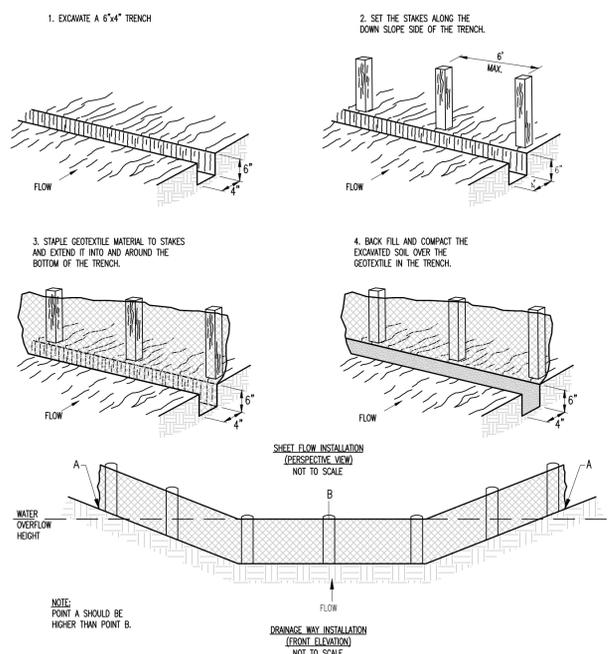
DRAWING INCLUDES:  
CONSTRUCTION DETAILS,  
SHEET 1 OF 2

DESIGNED: KRM  
DRAWN: KRM  
PROJECT NO: 200642  
SHEET:  
CE 8



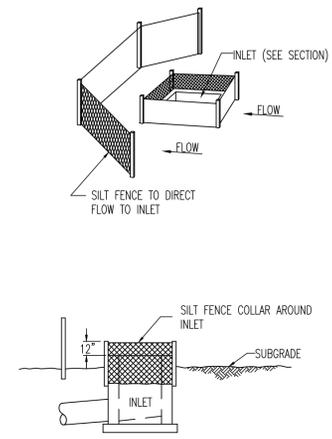
1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ADJUTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4\".
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTION SHALL BE AT LEAST ONCE A WEEK AND AFTER EACH 1/2\" RAIN. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY.
5. BALES SHALL BE REMOVED BY THE OWNER WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

**STRAW BALE CHECK DAM**

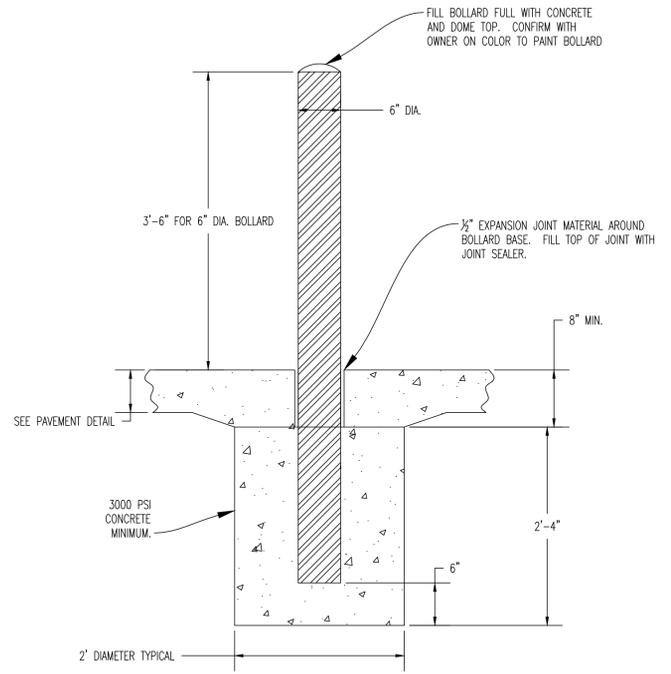


NOTE:  
POINT A SHOULD BE  
HIGHER THAN POINT B.

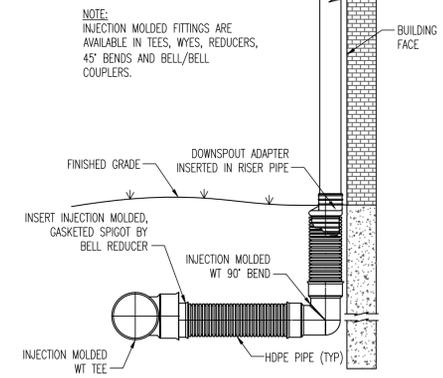
**SILT FENCE**



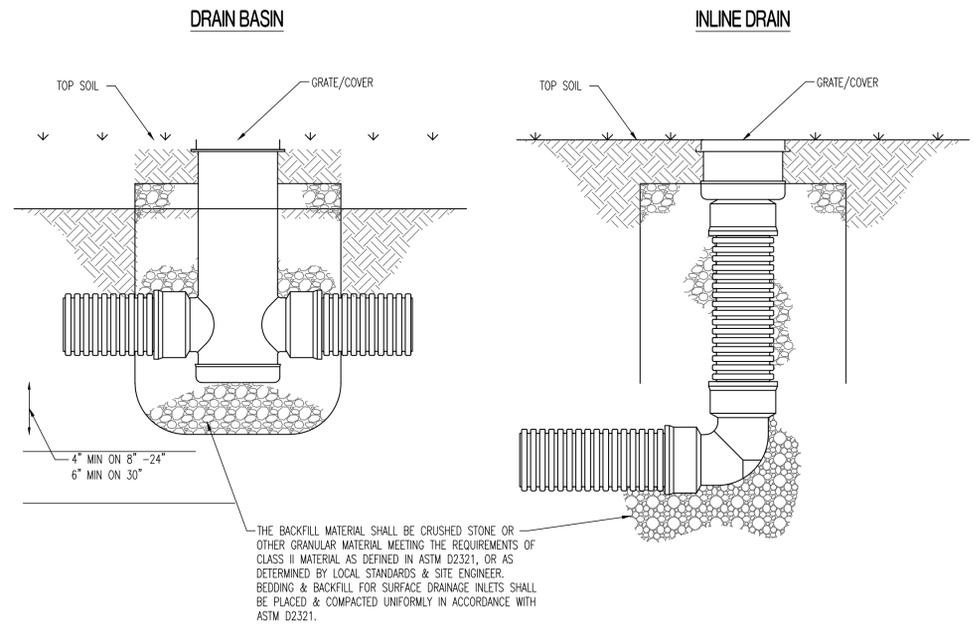
**INLET SILT BARRIERS**



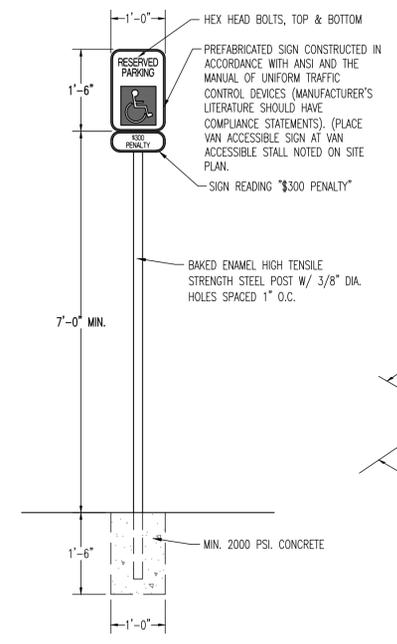
**BOLLARD INSTALLATION DETAIL**



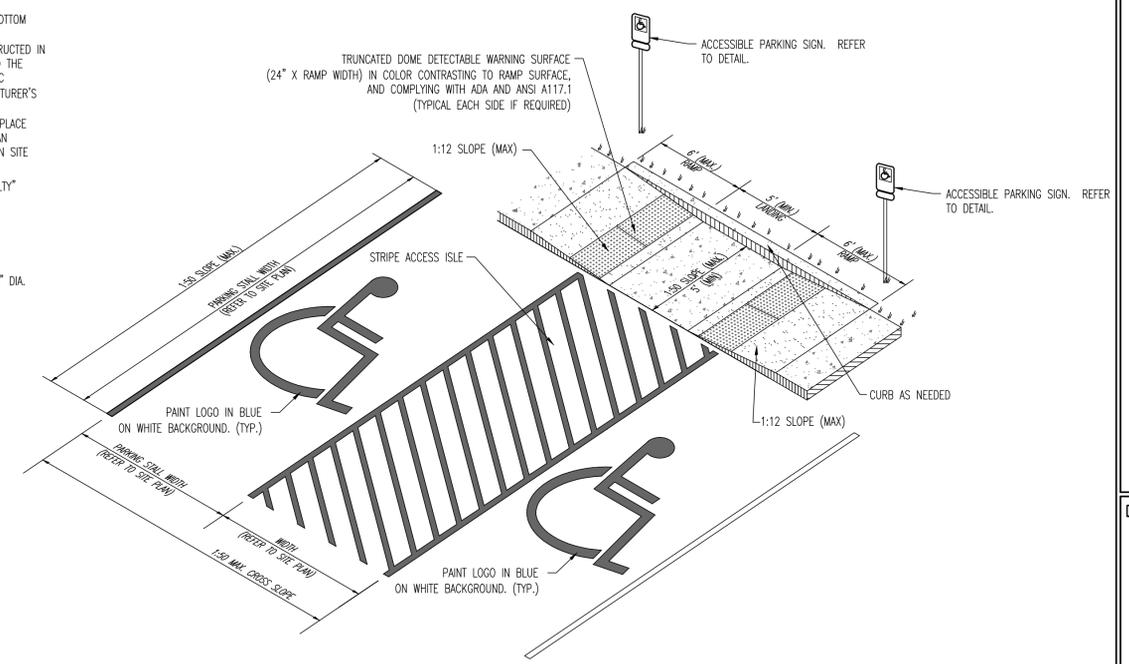
**ROOF DRAIN DETAIL**



**NYLOPLAST DRAIN BASIN & INLINE DRAIN NON TRAFFIC INSTALLATION**



**ACCESSIBLE PARKING SIGN**



**ACCESSIBLE PARKING STALL AREA DETAIL**

REVISIONS:

NO.	DATE
DESIGN DRAWINGS	08/20/2021

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**PRELIMINARY**  
(NOT FOR CONSTRUCTION)

KYLE R. MILLER  
MO LICENSE 20170803

PREPARED BY:  
**CROCKETT**  
ENGINEERS & ARCHITECTS  
1000 W. Illinois Blvd., Ste. 200  
Columbia, Missouri 65205  
(314) 487-0299  
www.crockettengineering.com  
Crockett Engineering Consultants, LLC  
Missouri Certificate of Authority  
#000000001

OWNER:  
CITY OF COLUMBIA  
PO BOX 6016  
COLUMBIA, MO 65205

**COLUMBIA FIRE STATION #11**  
COLUMBIA, MISSOURI

DRAWING INCLUDES:  
CONSTRUCTION DETAILS,  
SHEET 2 OF 2

DESIGNED: KRM  
DRAWN: KRM  
PROJECT NO: 200642  
SHEET:  
CE 9

# Columbia Fire Station #11

## Columbia, Boone County, Missouri

### GENERAL NOTES

**ELEVATION DATUM**  
SEE ARCHITECTURAL DRAWINGS OR SITE PLAN FOR FINISH FLOOR ELEVATIONS

**DESIGN SPECIFICATIONS**  
2018 INTERNATIONAL BUILDING CODE

**EARTHWORK**  
EARTHWORK OPERATIONS SHALL BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL TESTING AGENCY TO ASSURE COMPLIANCE WITH THE RECOMMENDATIONS OF THE SOILS REPORT.

### CONCRETE

CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 305 SPECIFICATIONS FOR HOT WATER CONCRETE, AND ACI 306 SPECIFICATIONS FOR COLD WEATHER CONCRETE, WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:

- CONCRETE SHALL DEVELOP THE FOLLOWING 28-DAY MINIMUM COMPRESSIVE STRENGTH:
 

FOUNDATIONS	3,000 PSI
CAST-IN-PLACE WALLS	3,500 PSI
FLOOR SLAB	4,000 PSI
EXTERIOR SLABS, WALLS AND CURBS	4,000 PSI
- ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR ENGINEERED FILL.
- CHLORIDE-BASED ADMIXTURES ARE PROHIBITED IN ALL REINFORCED CONCRETE.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, A616, OR A617, GRADE 60.
- ALL CONTINUOUS REINFORCING STEEL THAT MEETS AT A CORNER SHALL BE TIED TOGETHER WITH A CORNER BAR THAT HAS SUFFICIENT LAP DISTANCE IN EACH DIRECTION.
- CONTINUOUS REINFORCING BARS LAP LENGTH SHALL BE A MINIMUM OF 48 BAR DIAMETERS UNLESS NOTED OTHERWISE.
- CONCRETE SLUMP SHALL BE A MAXIMUM OF 4" +/- 1" (ASTM C-143) AS DELIVERED IN THE FIELD. CONTRACTOR MAY USE CHEMICAL ADMIXTURES TO ATTAIN A MAXIMUM SLUMP OF 8" FOR WORKABILITY. NO WATER MAY BE ADDED TO THE CONCRETE MIX ON SITE UNLESS WATER IS WITHHELD AT THE BATCHING FACILITY. IF WATER IS WITHHELD AT THE BATCHING FACILITY IT SHOULD BE REFLECTED ON THE LOAD TICKET. THE TOTAL AMOUNT OF WATER IN THE MIX SHALL NOT EXCEED WHAT IS NOTED ON THE APPROVED MIXED. THIS SHALL BE NOTED IN THE SPECIAL INSPECTOR'S RECORDS.
- CONCRETE EXPOSED TO WEATHER, VEHICLES, AND/OR DEICING CHEMICALS SHALL BE AIR-ENTRAINED WITH 6% (+/-) 1.5% ENTRAINED AIR BY VOLUME AT POINT OF DISCHARGE. DO NOT ALLOW AIR CONTENT OF TROWELED FINISHED FLOORS TO EXCEED 3%.
- SUBMIT CONCRETE MIX PROPORTIONS PRIOR TO START OF WORK. DO NOT BEGIN CONCRETE PRODUCTION UNTIL MIXES HAVE BEEN REVIEWED AND ARE ACCEPTABLE TO THE ENGINEER.
- READY MIX CONCRETE SHALL COMPLY WITH REQUIREMENTS OF ASTM C94.
- CONCRETE WORK EXECUTION
  - CONSTRUCT FORMS TO CORRECT SIZE, SHAPE, ALIGNMENT, ELEVATION AND POSITION; AND TO SUPPORT VERTICAL AND LATERAL LOADS.
  - POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE, UNLESS NOTED OTHERWISE ON THE DRAWINGS:
 

CAST AGAINST AND EXPOSED TO EARTH.....	3 INCHES
EXPOSED TO EARTH OR WEATHER.....	2 INCHES
NOT EXPOSED TO WEATHER OR	
IN CONTACT WITH EARTH.....	1 1/2 INCHES
  - PROVIDE CONTROL JOINTS IN SLABS-ON-GRADE AT NOT GREATER THAN 15 FEET ON CENTER IN EACH DIRECTION. SAW CUT CONTROL JOINTS MINIMUM 1/4 OF SLAB DEPTH, AS SOON AFTER SLAB FINISHING WITHOUT DISLODING AGGREGATE.
  - STEEL TROWEL FINISH ALL INTERIOR CONCRETE SLABS, BROOM FINISH ALL EXTERIOR CONCRETE SLABS.
  - CURE ALL CONCRETE IN COMPLIANCE WITH ACI 301, USING A LIQUID TYPE MEMBRANE, NON-RESIDUAL, CURING COMPOUND COMPLYING WITH ASTM C309. ASSURE COMPATIBILITY WITH FINISH FLOOR COVERING.

### STRUCTURAL STEEL

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AND CURRENT OSHA STANDARDS.
- WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992. STRUCTURAL TUBES SHALL CONFORM TO ASTM A500 GRADE B. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
- BOLTS, UNLESS OTHERWISE SHOWN, SHALL CONFORM TO ASTM A325-N, SIZE AS PER PLAN.
- ANCHOR BOLTS, UNLESS OTHERWISE SHOWN, SHALL CONFORM TO ASTM F1554 GRADE 36.
- SPLICING OF STRUCTURAL STEEL IS PROHIBITED EXCEPT AS DETAILED.
- ALL STRUCTURAL AND MISCELLANEOUS STEEL ITEMS SHALL RECEIVE ONE COAT OF "IRONCLAD RETARDO RUST INHIBITIVE PAINT 163" (BENJAMIN MOORE) OR APPROVED EQUAL UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS. ALL STEEL SURFACES EMBEDDED IN CONCRETE SHALL NOT BE PAINTED. PREPARATION OF STEEL SURFACES SHALL MEET THE REQUIREMENTS OF THE STEEL STRUCTURES PAINTING COUNCIL (SSPC-SP1) AND THE REMOVAL OF GREASE AND OIL BY SOLVENT CLEANING (SSPC-SP1) AND THE REMOVAL OF MILL SCALE, RUST, WELD FLUX AND SLAG BY HAND TOOL CLEANING (SSPC-SP2). PRIMER SHALL BE APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE BUT NOT LESS THAN ONE GALLON PER 400 SQ.FT. THEREBY DEPOSITING A DRY FILM THICKNESS OF NOT LESS THAN 1.5 MILS. ANY SCARRED AREAS SHALL BE TOUCHED UP WITH THE SAME PAINT AFTER ERECTION.
- ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS IN ACCORDANCE WITH THE CURRENT EDITION OF THE AWS STRUCTURAL WELDING CODE. WELDING ELECTRODES SHALL BE E70XX.

### POST-INSTALLED ANCHORS

- ALL POST-INSTALLED ANCHORS SHALL MEET THE REQUIREMENTS OF THE CODE-CITED EDITION OF ACI 318, APPENDIX "D", AND SHALL BE ACCEPTABLE FOR BOTH CRACKED AND UNCRACKED CONCRETE.
- EXPANSION ANCHORS HAVE BEEN DESIGNED AS HILTI KWIK BOLT TZ ANCHORS, UNLESS NOTED OTHERWISE.
- ADHESIVE ANCHORS HAVE BEEN DESIGNED TO USE HILTI HIT HY 200 ADHESIVE IN CONCRETE OR SOILD MASONRY, UNLESS NOTED OTHERWISE.
- EQUIVALENT ANCHORS MAY BE SUBMITTED FOR THE ENGINEER'S APPROVAL. SUBMITTALS ARE THE CONTRACTOR'S RESPONSIBILITY AND MUST INCLUDE EVALUATION REPORTS FROM THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO).
- EMBEDMENT DEPTH IS DEFINED AS THE DISTANCE FROM THE SURFACE OF THE LOAD-BEARING BASE MATERIAL TO THE DEEPEST PART OF THE ANCHOR AFTER THE ANCHOR HAS BEEN DRIVEN INTO THE HOLE BUT NOT YET EXPANDED.
- ADHESIVE ANCHORS SHALL BE ACCEPTABLE FOR LONG-TERM LOADING. WHEN BASE MATERIAL TEMPERATURES ARE BELOW 40 DEG F, ONLY NON-EPOXY-BASED ADHESIVES SHALL BE USED.
- POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLANE ANCHORS. CARE SHALL BE TAKEN TO AVOID CONFLICTS WITH EXISTING REINFORCING BARS. HOLES SHALL BE DRILLED AND CLEANED PER ANCHOR MANUFACTURER'S SPECIFICATIONS.
- STAINLESS STEEL ANCHORS ARE REQUIRED AT ALL PERMANENTLY EXPOSED WEATHER CONDITIONS.

### MASONRY

MASONRY WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT ACI 530.1 SPECIFICATIONS FOR MASONRY STRUCTURES WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:

- HOLLOW MASONRY BLOCK SHALL CONFORM TO ASTM C90 REGULAR WEIGHT GRADE N1.
- COURSE GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8" AND A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI.
- MORTAR SHALL BE TYPE S CONFORMING TO ASTM C270. AVERAGE COMPRESSIVE STRENGTH IS 2,000 PSI.
- MINIMUM 28-DAY COMPRESSIVE STRENGTH OF MASONRY:  $f_m = 2,000$  PSI.
- WIRE REINFORCING SHALL CONFORM TO ASTM A82, STANDARD TRUSS-TYPE DUR-O-WALL REINFORCING (OR APPROVED EQUAL) AND SHALL BE PLACED CONTINUOUSLY IN ALTERNATE HORIZONTAL MORTAR JOINTS.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, A616, OR A617, GRADE 60. THE MINIMUM LAP FOR SPLICES SHALL BE 48 BAR DIAMETERS. PROVIDE DUR-O-WALL REBAR POSITIONERS.
- ALL STEEL LINTELS TO BE A36 STEEL OR A992 GRADE 50. ALL LINTELS TO BE HOT DIPPED GALVANIZED.
- INTERSECTING STRUCTURAL WALLS SHALL BE ANCHORED BY STEEL CONNECTORS SPACED VERTICALLY AT 48" O.C. MAXIMUM. THE CONNECTORS SHALL CONFORM TO ASTM A36 AND SHALL HAVE A MINIMUM SECTION OF 1/4" x 1 1/2". THEY SHALL BE 28" LONG WITH 2" AT EACH END BENT AT 90 DEGREES TO FORM A "U" OR "Z" SHAPE. ALL CELLS ABOVE AND BELOW THE ANCHOR SHALL BE GROUTED, AND THE BENT ENDS OF THE CONNECTORS SHALL BE EMBEDDED IN THE GROUT, 2" MIN.
- EXPANSION JOINTS SHALL BE PROVIDED IN CMU BLOCK WALLS FULL HEIGHT OF WALL AT INTERVALS NOT EXCEEDING 24'-0". NOT CLOSER THAN 2'-8" FROM OPENINGS. JOINT REINFORCING SHALL BE SEVERED AT EXPANSION JOINT LOCATIONS, HOWEVER BOND BEAM REINFORCING SHALL BE CONTINUOUS THROUGH THE JOINT.
- BOND BEAMS OR GROUTED CELLS ARE REQUIRED AT ALL CONNECTIONS TO CMU.

### HEADED MASONRY ANCHORS

- ALL HEADED CONCRETE ANCHORS SHALL MEET THE REQUIREMENTS OF THE CODE-CITED EDITION OF ACI 318 APPENDIX "D" AND AWS D1.1.
- HEADED STUDS HAVE BEEN DESIGNED AS TYPE "B" ANCHORS ( $f_u = 65,000$  psi,  $f_y = 51,000$  psi).
- EMBEDMENT DEPTH IS DEFINED AS THE DISTANCE FROM THE OUTSIDE FACE OF THE EMBEDMENT PLATE TO THE INSIDE FACE OF THE STUD HEAD.
- EQUIVALENT ANCHORS MAY BE SUBMITTED FOR THE ENGINEER'S APPROVAL.

### DEFORMED BAR ANCHORS

- ALL DEFORMED BAR ANCHORS SHALL MEET THE REQUIREMENTS OF THE CODE-CITED EDITION OF ACI 318 APPENDIX "D" AND AWS D1.1.
- DEFORMED BAR ANCHORS HAVE BEEN DESIGNED AS TYPE "C" ANCHORS ( $f_u = 80,000$  psi,  $f_y = 70,000$  psi, & MANUFACTURED IN CONFORMANCE WITH ASTM A496).
- EQUIVALENT ANCHORS MAY BE SUBMITTED FOR THE ENGINEER'S APPROVAL.

### TIMBER

TIMBER WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT ANSI/AF&PA NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION, WITH THE FOLLOWING SUPPLEMENTAL REQUIREMENTS:

- FOR COMMON MEMBER SIZES, THE SPECIES AND GRADES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 

A.	2X4	SPF No.1/No.2
B.	2X6	SPF No.1/No.2
C.	2X8	DF-L No.2
D.	2X10	DF-L S.S.
E.	2X12	DF-L S.S.
- EQUIVALENT (OR BETTER) GRADES & SPECIES MAY BE SUBMITTED FOR THE ENGINEER'S APPROVAL.
- SIZES SHOWN FOR LUMBER ARE NOMINAL SIZES.
- TIMBER EXPOSED TO WEATHER OR GROUND, OR IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-IMPREGNATED BY AN APPROVED PROCESS AND PRESERVATIVE.
- SPLICING OF JOISTS, STUDS, OR HEADERS IS PROHIBITED EXCEPT AS SHOWN.
- BOLTS SHALL CONFORM TO ASTM A307. HOLES SHALL BE DRILLED PER SECTION 11.1.2 OF THE 2005 ANSI/AF&PA NDS FOR WOOD CONSTRUCTION.
- LAG SCREWS AND WOOD SCREWS SHALL BE INSTALLED PER SECTIONS 11.1.3 AND 11.1.4, RESPECTIVELY, OF THE 2005 ANSI/AF&PA NDS FOR WOOD CONSTRUCTION.
- COMMON NAILS SHALL BE USED, UNLESS NOTED OTHERWISE. IN ADDITION, NAILS SHALL BE GALVANIZED, IF EXPOSED TO WEATHER OR MOISTURE. TOE-NAILS SHALL BE DRIVEN PER SECTION 11.1.5.4 OF THE 2005 ANSI/AF&PA NDS FOR WOOD CONSTRUCTION.
- FASTENING SHALL BE PER THE IBC MINIMUM FASTENING SCHEDULE, TABLE 2304.9.1, UNLESS NOTED OTHERWISE.
- CONNECTIONS/CONNECTORS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

### PREFABRICATED WOOD TRUSSES

- FLOOR & ROOF TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE (TPI) DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES, AND THE ANSI/NF&PA NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION.
- PROVIDE TEMPORARY AND PERMANENT BRACING ON ALL TRUSSES, AS REQUIRED TO PROVIDE MEMBER AND TRUSS STABILITY.
- FLOOR & ROOF TRUSSES SHALL BE DESIGNED AND CONSTRUCTED FOR A MAXIMUM TOTAL LOAD DEFLECTION OF L/360 AND TO SAFELY SUPPORT THE FOLLOWING LOADS:
  - DEAD, LIVE, SNOW, WIND, EARTHQUAKE: SEE PROJECT DESIGN DATA ON COVER SHEET.
  - MECHANICAL PIPE LOAD: TRUSSES SHALL BE DESIGNED FOR A CONCENTRATED LOAD OF 250 LBS HUNG ANYWHERE ALONG THE BOTTOM CHORD.
  - OVER-FRAMING LOAD: TRUSSES SHALL ALSO BE DESIGNED TO SUPPORT ADDITIONAL OVERBUILD FRAMING, SUCH AS THAT WHICH FORMS VALLEYS AND HIPS ON ROOFS.
  - DRIFTED SNOW LOAD: TRUSSES SHALL BE DESIGNED TO SUPPORT DRIFTED SNOW LOADS IN ACCORDANCE WITH THE APPROPRIATE BUILDING CODE.
  - IN-PLANE LATERAL LOADS: TRUSSES SHALL BE DESIGNED TO SUPPORT ANY LATERAL LOADS CARRIED AXIALLY IN THE PLANE OF THE TRUSS, AS SHOWN ON THE PLANS.
- GABLED END TRUSSES SHALL HAVE VERTICAL MEMBERS SPACED AT 16" O.C. MAXIMUM.
- SUBMITTALS SHALL INCLUDE THE FOLLOWING:
  - SHOP DRAWINGS PREPARED UNDER THE SUPERVISION OF, AND SIGNED AND SEALED BY, A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS BUILT. THESE DRAWINGS SHALL INDICATE SPECIES, GRADE, AND SIZES OF LUMBER TO BE USED; PITCH, SPAN, CAMBER, CONFIGURATION, AND SPACING FOR EACH TYPE OF TRUSS REQUIRED; TYPE, SIZE, MATERIAL, FINISH, AND LOCATION OF METAL CONNECTOR PLATES; AND BEARING DETAILS. SHOW TRUSS LAYOUT AND ALL REQUIRED TEMPORARY AND PERMANENT BRACING AFFECTING THE STRUCTURAL CAPACITY OF THE TRUSSES.

PROVIDE COMPLETE ENGINEERING DESIGN CALCULATIONS THAT INCLUDE DESIGN VALUES, DESIGN ANALYSIS INDICATING LOADING, ASSUMED ALLOWABLE STRESSES, STRESS DIAGRAMS, AND CALCULATIONS, AND ANY OTHER INFORMATION NEEDED FOR REVIEW. THE CALCULATIONS SHALL HAVE BEEN SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER WHO IS REGISTERED IN THE STATE WHERE THE PROJECT IS BUILT AND WHO IS RESPONSIBLE FOR PREPARATION OF THE CALCULATIONS.

### SPECIAL INSPECTIONS

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.

- CONCRETE GROUT DESIGN MIX (PERIODIC)
- PLACING OF CONCRETE AND REINFORCING STEEL (CONTINUOUS OF CONCRETE SAMPLING / PERIODIC OF REINFORCING)
- BOLTS & ANCHORS EMBEDDED IN CONCRETE (PERIODIC)
- STRUCTURAL STEEL FABRICATIONS (UNLESS ASC APPROVED)
- STRUCTURAL STEEL BOLTING & WELDING (PERIODIC)
- POST INSTALLED ANCHORS IN CONCRETE (CONTINUOUS)
- IN-SITU SOILS, EXCAVATIONS, FILLING & COMPACTION (PERIODIC)
- MASONRY AND REINFORCING STEEL (CONTINUOUS ON CELL GROUTING / PERIODIC ON REINFORCING)
- WOOD FRAMING:
  - SHEAR WALLS; WALL SIZE, CONFIGURATION, BLOCKING, PANEL GRADE, PANEL THICKNESS, AND FASTENING. (PERIODIC)
  - DIAPHRAGMS (FLOOR AND ROOF SHEATHING); SIZE, CONFIGURATION, BLOCKING, PANEL GRADE, PANEL THICKNESS, AND FASTENING. (PERIODIC)
  - FRAMING MEMBERS AND DETAILS (PERIODIC)
  - MATERIAL GRADE (PERIODIC)
  - CONNECTIONS; HANGERS, HOLD DOWNS, BUILT-UP COLUMNS, BUILT-UP BEAMS (PERIODIC)
  - PRE-ENGINEERED TRUSSES; FRAMING, CONNECTIONS, BRIDGING (PERIODIC)

THE CONTRACTOR SHALL REQUEST SPECIAL INSPECTION OF THE ITEMS LISTED ABOVE PRIOR TO THOSE ITEMS BECOMING INACCESSIBLE AND UNOBSERVABLE DUE TO PROGRESSION OF THE WORK.

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1000 W. Nifong Blvd. Bldg. 1  
Columbia, Missouri 65202  
(573) 447-0292

www.crockettengineering.com  
Crockett Engineering Consultants, LLC



2120 Forum Blvd., Ste. 101  
Columbia, Missouri 65203  
PWArchitects.com | 573.449.2683  
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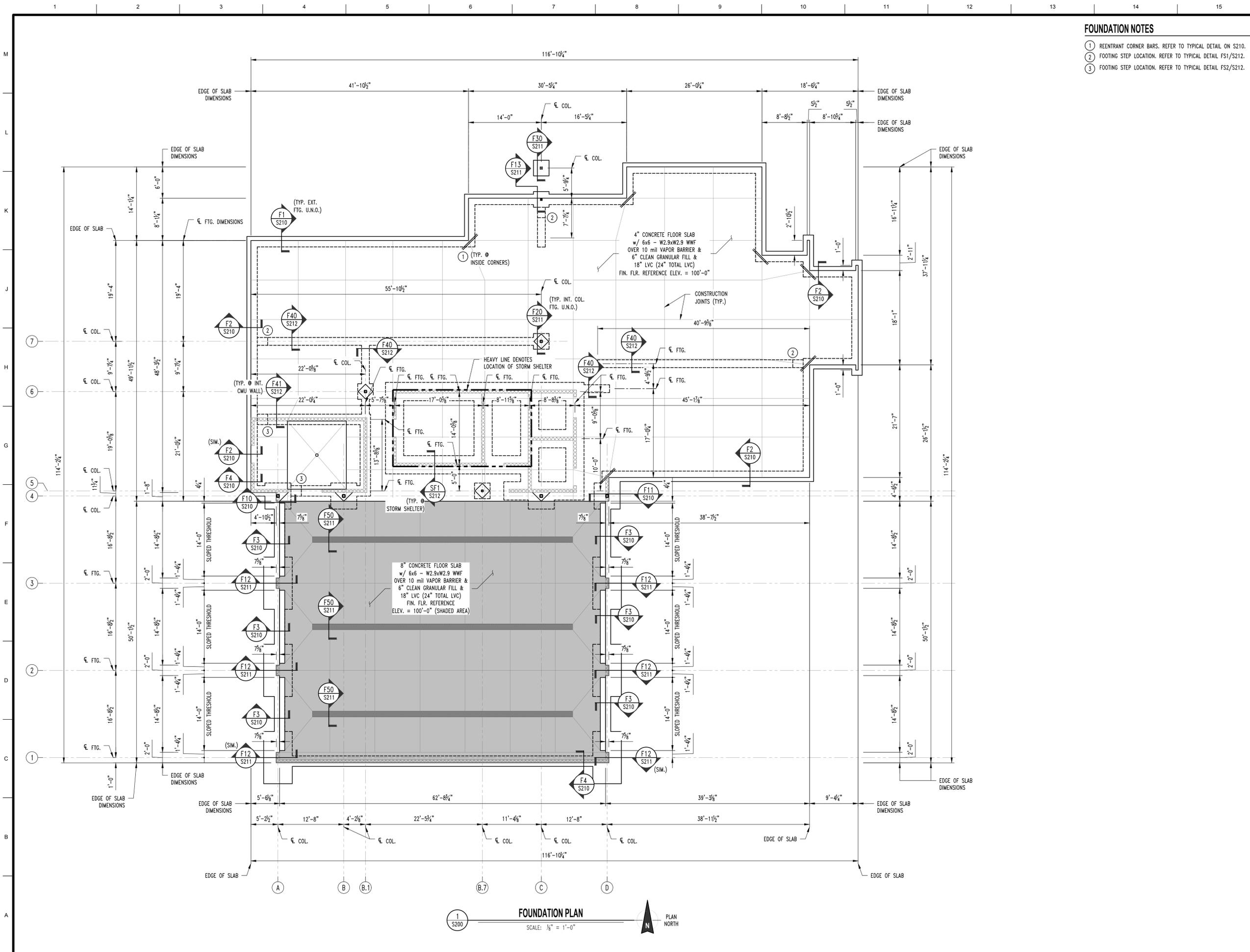
CITY OF COLUMBIA, MISSOURI  
FIRE STATION #11

SCOTT BOULEVARD  
COLUMBIA, MISSOURI

Drawn:	CEC Project Number:	
RCA	200642	
Checked:	CAD File Name (Number):	
GLL	N/A	
Drawing Title:		
GENERAL STRUCTURAL DATA		
No.	Revisions:	Date:
1	DD SET	8/19/2021
Submission Date:		Drawing Number:
08/19/2021		S100
Plot Date:		
08/19/2021		

**FOUNDATION NOTES**

- ① REINFRANT CORNER BARS. REFER TO TYPICAL DETAIL ON S210.
- ② FOOTING STEP LOCATION. REFER TO TYPICAL DETAIL FS1/S212.
- ③ FOOTING STEP LOCATION. REFER TO TYPICAL DETAIL FS2/S212.



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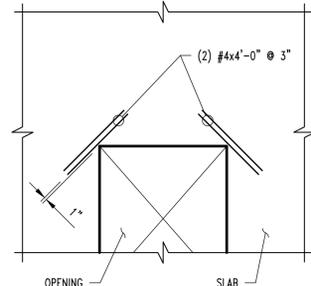
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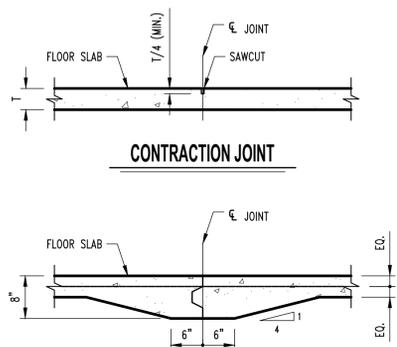
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Checked:	GLL	CAD File Name (Number):	N/A
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No.	Revisions:	Date:	
1	DD SET	8/19/2021	
Submission Date:	08/19/2021	Drawing Number:	S200
Plot Date:	08/19/2021		

**FOUNDATION PLAN**  
SCALE: 1/8" = 1'-0"  
PLAN NORTH



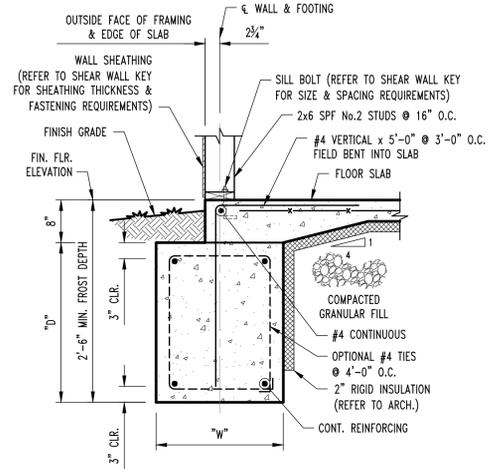
**NOTE:**  
TYPICAL AT ALL REENTRANT CORNERS FOR SLAB-ON-GRADE & STRUCTURAL SLAB. REINFORCING TO BE CENTERED IN SLAB THICKNESS.

**CRACK CONTROL REINFORCING**

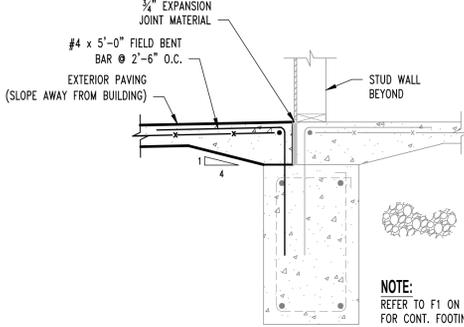


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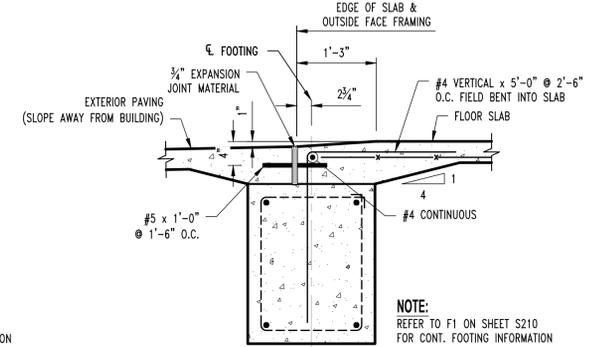
**CONSTRUCTION JOINT**



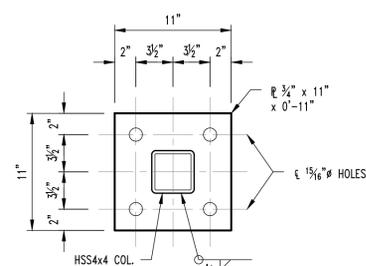
**F1 S200 CONT. FOOTING SECTION**  
SCALE: 3/4" = 1'-0"



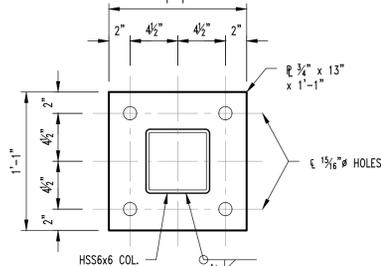
**F2 S200 FOOTING DETAIL @ THRESHOLD**  
SCALE: 3/4" = 1'-0"



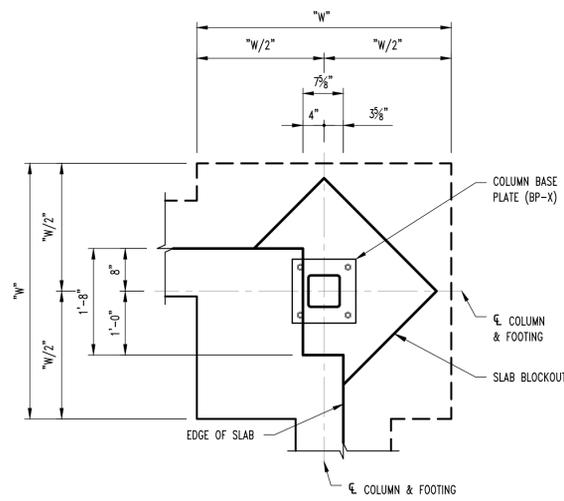
**F3 S200 SLOPED THRESHOLD SECTION @ OVHD DOOR**  
SCALE: 3/4" = 1'-0"



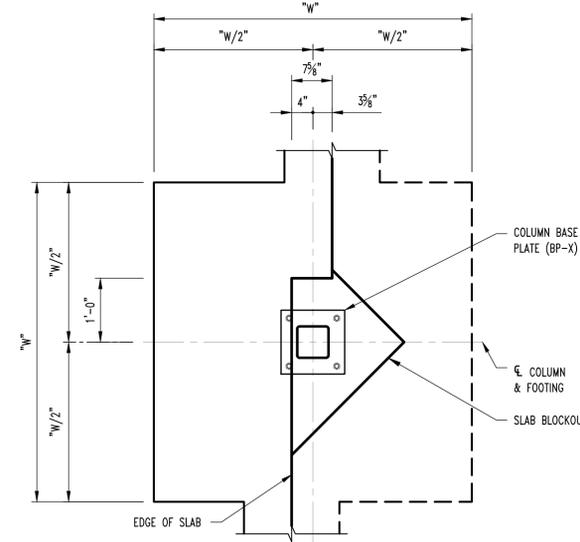
**BASE PLATE "BP-1"**



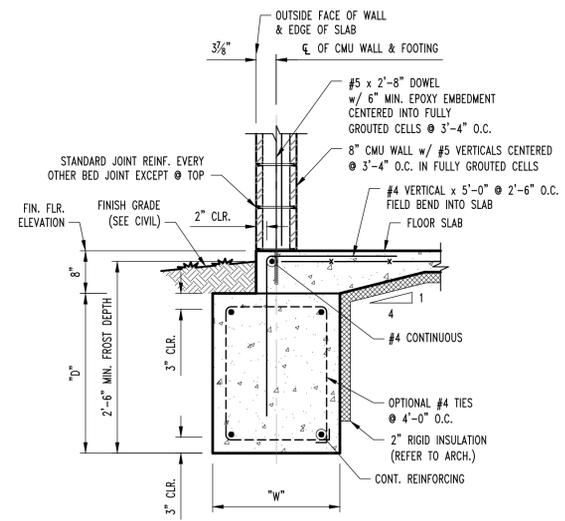
**BASE PLATE "BP-2"**



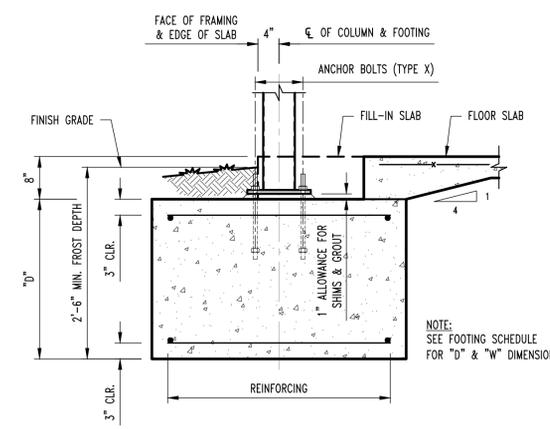
**PLAN VIEW**



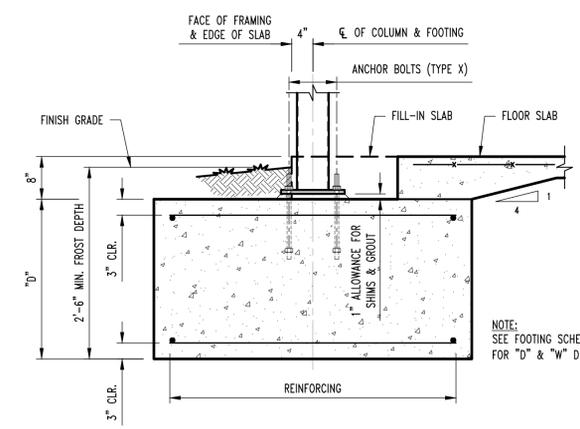
**PLAN VIEW**



**F4 S200 CONTINUOUS FOOTING SECTION**  
SCALE: 3/4" = 1'-0"



**F10 S200 COLUMN FOOTING SECTION**  
SCALE: 3/4" = 1'-0"



**F11 S200 COLUMN FOOTING SECTION**  
SCALE: 3/4" = 1'-0"

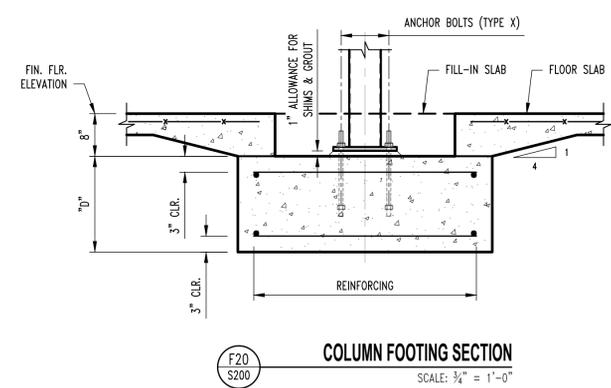
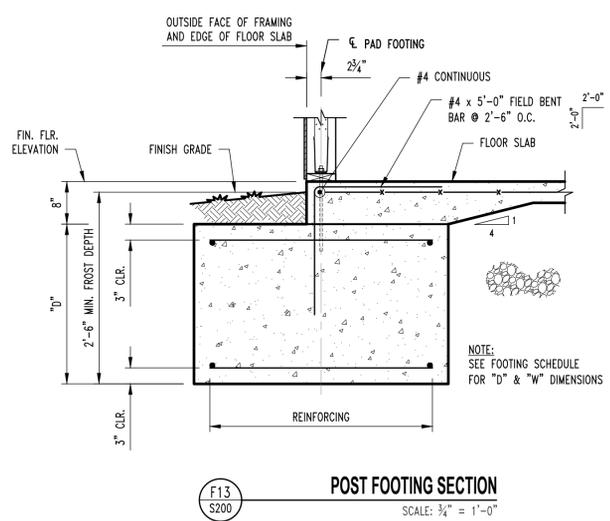
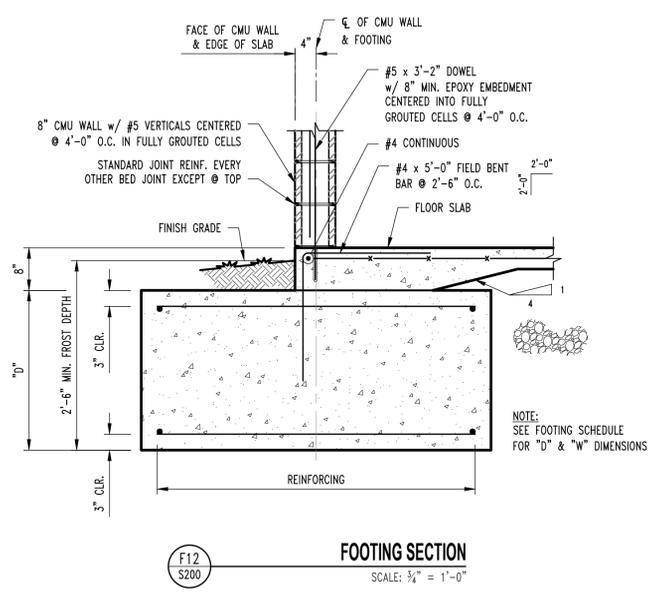
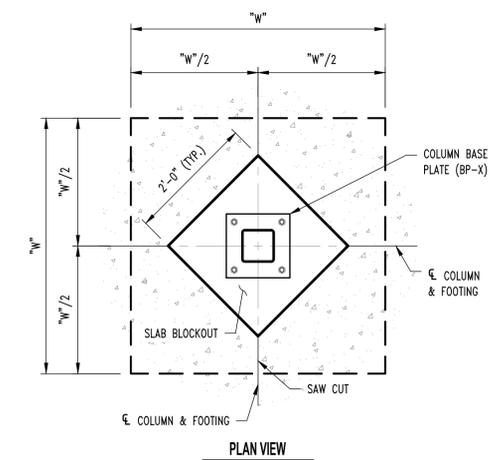
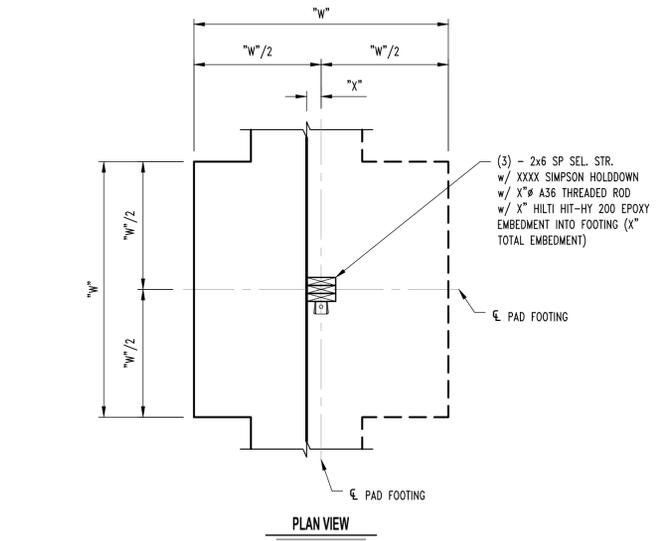
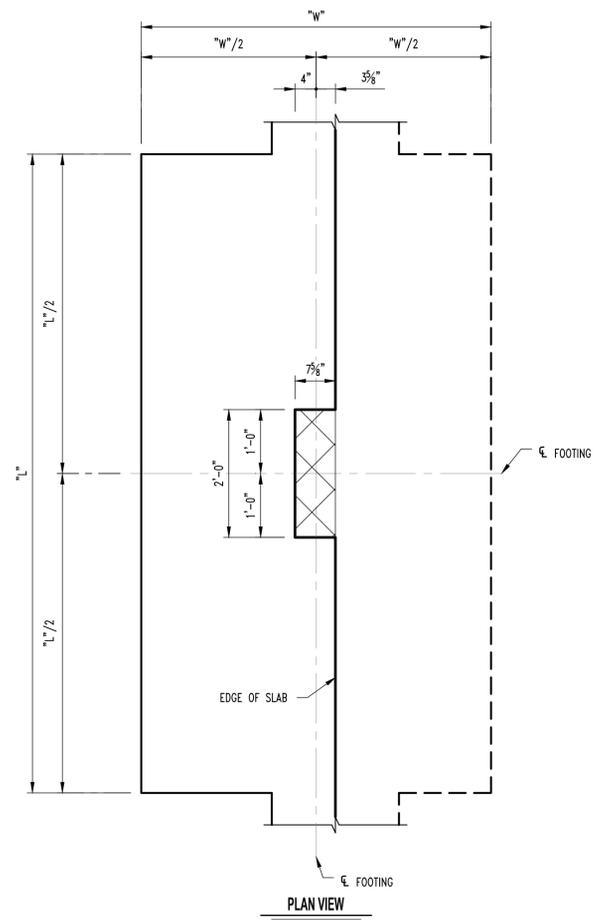
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Drawn:	CEC Project Number:	
RCA	200642	
Checked:	CAD File Name (Number):	
GLL	N/A	
Drawing Title:		
<b>FOUNDATION DETAILS</b>		
No.	Revisions:	Date:
1	DD SET	8/19/2021
Submission Date:		Drawing Number:
08/19/2021		<b>S210</b>
Plot Date:		
08/19/2021		



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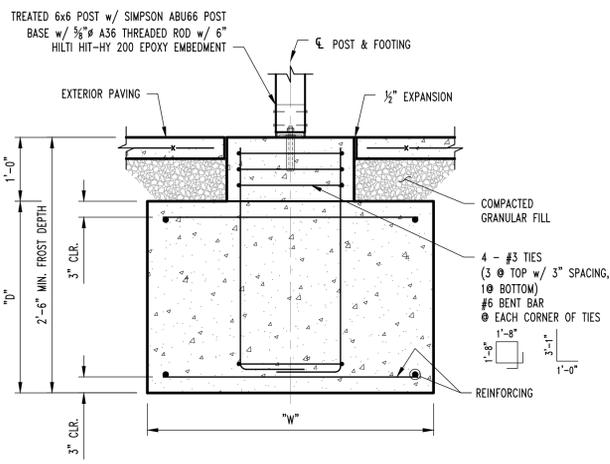
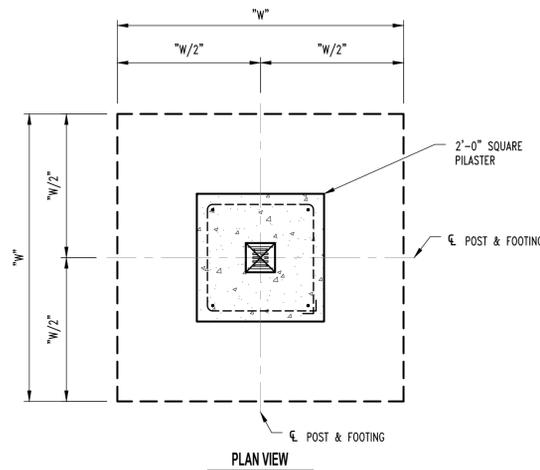
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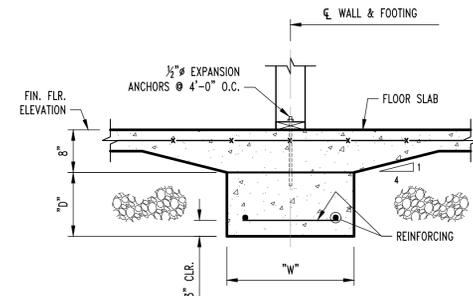
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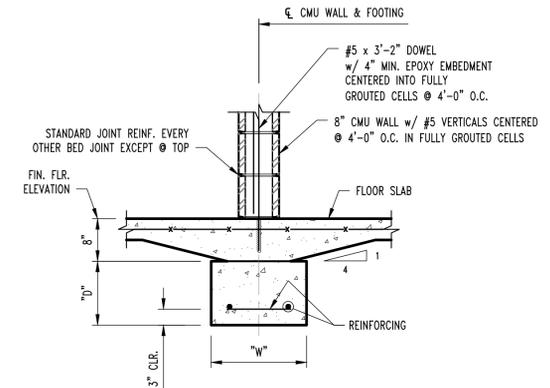
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No.	Revisions:	Date:	
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Submission Date:		Drawing Number:	
08/19/2021		S211	
Plot Date:		08/19/2021	



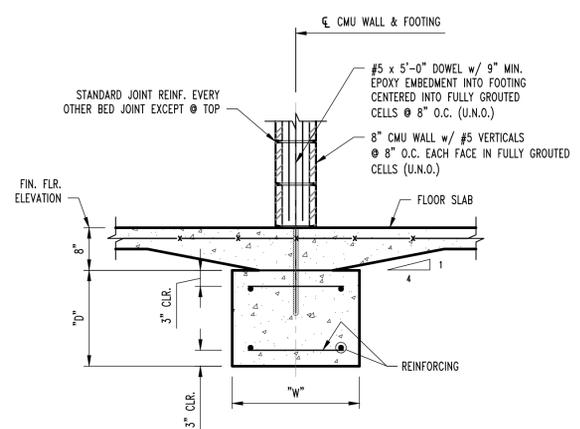
F30 S200 SCALE: 3/4" = 1'-0"



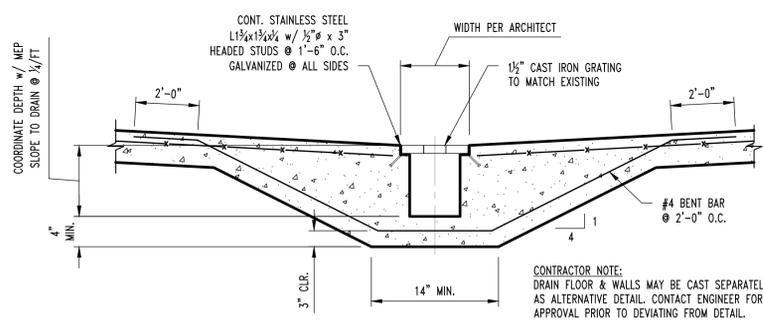
F40 S200 SCALE: 3/4" = 1'-0"



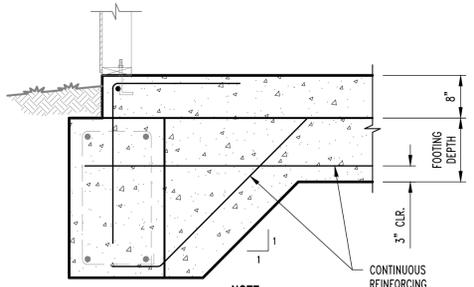
F41 S200 SCALE: 3/4" = 1'-0"



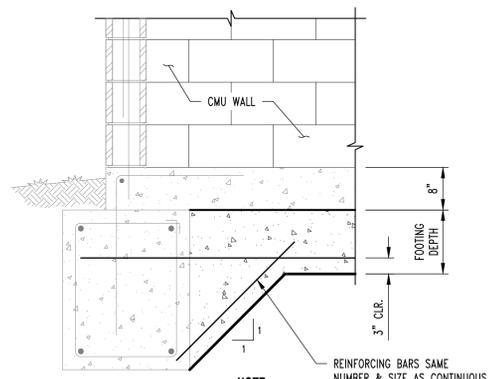
SF1 S200 SCALE: 3/4" = 1'-0"



F50 S200 SCALE: 3/4" = 1'-0"



F51 S200 SCALE: 3/4" = 1'-0"



FS2 S200 SCALE: 3/4" = 1'-0"

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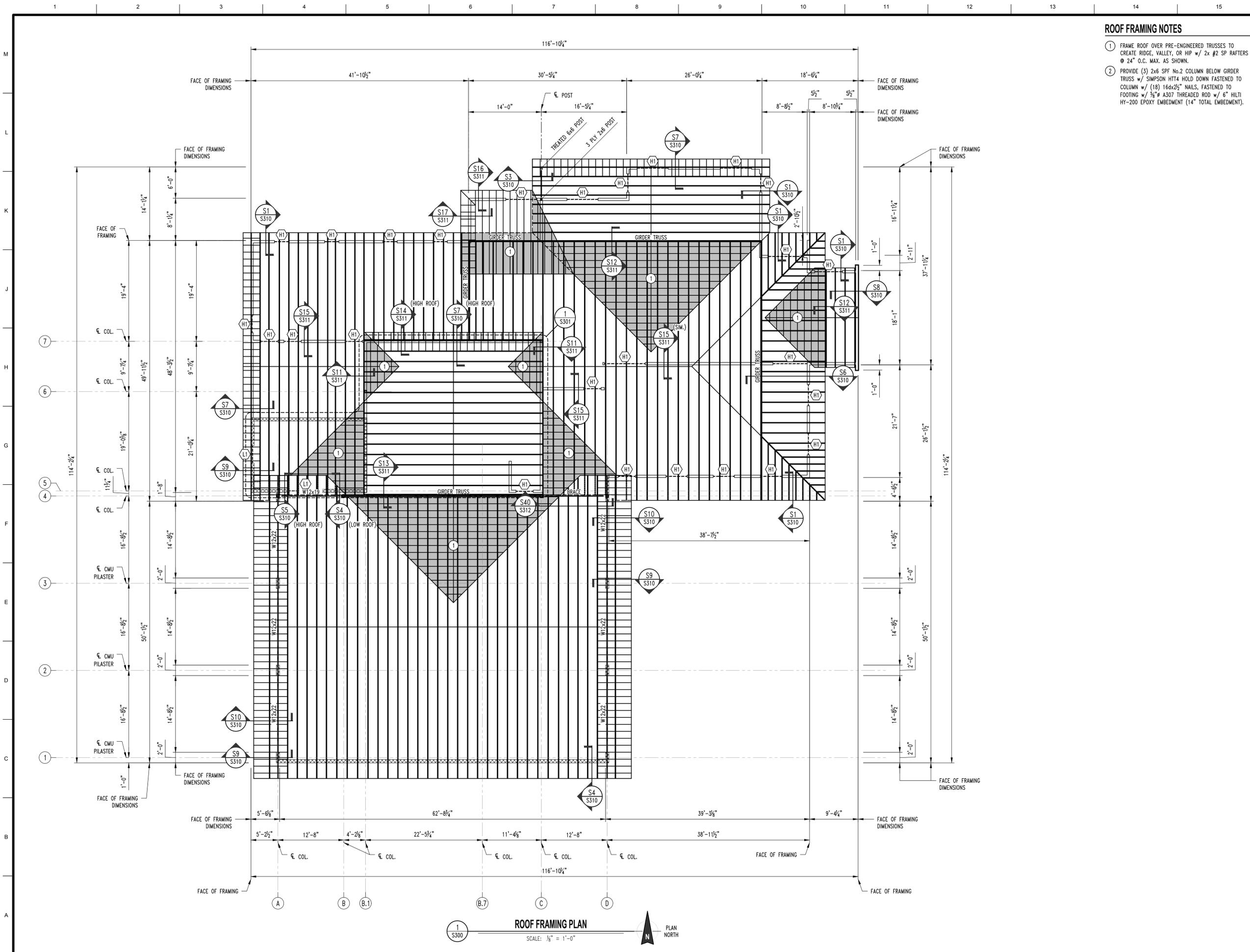
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No.	Revisions:	Date:
1	DD SET	8/19/2021
Submission Date:		Drawing Number:
08/19/2021		S212
Plot Date:		
08/19/2021		

**ROOF FRAMING NOTES**

- 1 FRAME ROOF OVER PRE-ENGINEERED TRUSSES TO CREATE RIDGE, VALLEY, OR HIP w/ 2x #2 SP RAFTERS @ 24" O.C. MAX. AS SHOWN.
- 2 PROVIDE (3) 2x6 SPF No.2 COLUMN BELOW GIRDER TRUSS w/ SIMPSON HT14 HOLD DOWN FASTENED TO COLUMN w/ (18) 16dx2 1/2" NAILS, FASTENED TO FOOTING w/ 3/8" A307 THREADED ROD w/ 6" HILTI HY-200 EPOXY EMBEDMENT (14" TOTAL EMBEDMENT).



**1**  
S300  
**ROOF FRAMING PLAN**  
SCALE: 3/8" = 1'-0"  
PLAN NORTH

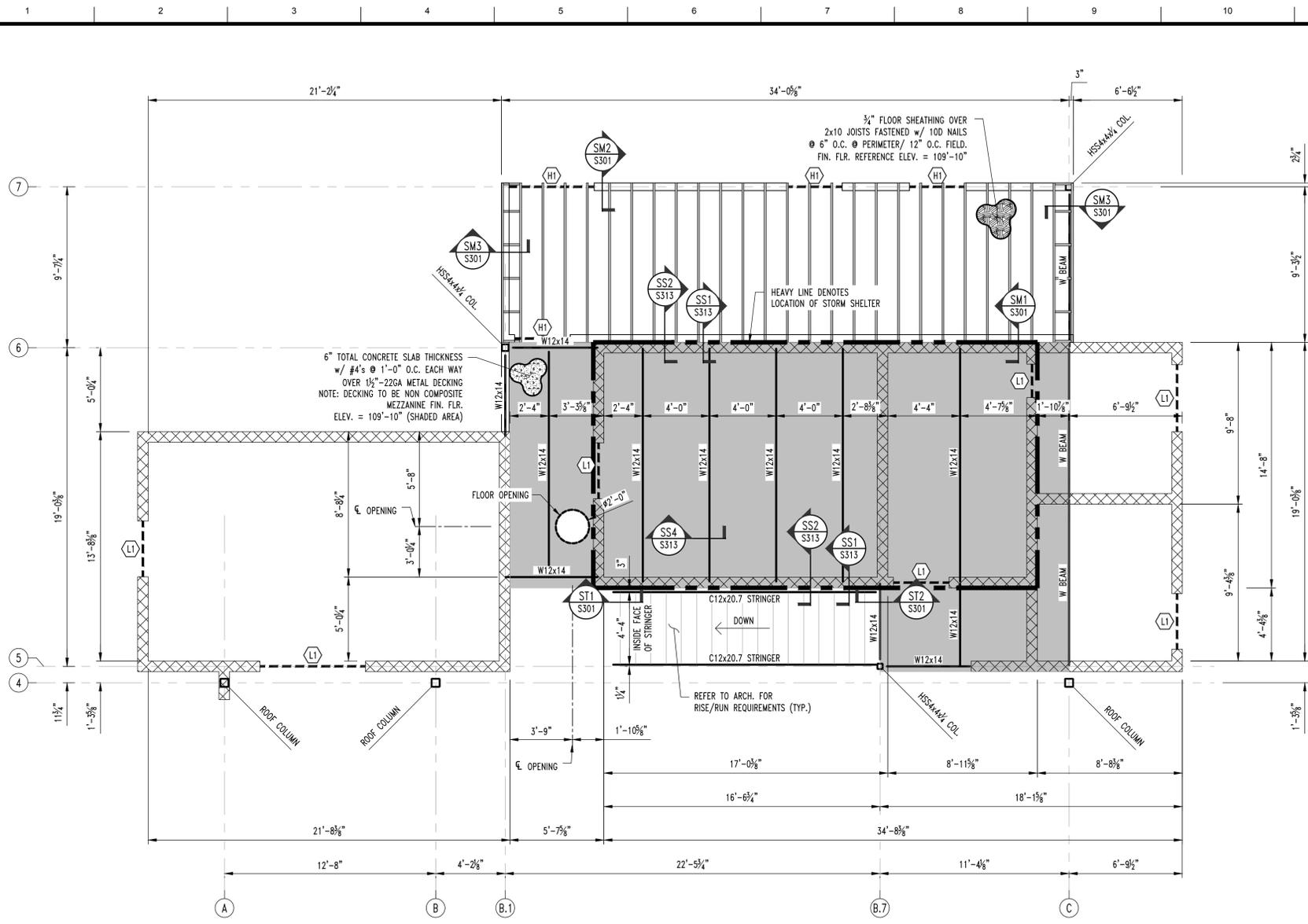
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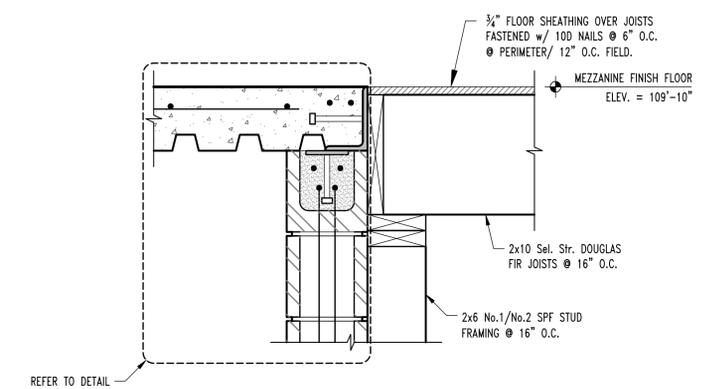
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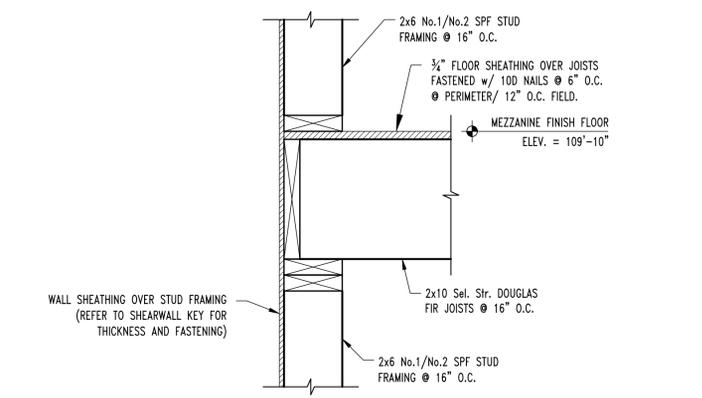
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<b>ROOF FRAMING PLAN</b>		
No.	Revisions:	Date:
1	DD SET	8/19/2021
Submission Date:		Drawing Number:
08/19/2021		<b>S300</b>
Plot Date:		
08/19/2021		



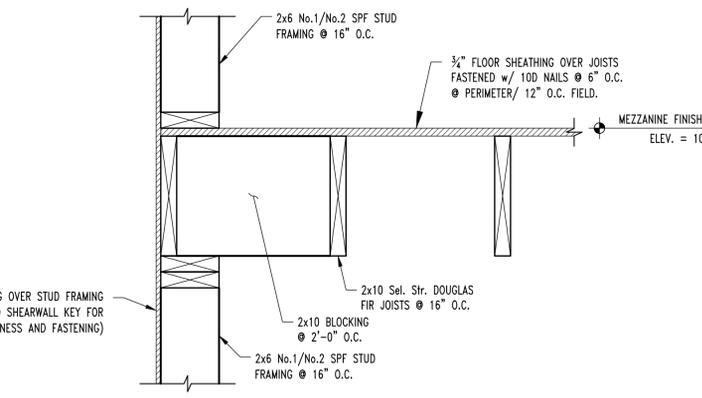
**1 S301 STORM SHELTER / MEZZANINE FRAMING PLAN**  
SCALE: 1/2" = 1'-0"



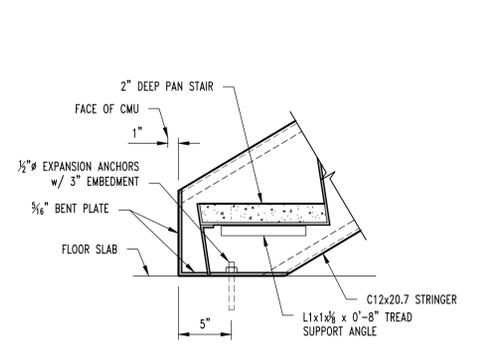
**SM1 S301 MEZZANINE FRAMING SECTION**  
SCALE: 1/2" = 1'-0"



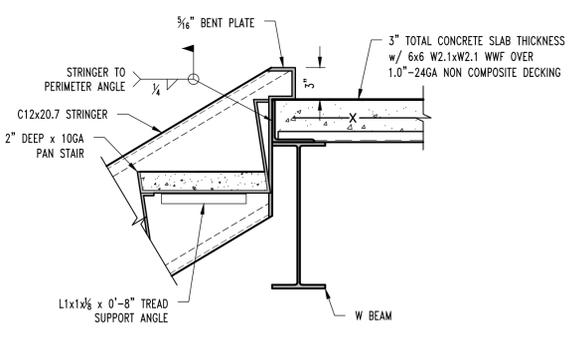
**SM2 S301 MEZZANINE FRAMING SECTION**  
SCALE: 1/2" = 1'-0"



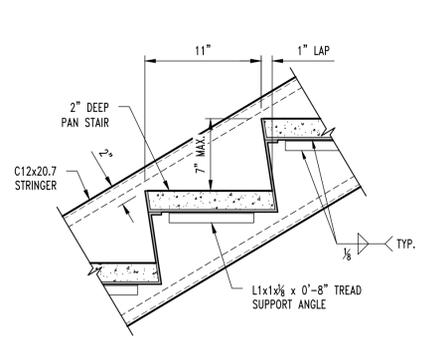
**SM3 S301 MEZZANINE FRAMING SECTION**  
SCALE: 1/2" = 1'-0"



**ST1 S301 STAIR FRAMING SECTION**  
SCALE: 1/2" = 1'-0"



**ST2 S301 STAIR FRAMING SECTION**  
SCALE: 1/2" = 1'-0"



**TYPICAL TREAD CONNECTION DETAIL**

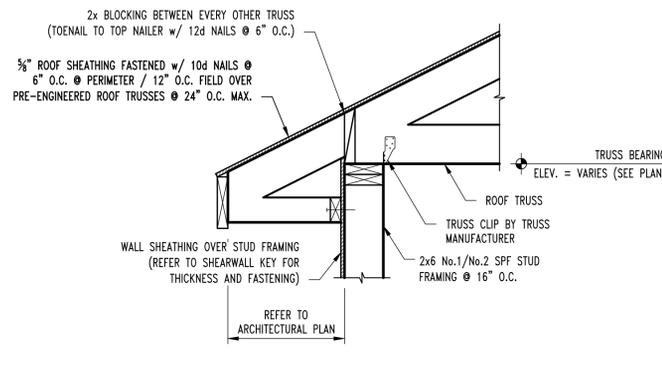
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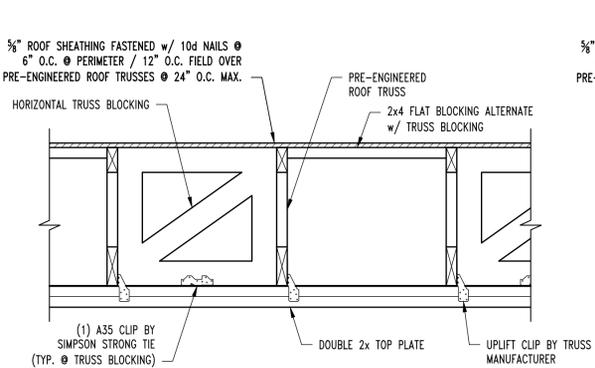
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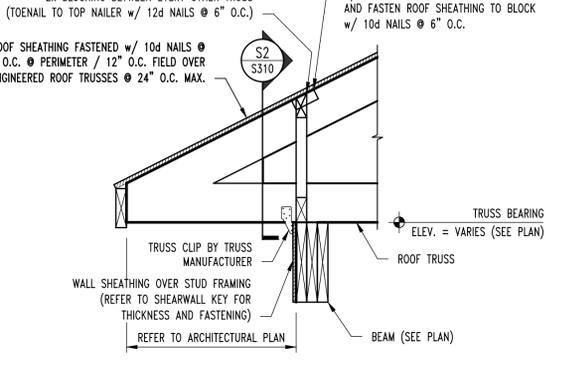
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No.	Revisions:	Date:
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Submission Date:		Drawing Number:
08/19/2021		<b>S301</b>
Plot Date:		
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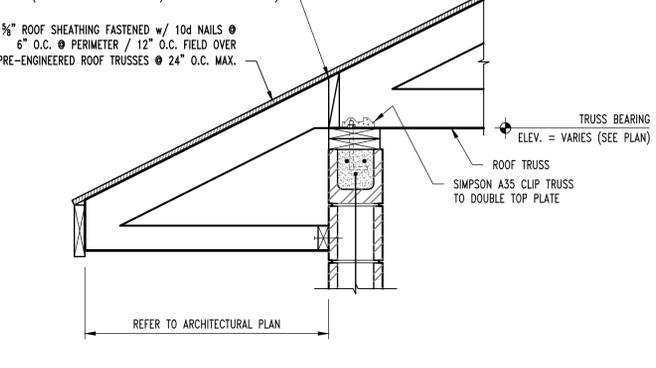
**S1**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



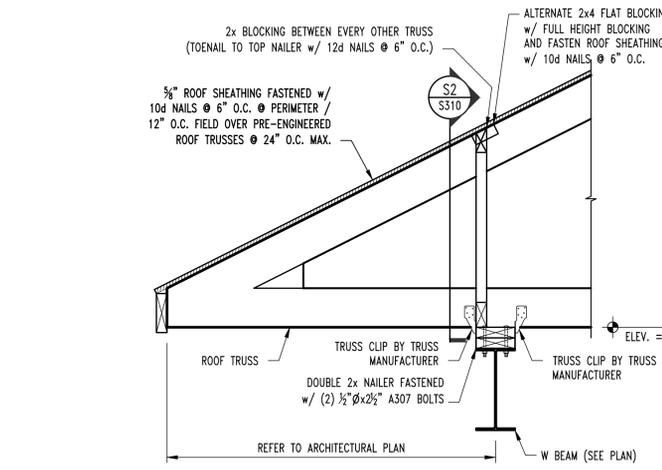
**S2**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



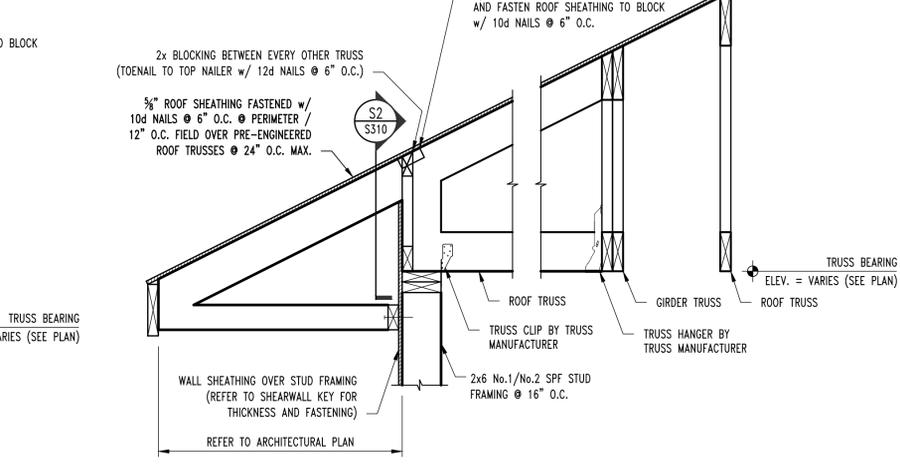
**S3**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



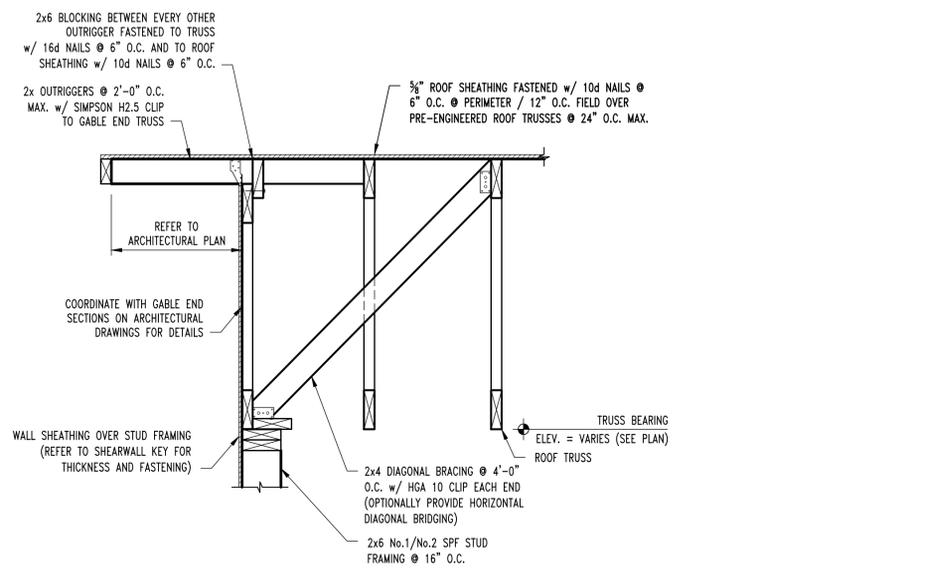
**S4**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



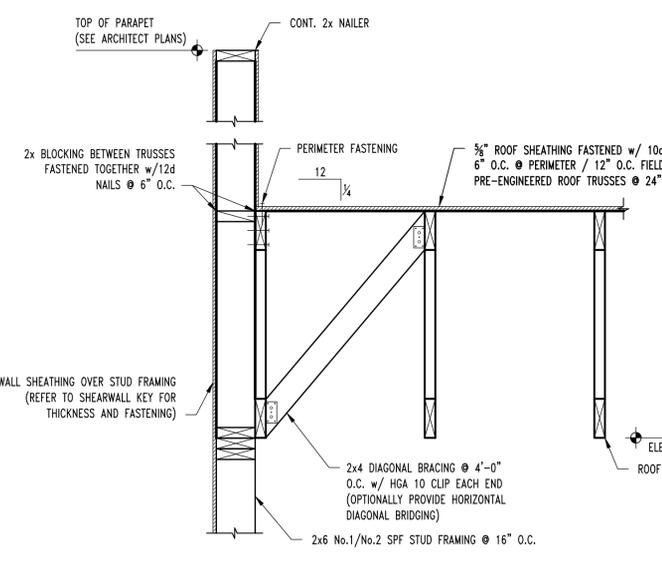
**S5**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



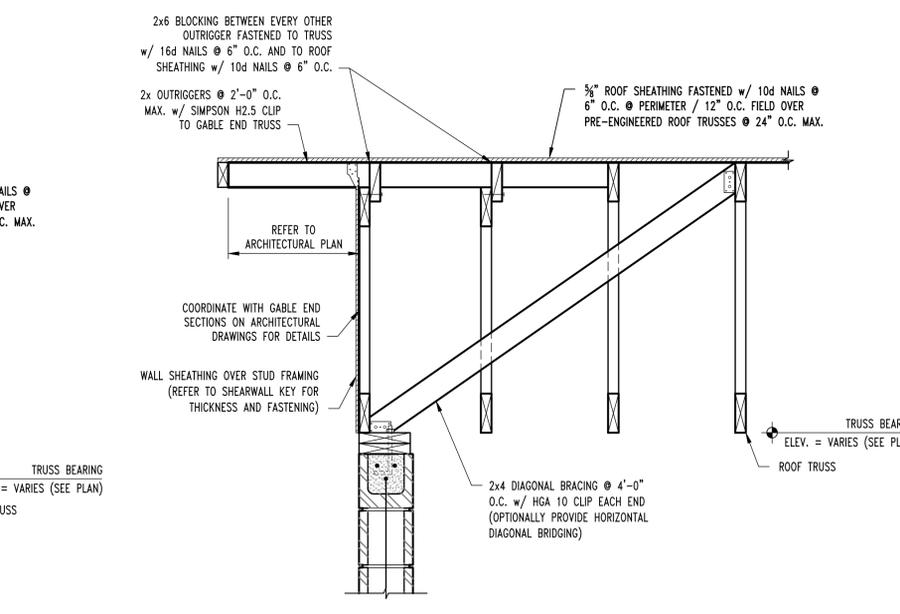
**S6**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



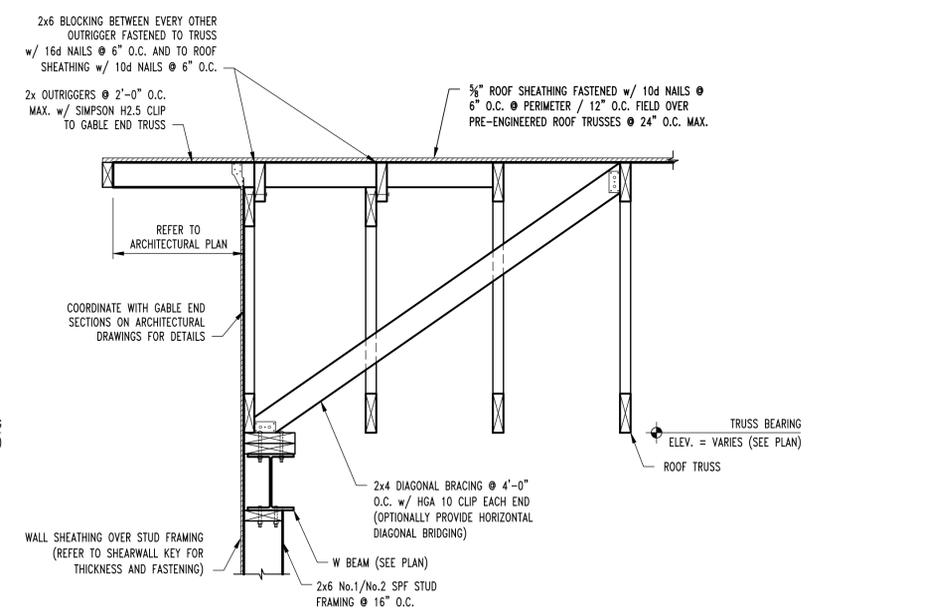
**S7**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



**S8**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



**S9**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"



**S10**  
ROOF FRAMING SECTION  
SCALE: 1" = 1'-0"

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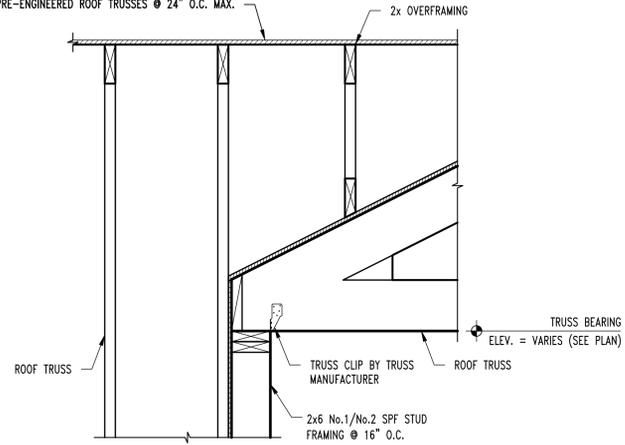
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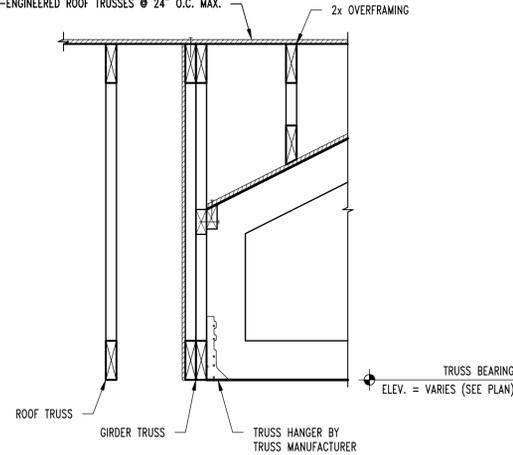
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No.	Revisions:	Date:
1	DD SET	8/19/2021
Submission Date:		Drawing Number:
08/19/2021		<b>S310</b>
Plot Date:		
08/19/2021		

5/8" ROOF SHEATHING FASTENED w/ 10d NAILS @ 6" O.C. @ PERIMETER / 12" O.C. FIELD OVER PRE-ENGINEERED ROOF TRUSSES @ 24" O.C. MAX.



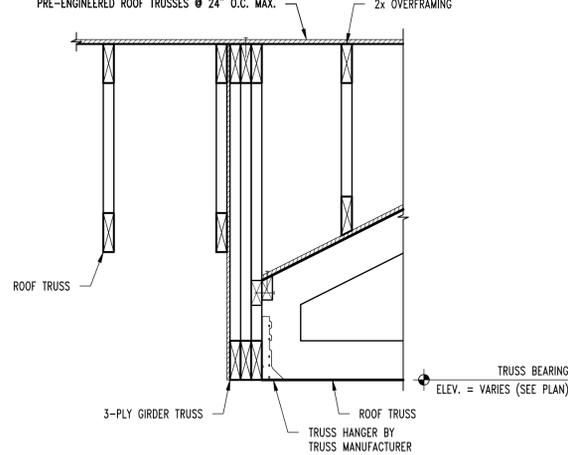
S11 ROOF FRAMING SECTION SCALE: 1/2" = 1'-0"

5/8" ROOF SHEATHING FASTENED w/ 10d NAILS @ 6" O.C. @ PERIMETER / 12" O.C. FIELD OVER PRE-ENGINEERED ROOF TRUSSES @ 24" O.C. MAX.



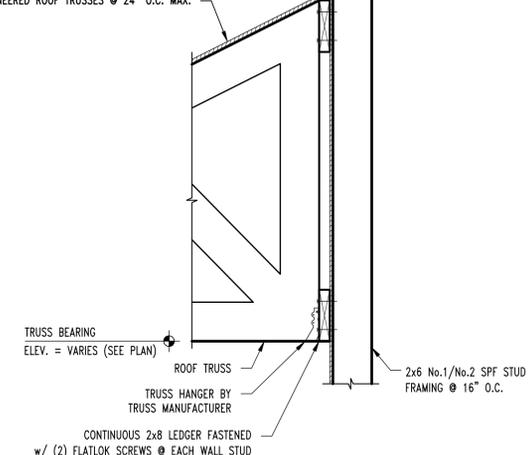
S12 ROOF FRAMING SECTION SCALE: 1/2" = 1'-0"

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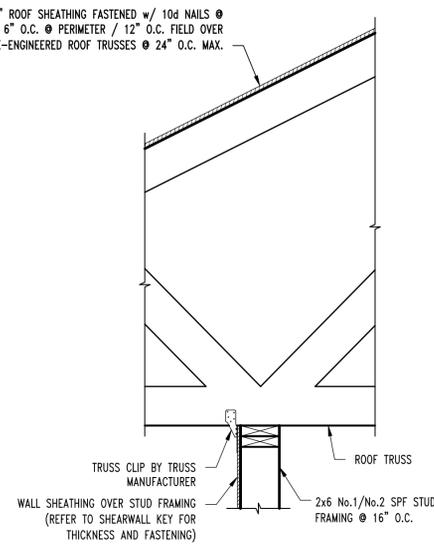
S13 ROOF FRAMING SECTION SCALE: 1/2" = 1'-0"

WALL SHEATHING OVER STUD FRAMING (REFER TO SHEARWALL KEY FOR THICKNESS AND FASTENING)  
CONTINUOUS 2x8 LEDGER FASTENED w/ (2) FLATLOK SCREWS @ EACH WALL STUD  
5/8" ROOF SHEATHING FASTENED w/ 10d NAILS @ 6" O.C. @ PERIMETER / 12" O.C. FIELD OVER PRE-ENGINEERED ROOF TRUSSES @ 24" O.C. MAX.

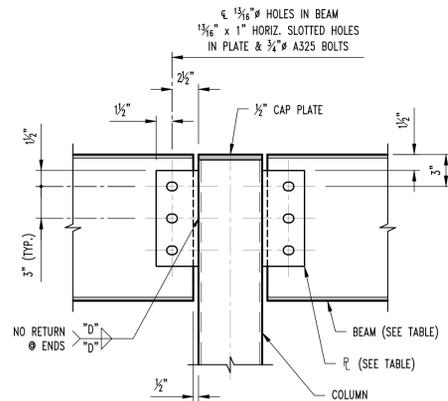


S14 ROOF FRAMING SECTION SCALE: 1/2" = 1'-0"

5/8" ROOF SHEATHING FASTENED w/ 10d NAILS @ 6" O.C. @ PERIMETER / 12" O.C. FIELD OVER PRE-ENGINEERED ROOF TRUSSES @ 24" O.C. MAX.



S15 ROOF FRAMING SECTION SCALE: 1/2" = 1'-0"



BEAM SIZE	No. OF BOLTS "N"	PLATE SIZE	WELD SIZE "D"
W12, W14	3	3/8x4x0'-9"	1/4"
W16	4	3/8x4x1'-0"	1/4"
W18	5	3/8x4x1'-3"	1/4"
W21	6	3/8x4x1'-6"	1/4"
W24	7	3/8x4x1'-9"	1/4"

S20 TYP. BEAM TO COLUMN SECTION SCALE: 1/2" = 1'-0"

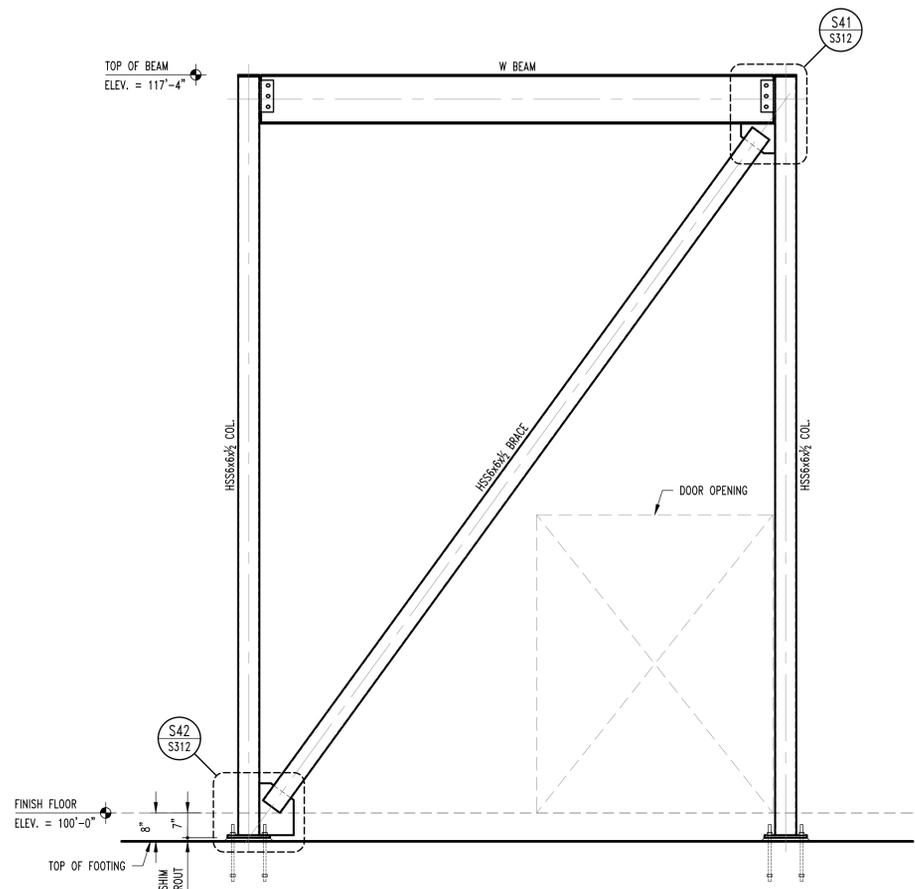
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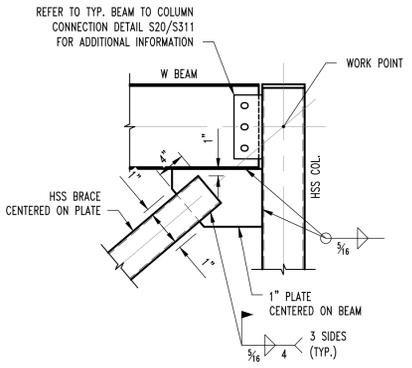
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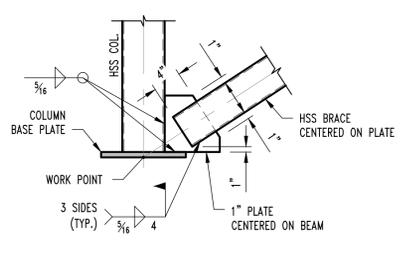
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RCA	200642	
Checked:	CAD File Name (Number):	
GLL	N/A	
Drawing Title:		
ROOF FRAMING DETAILS		
No.	Revisions:	Date:
1	DD SET	8/19/2021
Submission Date:		Drawing Number:
08/19/2021		S311
Plot Date:		
08/19/2021		



**BRACE FRAME SECTION**  
SCALE: 1/4" = 1'-0"



**CONNECTION DETAIL**  
SCALE: 1" = 1'-0"



**CONNECTION DETAIL**  
SCALE: 1" = 1'-0"

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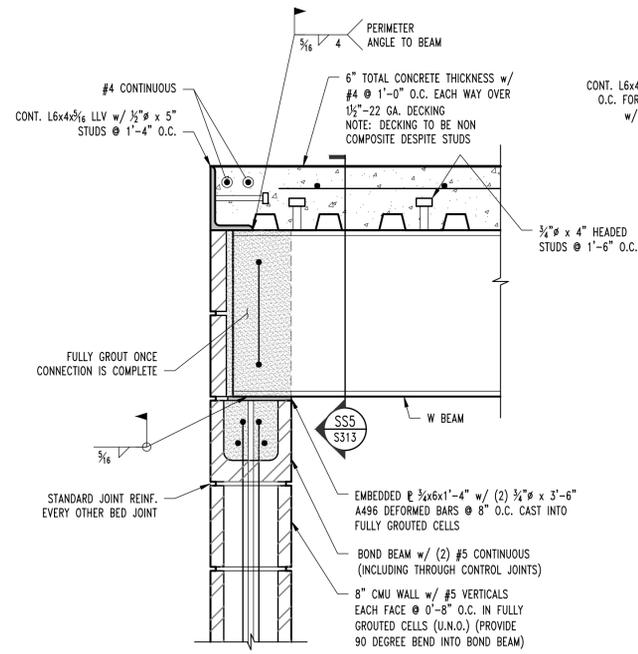
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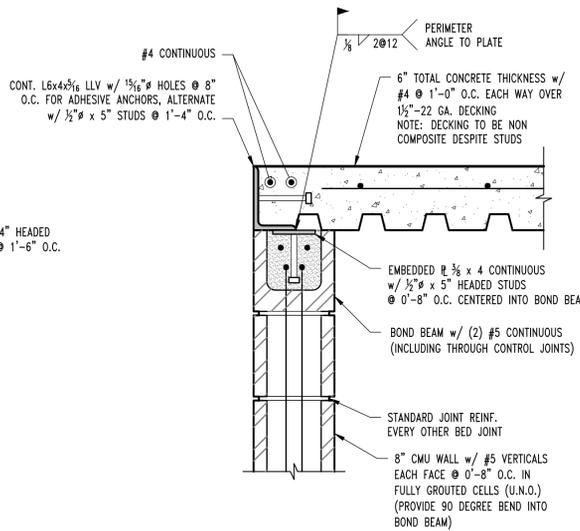
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Checked:	GLL	CAD File Name (Number):	N/A
Drawing Title: <b>ROOF FRAMING DETAILS</b>			
No.	Revisions:	Date:	
1	DD SET	8/19/2021	

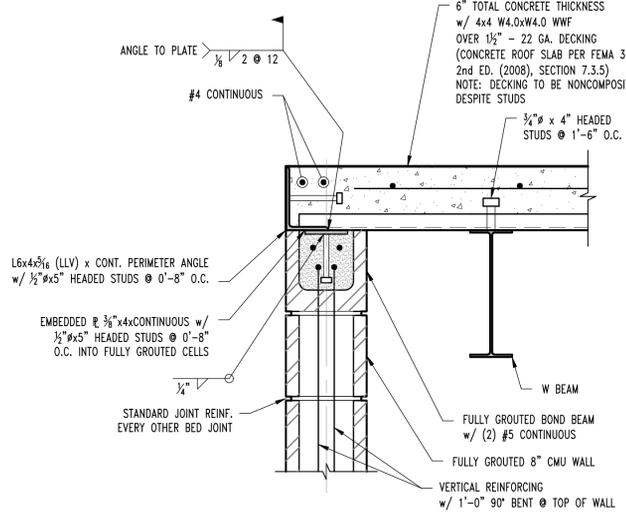
Submission Date: 08/19/2021  
Plot Date: 08/19/2021  
Drawing Number: **S312**



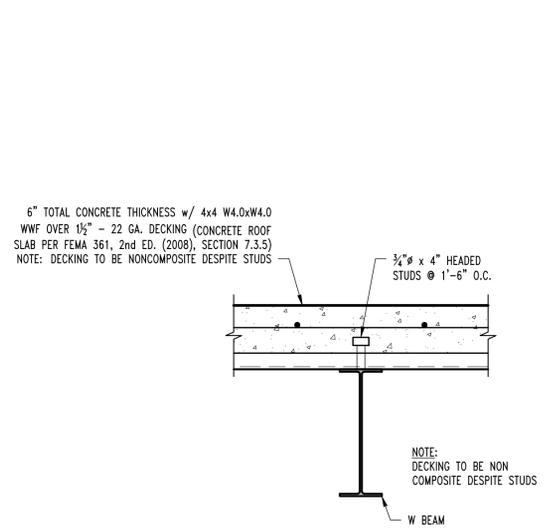
**SS1**  
SS301  
**STORM SHELTER SECTION**  
SCALE: 1/2" = 1'-0"



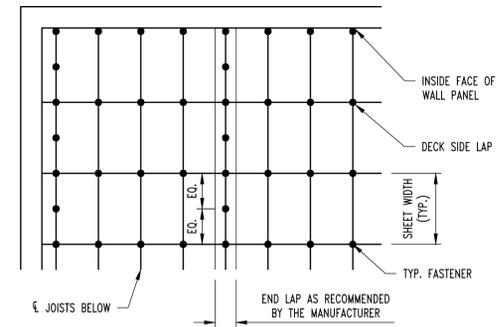
**SS2**  
SS301  
**STORM SHELTER SECTION**  
SCALE: 1/2" = 1'-0"



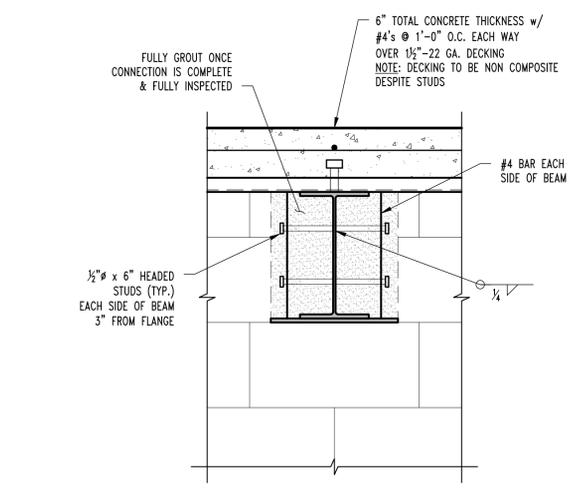
**SS3**  
SS301  
**STORM SHELTER SECTION**  
SCALE: 1/2" = 1'-0"



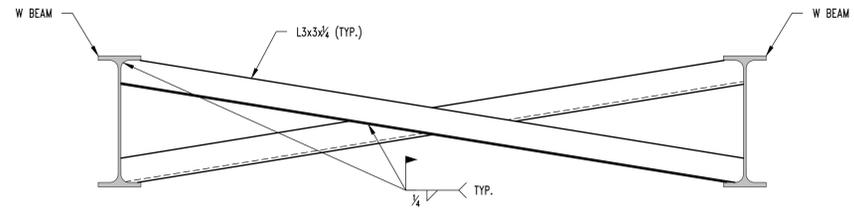
**SS4**  
SS301  
**STORM SHELTER SECTION**  
SCALE: 1/2" = 1'-0"



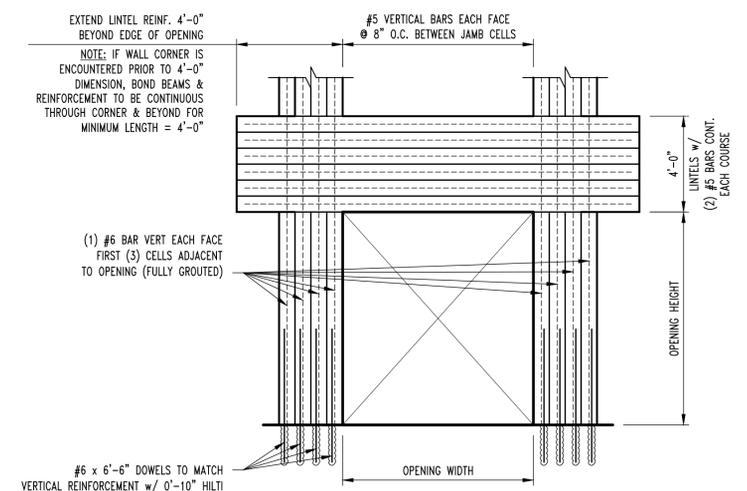
**FASTENER PATTERN**  
#12 TEK SCREWS



**SS5**  
SS313  
**STORM SHELTER SECTION**  
SCALE: 1/2" = 1'-0"



**STORM SHELTER BEAM WELDED CROSS BRIDGING**



**STORM SHELTER OPENING REINFORCING**

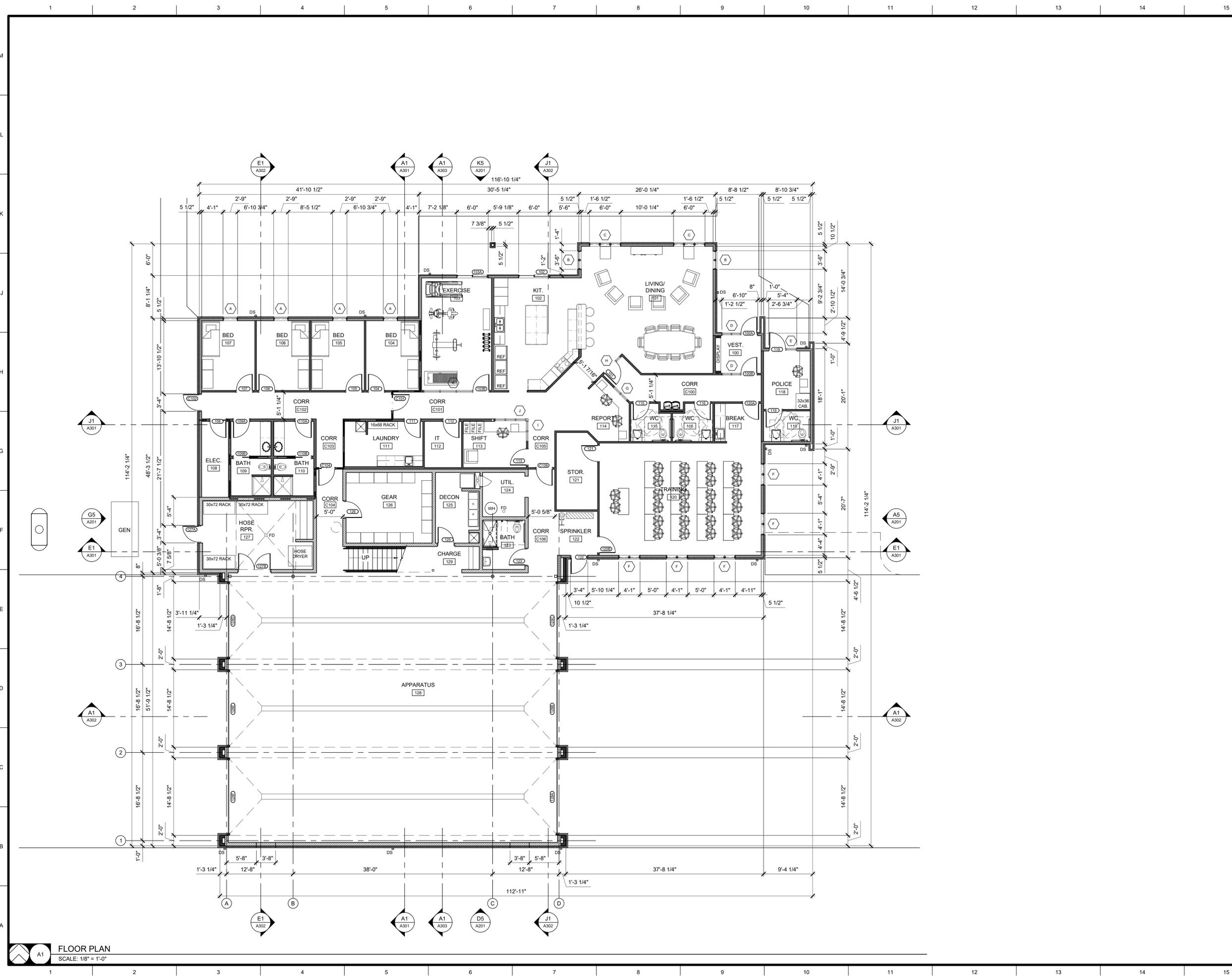
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Drawn:	CEC Project Number:	
RCA	200642	
Checked:	CAD File Name (Number):	
GLL	N/A	
Drawing Title:		
<b>STORM SHELTER DETAILS</b>		
No.	Revisions:	Date:
1	DD SET	8/19/2021
Submission Date:		Drawing Number:
08/19/2021		<b>S313</b>
Plot Date:		
08/19/2021		



**FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



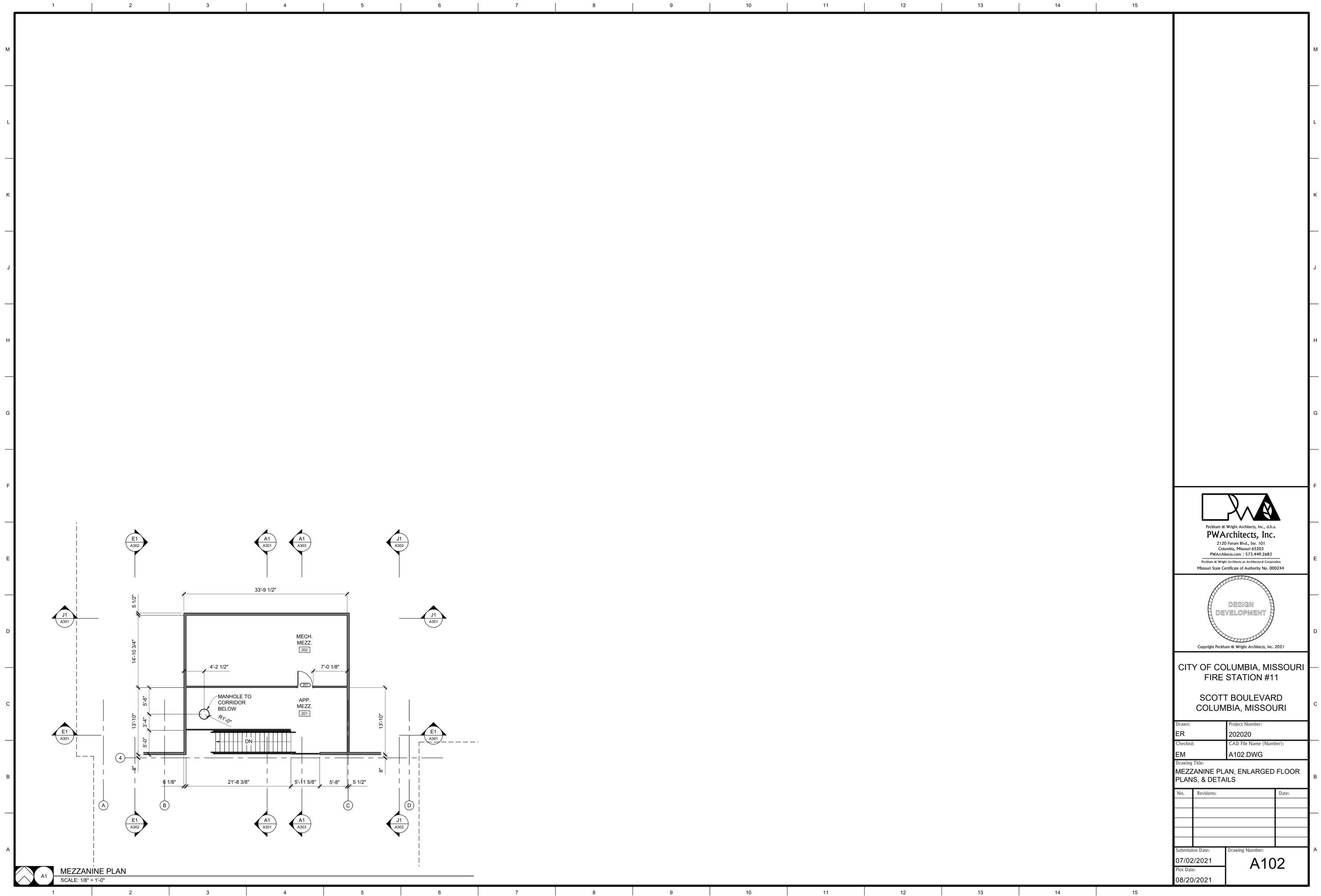
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Drawn:	Project Number:
ER	202020
Checked:	CAD File Name (Number):
EM	A101.DWG

Drawing Title:  
**FLOOR PLAN & DETAILS**

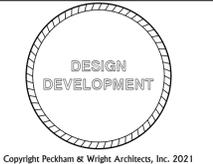
No.	Revisions:	Date:

Submission Date:	Drawing Number:
07/02/2021	<b>A101</b>
Plot Date:	
08/20/2021	



**MEZZANINE PLAN**  
SCALE: 1/8" = 1'-0"

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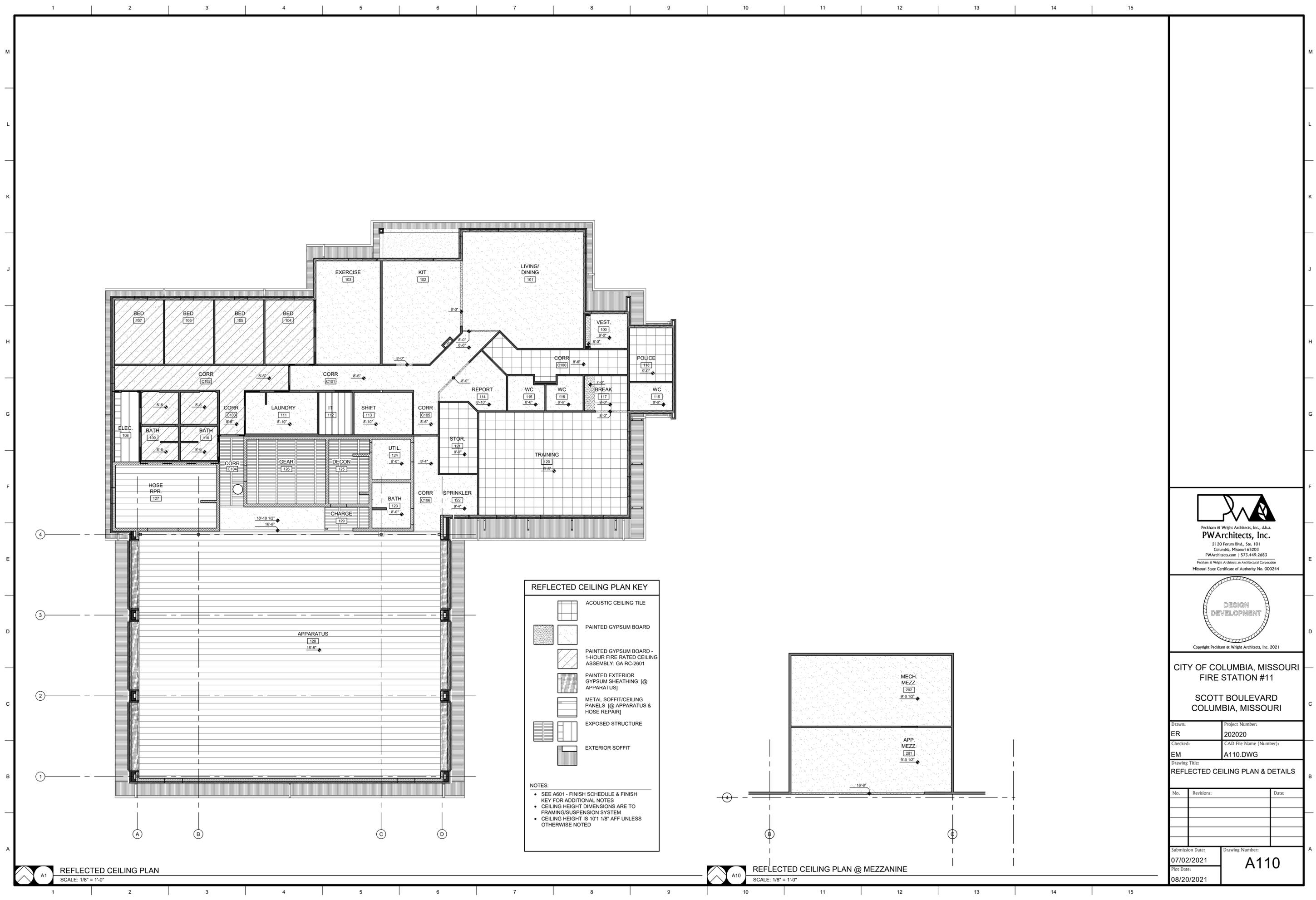
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Drawn: <b>ER</b>	Project Number: <b>202020</b>
Checked: <b>EM</b>	CAD File Name (Number): <b>A102.DWG</b>

Drawing Title:  
**MEZZANINE PLAN, ENLARGED FLOOR PLANS, & DETAILS**

No.	Revisions:	Date:

Submission Date: <b>07/02/2021</b>	Drawing Number: <b>A102</b>
Plot Date: <b>08/20/2021</b>	

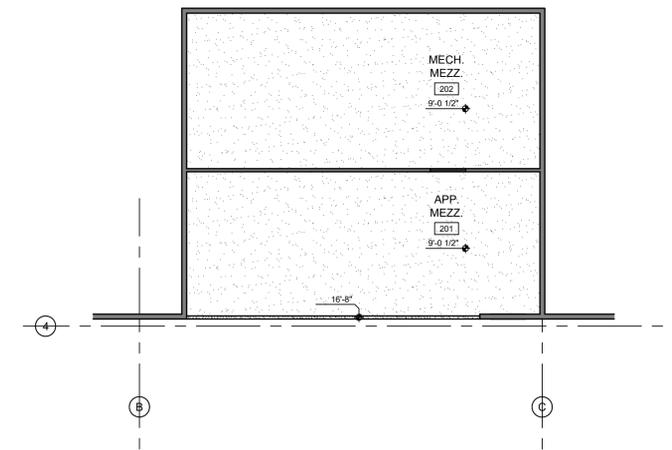


**REFLECTED CEILING PLAN KEY**

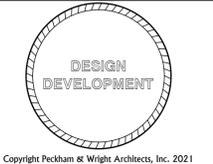
- ACOUSTIC CEILING TILE
- PAINTED GYPSUM BOARD
- PAINTED GYPSUM BOARD - 1-HOUR FIRE RATED CEILING ASSEMBLY: GA RC-2801
- PAINTED EXTERIOR GYPSUM SHEATHING (@ APPARATUS)
- METAL SOFFIT/CEILING PANELS (@ APPARATUS & HOSE REPAIR)
- EXPOSED STRUCTURE
- EXTERIOR SOFFIT

**NOTES:**

- SEE A601 - FINISH SCHEDULE & FINISH KEY FOR ADDITIONAL NOTES
- CEILING HEIGHT DIMENSIONS ARE TO FRAMING/SUSPENSION SYSTEM
- CEILING HEIGHT IS 10'1 1/8" AFF UNLESS OTHERWISE NOTED



  
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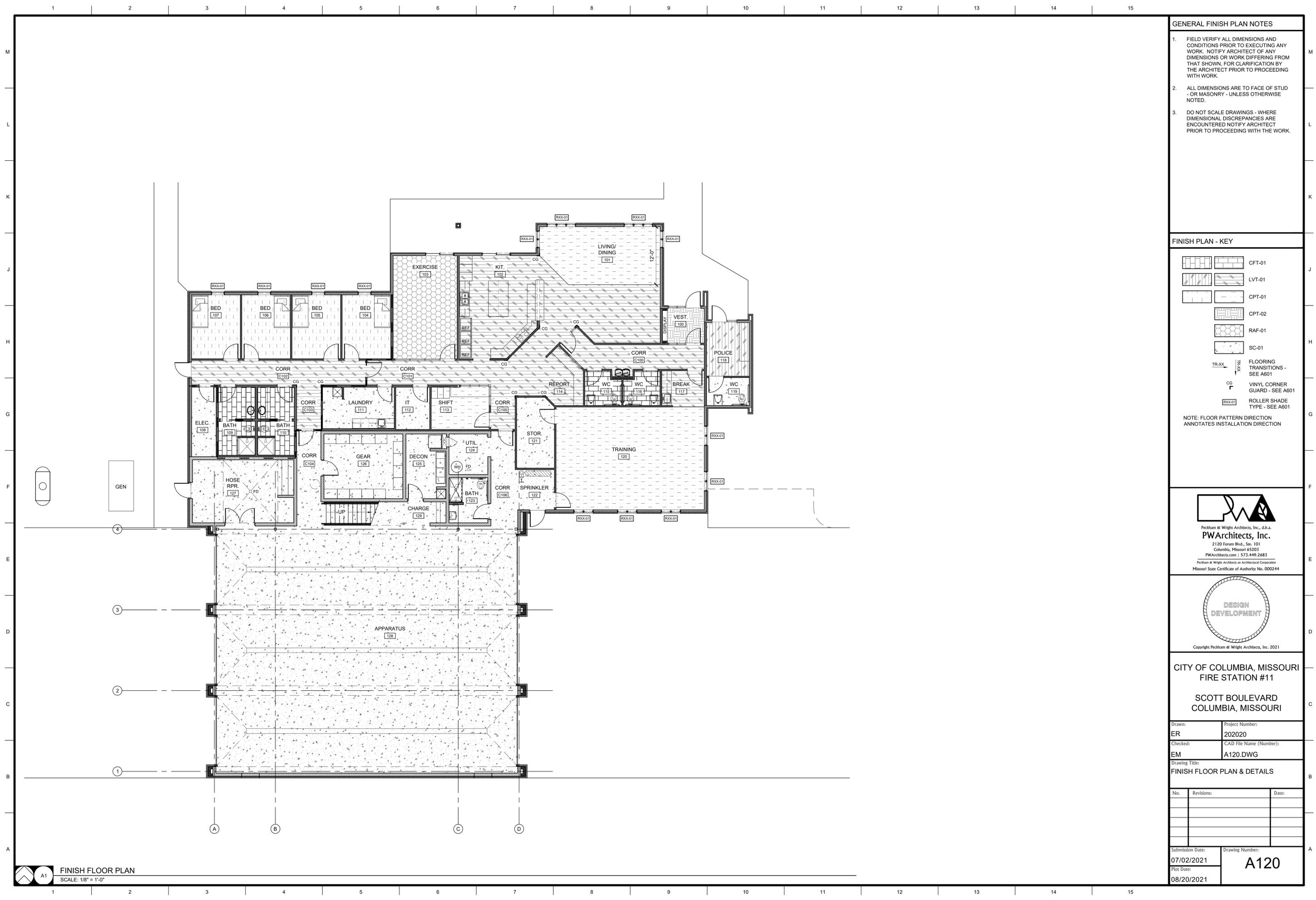
Drawn: ER  
 Checked: EM  
 Drawing Title: REFLECTED CEILING PLAN & DETAILS

No.	Revisions:	Date:

Submission Date: 07/02/2021  
 Plot Date: 08/20/2021  
 Project Number: 202020  
 CAD File Name (Number): A110.DWG  
 Drawing Number: **A110**

 **REFLECTED CEILING PLAN**  
 SCALE: 1/8" = 1'-0"

 **REFLECTED CEILING PLAN @ MEZZANINE**  
 SCALE: 1/8" = 1'-0"



**GENERAL FINISH PLAN NOTES**

1. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO EXECUTING ANY WORK. NOTIFY ARCHITECT OF ANY DIMENSIONS OR WORK DIFFERING FROM THAT SHOWN, FOR CLARIFICATION BY THE ARCHITECT PRIOR TO PROCEEDING WITH WORK.
2. ALL DIMENSIONS ARE TO FACE OF STUD - OR MASONRY - UNLESS OTHERWISE NOTED.
3. DO NOT SCALE DRAWINGS - WHERE DIMENSIONAL DISCREPANCIES ARE ENCOUNTERED NOTIFY ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.

**FINISH PLAN - KEY**

	CFT-01
	LVT-01
	CPT-01
	CPT-02
	RAF-01
	SC-01
	FLOORING TRANSITIONS - SEE A601
	VINYL CORNER GUARD - SEE A601
	ROLLER SHADE TYPE - SEE A601

NOTE: FLOOR PATTERN DIRECTION ANNOTATES INSTALLATION DIRECTION



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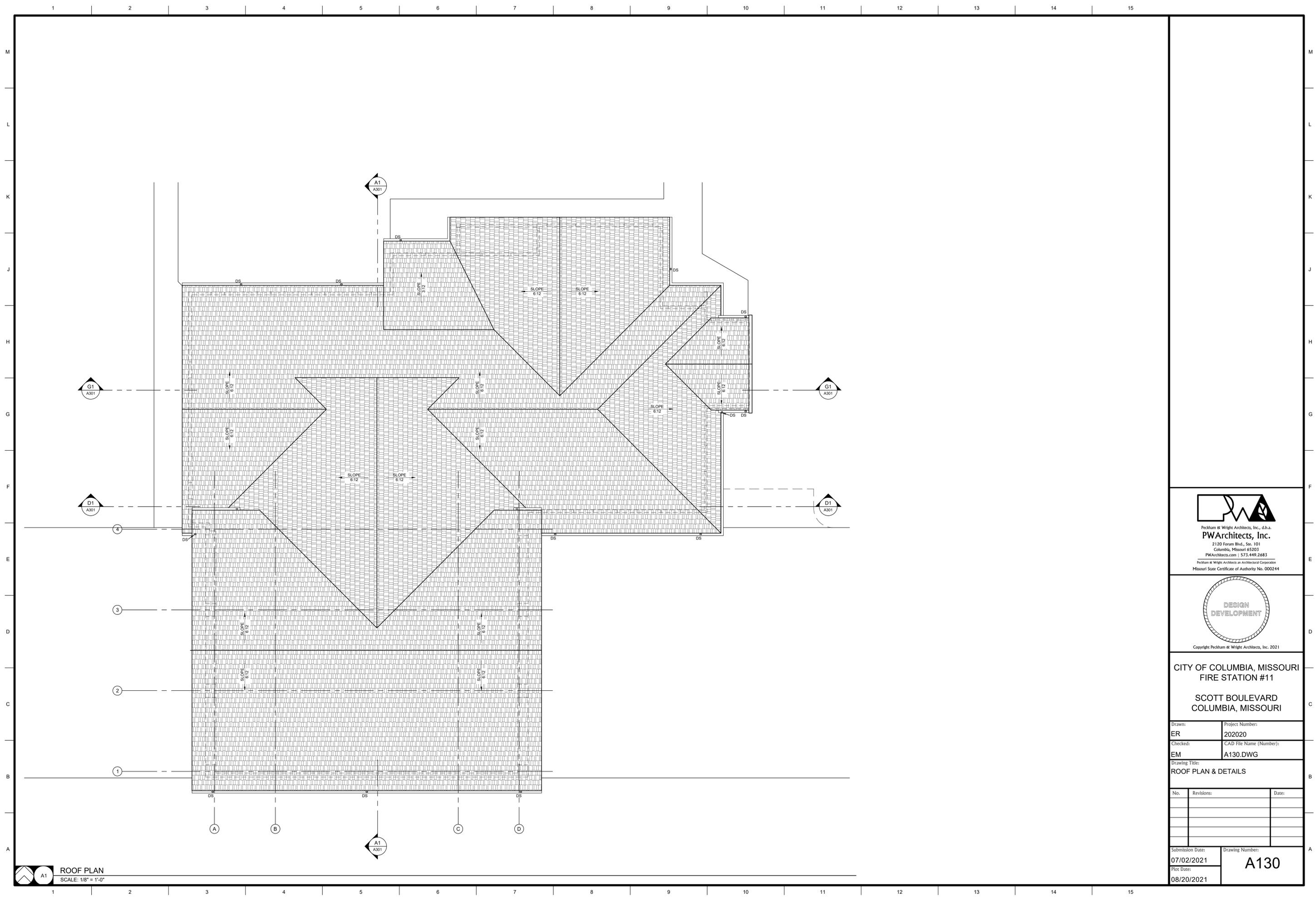
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Drawn:	Project Number:
ER	202020
Checked:	CAD File Name (Number):
EM	A120.DWG

Drawing Title:  
**FINISH FLOOR PLAN & DETAILS**

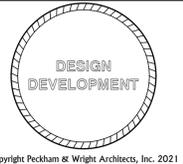
No.	Revisions:	Date:

Submission Date:	Drawing Number:
07/02/2021	<b>A120</b>
Plot Date:	
08/20/2021	



**ROOF PLAN**  
 SCALE: 1/8" = 1'-0"

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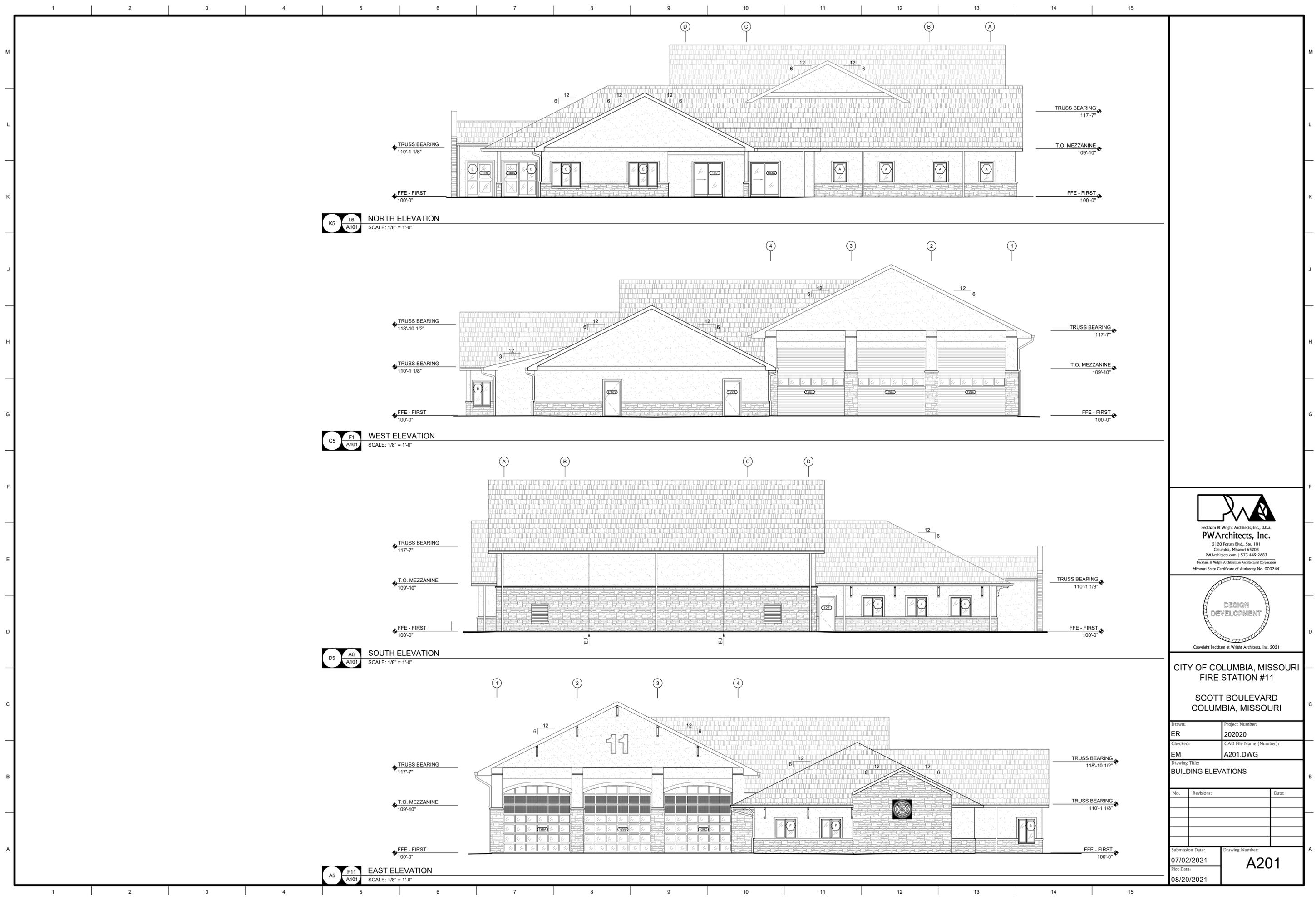
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Drawn:	Project Number:
ER	202020
Checked:	CAD File Name (Number):
EM	A130.DWG

Drawing Title:  
**ROOF PLAN & DETAILS**

No.	Revisions:	Date:

Submission Date:	Drawing Number:
07/02/2021	<b>A130</b>
Plot Date:	
08/20/2021	



**NORTH ELEVATION**  
 SCALE: 1/8" = 1'-0"

**WEST ELEVATION**  
 SCALE: 1/8" = 1'-0"

**SOUTH ELEVATION**  
 SCALE: 1/8" = 1'-0"

**EAST ELEVATION**  
 SCALE: 1/8" = 1'-0"



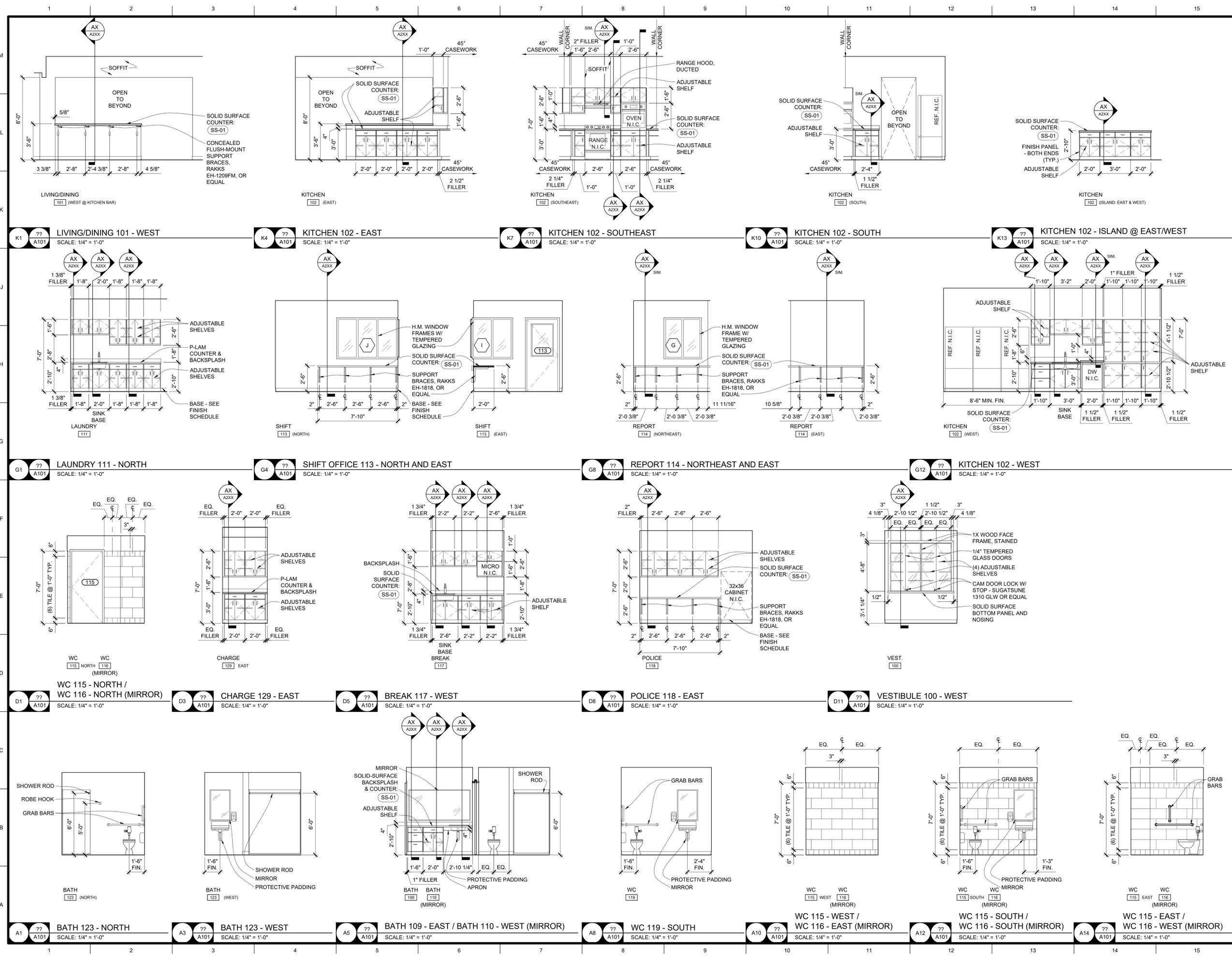
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Drawn: <b>ER</b>	Project Number: <b>202020</b>
Checked: <b>EM</b>	CAD File Name (Number): <b>A201.DWG</b>

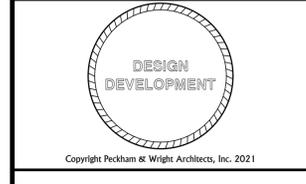
Drawing Title:  
**BUILDING ELEVATIONS**

No.	Revisions:	Date:

Submission Date: <b>07/02/2021</b>	Drawing Number: <b>A201</b>
Plot Date: <b>08/20/2021</b>	



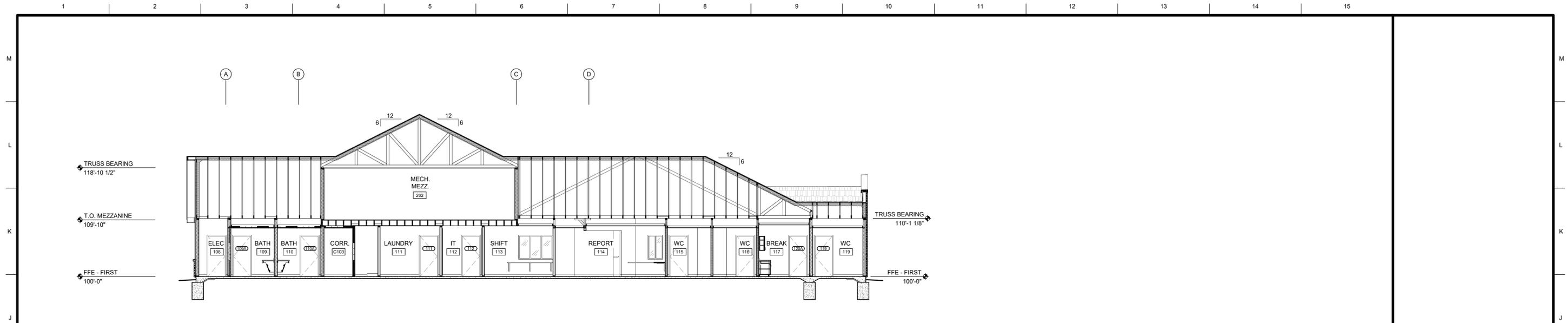
  
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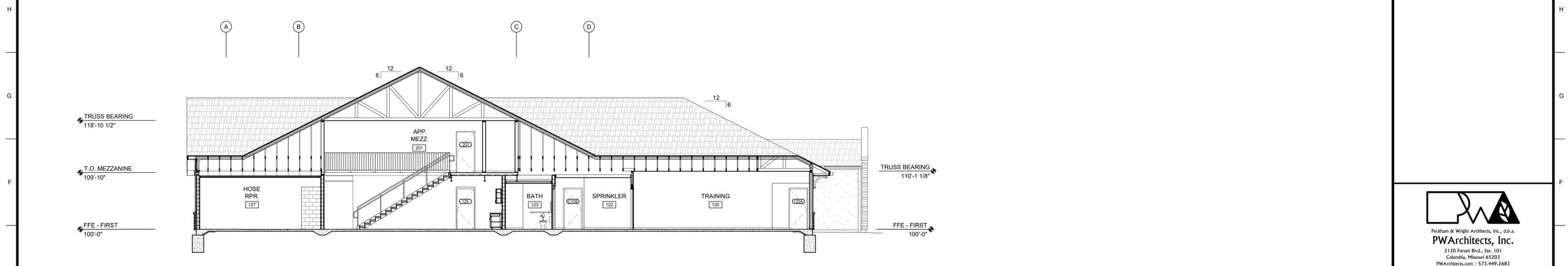
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Checked: <b>EM</b>	CAD File Name (Number): <b>A210.DWG</b>	
Drawing Title: <b>INTERIOR ELEVATIONS</b>		
No.	Revisions:	Date:

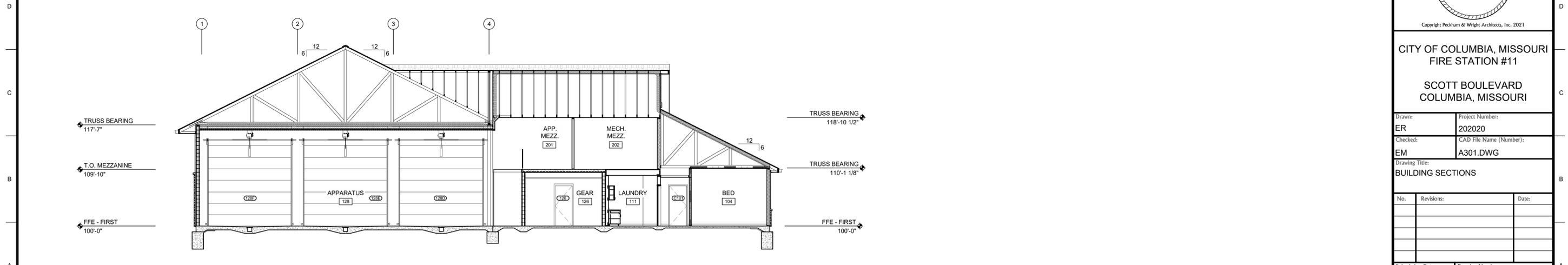
Submission Date: **07/02/2021**  
 Drawing Number: **A210**  
 Plot Date: **07/30/2021**



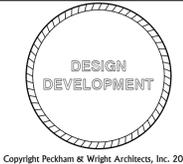
**G1**  
**A101**  
**BUILDING SECTION**  
 SCALE: 1/8" = 1'-0"



**F1**  
**A101**  
**BUILDING SECTION**  
 SCALE: 1/8" = 1'-0"



**A5**  
**A101**  
**BUILDING SECTION**  
 SCALE: 1/8" = 1'-0"



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Drawn:	Project Number:
ER	202020
Checked:	CAD File Name (Number):
EM	A301.DWG

Drawing Title:  
**BUILDING SECTIONS**

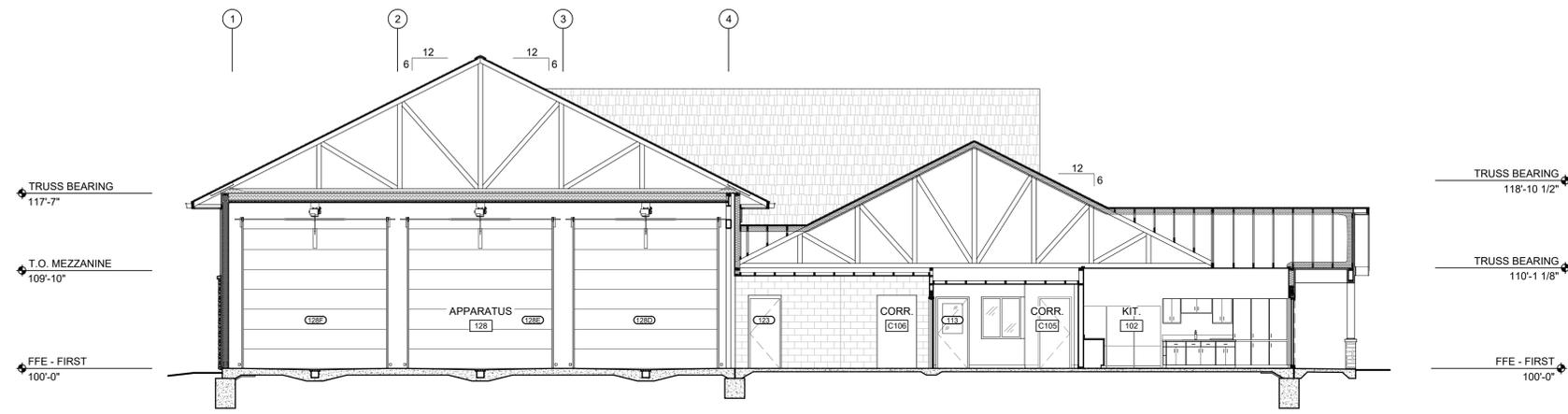
No.	Revisions:	Date:

Submission Date:	Drawing Number:
07/02/2021	<b>A301</b>
Plot Date:	
08/20/2021	

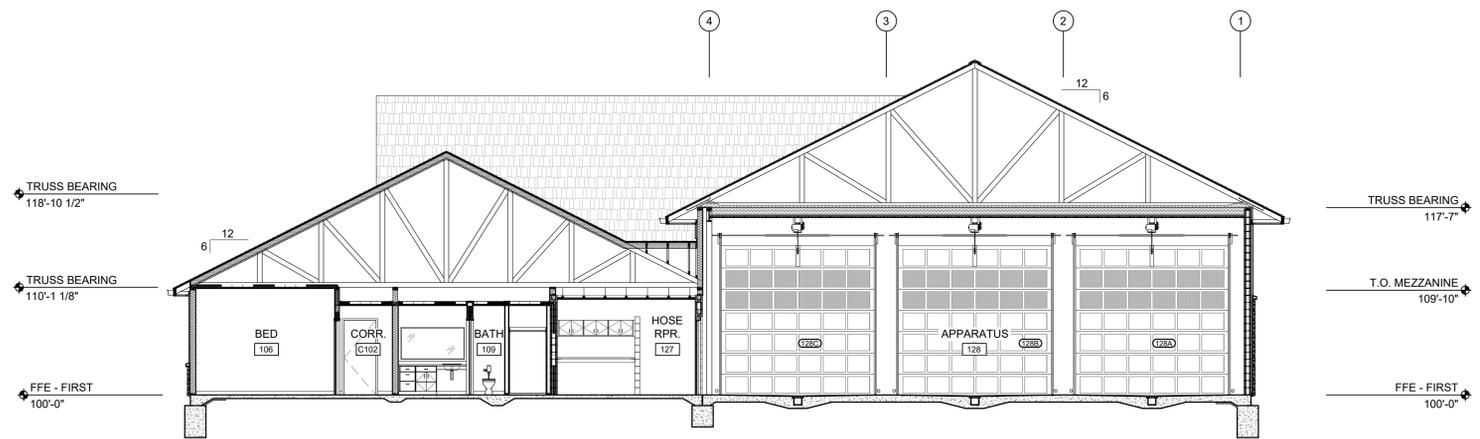
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

M  
L  
K  
J  
H  
G  
F  
E  
D  
C  
B  
A

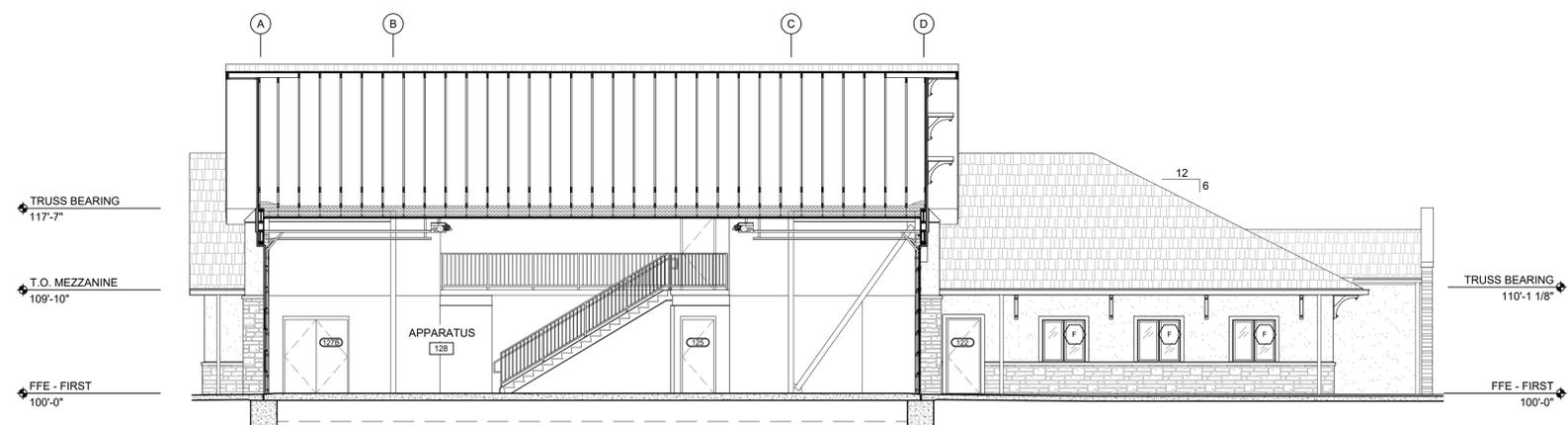
M  
L  
K  
J  
H  
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E  
D  
C  
B  
A



J1 A7 A101 BUILDING SECTION  
SCALE: 1/8" = 1'-0"



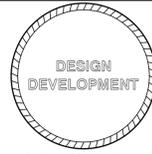
E1 A3 A101 BUILDING SECTION  
SCALE: 1/8" = 1'-0"



A1 D1 A101 BUILDING SECTION  
SCALE: 1/8" = 1'-0"



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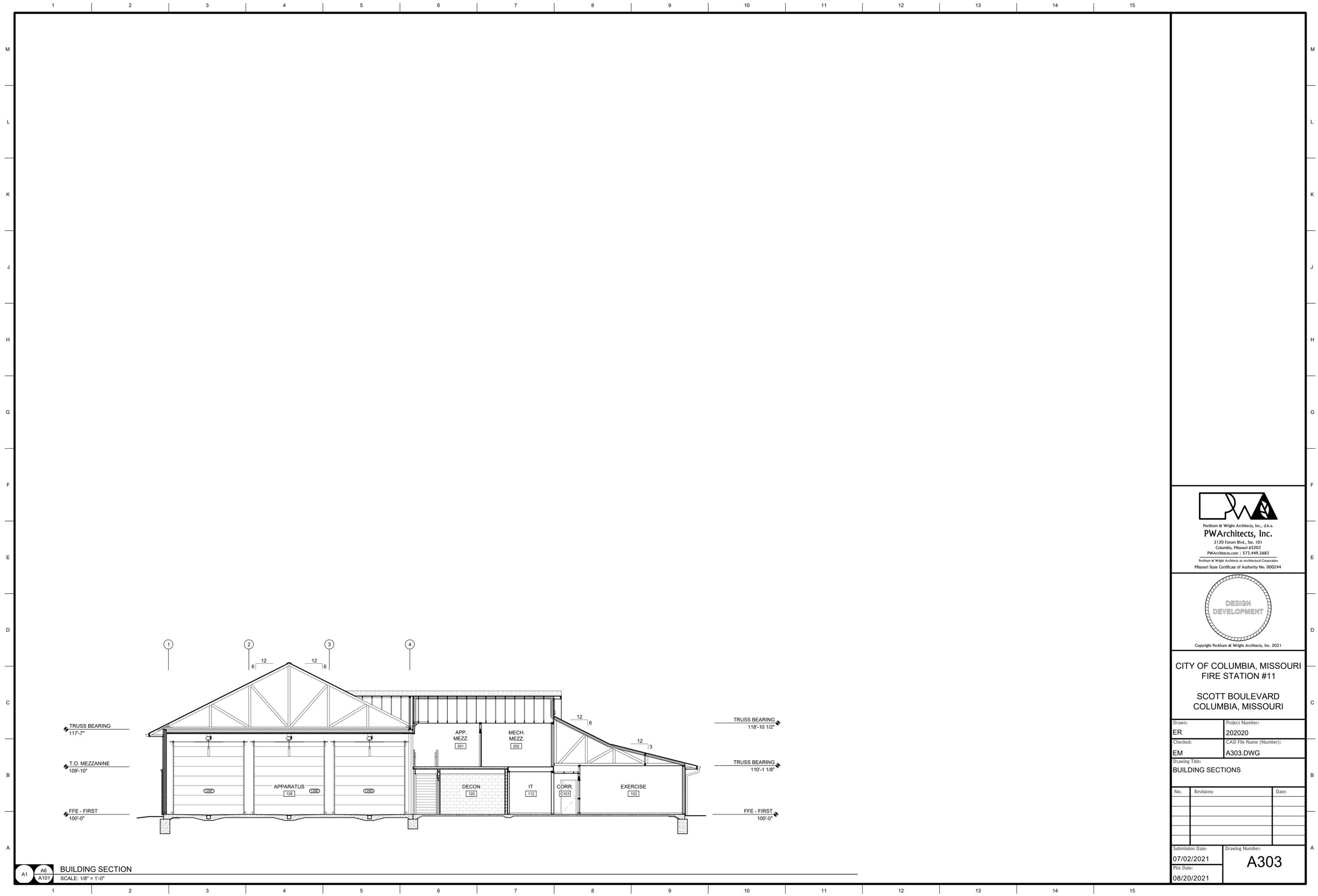
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ER	202020
Checked:	CAD File Name (Number):
EM	A302.DWG

Drawing Title:  
**BUILDING SECTIONS**

No.	Revisions:	Date:

Submission Date:	Drawing Number:
07/02/2021	<b>A302</b>
Plot Date:	
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



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Drawn:	Project Number:
ER	202020
Checked:	CAD File Name (Number):
EM	A303.DWG

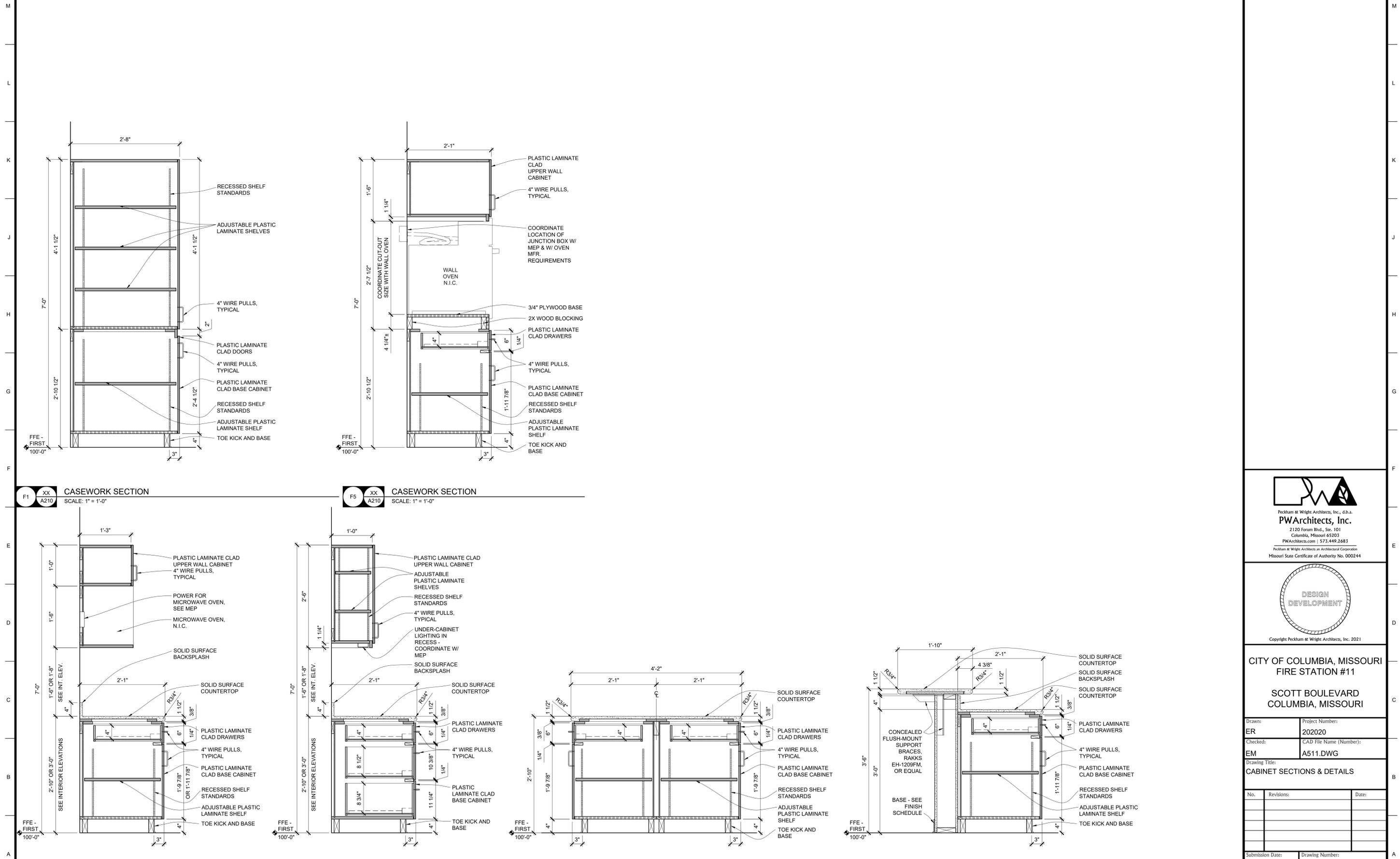
Drawing Title:  
**BUILDING SECTIONS**

No.	Revisions:	Date:

Submission Date:	Drawing Number:
07/02/2021	<b>A303</b>
Plot Date:	
08/20/2021	

**BUILDING SECTION**  
 SCALE: 1/8" = 1'-0"





F1 XX A210 CASEWORK SECTION SCALE: 1" = 1'-0"

F5 XX A210 CASEWORK SECTION SCALE: 1" = 1'-0"

A1 XX A210 CASEWORK SECTION SCALE: 1" = 1'-0"

A4 XX A210 CASEWORK SECTION SCALE: 1" = 1'-0"

A7 XX A210 CASEWORK SECTION SCALE: 1" = 1'-0"

A11 XX A210 CASEWORK SECTION SCALE: 1" = 1'-0"



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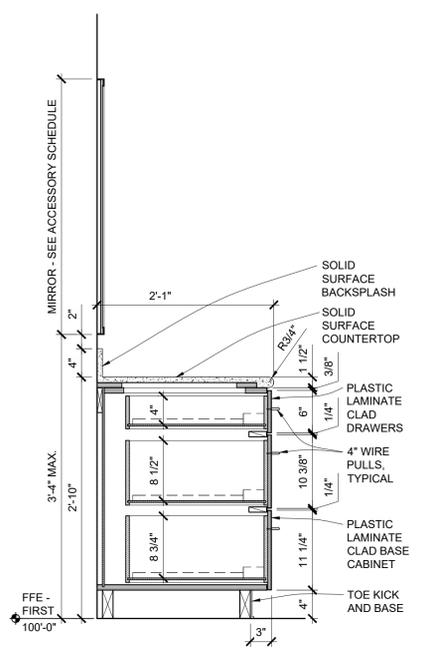
**CITY OF COLUMBIA, MISSOURI**  
**FIRE STATION #11**  
**SCOTT BOULEVARD**  
**COLUMBIA, MISSOURI**

Drawn: ER	Project Number: 202020
Checked: EM	CAD File Name (Number): A511.DWG

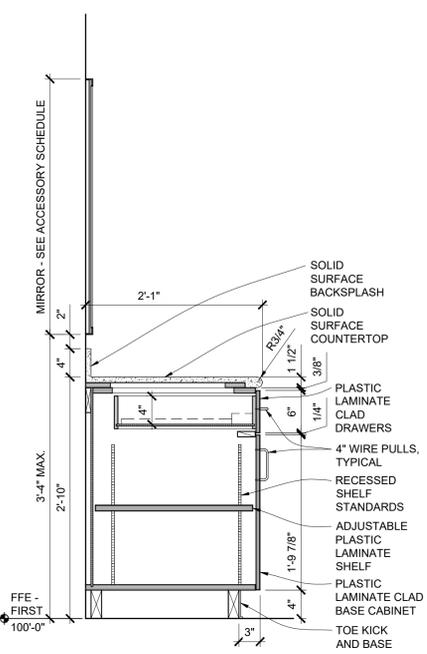
Drawing Title:  
**CABINET SECTIONS & DETAILS**

No.	Revisions:	Date:

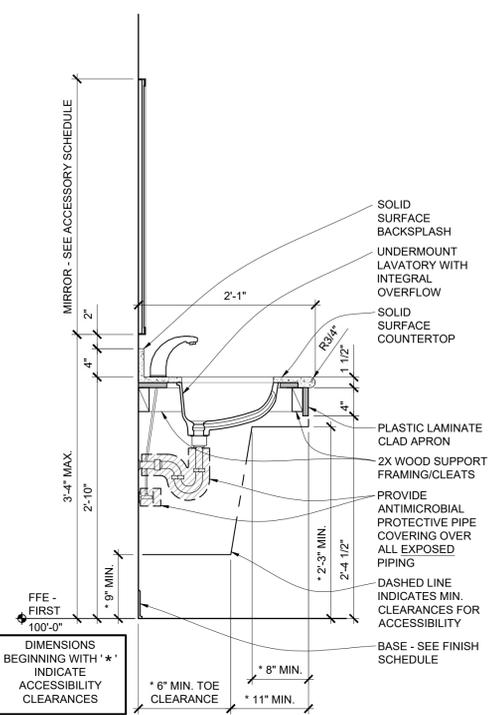
Submission Date: 07/02/2021	Drawing Number: <b>A511</b>
Plot Date: 08/20/2021	



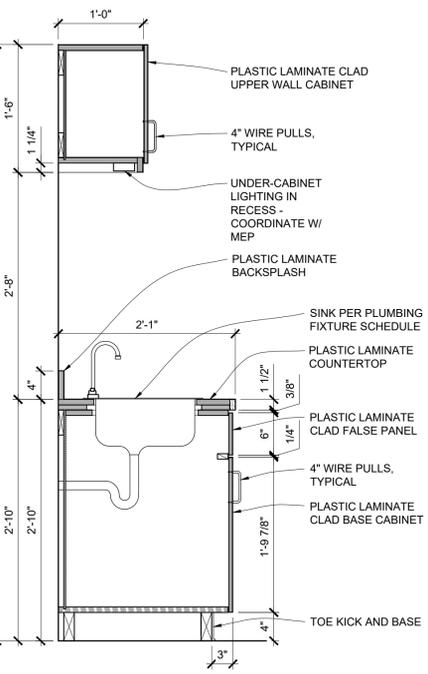
F1 XX A210 CASEWORK SECTION  
SCALE: 1" = 1'-0"



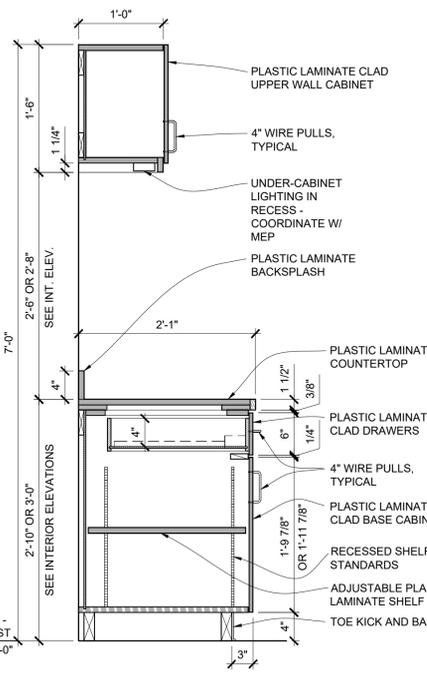
F4 XX A210 CASEWORK SECTION  
SCALE: 1" = 1'-0"



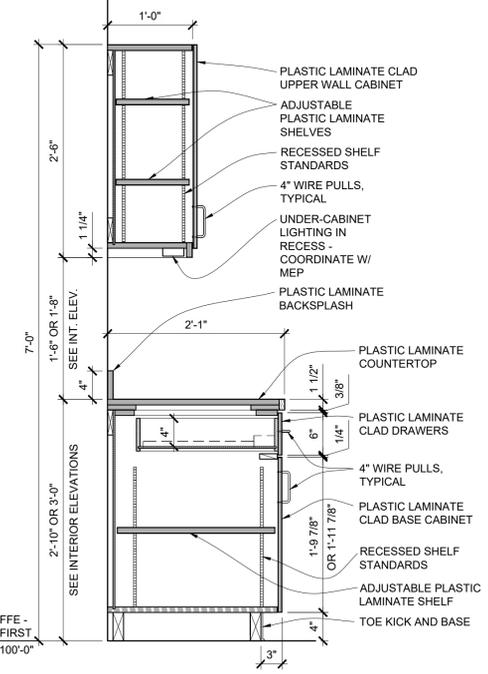
F7 XX A210 CASEWORK SECTION  
SCALE: 1" = 1'-0"



A1 XX A210 CASEWORK SECTION  
SCALE: 1" = 1'-0"



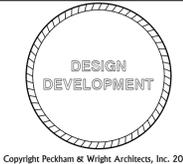
A4 XX A210 CASEWORK SECTION  
SCALE: 1" = 1'-0"



A7 XX A210 CASEWORK SECTION  
SCALE: 1" = 1'-0"



Peckham & Wright Architects, Inc., d.b.a.  
**PWArchitects, Inc.**  
2120 Forum Blvd., Ste. 101  
Columbia, Missouri 65203  
PWArchitects.com | 573.449.2683  
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**CITY OF COLUMBIA, MISSOURI  
FIRE STATION #11**  
**SCOTT BOULEVARD  
COLUMBIA, MISSOURI**

Drawn:	Project Number:
ER	202020
Checked:	CAD File Name (Number):
EM	A512.DWG

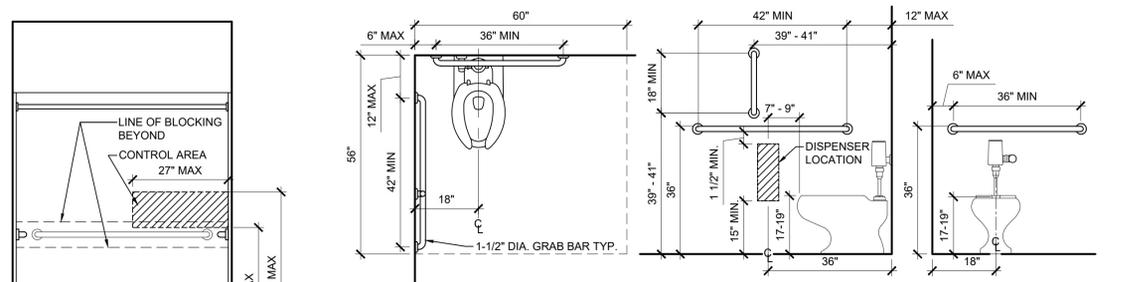
Drawing Title:  
**CABINET SECTIONS & DETAILS**

No.	Revisions:	Date:

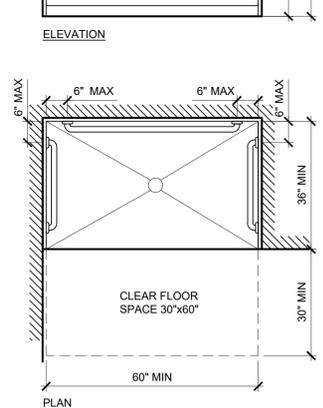
Submission Date:	Drawing Number:
07/02/2021	<b>A512</b>
Plot Date:	
08/20/2021	

INTERIOR FINISH LEGEND					
FINISH TAG	MATERIAL	MFR.	STYLE	COLOR	COMMENTS
<b>FLOORING</b>					
SC-01	SEALED CONCRETE	PROSOCO	CONSOLIDECK LSGUARD		
EP-01	EPOXY				
LVT-01	VINYL PLANK FLOORING	EF CONTRACT	MELANGE - 5 MM	TBD	
CPT-01	CARPET TILE	EF CONTRACT	LIAISON	TBD	
CPT-02	CARPET TILE, WALK-OFF CARPET	EF CONTRACT	ACCESS	INGRESS AX904	
RAF-01	RESILIENT ATHLETIC FLOORING	ECORE INTERNATIONAL	EVERLAST		8MM X 48" ROLL GOOD
CTF-01	CERAMIC FLOOR TILE	DALTILE			
<b>WALL</b>					
PNT-01	PAINT GYPSUM BOARD	SHERWIN WILLIAMS	SATIN UNO		
PNT-02	PAINT GYPSUM BOARD	SHERWIN WILLIAMS	SATIN UNO		
PNT-03	PAINT GYPSUM BOARD	SHERWIN WILLIAMS	SATIN UNO		
PNT-04	PAINT GYPSUM BOARD	SHERWIN WILLIAMS	SATIN UNO		
PNT-05	PAINT CMU	SHERWIN WILLIAMS	SATIN UNO		
CTW-01	CERAMIC WALL TILE	DALTILE			
CTW-02	CERAMIC WALL TILE	DALTILE			
<b>CEILING</b>					
PGB-01	PAINT GYPSUM BOARD	SHERWIN WILLIAMS	FLAT UNO	SW7007 CEILING BRIGHT WHITE	
ACT-01	ACOUSTIC CEILING TILE	ARMSTRONG			
MST-01	METAL SOFFIT PANEL(S)	BERRIDGE	FW-12 PANEL W/ VEE- GROOVES	SHASTA WHITE	
<b>BASE</b>					
EPB-01	EPOXY COVE BASE (INTEGRAL)				
RB-01	RUBBER COVE BASE	JOHNSONITE			
CTB-01	CERAMIC TILE BASE	DALTILE			
<b>OTHER</b>					
SS-01	SOLID SURFACE	WILSONART			
SS-02	SOLID SURFACE	WILSONART			
PL-01	PLASTIC LAMINATE	WILSONART			
	GROUT - GENERAL (WALL TILE)	TEC	ACCUCOLOR - PREMIUM SANDED		
	GROUT - GENERAL (FLOOR TILE)	TEC	ACCUCOLOR - PREMIUM SANDED		
CTR-01	EDGE TRIM (@ TILE)	SCHLUTER	JOLLY, A100 ATGB, 3/8" HEIGHT, ANODIZED ALUMINUM	BRUSHED NICKEL	USE AT ALL EXPOSED EDGES, TILE O/S CORNERS, AND TOP EDGE OF TILE
PNT-10	PAINT HM DOORS & FRAMES (EXTERIOR)	SHERWIN WILLIAMS	SEMI-GLOSS UNO		
PNT-11	PAINT HM DOORS & FRAMES (INTERIOR)	SHERWIN WILLIAMS	SEMI-GLOSS UNO		
PNT-12	PAINT MISC. STEEL (INTERIOR)	SHERWIN WILLIAMS	SEMI-GLOSS UNO		STAIRS, RAILINGS
CG-01	CORNER GUARDS	INPRO	130BN - SURFACE-MOUNT VINYL		TOP OF GUARD AT 8'-0" AFF
<b>WINDOW TREATMENTS</b>					
RSH-01	ROLLER SHADES	MECHOSHADES			
RBO-01	ROLLER SHADES - BLACKOUT	MECHOSHADES			
<b>TRANSITIONS</b>					
TR-01	TRANSITION STRIP	JOHNSONITE	CTA-20-P		
TR-02	TRANSITION STRIP	SCHLUTER	SCHIENE E100 TRIM, 3/8" HEIGHT, 304 STAINLESS STEEL		CERAMIC FLOOR TILE TO RESILIENT FLOORING

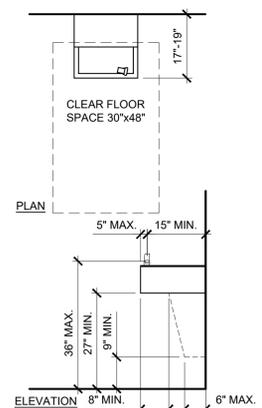
ROOM FINISH SCHEDULE										
ROOM NO.	ROOM NAME	FLOOR MAT'L	BASE MAT'L	WALL				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	FINISH	HEIGHT	
<b>FIRST FLOOR</b>										
100	VESTIBULE	CPT-02	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	9'-0"	
101	LIVING/DINING	CPT-01 / LVT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	10'-1-1/8"	SEE FINISH PLAN A120
102	KITCHEN	LVT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	10'-1-1/8"	
103	EXERCISE	RAF-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	10'-1-1/8"	
104	BED	CPT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
105	BED	CPT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
106	BED	CPT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
107	BED	CPT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
108	ELECTRICAL	SC-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	EXPOSED	10'-1-1/8"	
		CTF-01		CTW-01 / PNT-01	CTW-01 / PNT-01	CTW-01 / PNT-01	CTW-01 / PNT-01			
109	BATH		CTB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
110	BATH	CTF-01	CTB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
111	LAUNDRY	SC-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-10"	
112	I.T.	SC-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	EXPOSED	8'-10"	
113	SHIFT OFFICE	CPT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-10"	
114	REPORT	LVT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-10"	
115	WC	CTF-01	CTB-01	CTW-01 / PNT-01	CTW-01 / PNT-01	CTW-01 / PNT-01	CTW-01 / PNT-01	PNT-01	8'-6"	
116	WC	CTF-01	CTB-01	CTW-01 / PNT-01	CTW-01 / PNT-01	CTW-01 / PNT-01	CTW-01 / PNT-01	PNT-01	8'-6"	
117	BREAK	LVT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	ACT-01	9'-0"	
118	POLICE	LVT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	ACT-01	9'-0"	
119	WC	SC-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
120	TRAINING	CPT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	ACT-01	9'-8"	
121	STORAGE	SC-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	ACT-01	9'-0"	
122	SPRINKLER	SC-01	RB-01	PNT-01	PNT-01	PNT-05 / PNT-01	--	PGB-01	9'-4"	
123	BATH	SC-01	RB-01	PNT-05	PNT-05	PNT-05	PNT-05 / PNT-01	PGB-01	8'-0"	
124	UTILITY	SC-01	RB-01	PNT-05	PNT-05	PNT-05	PNT-05	PGB-01	8'-0"	
125	DECON	SC-01	RB-01	PNT-05	PNT-05	PNT-05	PNT-05	EXPOSED	8'-4"+/-	
126	GEAR	SC-01	RB-01	PNT-05	PNT-05	PNT-05	PNT-05	EXPOSED	8'-4"+/-	
127	HOSE REPAIR	SC-01	RB-01	PNT-05	PNT-05	PNT-05	PNT-05	PGB-01	10'-1-1/8"	
128	APPARATUS	SC-01	RB-01	PNT-05 / PNT-01	PNT-05 / PNT-01	PNT-05	PNT-05 / PNT-01	MST-01	16'-8"	
129	CHARGE	SC-01	RB-01	PNT-05	PNT-05	PNT-05	PNT-05	EXPOSED	8'-4"+/-	
C100	CORRIDOR	LVT-01 / CTF-01*	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	ACT-01	8'-6"	* CTF-01 @ WATER COOLER RECESS ONLY
C101	CORRIDOR	LVT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
C102	CORRIDOR	LVT-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
C103	CORRIDOR	LVT-01	RB-01	--	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
C104	CORRIDOR	SC-01	RB-01	PNT-01	PNT-05 / PNT-01	--	PNT-05 / PNT-01	EXPOSED	8'-4"+/-	
C105	CORRIDOR	LVT-01	RB-01	--	PNT-01	PNT-01	PNT-01	PGB-01	8'-6"	
C106	CORRIDOR	SC-01	RB-01	PNT-01	PNT-05 / PNT-01	--	PNT-05	PGB-01	9'-4"	
<b>MEZZANINE</b>										
201	APPARATUS MEZZANINE	SC-01	RB-01	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	9'-0 1/2"	
202	MECHANICAL MEZZANINE	SC-01 / EXPOSED PLYWOOD	--	PNT-01	PNT-01	PNT-01	PNT-01	PGB-01	9'-0 1/2"	



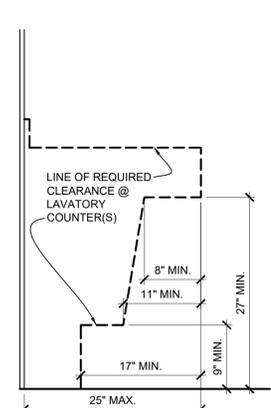
**D3 ACCESSIBILITY CLEARANCE AT WATERCLOSETS, TYP.**  
SCALE: 1/2" = 1'-0"



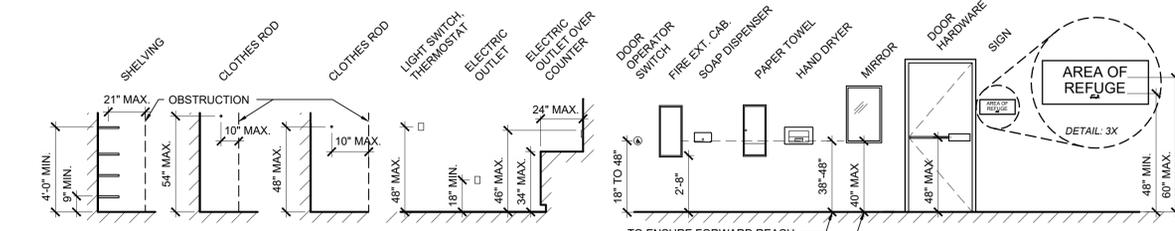
**A1 ACCESSIBILITY CLEARANCE AT SHOWERS, TYP.**  
SCALE: 1/2" = 1'-0"



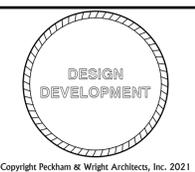
**A3 ACCESSIBILITY CLEARANCE AT WATER COOLERS, TYP.**  
SCALE: 1/2" = 1'-0"



**A5 ACCESSIBILITY CLEARANCE AT COUNTER SUPPORTS, TYP.**  
SCALE: 1" = 1'-0"



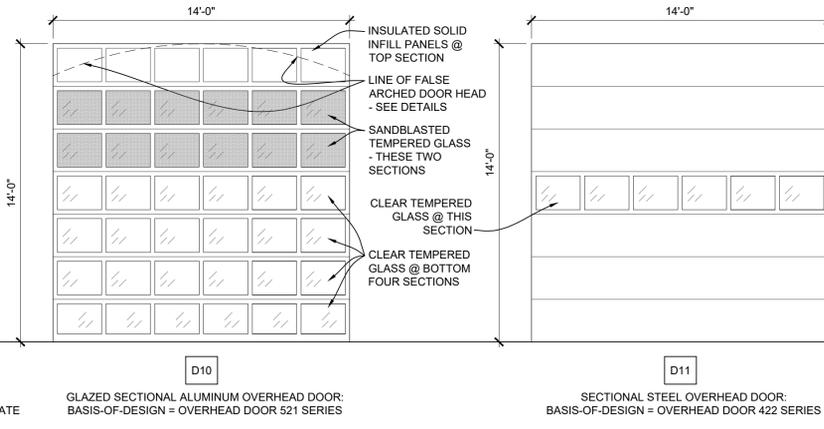
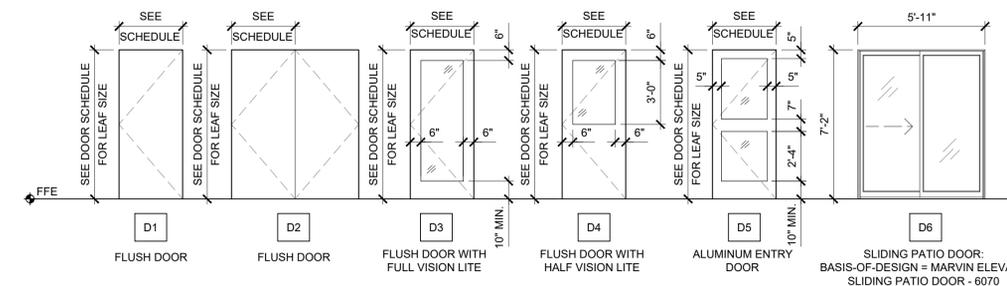
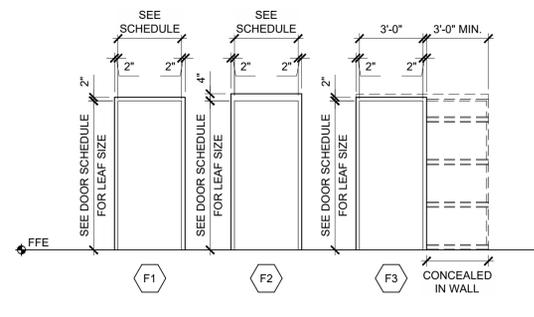
**A8 TYP. MOUNTING HEIGHTS**  
SCALE: 1/4" = 1'-0"



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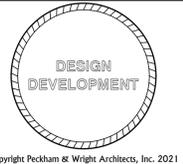
Drawn: ER	Project Number: 202020
Checked: EM	CAD File Name (Number): A601.DWG
Drawing Title: FINISH SCHEDULE & KEY, MOUNTING HEIGHTS, ACCESSIBLE CLEARANCES	
No.	Revisions:
Date:	
Submission Date: 07/02/2021	Drawing Number: A601
Plot Date: 08/20/2021	

DOOR SCHEDULE						FRAME SCHEDULE						HARDWARE GROUP	FIRE RATING	REMARKS												
DOOR NO.	DOOR LEAF SIZE (W x H)	MATERIAL	DOOR ELEVATION	WOOD	HOLLOW METAL	ALUMINUM	CLAD WOOD	LITE (TEMPERED GLS)	FRAME SIZE (W x H)	MATERIAL	FRAME ELEVATION				WOOD	HOLLOW METAL	ALUMINUM	CLAD WOOD	LITE (TEMPERED GLS)	HEAD	JAMB	SILL				
<b>FIRST FLOOR</b>																										
100A	3'-0" X 7'-0"	D5		X				X	6'-10" X 7'-2"											AX/A-602	AX/A-602	AX/A-602			SEE WINDOW ELEV. W4	
100B	3'-0" X 7'-0"	D5			X			X	6'-10" X 7'-2"											AX/A-602	AX/A-602	AX/A-602			SEE WINDOW ELEV. W4	
101	3'-0" X 7'-0"	D1	X						4'-6" X 7'-2"				X							AX/A-602	AX/A-602	AX/A-602			SEE WINDOW ELEV. W8	
102	--	D6						X	5'-11" X 7'-2"						X					AX/A-602	AX/A-602	AX/A-602			SLIDING PATIO DOOR	
103A	--	D6						X	5'-11" X 7'-2"						X					AX/A-602	AX/A-602	AX/A-602			SLIDING PATIO DOOR	
103B	3'-0" X 7'-0"	D3	X					X	12'-8" X 7'-2"											AX/A-602	AX/A-602	AX/A-602			SEE WINDOW ELEV. W11	
104	3'-0" X 7'-0"	D1	X																							
105	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1		X								AX/A-602	AX/A-602	AX/A-602				
106	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
107	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
108	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
109A	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
109B	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F3	X									AX/A-602	AX/A-602	AX/A-602			POCKET DOOR	
110A	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
110B	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F3	X									AX/A-602	AX/A-602	AX/A-602			POCKET DOOR	
111	3'-0" X 7'-0"	D1	X						4'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
112	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
113	3'-0" X 7'-0"	D4	X					X	3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
115	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
116	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
118	3'-0" X 7'-0"	D5		X				X	5'-4" X 7'-2"				X		X					AX/A-602	AX/A-602	AX/A-602			SEE WINDOW ELEV. W5	
119	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
120A	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
120B	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
121	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
122	3'-0" X 7'-0"	D1	X					X	3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
123	3'-0" X 7'-0"	D1	X						3'-4" X 7'-4"	F2	X									AX/A-602	AX/A-602	AX/A-602				
125	3'-0" X 7'-0"	D1	X						3'-4" X 7'-4"	F2	X									AX/A-602	AX/A-602	AX/A-602				
126	3'-0" X 7'-0"	D1	X						3'-4" X 7'-4"	F2	X									AX/A-602	AX/A-602	AX/A-602				
127A	3'-0" X 7'-0"	D1	X						3'-4" X 7'-4"	F2	X									AX/A-602	AX/A-602	AX/A-602				
127B	(2) 3'-0" X 7'-0"	D2	X						6'-4" X 7'-4"	F2	X									AX/A-602	AX/A-602	AX/A-602				
128A	14'-0" X 16'-0"	D10						X	--											AX/A-602	AX/A-602	AX/A-602			OHD - GLAZED SECTIONAL DOOR	
128B	14'-0" X 16'-0"	D10						X	--											AX/A-602	AX/A-602	AX/A-602			OHD - GLAZED SECTIONAL DOOR	
128C	14'-0" X 16'-0"	D10						X	--											AX/A-602	AX/A-602	AX/A-602			OHD - GLAZED SECTIONAL DOOR	
128D	14'-0" X 16'-0"	D11						--	--											AX/A-602	AX/A-602	AX/A-602			OHD - SECTIONAL DOOR	
128E	14'-0" X 16'-0"	D11						--	--											AX/A-602	AX/A-602	AX/A-602			OHD - SECTIONAL DOOR	
128F	14'-0" X 16'-0"	D11						--	--											AX/A-602	AX/A-602	AX/A-602			OHD - SECTIONAL DOOR	
C101	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602			1-HR.	
C102	3'-0" X 7'-0"	D1	X					X	3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602			1-HR.	
C104	3'-0" X 7'-0"	D1	X						3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
C106	3'-0" X 7'-0"	D4	X					X	3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				
<b>MEZZANINE</b>																										
201	3'-0" X 7'-0"	D1		X					3'-4" X 7'-2"	F1	X									AX/A-602	AX/A-602	AX/A-602				



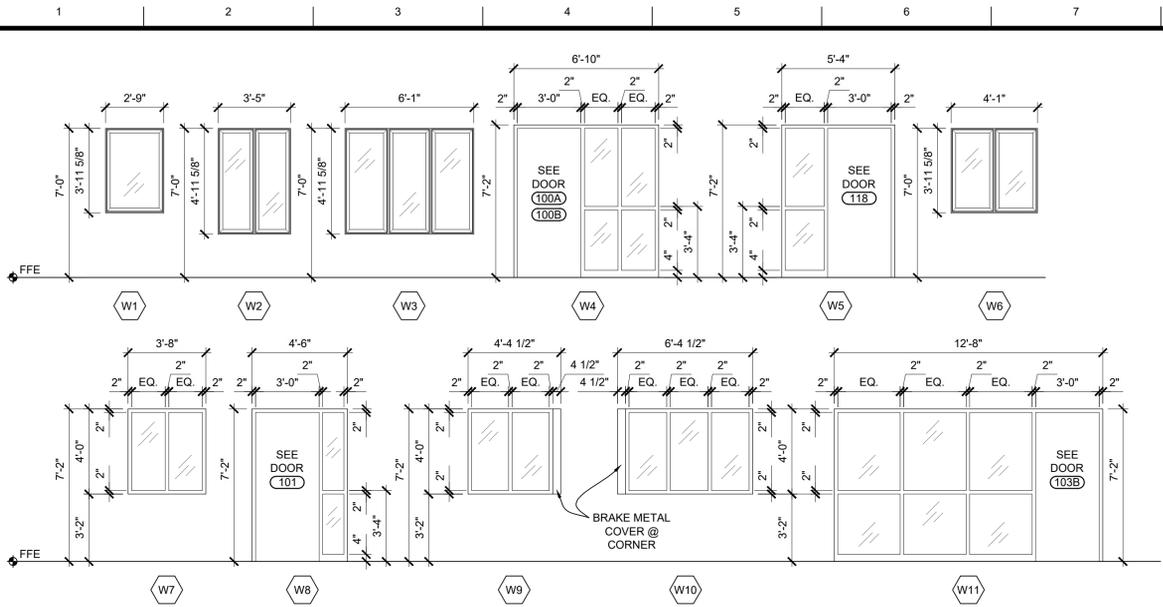
A1 DOOR FRAME ELEVATIONS  
SCALE: 1/4" = 1'-0"

A5 DOOR ELEVATIONS  
SCALE: 1/4" = 1'-0"



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SCOTT BOULEVARD  
COLUMBIA, MISSOURI

Drawn: ER	Project Number: 202020	
Checked: EM	CAD File Name (Number): A610.DWG	
Drawing Title: DOOR SCHEDULE, ELEVATIONS, & DETAILS		
No.	Revisions:	Date:
Submission Date: 07/02/2021	Drawing Number: A610	
Plot Date: 08/20/2021		



J1 WINDOW ELEVATIONS  
SCALE: 1/4" = 1'-0"

WINDOW SCHEDULE										REMARKS			
WINDOW NO.	ROUGH OPENING SIZE (W x H)	MATERIAL					DETAILS			BASIS OF DESIGN			
		FRAME ELEVATION	CLAD WOOD	ALUMINIUM	HOLLOW METAL	LITE (TEMPERED GL)	LAMINATED	INSULATED GLASS	HEAD			JAMB	SILL
<b>EXTERIOR WINDOWS</b>													
A	2'-9" x 3'-11 5/8"	W1	X					X	AX/A6XX	AX/A6XX	AX/A6XX	MARVIN ELEVATE CASEMENT - ELCA3347 E	EGRESS WINDOW
B	3'-5" x 4'-11 5/8"	W2	X					X				MARVIN ELEVATE CASEMENT - ELCA2159 2W	
C	6'-1" x 4'-11 5/8"	W3	X					X				MARVIN ELEVATE CASEMENT - ELCA2559 3W	
D	6'-10" x 7'-2"	W4		X				X					COORDINATE W/ DOORS 100A & 100B
E	5'-4" x 7'-2"	W5		X				X					COORDINATE W/ DOOR 118
F	4'-1" x 3'-11 5/8"	W6	X					X				MARVIN ELEVATE CASEMENT - ELCA2547 2W	
G	3'-8" x 4'-0"	W7			X			X					
H	4'-6" x 7'-2"	W8			X			X					COORDINATE W/ DOOR 101
I	4'-4 1/2" x 4'-0"	W9			X			X					
J	6'-4 1/2" x 4'-0"	W10			X			X					
K	12'-8" x 7'-2"	W11			X			X					COORDINATE W/ DOOR 103B



CITY OF COLUMBIA, MISSOURI  
 FIRE STATION #11  
 SCOTT BOULEVARD  
 COLUMBIA, MISSOURI

Drawn:	Project Number:
ER	202020
Checked:	CAD File Name (Number):
EM	A620.DWG

Drawing Title:  
 WINDOW SCHEDULE, ELEVATIONS, & DETAILS

No.	Revisions:	Date:

Submission Date:	Drawing Number:
07/02/2021	A620
Plot Date:	
08/20/2021	

# Mechanical - Electrical - Plumbing Design Drawings for City of Columbia, Missouri Fire Station #11

Scott Boulevard  
Columbia, Boone County, Missouri 65203

**PRELIMINARY**

James Watson, P.E. "Month DD, 20YY"  
PE-2015017071  
MO Certificate of Authority # 2018029680



**J-SQUARED  
ENGINEERING**

2401 Bernadette Drive, Suite 201  
Columbia, Missouri 65203  
573 - 234 - 4492 phone  
www.j-squaredeng.com

J2 PROJECT No: J20368

J2 DESIGN: ACW

ISSUE TITLE DATE

DESIGN DEVELOPMENT 08 / 13 / 2021

## GENERAL MEP SPECIFICATIONS

- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND UNDERSTAND ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENTS. EACH CONTRACTOR IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH HIS TRADE REGARDLESS OF WHERE THE WORK IS DEPICTED IN THE DRAWINGS OR SPECIFICATIONS.
- THE LAYOUT OF SYSTEMS SHOWN ON PLANS ARE APPROXIMATE AND WILL NEED TO BE COORDINATED IN FIELD. THE CONTRACTOR SHALL INCLUDE THIS COORDINATION IN HIS SCOPE AND INCLUDE ALL COSTS OF MODIFYING THE LAYOUT AS REQUIRED IN HIS BID.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY PARTS AND LABOR TO PRODUCE A COMPLETE AND FULLY OPERATIONAL SYSTEM UNLESS STATED OTHERWISE ON PLANS.
- ALL MATERIALS TO BE NEW, FIRST CLASS, AND INSTALLED PER MANUFACTURE'S PUBLISHED INSTRUCTIONS.
- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH LOCALLY ADOPTED CODES AND ORDINANCES.
- CONTRACTOR IS RESPONSIBLE FOR TO COORDINATE EQUIPMENT LOCATIONS AND SYSTEM ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION.
- CONTRACTOR TO GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE THE PROJECT IS TURN OVER TO THE OWNER, UNLESS NOTED OTHERWISE.
- CONTRACTOR IS TO INCLUDE IN HIS SCOPE THE COST OF ALL PERMITS, INSPECTIONS, METERING, AND TAPS ASSOCIATED WITH HIS WORK.
- CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATION, CUTTING, CORING, PATCHING, AND BACKFILL REQUIRED TO COMPLETE HIS WORK, UNLESS NOTED OTHERWISE.
- THESE PLANS ARE NOT TO BE SCALED. SEE ARCHITECTURAL PLANS FOR DIMENSIONS. WHERE THERE IS A CONFLICT BETWEEN ARCHITECTURAL DIMENSIONS AND MEP DIMENSION, ARCHITECTURAL SHALL GOVERN.
- SEE DISCIPLINE SHEETS FOR ADDITIONAL DISCIPLINE SPECIFIC SPECIFICATIONS.

## DEFERRED SUBMITTAL NOTES

- FIRE ALARM CONTRACTOR TO PROVIDE DEFERRED SUBMITTAL FOR FIRE ALARM SYSTEM. SUBMITTAL TO INCLUDE BATTERY CALCULATION, VOLTAGE DROP CALCULATIONS, AND DEVICE CUT SHEETS FOR DEVICES AND PANELS.
- FIRE SPRINKLER CONTRACTOR TO PROVIDE DEFERRED SUBMITTAL FOR FIRE SPRINKLER SYSTEM. SUBMITTAL TO INCLUDE HYDRAULIC CALCULATIONS AND SPRINKLER DRAWINGS SEALED BY A QUALIFIED DESIGN PROFESSIONAL LICENSED BY THE STATE.

## FIRE RATED PENETRATION NOTES

- THIS BUILDING CONTAINS FIRE RATED ASSEMBLIES. SEE ARCHITECTURAL PLANS FOR LOCATIONS.
- A UL LISTED FIRESTOP SYSTEM SHALL BE INSTALLED AT EACH PENETRATION OF A HORIZONTAL OR VERTICAL RATED ASSEMBLY IN ACCORDANCE WITH ASTM E814 OR UL 1479.
- EACH CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROTECTION FOR HIS PENETRATIONS THRU RATED ASSEMBLIES.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A CATALOG OF ALL UL LISTED FIRESTOP ASSEMBLIES

## REFERENCED CODES IN EFFECT

- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL PLUMBING CODE
- 2018 INTERNATIONAL FUEL GAS CODE
- 2018 INTERNATIONAL FIRE CODE
- 2017 NATIONAL ELECTRIC CODE
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE

## SHEET INDEX

SHEET #	SHEET NAME
MEP1	MECHANICAL ELECTRICAL PLUMBING COVER SHEET
M101	MAIN LEVEL HVAC PLAN
M102	MEZZANINE HVAC PLAN
M501	HVAC DETAILS & SCHEDULES
EP101	MAIN LEVEL POWER PLAN
EL101	LIGHTING PLAN
E501	ELECTRICAL DETAILS & SCHEDULES
PS101	MAIN LEVEL SANITARY SEWER PLAN
PW101	MAIN LEVEL WATER & GAS PLAN
P501	PLUMBING DETAILS & SCHEDULES

Mechanical - Electrical - Plumbing Design Drawings for

**City of Columbia, Missouri**

**Fire Station #11**

Scott Boulevard  
Columbia, Boone County, Missouri 65203

SHEET TITLE

MECHANICAL  
ELECTRICAL  
PLUMBING  
COVER SHEET

SHEET NUMBER

**MEP1**

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**HVAC PLAN SYMBOL LEGEND**

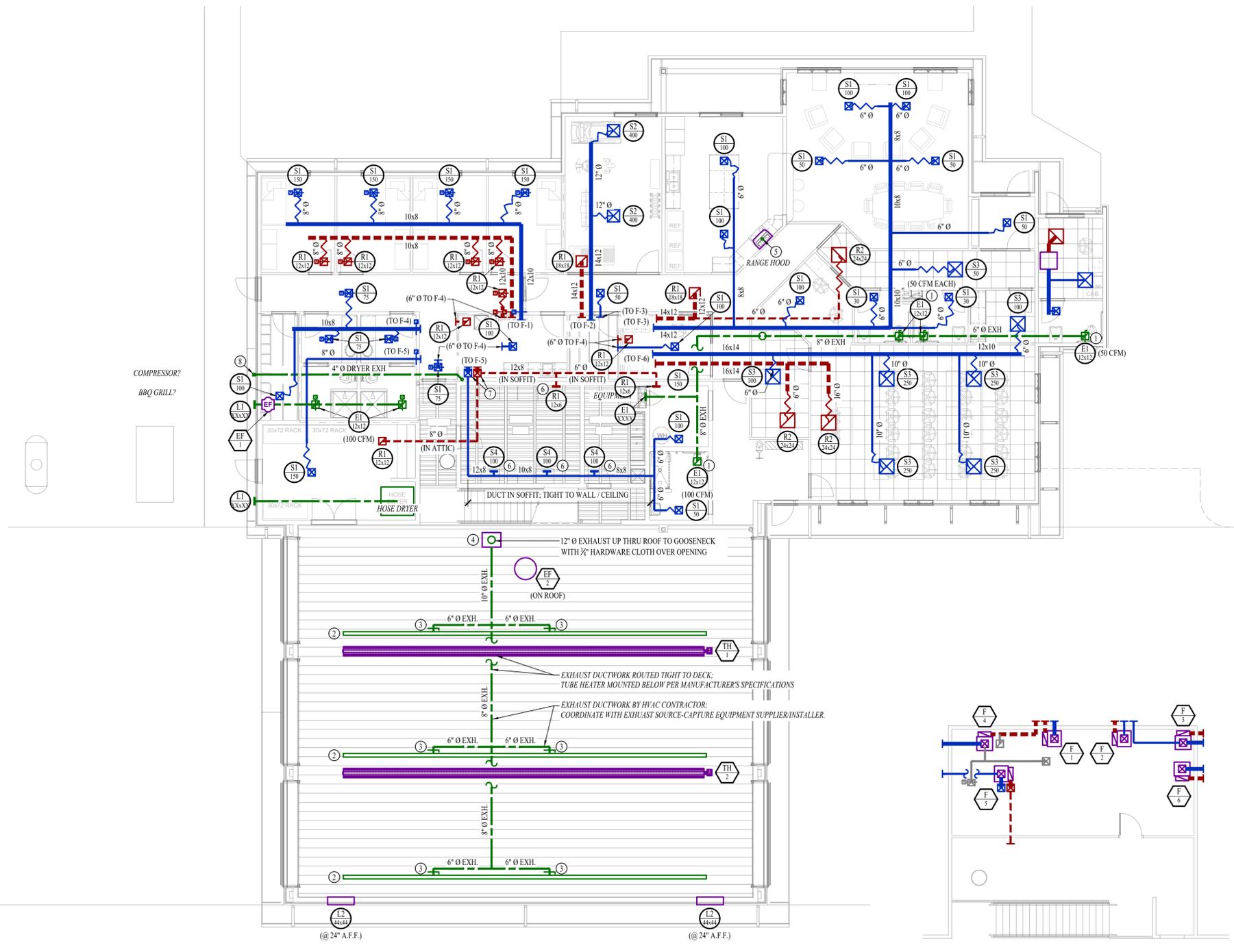
- EQUIPMENT TYPE (REFER TO EQUIPMENT SCHEDULE)
- EQUIPMENT REFERENCE NUMBER
- DIFFUSER/GRILLE TYPE (REFER TO SCHEDULE)
- CUBIC FEET PER MINUTE (CFM) / FACE SIZE
- SUPPLY DUCTWORK
- RETURN DUCTWORK
- EXHAUST DUCTWORK
- OUTSIDE AIR DUCTWORK
- FLEX DUCT
- VENT / COMBUSTION AIR
- CONDENSATION LINE
- REFRIGERANT LINE
- TIE INTO EXISTING
- SUPPLY DIFFUSER (HATCH INDICATES "NO FLOW ZONE")
- RETURN DIFFUSER
- BALANCE DAMPER
- MOTORIZED DAMPER
- CEILING RADIATION DAMPER
- FIRE RATED DAMPER
- SMOKE DAMPER
- THERMOSTAT
- CO2 DETECTOR
- RETURN DUCT SMOKE DETECTOR  
 WIRED TO FAN STARTER TO SHUT UNIT(S) DOWN AND SEND ALARM SIGNAL TO FIRE ALARM SYSTEM (IF PRESENT) OR TO REMOTE SOUNDER LOCATED IN AN OCCUPIED SPACE (EQUAL TO SYSTEM SENSOR #D4120)
- REMOTE SOUNDER WIRED TO RETURN DUCT SMOKE DETECTOR (EQUAL TO SYSTEM SENSOR #MHW)

**HVAC PLAN GENERAL NOTES:**

1. SEE SHEET M501 FOR ADDITIONAL HVAC NOTES, DETAIL, AND SCHEDULES.
2. ALL DUCTWORK SHOWN SHALL BE ROUTED IN ATTIC SPACE UNLESS NOTED OTHERWISE.

**HVAC PLAN KEY NOTES:**

- ① BALANCE EXHAUST FLOW TO AMOUNT SHOWN (XXX CFM).
- ② SOURCE-CAPTURE EXHAUST RAIL SYSTEM EQUAL TO PLYMOVENT #MRP55-1 (INSTALLED BY OTHERS).
- ③ 5" Ø EXHAUST DUCT CONNECTION TO EXHAUST RAIL SYSTEM (COORDINATE WITH EQUIPMENT SUPPLIER / INSTALLER).
- ④ SOURCE-CAPTURE EXHAUST FAN EQUAL TO PLYMOVENT #TEVS (INSTALLED BY OTHERS).
- ⑤ KITCHEN EXHAUST FROM RANGE HOOD TO ROUTE UP THRU ROOF TO GOOSENECK WITH ½" HARDWARE CLOTH OVER OPENING.
- ⑥ AIR DEVICE IN FACE OF SOFFIT.
- ⑦ 12x8 SUPPLY / RETURN DUCTS DOWN INTO SOFFIT TIGHT TO CEILING / WALL BELOW.
- ⑧ TERMINATE 4" DRYER DUCT WITH DRYER-WALL-VENT #DWV4. FIRE-WRAP EXHAUST DUCT WITH FIREMASTER DUCT-WRAP (OR EQUAL).



**MAIN LEVEL HVAC PLAN**  
 SCALE: 1/8" = 1'-0"

**MEZZANINE HVAC PLAN**  
 SCALE: 1/8" = 1'-0"

Mechanical - Electrical - Plumbing Design Drawings for

**City of Columbia, Missouri  
 Fire Station #11**

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SHEET TITLE

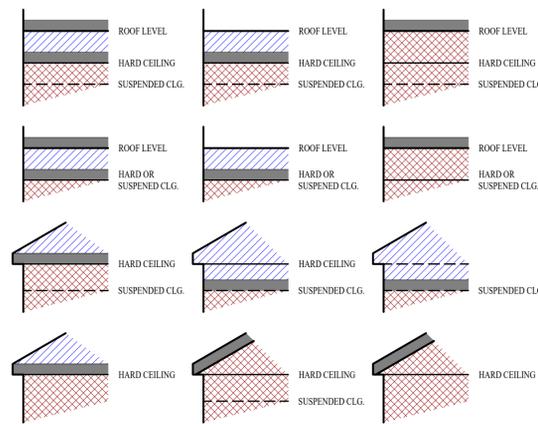
HVAC PLAN

SHEET NUMBER

**M101**

**HVAC SPECIFICATIONS**

1. EQUIPMENT
  - 1.1. ALL EQUIPMENT MUST PROVIDE THE PERFORMANCE SPECIFIED ON PLANS. WHERE SPECIFIC MAKES AND MODELS ARE INDICATED ON PLAN, CONTRACTOR TO PROVIDE MODEL INDICATED OR APPROVED EQUAL.
  - 1.2. CONTRACTOR TO SUPPLY SUBMITTALS FOR ALL EQUIPMENT FOR REVIEW BY ARCHITECT AND ENGINEER PRIOR TO PURCHASE.
  - 1.3. ALL HORIZONTAL FURNACES WITH AC COILS TO BE EQUIPPED WITH CORROSION RESISTANT DRAIN PAN. DRAIN PAN TO DISCHARGE TO SANITARY WASTE VIA INDIRECT CONNECTION WITH AIR GAP. DRAIN PAN TO PROVIDE SECONDARY OVERFLOW OR FLOAT SWITCH INTERLOCKED WITH UNIT TO SHUT DOWN UNIT ON HIGH WATER SIGNAL.
  - 1.4. ALL EXTERIOR REFRIGERANT COILS TO BE PROTECTED BY FACTORY EQUIPPED HAIL GUARDS.
  - 1.5. REFRIGERANT PIPING TO BE ACR COPPER OR TYPE L COPPER.
2. DUCTWORK
  - 2.1. DUCTWORK TO BE GALVANIZED STEEL, SEAL CLASS B, CONSTRUCTED PER SMACNA STANDARDS.
  - 2.2. 26 GA. MINIMUM UP TO 16" DUCT, 24 GA. UP TO 20", 22 GA. UP TO 24", 20 GA. UP TO 28", AND 18 GA. UP TO 36".
  - 2.3. TURNING VANES TO BE PROVIDED AND INSTALLED AT ALL 90° BENDS AND TEES.
  - 2.4. DUCT DIMENSIONS LISTED ARE TO INTERIOR OF DUCT LINER.
  - 2.5. BALANCE DAMPERS MUST BE PROVIDED TO ALLOW ADJUSTMENT AT EACH AIR TERMINAL.
    - 2.5.1. WHERE BRANCH TAKEOFF IS ACCESSIBLE (ABOVE LAY-IN CEILING OR EXPOSED DUCT), THE BALANCE DAMPER IS TO BE INSTALLED AT TAKEOFF.
    - 2.5.2. WHERE TAKEOFF IS INACCESSIBLE (IN ATTIC OR SOFFIT), THE BALANCE DAMPER IS TO BE LOCATED SO IT IS ACCESSIBLE FROM FACE OF AIR DEVICE.
  - 2.6. HVAC CONTRACTOR RESPONSIBLE FOR ALL DUCTWORK TRANSITIONS AND FITTINGS AS REQUIRED FOR FINAL CONNECTIONS TO HVAC EQUIPMENT.
3. INSULATION
  - 3.1. DUCTWORK
    - 3.1.1. SEE "TYPICAL DUCT INSULATION DIAGRAM" FOR INSTALLATION SPECIFIC REQUIREMENTS.
    - 3.1.2. INTERNAL DUCT LINER TO BE EQUAL TO JOHNS MANVILLE LINACOUSTIC R-300.
    - 3.1.3. EXTERNAL DUCT WRAP TO INCLUDE VAPOR BARRIER. EQUAL TO JOHNS MANVILLE MICROLITE WITH FSK JACKET.
  - 3.2. REFRIGERANT PIPING
    - 3.2.1. REFRIGERANT PIPING SHALL BE TYPE ACR OR TYPE L COPPER.
    - 3.2.2. SPLIT SYSTEM (SUCTION LINE ONLY) - 1" CLOSED CELL ELASTOMERIC FOAM (EQUAL TO ARMAFLEX AP).
  - 3.3. VRV/VRF SYSTEMS (BOTH SUCTION AND HOT GAS LINES) 1 1/2" EPDM (EQUAL TO AEROFLEX AEROCEL AC) WITHIN CONDITIONED SPACES & 2" EPDM (EQUAL TO AEROFLEX AEROCEL AC) IN UNCONDITIONED SPACES, AND WITH BANDED ALUMINUM SHIELDING IN EXTERIOR SPACES.
  - 3.4. CONDENSATE PIPING
    - 3.4.1. SPLIT SYSTEMS - WHERE CONDENSATE PIPING IS LOCATED IN UNCONDITIONED SPACE, INSULATE WITH 1/2" ELASTOMERIC. NO INSULATION REQUIRED IN CONDITIONED SPACES.
    - 3.4.2. VRV/VRF - INSULATE WITH 1/2" ELASTOMERIC.
4. WORKMANSHIP
  - 4.1. COORDINATE WITH OTHER TRADES SO THAT HVAC EQUIPMENT AND DUCT WORK DOES NOT BLOCK REQUIRED ACCESS OR CLEARANCE TO EQUIPMENT.
  - 4.2. ALL HVAC EQUIPMENT IS TO BE INSTALLED PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
  - 4.3. ALL EQUIPMENT TO BE INSTALLED LEVEL AND PLUMB.
  - 4.4. ROOFTOP MOUNTED RTUS TO BE INSTALLED ON CURBS PER MANUFACTURER'S INSTRUCTIONS.
  - 4.5. GRADE MOUNTED RTUS, CONDENSING UNITS, AND HEAT PUMPS TO BE INSTALLED ON 4" REINFORCED CONCRETE PAD EXTENDING 4" BEYOND EACH EDGE OF THE EQUIPMENT, OR A MANUFACTURER APPROVED PRE-MANUFACTURED BASE.
5. TESTING AND BALANCING
  - 5.1. ALL SYSTEMS MUST BE BALANCED TO WITHIN 10% OF VALUES INDICATED ON PLAN.
  - 5.2. HVAC CONTRACTOR TO PROVIDE WRITTEN BALANCE REPORT INCLUDING FLOW VALUES INDICATED ON PLAN AND ACTUAL MEASURED VALUES.
  - 5.3. THIRD PARTY CERTIFIED TEST AND BALANCE NOT REQUIRED.



- INSIDE  
 - INSULATION  
 - OUTSIDE

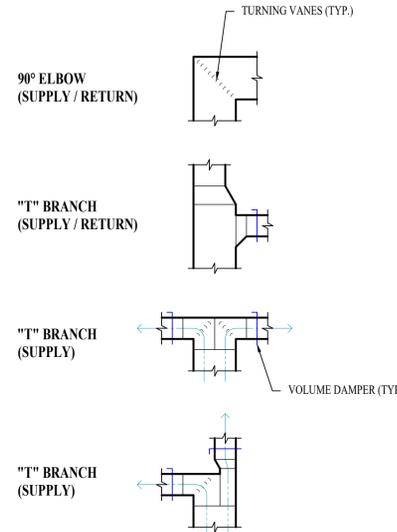
**DUCT INSIDE THERMAL ENVELOPE INSULATION REQUIREMENTS**

<b>RECTANGULAR</b>	
• SUPPLY =	1" LINER
• RETURN =	1" LINER
• EXHAUST =	NONE
• OUTSIDE AIR =	2" WRAP
<b>ROUND</b>	
• SUPPLY =	1/2" WRAP
• RETURN =	NONE
• EXHAUST =	NONE
• OUTSIDE AIR =	2" WRAP
<b>SPIRAL</b>	
• SUPPLY =	NONE
• RETURN =	NONE
• EXHAUST =	NONE
• OUTSIDE AIR =	2" WRAP

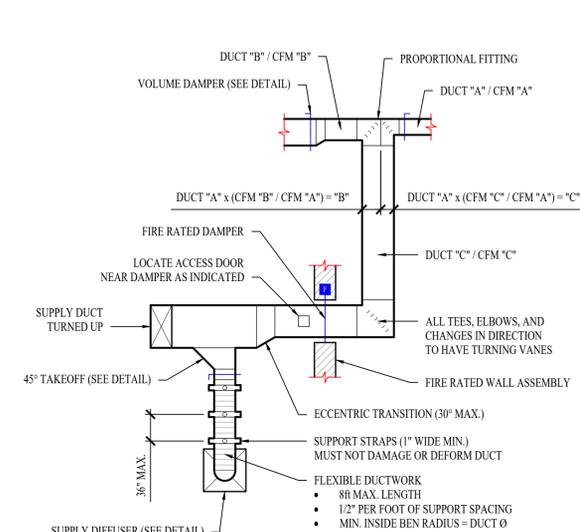
**DUCT OUTSIDE THERMAL ENVELOPE INSULATION REQUIREMENTS**

<b>RECTANGULAR</b>	
• SUPPLY =	1" LINER & 1/2" WRAP
• RETURN =	1" LINER @ 1/2" WRAP
• EXHAUST =	1/2" WRAP
• OUTSIDE AIR =	NONE
<b>ROUND</b>	
• SUPPLY =	2" WRAP
• RETURN =	2" WRAP
• EXHAUST =	1/2" WRAP
• OUTSIDE AIR =	NONE
<b>SPIRAL</b>	
• SUPPLY =	2" WRAP
• RETURN =	2" WRAP
• EXHAUST =	1/2" WRAP
• OUTSIDE AIR =	NONE

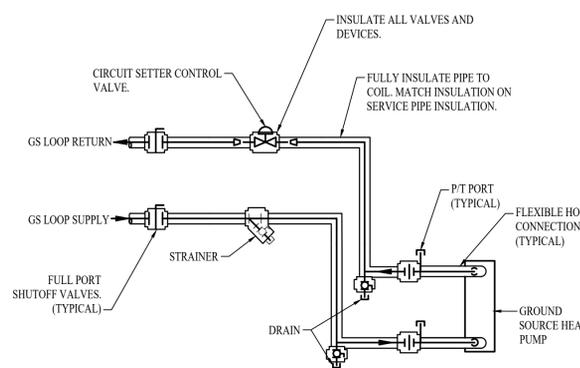
**TYPICAL BUILDING INTERIOR DUCT INSULATION DIAGRAM**



**TYPICAL DUCTWORK FITTINGS DETAIL**

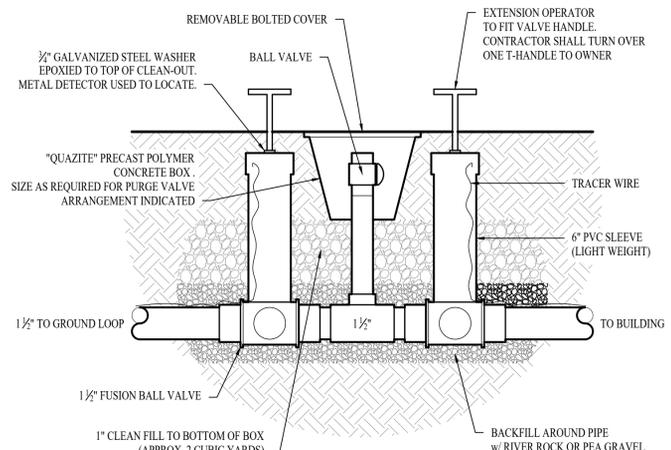


**TYPICAL DUCTWORK DETAIL**

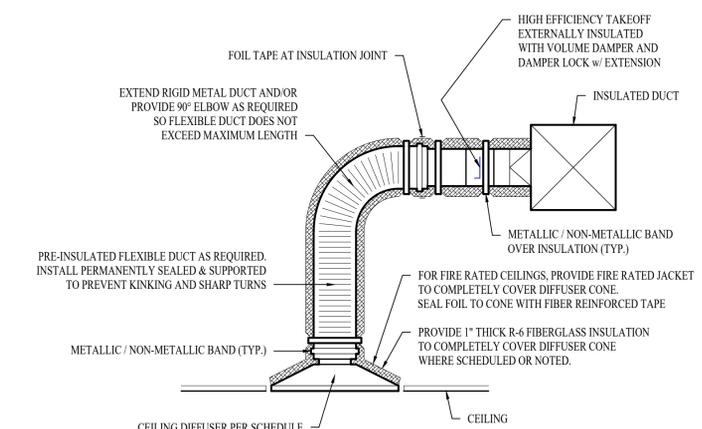


**GROUND SOURCE HEAT EXCHANGER PIPING**

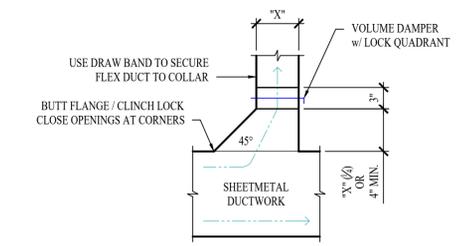
- ① FOR P/T PORT, USE PRESSURE TAP PROVIDED BY MANUFACTURER AT HEAT PUMP IF AVAILABLE.
- ② INSTALL EXTENSION AT PRESSURE TAP SO P/T PORT IS AT LEVEL OF INSULATION.
- ③ LOCATE SHUT OFF VALVE, UNIONS AND FLANGES TO ALLOW CLEAR SPACE FOR REMOVAL OF COIL.



**PURGE VALVE PIT DETAIL**



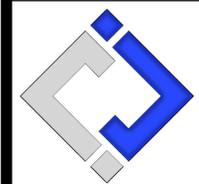
**TYPICAL LAY-IN DIFFUSER DETAIL**



**TYPICAL 45° TAKEOFF DETAIL**

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Mechanical - Electrical - Plumbing Design Drawings for  
**City of Columbia, Missouri**  
**Fire Station #11**  
 Scott Boulevard  
 Columbia, Boone County, Missouri 65203

SHEET NUMBER

**HVAC DETAILS & SCHEDULES**

**M501**

**POWER PLAN SYMBOL LEGEND**

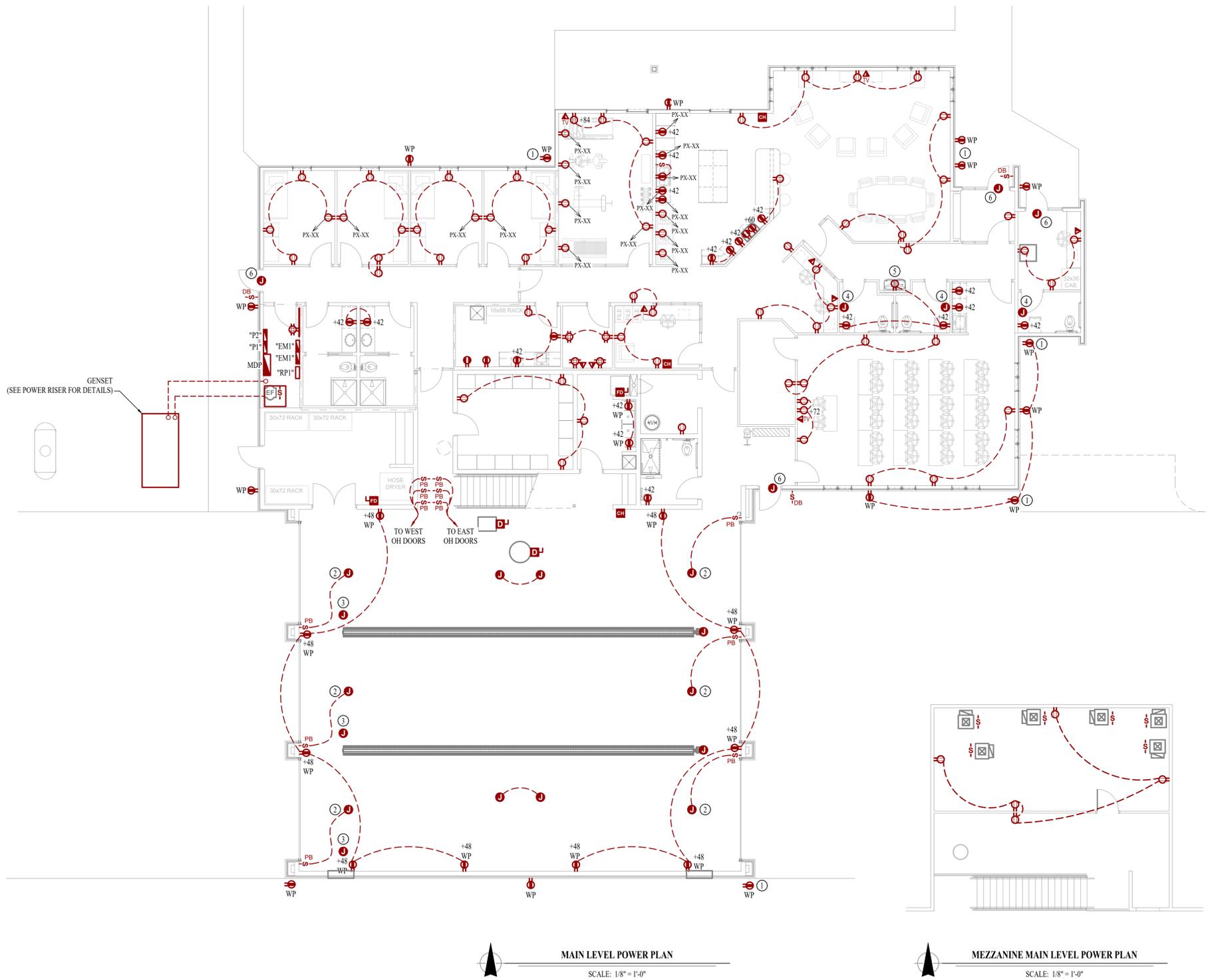


**POWER PLAN GENERAL NOTES:**

- SEE SHEET E501 FOR ADDITIONAL ELECTRICAL NOTES, DETAILS, & SCHEDULES.
- ALL EMERGENCY DUPLEX/QUADRUPEX OUTLETS & FACEPLATES SHALL BE RED IN COLOR.

**POWER PLAN KEY NOTES:**

- OUTLETS LOCATED IN EXTERIOR SOFFIT FOR HOLIDAY LIGHTING. COORDINATE EXACT LOCATION WITH ARCHITECT.
- POWER FOR GARAGE DOOR OPENER WITH (2) PUSH BUTTON CONTROLLERS. COORDINATE EXACT LOCATION OF OPENER WITH GARAGE DOOR INSTALLER.
- POWER FOR EXHAUST SOURCE-CAPTURE SYSTEM; COORDINATE EXACT LOCATION & REQUIREMENTS WITH EQUIPMENT SUPPLIER / INSTALLER.
- PROVIDE & INSTALL HAND-DRYER EQUAL TO XELERATOR #XL SERIES. VERIFY FINISH WITH OWNER. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION / MOUNTING HEIGHT.
- RECEPTACLE GFCI-PROTECTED THRU UPSTREAM GFCI. LOCATE RECEPTACLE BEHIND DRINKING FOUNTAIN SHROUD; COORDINATE WITH PLUMBING CONTRACTOR.
- POWER FOR ACCESS CONTROLS. COORDINATE EXACT LOCATION & REQUIREMENTS WITH DOOR HARDWARE SUPPLIER/INSTALLER.



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SHEET TITLE

MAIN LEVEL POWER PLAN

SHEET NUMBER

**EP101**

PRELIMINARY

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LIGHTING PLAN SYMBOL LEGEND

- XI — "XI" INDICATES FIXTURE TYPE (REFER TO SCHEDULE)
  - — LIGHTING FIXTURE
  - EM — "EM" INDICATES EMERGENCY BATTERY BACKUP
  - NL — "NL" INDICATES UN-SWITCHED NIGHT LIGHT
  - EXIT LIGHT
  - INDICATES REQUIRED REMOTE HEAD
  - EMERGENCY EGRESS LIGHT
  - SWITCH (WALL MOUNTED)
    - SWITCH TYPE:
    - 3 = 3-WAY
    - 4 = 4-WAY
    - OP = PASSIVE INFRARED OCCUPANCY SENSOR
    - OI = ULTRASONIC OCCUPANCY SENSOR
    - OT = DUAL-TECHNOLOGY OCCUPANCY SENSOR
    - VP = PASSIVE INFRARED VACANCY SENSOR
    - VU = ULTRASONIC VACANCY SENSOR
    - VT = DUAL-TECHNOLOGY VACANCY SENSOR
    - M = MOMENTARY SWITCH
    - SS = SCENE SWITCH
  - DIMMER SWITCH (WALL MOUNTED)
    - SWITCH TYPE:
    - SEE "SWITCH (WALL MOUNTED)" FOR TYPE DESIGNATIONS
  - SWITCH (CEILING MOUNTED)
    - SWITCH TYPE:
    - SEE "SWITCH (WALL MOUNTED)" FOR TYPE DESIGNATIONS
  - POWER PACK
- OCCUPANCY SENSOR**
- AUTO FULL-ON (OR 50% IF NOTED)
  - AUTOMATICALLY TURN OFF LIGHTING AFTER 20 MINUTES WITHOUT OCCUPANT DETECTION
  - WITH MANUAL OVERRIDE CONTROL (IF NOTED)
- VACANCY SENSOR**
- MANUAL FULL-ON
  - AUTOMATICALLY TURN OFF LIGHTING AFTER 20 MINUTES WITHOUT OCCUPANT DETECTION
  - WITH MANUAL OVERRIDE CONTROL (IF NOTED)

LIGHTING PLAN GENERAL NOTES:

1. SEE SHEET E501 FOR ADDITIONAL ELECTRICAL NOTES, DETAILS, & SCHEDULES.
2. OCCUPANCY / VACANCY SENSOR QUANTITIES AND GENERAL LOCATIONS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE AND INSTALL SENSOR WITH SPACING PER MANUFACTURER SPECIFICATIONS AND INCLUDE ADDITIONAL SENSORS IF NECESSARY. CEILING-MOUNTED SENSORS SHALL BE INSTALLED WITHIN MANUFACTURER'S ACCEPTABLE MOUNTING HEIGHT RANGE.

LIGHTING PLAN KEY NOTES:

① WIRE THRU 'LCP1' RELAY #.



MAIN LEVEL LIGHTING PLAN  
SCALE: 1/8" = 1'-0"

MEZZANINE LIGHTING PLAN  
SCALE: 1/8" = 1'-0"

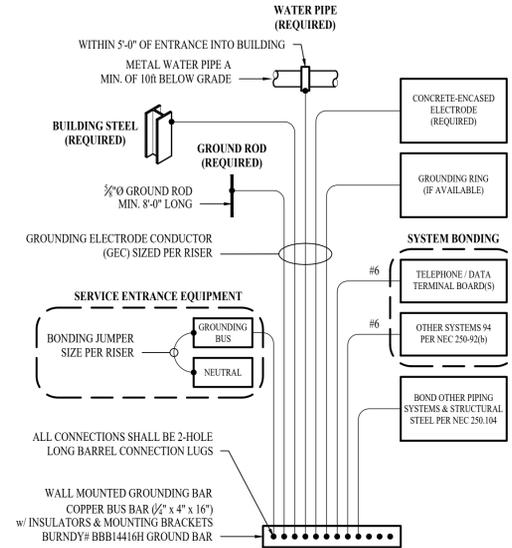
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SHEET TITLE  
LIGHTING PLAN

SHEET NUMBER  
EL101

**ELECTRICAL SPECIFICATIONS**

1. GENERAL
  - 1.1. THE ENTIRE ELECTRICAL SYSTEM SHALL BE CONTINUOUSLY GROUNDED. EVERY BRANCH CONDUIT SHALL INCLUDE A GREEN GROUND CONDUCTOR SIZED PER NEC.
  - 1.2. ARC-FAULT CIRCUITS SHALL BE RUN WITH A DEDICATED NEUTRAL AS REQUIRED BY MANUFACTURER.
  - 1.3. PROVIDE PERMANENT ARC-FLASH LABEL AFFIXED TO EVERY DISCONNECT AND PANEL.
  - 1.4. PROVIDE TYPE WRITTEN PANEL SCHEDULE FOR EACH PANEL.
2. MATERIALS
  - 2.1. CONDUIT & CONDUCTORS
    - 2.1.1. ALL CONDUCTORS SIZES INDICATED ON PLANS ARE COPPER UNLESS NOTED OTHERWISE.
    - 2.1.2. ABOVE GRADE CONDUCTORS SHALL BE THIN COPPER. BELOW GRADE CONDUCTORS SHALL BE XHHW-2.
    - 2.1.3. MINIMUM CONDUCTOR SIZE SHALL BE #12 UNLESS NOTED OTHERWISE. 120V, 20 AMP CIRCUITS WITH CONDUCTOR LENGTH GREATER THAN 100' SHALL BE MINIMUM #10. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MEASURING ACTUAL CONDUCTOR LENGTH AND INCREASING CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP AS REQUIRED BY NEC.
    - 2.1.4. RIGID GALVANIZED OR SCHEDULE 40 PVC CONDUIT SHALL BE USED FOR SERVICE WIRING, BELOW GRADE INSTALLATIONS, OR WHERE EXPOSED TO WEATHER.
    - 2.1.5. IN APPLICATIONS OTHER THAN THOSE LISTED IN 2.1.4, EMT OR MC CABLE IS ACCEPTABLE. WHERE CONDUCTORS ARE PROTECTED FROM DAMAGE, ENCLOSED IN BUILDING MATERIALS, AND CONSTRUCTION IS OF A PERMITTED TYPE, NM CABLE MAY BE USED.
  - 2.2. DEVICES
    - 2.2.1. CONTRACTOR TO PROVIDE J-BOXES, COVER PLATES, AND ANY ACCESSORIES REQUIRED TO PROVIDE A COMPLETE SYSTEM. SEE ARCHITECTURAL PLANS FOR DEVICE COLORS.
    - 2.2.1. DUPLEX RECEPTACLES SHALL BE TAMPER RESISTANT, 20 AMP, EQUAL TO LEVITON CR20.
    - 2.2.2. TOGGLE WALL SWITCHES SHALL BE EQUAL TO LEVITON CS120-2
    - 2.2.3. DIMMER SWITCHES SHALL BE TESTED WITH FIXTURES AND LAMPS FOR COMPATIBILITY.
3. EMERGENCY LIGHTING
  - 3.1. THE BRANCH CIRCUIT FEEDING THE EMERGENCY FIXTURE SHALL BE THE SAME BRANCH CIRCUIT AS THAT SERVING THE NORMAL LIGHTING IN THE AREA AND CONNECTED AHEAD OF ANY LOCAL SWITCHES.



**TYPICAL GROUNDING & BONDING DETAIL**

**LIGHTING FUNCTION TESTING NOTES:**

1. LIGHTING COMMISSIONING TO BE PERFORMED PRIOR TO FINAL INSPECTION. THE DESIGN PROFESSIONAL SHALL PROVIDE EVIDENCE THAT THE LIGHTING CONTROL SYSTEMS HAVE BEEN TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS. FUNCTIONAL TESTING SHALL BE IN ACCORDANCE WITH 2018 IECC SECTION C408.3, AS FOLLOWS
  - 2.1. OCCUPANCY SENSOR CONTROLS
    - 2.1.1. VERIFY SENSOR(S) IS LOCATED AND AIMED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
    - 2.1.2. FOR PROJECTS WITH SEVEN OR FEWER OCCUPANCY SENSORS, EACH SENSOR SHALL BE TESTED.
    - 2.1.3. FOR PROJECTS WITH MORE THAN SEVEN OCCUPANCY SENSORS, TESTING SHALL BE DONE FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY.
  - 2.4. OCCUPANCY CONTROLS TO BE TESTED TO VERIFY THE FOLLOWING:
    - 2.4.1. WHERE OCCUPANCY SENSORS INCLUDE STATUS INDICATORS, VERIFY CORRECT OPERATION.
    - 2.4.2. CONTROLLED LIGHTS TURN OFF OR DOWN TO PERMITTED LEVEL WITHIN THE REQUIRED TIME.
    - 2.4.3. FOR AUTO ON OCCUPANCY SENSORS, THE LIGHTS TURN ON TO PERMITTED LEVEL WHEN OCCUPANT ENTERS SPACE.
    - 2.4.4. FOR MANUAL ON OCCUPANCY SENSORS, THE LIGHTS TURN ON ONLY WHEN ACTIVATED.
    - 2.4.5. LIGHTS ARE NOT INCORRECTLY SWITCHED ON BY MOVEMENTS IN ADJACENT AREAS OR BY HVAC OPERATION IN SPACE.
3. TIME SWITCH CONTROLS
  - 3.1. WHERE TIME SWITCH CONTROLS ARE PROVIDED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:
    - 3.1.1. CONFIRM THAT THE TIME SWITCH IS PROGRAMMED WITH ACCURATE WEEKDAY, WEEKEND, AND HOLIDAY SCHEDULES.
    - 3.1.2. PROVIDE DOCUMENTATION TO THE OWNER OF THE TIME SWITCH SCHEDULES, SET-UP, AND PREFERENCE SETTINGS.
    - 3.1.3. VERIFY CORRECT TIME AND DATE.
    - 3.1.4. VERIFY BATTERY BACKUP IS INSTALLED AND ENERGIZED IF APPLICABLE.
    - 3.1.5. VERIFY OVERRIDE TIME LIMIT IS NOT MORE THAN 2 HOURS.
    - 3.1.6. FORCE TIME SWITCH TO OCCUPIED CONDITION AND VERIFY THE FOLLOWING:
      - 3.1.6.1. ALL LIGHTS TURN ON AND OFF BY THEIR RESPECTIVE AREA CONTROL SWITCH.
      - 3.1.6.2. SWITCH ONLY OPERATES LIGHTING IN ENCLOSED SPACE IN WHICH SWITCH IS LOCATED.
    - 3.1.7. FORCE TIME SWITCH TO UNOCCUPIED CONDITION AND VERIFY THE FOLLOWING:
      - 3.1.7.1. NONE EXEMPT LIGHTING IS TURNED OFF.
      - 3.1.7.2. MANUAL OVERRIDE SWITCH ALLOWS ONLY THE LIGHTS IN THE ENCLOSED SPACE WHERE THE OVERRIDE SWITCH IS LOCATED TO TURN ON, OR REMAIN ON UNTIL THE NEXT SCHEDULED EVENT OCCURS.
4. DAYLIGHT RESPONSIVE CONTROLS
  - 4.1. WHERE DAYLIGHT RESPONSIVE CONTROLS ARE PROVIDED, VERIFY THE FOLLOWING:
    - 4.1.1. CONTROL DEVICES ARE PROPERLY LOCATED, FIELD CALIBRATED, AND SET FOR ACCURATE SETPOINTS AND THRESHOLD LIGHT LEVELS.
    - 4.1.2. DAYLIGHT CONTROLLED LIGHTING LOADS ADJUST TO LIGHT LEVEL SETPOINT IN RESPONSE TO AVAILABLE DAYLIGHT.
    - 4.1.3. CALIBRATION ADJUSTMENT EQUIPMENT IS LOCATED FOR READY ACCESS ONLY BY AUTHORIZED PERSONNEL.
5. DOCUMENTATION OF THE FOLLOWING MUST BE PROVIDED TO THE OWNER WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATION OF OCCUPANCY.
  - 5.1. CONSTRUCTION DRAWINGS INDICATING THE LOCATION AND CATALOG NUMBER OF EACH PIECE OF EQUIPMENT.
  - 5.2. OPERATION AND MAINTENANCE MANUALS, INCLUDING THE FOLLOWING:
    - 5.2.1. NAME AND ADDRESS OF NOT LESS THAN ONE SERVICE AGENCY FOR THE INSTALLED LIGHTING EQUIPMENT.
    - 5.2.2. A NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE INCLUDING RECOMMENDED SET-POINTS.
    - 5.2.3. SUBMITTAL DATA INDICATING THE LOCATION AND CATALOG NUMBER OF EACH PIECE OF EQUIPMENT.
    - 5.2.4. OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF LIGHTING EQUIPMENT AND LIGHTING CONTROLS.
    - 5.2.5. A SCHEDULE FOR INSPECTION AND RECALIBRATING ALL LIGHTING CONTROLS.
  - 5.3. A REPORT INCLUDING THE FOLLOWING:
    - 5.3.1. RESULTS OF THE FUNCTIONAL TESTING ABOVE.
    - 5.3.2. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.

PANEL 'P1' SCHEDULE									
VOLTAGE		PANEL SIZE		MOUNTING		AIC RATING			
208Y/120V 3-PH		200A MLO		SURFACE OR RECESSED		22,000		PHASE "A" LOAD 0	
NEMA RATING: 1								PHASE "B" LOAD 0	
								PHASE "C" LOAD 0	
CIRCUIT NUMBER	DESCRIPTION	BREAKER SIZE	AMPS	PHASE	AMPS	BREAKER SIZE	DESCRIPTION	CIRCUIT NUMBER	
1				A				2	
3				B				4	
5				C				6	
7				A				8	
9				B				10	
11				C				12	
13				A				14	
15				B				16	
17				C				18	
19				A				20	
21				B				22	
23				C				24	
25				A				26	
27				B				28	
29				C				30	
31				A				32	
33				B				34	
35				C				36	
37				A				38	
39				B				40	
41				C				42	
43				A				44	
45				B				46	
47				C				48	
49				A				50	
51				B				52	
53				C				54	
55				A				56	
57				B				58	
59				C				60	
61				A				62	
63				B				64	
65				C				66	
67				A				68	
69				B				70	
71				C				72	
73				A				74	
75				B				76	
77				C				78	
79				A				80	
81				B				82	
83				C				84	

NOTES:  
 A: PANEL SHALL BE EQUAL TO SQUARE D MODEL "QO"  
 B: ELECTRICIAN SHALL VERIFY BREAKER WITH EQUIPMENT PRIOR TO PURCHASE & INSTALL.  
 C: AFTER COMPLETION OF WORK, ELECTRICIAN SHALL PROVIDE A TYPE WRITTEN PANEL DIRECTORY IN NEW PANEL.

MAIN DISTRIBUTION PANEL SCHEDULE									
VOLTAGE		PANEL SIZE		MOUNTING		AIC RATING			
208Y/120V 3-PH		800A MLO		SURFACE OR RECESSED		22,000		PHASE "A" LOAD 0	
NEMA RATING: 1								PHASE "B" LOAD 0	
								PHASE "C" LOAD 0	
DESCRIPTION	BREAKER SIZE	AMPS	PHASE	AMPS	BREAKER SIZE	DESCRIPTION			
			A						
			B						
			C						
			A						
			B						
			C						
			A						
			B						
			C						
			A						
			B						
			C						
			A						
			B						
			C						
			A						
			B						
			C						

NOTES:  
 A: PANEL SHALL BE EQUAL TO SQUARE D "I-LINE" SERIES FOR 208V "NP" SERIES FOR 480V  
 B: ELECTRICIAN SHALL VERIFY BREAKER WITH EQUIPMENT PRIOR TO PURCHASE & INSTALL.  
 C: AFTER COMPLETION OF WORK, ELECTRICIAN SHALL PROVIDE A TYPE WRITTEN PANEL DIRECTORY IN NEW PANEL.

PANEL 'P2' SCHEDULE									
VOLTAGE		PANEL SIZE		MOUNTING		AIC RATING			
208Y/120V 3-PH		200A MLO		SURFACE OR RECESSED		22,000		PHASE "A" LOAD 0	
NEMA RATING: 1								PHASE "B" LOAD 0	
								PHASE "C" LOAD 0	
CIRCUIT NUMBER	DESCRIPTION	BREAKER SIZE	AMPS	PHASE	AMPS	BREAKER SIZE	DESCRIPTION	CIRCUIT NUMBER	
1				A				2	
3				B				4	
5				C				6	
7				A				8	
9				B				10	
11				C				12	
13				A				14	
15				B				16	
17				C				18	
19				A				20	
21				B				22	
23				C				24	
25				A				26	
27				B				28	
29				C				30	
31				A				32	
33				B				34	
35				C				36	
37				A				38	
39				B				40	
41				C				42	
43				A				44	
45				B				46	
47				C				48	
49				A				50	
51				B				52	
53				C				54	
55				A				56	
57				B				58	
59				C				60	
61				A				62	
63				B				64	
65				C				66	
67				A				68	
69				B				70	
71				C				72	
73				A				74	
75				B				76	
77				C				78	
79				A				80	
81				B				82	
83				C				84	

NOTES:  
 A: PANEL SHALL BE EQUAL TO SQUARE D MODEL "QO"  
 B: ELECTRICIAN SHALL VERIFY BREAKER WITH EQUIPMENT PRIOR TO PURCHASE & INSTALL.  
 C: AFTER COMPLETION OF WORK, ELECTRICIAN SHALL PROVIDE A TYPE WRITTEN PANEL DIRECTORY IN NEW PANEL.

**PRELIMINARY**

James Watson, P.E. "Month DD, 20YY"  
 PE-2015017071  
 MO Certificate of Authority # 2018029680



**J-SQUARED ENGINEERING**

2401 Bernadette Drive, Suite 201  
 Columbia, Missouri 65203  
 573 - 234 - 4492 phone  
 www.j-squareeng.com

J2 PROJECT No: J20368  
 J2 DESIGN: ACW

ISSUE TITLE: DATE  
 DESIGN DEVELOPMENT 08 / 13 / 2021

Mechanical - Electrical - Plumbing Design Drawings for  
**City of Columbia, Missouri**  
**Fire Station #11**  
 Scott Boulevard  
 Columbia, Boone County, Missouri 65203

SHEET TITLE

**ELECTRICAL DETAILS & SCHEDULES**

SHEET NUMBER  
**E501**

**SANITARY SEWER PLAN SYMBOL LEGEND**

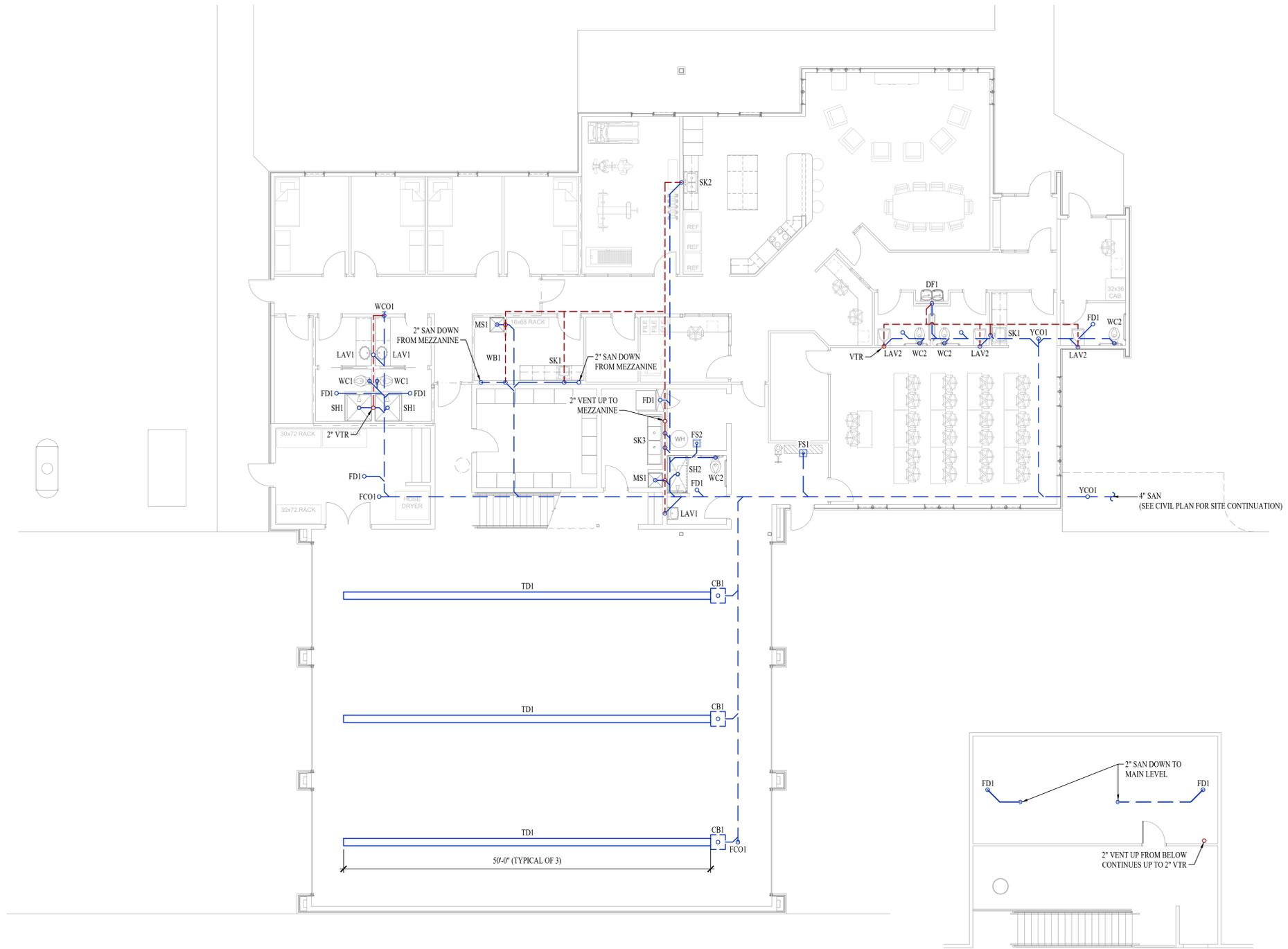
- SANITARY SEWER PIPING
- VENT PIPING
- PIPING TURNED DOWN / TURNED UP
- ✕ TIE INTO EXISTING

**SANITARY SEWER PLAN GENERAL NOTES:**

1. SEE SHEET PS01 FOR ADDITIONAL PLUMBING NOTES, DETAILS, & SCHEDULES.

**SANITARY SEWER PLAN KEY NOTES:**

- ① ###



**MAIN LEVEL SANITARY SEWER PLAN**  
SCALE: 1/8" = 1'-0"

**MEZZANINE MAIN LEVEL SANITARY SEWER PLAN**  
SCALE: 1/8" = 1'-0"

**PRELIMINARY**

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SHEET TITLE  
**MAIN LEVEL SANITARY SEWER PLAN**

SHEET NUMBER  
**PS101**



**PLUMBING SPECIFICATIONS**

1. GENERAL
  - 1.1. PLUMBING CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL ESCUTCHEONS, 1/2 TURN STOPS, P-TRAPS, AND SUPPLY LINES TO PROVIDE A COMPLETE SYSTEM AT EACH FIXTURE INDICATED ON PLANS UNLESS NOTED OTHERWISE.
2. SANITARY
  - 2.1. BELOW AND ABOVE GRADE WASTE AND VENT PIPING IN BUILDING TO BE SOLID CORE SCH. 40 PVC DWV.
  - 2.2. NO PIPE SMALLER THAN 2" BELOW GRADE.
  - 2.3. WASTE AND VENT PIPING IN PLENUMS TO BE CAST IRON, OR PVC WITH AN INSULATION WRAP LISTED FOR USE AS SUCH AN ASSEMBLY.
  - 2.4. ALL VENT PIPE TERMINATIONS ARE TO BE LOCATED EITHER 10' HORIZONTALLY OR 3' ABOVE MECHANICAL AIR INTAKE LOCATIONS.
3. DOMESTIC WATER
  - 3.1. DOMESTIC WATER PIPING TO BE EITHER COPPER OR PEX. WHERE PEX PIPING IS USED, IT SHALL BE INCREASED ONE PIPE SIZE FROM WHAT IS INDICATED ON PLANS FOR ALL PORTIONS OF THE SYSTEM.
  - 3.2. PEX-A MAY BE INSTALLED AT SIZES INDICATED ON PLANS IF AN ENGINEERED PLAN IS SUBMITTED SHOWING ACCEPTABLE PRESSURE DROPS AND FLUID VELOCITIES. APPROVAL MUST BE GRANTED PRIOR TO PURCHASE AND INSTALLATION.
  - 3.3. COPPER WATER PIPING BELOW GRADE SHALL BE TYPE "K". BELOW GRADE JOINTS SHALL BE SILVER SOLDERED. THERE SHALL BE NO JOINTS IN WATER PIPING LOCATED BENEATH BUILDING SLAB.
  - 3.4. COPPER WATER PIPING ABOVE GRADE SHALL BE TYPE "L".
  - 3.5. PROVIDE WATER HAMMER ARRESTORS AT ALL QUICK-CLOSE VALVES. FIXTURES REQUIRING WATER HAMMER ARRESTORS INCLUDE BUT ARE NOT LIMITED TO FLUSH VALVES, SENSOR FAUCETS, AND WASHING MACHINE BOXES. AIR CHAMBERS ARE NOT ACCEPTABLE.
  - 3.6. DOMESTIC WATER PIPING INSULATION
    - 3.6.1. ALL HW PIPING, WHETHER COPPER OR PEX, SHALL BE INSULATED WITH PLENUM RATED CLOSED CELL ELASTOMERIC INSULATION. FOR PIPING LESS THAN 1/2", INSULATION THICKNESS TO BE 1". FOR PIPING 1/2" OR GREATER, INSULATION THICKNESS SHALL BE 1/2".
    - 3.6.2. CW COPPER PIPING TO INSULATED WITH 1/2" PLENUM RATED CLOSED CELL ELASTOMERIC INSULATION. CW PEX NEED NOT BE INSULATED UNLESS NOTED OTHERWISE.
4. GAS PIPING
  - 4.1. ABOVE GRADE NATURAL GAS AND LP PIPING TO BE SCH. 40 BLACK STEEL WITH CLASS 150 THREADED FITTINGS.
  - 4.2. WHERE PIPING IS EXPOSED ON EXTERIOR FACE OF BUILDING, PAINT TO MATCH BUILDING. PAINT YELLOW IN ALL OTHER LOCATIONS.
  - 4.3. ON ROOFTOPS, INSTALL GAS PIPE WITH "ROOFTOP BLOX" PER MANUFACTURER'S INSTRUCTION.

**PLUMBING FIXTURE SCHEDULE**

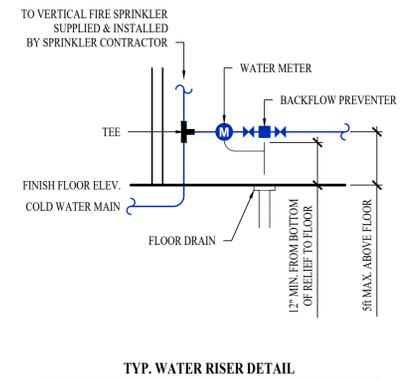
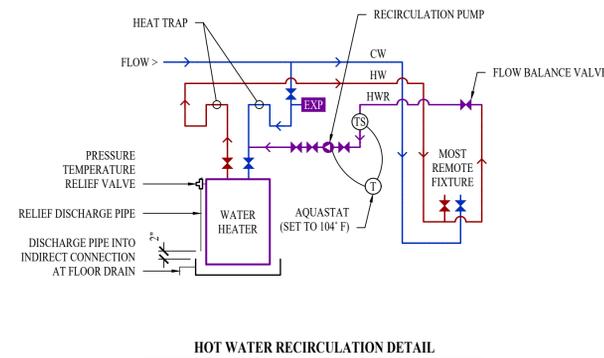
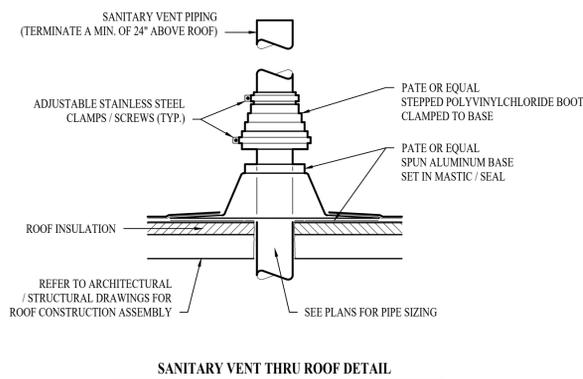
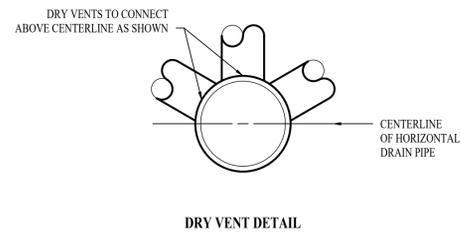
TAG	DESCRIPTION	MANUFACTURER (OR EQUAL)	MODEL (OR EQUAL)	NOTES
BFP1	BACKFLOW PREVENTER	WILKINS	975SXL2	RPZ - SIZE AS INDICATED ON PLANS
CB1	TRENCH DRAIN CATCH BASIN	WATTS	CB-2424T	WITH DUCTILE IRON GRATE & TRASH BASKET
DF1	DRINKING FOUNTAIN	ELKAY	EZSTL8LC	H/L/W
EXP1	EXPANSION TANK	WATTS	PLT-5	
FD1	FLOOR DRAIN	ZURN	Z415-BZ	WITH Z1072 TRAP SEAL
FS1	FLOOR SINK	ZURN	FD2370	WITH DOME STRAINER & FULL-GRATE
FS2	FLOOR SINK	ZURN	FD2370	WITH DOME STRAINER & HALF-GRATE
HB1	HOSE BIBB	JR SMITH	5670-H	INTERIOR HOSE BIB WITH VACUUM BREAKER
LAV1	LAVATORY (DROP-IN W/ MANUAL FAUCET)	AMERICAN STANDARD	0475.028	WITH ZURN Z81104-XL FAUCET, 1/4 TURN STOPS, AND BRAIDED STAINLESS STEEL SUPPLIES
LAV2	LAVATORY (WALL HUNG W/HARD WIRED SENSOR FAUCET)	AMERICAN STANDARD	0355.012	WITH ZURN Z6915-XL-L-HW6-TMV-1 FAUCET, 1/4 TURN STOPS, BRAIDED STAINLESS STEEL SUPPLIES, AND TRUBRO LAV GUARD 2. PLUMBER TO INCLUDE P6000-HW6 POWER CONVERTER
MS1	MOP SINK	FIAT	MSB2424	WITH ZURN Z843M1 FAUCET WITH WALL HOOK
RP1	RECIRCULATION PUMP	GRUNDFOS	UP10-15BUA/TLC	
SH1	42"x42" SHOWER	AQUATIC	1423CT	WITH MOEN #82604 POSI-TEMP MIXING VALVE / TRIM KIT
SH2	60"x34" ADA SHOWER	AQUATIC	1608BFC	ORDER FULLY ADA-EQUIPPED WITH GRAB-BARS, HAND-HELD SHOWER ASSEMBLY, SEAT, MIXING VALVE, ETC.
SK1	SINGLE COMPARTMENT SINK (22x19x7)	ELKAY	LR2219	WITH TWO HANDED ZURN Z871C4-XL FAUCET
SK2	DOUBLE COMPARTMENT SINK W/DISPOSAL (33x22x7)	ELKAY	CR3322	WITH TWO HANDED ZURN Z871C4-XL FAUCET AND INSINKERATOR BADGER 1 DISPOSAL WITH POWER CORD
SK3	72" TWO-COMPARTMENT SINK	ADVANCE TABCO	FE-2-1812-18RL-X	WITH REGENCY #600FW812LL FAUCET
TD1	6" WIDE LINEAR TRENCH DRAIN SYSTEM	WATTS	DL-SERIES	6" WIDE SYSTEM WITH DUCTILE IRON FRAME & GRATE, SEE PLANS FOR OVERALL SYSTEM LENGTH
WB1	WASHER BOX	OATEY	38529	WASHER BOX W/ 1/4 TURN VALVES
WC1	WATER CLOSET - STANDARD HEIGHT - HARD WIRED AUTO FLUSH VALVE	AMERICAN STANDARD	2234.001	WITH ZURN ZEMS6000A-V-WS1-CCP HARDWIRED FLUSH VALVE (1.6 GPM FLUSH) AND CHURCH 9500SSCT SELF SUSTAINING SEAT. PROVIDE WITH ZURN P6000-HW6 POWER CONVERTER.
WC2	WATER CLOSET - ADA HEIGHT - HARD WIRED AUTO FLUSH VALVE	AMERICAN STANDARD	3043.001	WITH ZURN ZEMS6000A-V-WS1-CCP HARDWIRED FLUSH VALVE (1.6 GPM FLUSH) AND CHURCH 9500SSCT SELF SUSTAINING SEAT. PROVIDE WITH ZURN P6000-HW6 POWER CONVERTER.
WCO1	WALL CLEAN OUT	WATTS	CO-460-RD	
WH1	GAS WATER HEATER	A.O. SMITH	BTH-199	100 GALLON, 199MBTU, WITH 'EXPI'
YCO1	YARD CLEAN OUT	ZURN	Z1400	

**NOTES:**  
1. VERIFY NECESSARY FIXTURES MEET ADA REQUIREMENTS WITH ARCHITECT PRIOR TO INSTALLATION

**PLUMBING CONNECTION SIZING SCHEDULE**

FIXTURE	TYPE	TYPICAL ABBREVIATION	SANITARY PIPING		SUPPLY PIPING	
			WASTE CONNECTION	VENT CONNECTION	COLD WATER CONNECTION	HOT WATER CONNECTION
DRINKING FOUNTAIN	DF		1-1/2"	1-1/4"	1/2"	-
FLOOR DRAIN	FD		3"	2"	-	-
HAND / HAIR SINK	HS / SK		2"	1-1/4"	1/2"	1/2"
HOSE BIBB	HB		-	-	3/4"	-
LAVATORY	LAV		1-1/2"	1-1/4"	1/2"	1/2"
MOP SINK	MS		3"	1-1/2"	1/2"	1/2"
ICE MAKER OUTLET BOX	REF		-	-	1/2"	-
SHOWER	SH		3"	1-1/2"	1/2"	1/2"
URINAL	UR		2"	1-1/4"	3/4"	-
WATER CLOSET (FLUSH TANK)	WC		3"	2"	1/2"	-
WATER CLOSET (FLUSH VALVE)	WC		3"	2"	1"	-

**NOTES:**  
1. SIZES SHOWN ABOVE ARE TYPICAL UNLESS NOTED OTHERWISE ON PLANS



**PRELIMINARY**

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PE-2015017071  
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**J-SQUARED ENGINEERING**  
2401 Bernadette Drive, Suite 201  
Columbia, Missouri 65203  
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Mechanical - Electrical - Plumbing Design Drawings for  
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SHEET TITLE  
**PLUMBING DETAILS & SCHEDULES**

SHEET NUMBER  
**P501**