

Building and Grounds Committee
November 18, 2022 4:00 PM
Central Services Board Room

1. Call to Order - Mr. Robert Safdie
2. Moment of Silence and Pledge - Mr. Robert Safdie
3. Approval of Committee Minutes
4. Discussion of Proposed Meeting Dates
5. CCHS Stadium Steps Update
6. CCHS Tennis Court Demolition
7. Martin Elementary Crosswalk Update
8. SMHS Baseball Field House
9. Other Discussion
10. Adjournment

**Building and Ground
Committee Meeting
October 18, 2022
Central Services Board Room**

The Building and Grounds Committee met on Tuesday, October 18, 2022, in the Central Services Board Room where Mr. Robert Safdie called the meeting to order via telephone call at the approximate hour of 5:15 p.m. He welcomed everyone to the meeting and appreciated everyone for attending.

PRESENT:

Mr. Robert Safdie (via phone) District 2	Rebecca Hamby, District 7
Mr. William Stepp, DOS	Anita Hale, District 4
Ms. Teresa Boston, District 8	Nick Davis, District 5
Mary Kington, Maintenance Director	Shannon Stout, District 9
Kim Chamberlin, Uplands Design Group	Mo Charnot, Media
Bryan Parker, SMHS Coach	Jon Hall, CCHS Teacher

Absent:

- 1. Call to Order** – Mr. Robert Safdie
- 2. Moment of Silence/Pledge of Allegiance** – Mr. Nick Davis
- 3. Approval of Minutes** – Mr. Robert Safdie

VOICE VOTE: Stout moved to approve.
Davis (seconder-yes)

MOTION: Carried unanimously

- 4. Nomination for Chairman of the Building and Grounds Committee**-Mr. Safdie expressed interest in being the chair. Voice vote was taken, and it was unanimous for Safdie to continue as Chair.

5. CCHS Auditorium

Safdie introduced the agenda item and asked Chamberlin with Uplands Design Group to discuss the current auditorium plans. Chamberlin presented the group with the detailed plans via power point presentation. Stout asked if any concerns have been brought up. Chamberlin said the orchestra group that uses the auditorium had some questions about acoustics. Nothing pertaining to traffic flow or things of that nature. Stout asked if the tennis courts being removed were the ones that were currently being used. Hall said the 2 being removed were the better of what courts were there. Boston stated that all courts were being removed and it would be the responsibility of the BOE to replace them. Chamberlin stated that he could give a bid to have them rebuild while they were on site if that was something the BOE wanted him to do. Chamberlin said they cannot be resurfaced. He said there are some systems that are out now that are sturdier. Davis asked if an area has been identified to put them or go back in the same location. Chamberlin said the thoughts were to put 6 courts back in the same location if there's adequate room. Hale asked if there would be a fly system incorporated in the building. Chamberlin said someone asked that, but this is something that is a whole other level of complexity along with cat walks and lighting systems. This will be consistent with SMHS auditorium, and they do not have that. Boston asked if the bids were expected to come in close. Chamberlin said asking him now, he would determine this to be a \$10 million dollar project. But in 4 months when it's time to put this on the ground, it could be anywhere since numbers are all over the place right now. Chamberlin said there will be a lot of interest in contractors since it's a clean project and not a renovation. Davis asked if the new building will be cutting into any traffic patterns. Chamberlin said no, it would not. Safdie asked for a motion to approve bid process to send to full board. Davis

made motion. Stout with a second.

VOICE VOTE: Davis (mover-yes)
Stout (seconder-yes)
All Ayes

MOTION: Carried unanimously

6. South Cumberland Elementary Addition

Safdie once again turned this item over to Chamberlin. Chamberlin presented the detailed information to the committee via power point presentation. Boston asked when this would be started. Chamberlin said both projects are planned to start at the beginning of the year for the bids so hopefully when the weather breaks, they can break ground and start the earth work. He said the CCHS would be about 18 months and this one is looking to be about 14 months. Safdie asked for a motion to approve bid process and send to full board. Stout made the motion. Davis with the second.

VOICE VOTE: Stout (mover-yes)
Davis (seconder-yes)
All Ayes

MOTION: Carried unanimously

7. CCHS Stadium Steps

Safdie introduced this item. He then he asked Kington to update. Chamberlin said he would chime in and told everyone that he went over with Kington to look at the steps in question. He said these concrete steps were not replaced in the last project because they looked good then. But now they are deteriorating, and he suggests aluminum risers to go on top of the concrete. He will get more info, but he said replacing them with concrete is going to cause the same problem down the road. He told the committee that there are 2 right now that are in bad shape but 26 total steps. He said he might could add this bid into the auditorium. Safdie asked if this could have the coating placed on them like the steps at the Justice Center. Chamberlin said since the 2 are really broken up, coating would not help those 2. Coating might help the others, but he still feels aluminum would be a best long-term solution. Boston asked if he would know the expense and he said not at this time, but he would get that information. He also said the aluminum bleachers that were installed are separating at the joints in places but he's working to get the contractor back who did those to take care of that issue. Safdie asked Chamberlin to get info to Stepp and Stepp to keep the committee informed.

8. Martin Elementary Crosswalk Update

Safdie turned this over to Kington to discuss. She gave the update of almost completion. She said the new culverts installed in front of the school has helped the flooding issue tremendously. But she said we are on the wait list for getting the rest of the components for completing the last light. She was told those would hopefully be ready in November. Then they will stripe the roadway lastly.

9. Old/New Business

Safdie asked Stepp to give an overview about the SMHS baseball facility issue. There was discussion about a Title 9 issue. Stepp said the baseball parents raised money and built a facility for a field house. Softball was provided other hitting facilities and locker rooms and restrooms during that time. Now the baseball parents have raised more money and would like to build another facility that would match the length for regulations. Softball will then take over the current baseball facility. Which will still provide

them with locker rooms and restrooms elsewhere. Both teams are happy with the proposed project. Davis asked when the project began its inception. Parker said it's been a couple of years now that they have been working toward that building. The basic layout was finalized in August and the final layout was completed by the end of August and those plans were in the hands of the BOE. Boston asked which high school. Stepp replied Stone Memorial. Davis asked as far as legal advice and title 9-would one source be able to answer both pieces of this or would we have to ask multiple people. Stepp said he would directly call Mr. Patton the board attorney and then he would call other people who are experts in that area. Davis asked if there were any specific questions to be mindful of. He wanted to know if we would be able to seek that advice and put those questions to bed. Stepp said that was the goal. Stepp said when its parent grown groups leading the projects that is where legal advice will lead in the best direction. Parker said the softball team has already taken possession of the current facility. Boston asked if the building and grounds would have to approve this facility. Stepp said they would just have to approve the actual structure. He said Kington is working on fire marshal and building and codes and local people that certify the structure which at that point will come back to building and grounds. Boston asked at what point this would be turned back over to SMHS to give permission. Stepp said when they have all the answers to their questions.

10. Adjournment

VOICE VOTE: Stout (mover-yes)
Safdie (seconder-yes)
All Ayes

MOTION: **Carried unanimously.**

The meeting was adjourned at approximately 6:00 pm.

Mr. William Stepp, Director of Schools

Mr. Robert Safdie
Chairman of the Building & Grounds Committee

Diane McCartney
Executive Assistant for the Director of Schools and BOE

Here are the proposed dates for Building and Grounds Meetings:

January 9, 2023 (shifted to second Monday due to New Year's holiday)

February 6, 2023

March 6, 2023

April 3, 2023

May 1, 2023

June 5, 2023

July 10, 2023 (shifted to second Monday due to Independence Day holiday)

August 7, 2023

September 11, 2023 (shifted to second Monday due to Labor Day holiday).

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 www.civilends.com

LOCATION
 Crossville, Tennessee

DRAWN BY
 SMHS Baseball Booster Club

A New Hitting Facility for
STONE MEMORIAL HIGH SCHOOL BASEBALL

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REVISIONS

JOB NO.
SMHS

ISSUE DATE
9-15-2022

SHEET TITLE
SITE PLAN

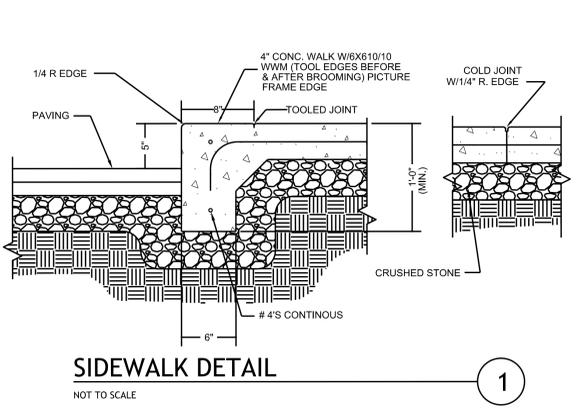
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 BB

REVIEW BY
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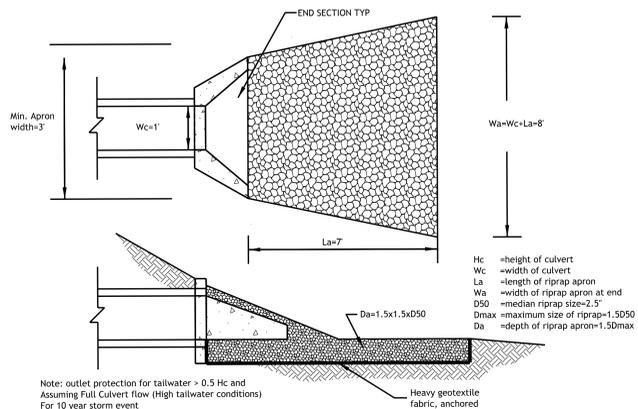
SHEET NO.
C1.1

- GRADING AND DRAINAGE PLAN NOTES:**
1. THE SITE WORK CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDERGROUND UTILITIES WITH HIS WORK. ALL UNDERGROUND UTILITIES (WATER, SANITARY SEWER, STORM SEWER, GAS, ELECTRICAL CONDUIT, IRRIGATION SLEEVES, AND ANY OTHER MISCELLANEOUS UNDERGROUND UTILITIES, DEVICES, OR STRUCTURES), SHALL BE IN-PLACE PRIOR TO THE PLACEMENT OF BASE COURSE MATERIAL.
 2. THE CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
 3. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING SANITARY AND STORM SEWER STRUCTURES, PIPES, AND ALL UTILITIES PRIOR TO CONSTRUCTION.
 4. CLEARING AND GRUBBING LIMITS SHALL INCLUDE ALL AREAS DISTURBED BY GRADING OPERATION.
 5. THE SOIL MATERIALS, SHOWN HEREON, MAY BE DISTURBED BY CUTTING OR FILLING OPERATIONS PERFORMED DURING OR BEFORE DEVELOPMENT.
 6. STRIP BUILDING AND PAVEMENT AREAS OF ALL ORGANIC TOPSOILS. STOCKPILE SUITABLE TOPSOILS FOR RESPREADING ONTO LAWN AND LANDSCAPE AREAS.
 7. FILL UNDER PAVED AREAS AND SLABS ON GRADE SHALL BE COMPACTED TO 98% STANDARD PROCTOR. DEPOSIT FILL MATERIAL IN HORIZONTAL LAYERS AND COMPACT EACH LAYER WITH A MECHANICAL TAMPER. BASE COURSE PAVEMENT SHALL BE COMPACTED TO 100% STANDARD PROCTOR.
 8. IT IS THE EARTHWORK CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SITE SOILS AND ENGINEERED FILLS WITH A WORKABLE MOISTURE CONTENT RANGE TO OBTAIN THE REQUIRED IN-PLACE DENSITY. SCARIFYING AND DRYING OPERATION SHOULD BE INCLUDED IN THE CONTRACTOR'S PRICE AND SHOULD NOT BE CONSIDERED AN EXTRA FOR THE CONTRACT.
 9. FOLLOWING GRADING OF SUBSOIL TO SUBGRADE ELEVATIONS, THE CONTRACTOR SHALL PLACE A MINIMUM OF 6-INCHES OF TOPSOIL IN ALL DISTURBED AREAS WHICH ARE NOT TO BE PAVED. SMOOTHLY FINISH GRADE TO MEET SURROUNDING LAWN AREAS AND ENSURE POSITIVE DRAINAGE. TOPSOIL SHALL BE FREE OF SUBSOIL, DEBRIS, BRUSH AND STONES LARGER THAN 1" IN ANY DIMENSION.
 10. ELEVATIONS GIVEN ARE AT BOTTOM FACE OF CURBS AND/OR FINISHED PAVEMENT GRADE UNLESS OTHERWISE SPECIFIED ON GRADING PLAN. ALL PAVEMENT SHALL BE LAID ON A STRAIGHT, EVEN, AND UNIFORM GRADE WITH A MINIMUM OF 1% SLOPE TOWARD THE COLLECTION POINTS UNLESS OTHERWISE SPECIFIED ON THE GRADING PLAN. DO NOT ALLOW NEGATIVE GRADES OR PONDING OF WATER.
 11. ALL PIPES UNDER PAVED AREAS SHALL BE BACKFILLED TO SUBGRADE WITH COMPACTED CRUSHED STONE.
 12. FILL MATERIAL, IF REQUIRED, SHALL BE BORROWED AT THE CONTRACTOR'S EXPENSE. FILL SHALL BE BORROWED FROM A TOEC PERMITTED SITE.
 13. HDPE STORM SEWER PIPING SHALL BE SMOOTH INTERIOR, CORRUGATED EXTERIOR HDPE BY ADS, HANCOR OR ENGINEER APPROVED EQUAL. REINFORCED CONCRETE PIPE SHALL BE CLASS III.
 14. EXCESS TOPSOIL SHALL BE STOCKPILED ON SITE AT LOCATIONS AS DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
 15. HEADWALLS SHALL BE PRECAST WING WALLS BY BARGER AND SONS, FOLEY PRODUCTS OR ENGINEER APPROVED EQUAL.
 16. CATCH BASINS SHALL BE PRECAST BY BARGER AND SONS OR ENGINEER APPROVED EQUAL. CATCH BASIN FRAME AND GRATES SHALL BE JBS#4315 OR APPROVED EQUAL.

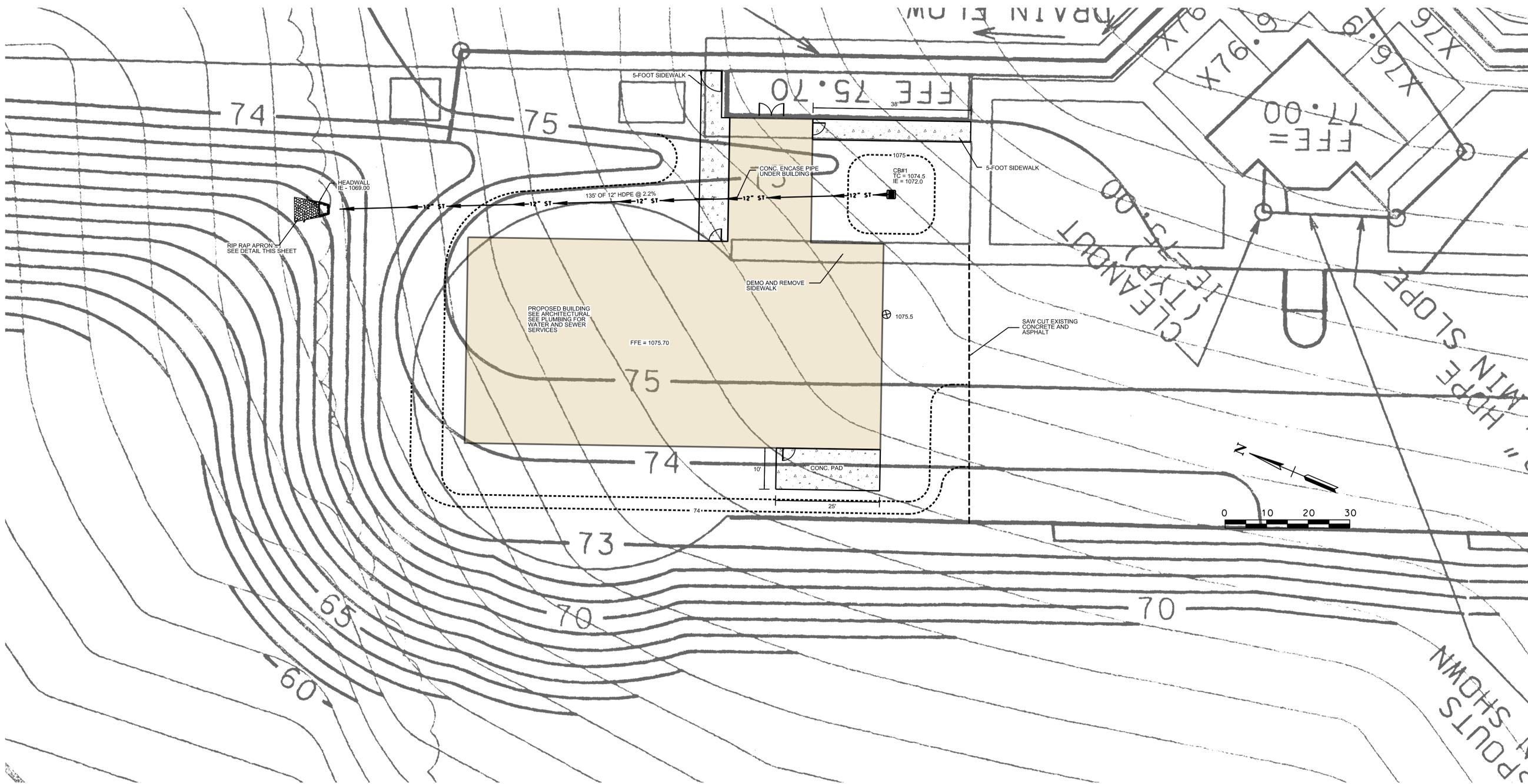
GRADES SHOWN ARE FROM THE SITE'S ORIGINAL DESIGN DRAWINGS. THESE GRADES HAVE NOT BEEN VERIFIED BY THE ENGINEER OR ARCHITECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL GRADES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

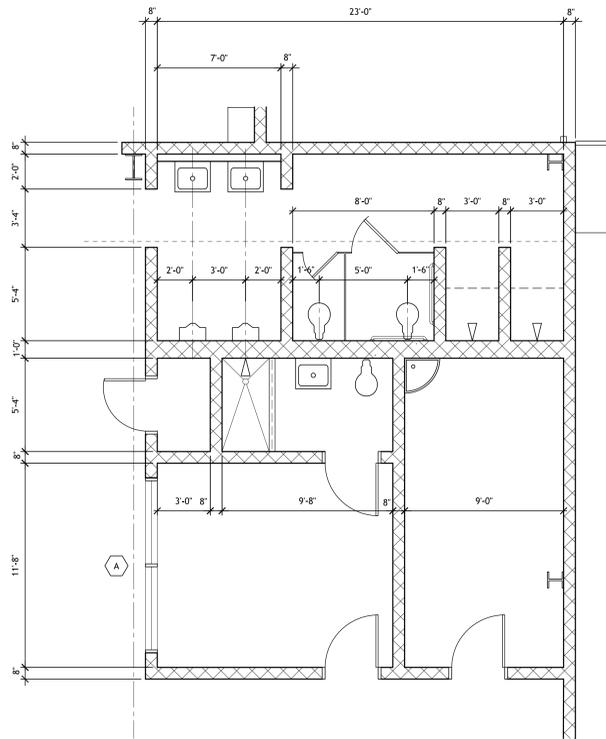


SIDEWALK DETAIL
 NOT TO SCALE



RIPRAP OUTLET PROTECTION
 NOT TO SCALE

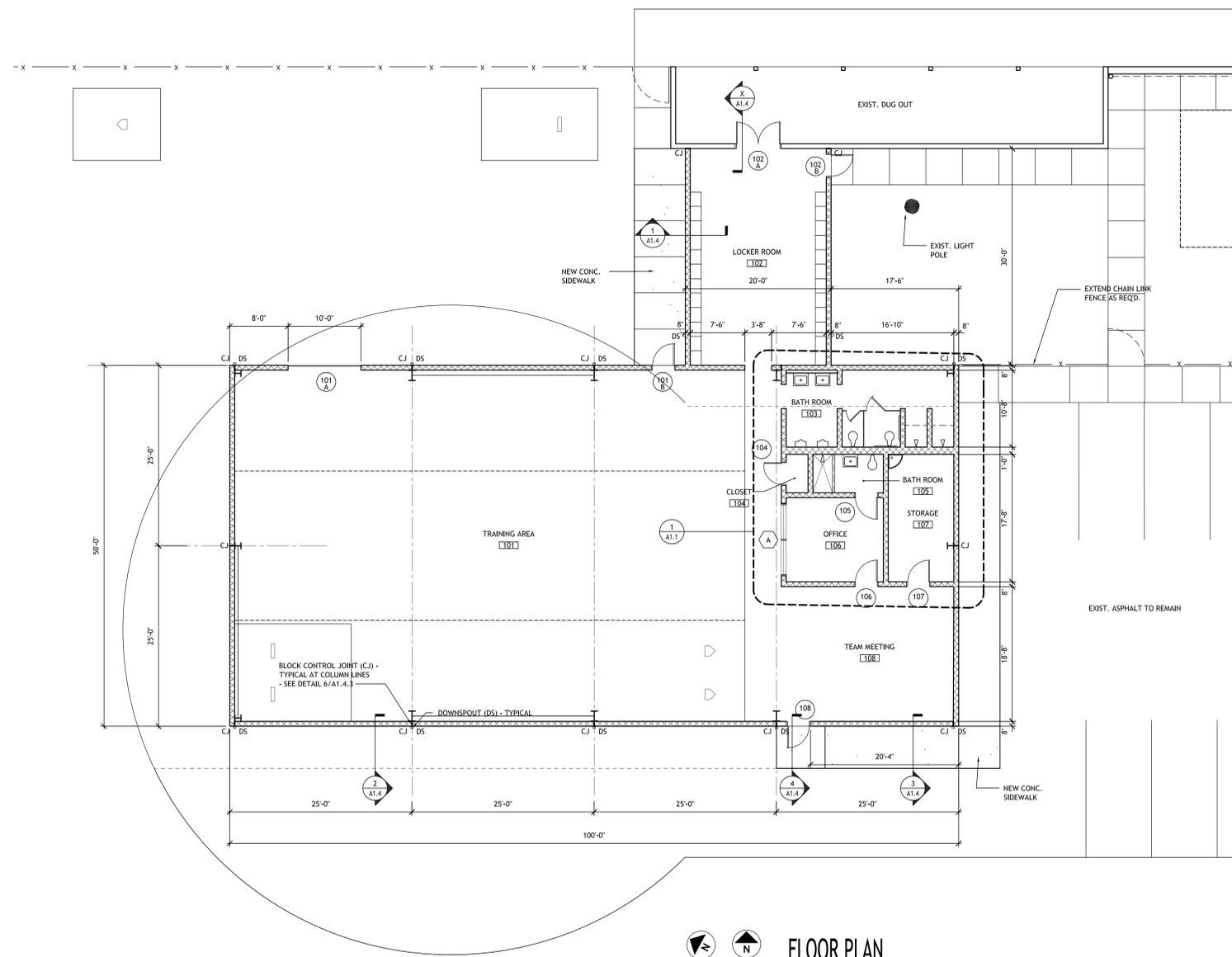




ENLARGED PLAN

1/4"=1'-0"

1



FLOOR PLAN

1/8" = 1'-0"



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**A New Hitting Facility for
 STONE MEMORIAL HIGH SCHOOL BASEBALL**

OWNER
SMHS Baseball Booster Club

LOCATION
Crossville, Tennessee

SEAL

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REVISIONS

JOB NO.
SMHS

ISSUE DATE
9-X-2022

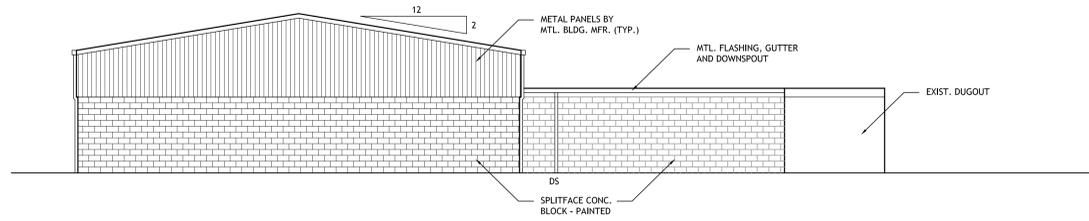
SHEET TITLE
FLOOR PLAN

DRAWN	SHEET NO.
BT	A1.1
REVIEW	
BT	

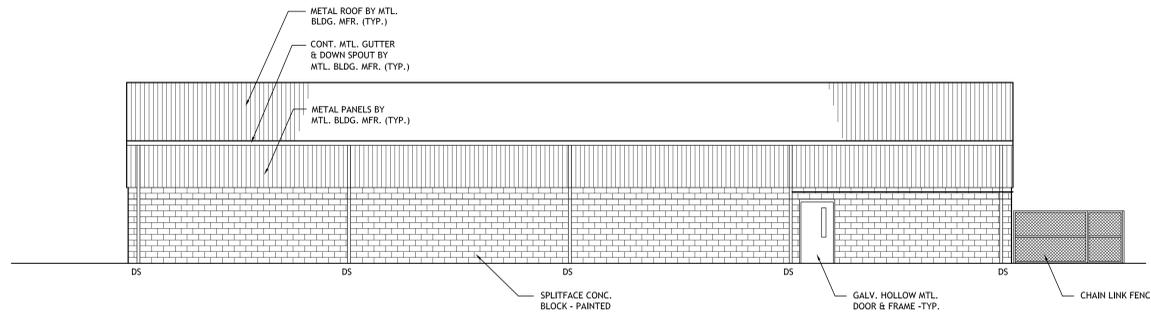


A New Hitting Facility for
STONE MEMORIAL HIGH SCHOOL BASEBALL
 SMHS Baseball Booster Club

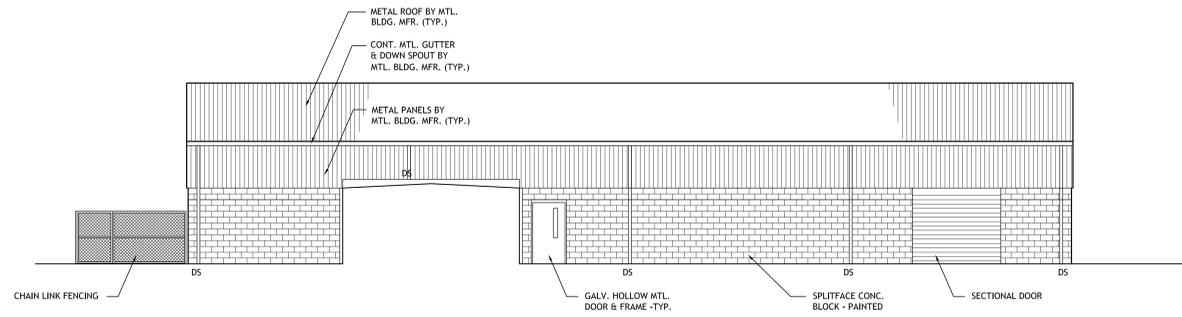
LOCATION
 Crossville, Tennessee



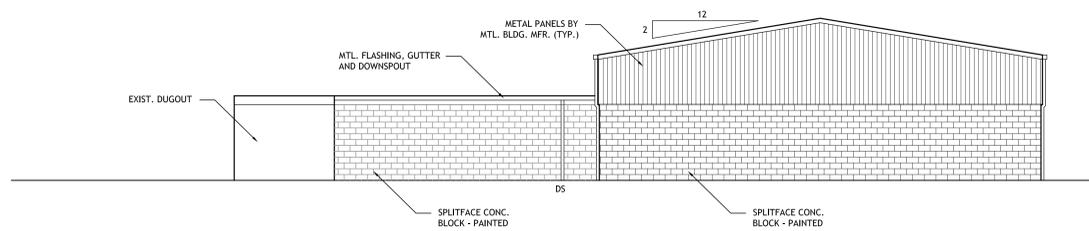
ELEVATION A
 1/8" = 1'-0"



ELEVATION B
 1/8" = 1'-0"



ELEVATION C
 1/8" = 1'-0"



ELEVATION D
 1/8" = 1'-0"

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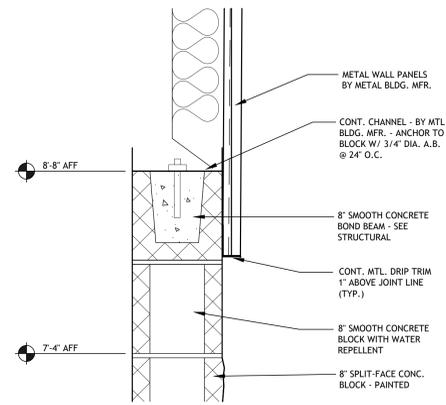
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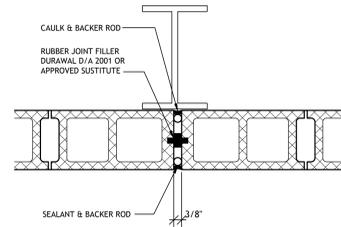
ISSUE DATE
9-X-2022

SHEET TITLE
ELEVATIONS

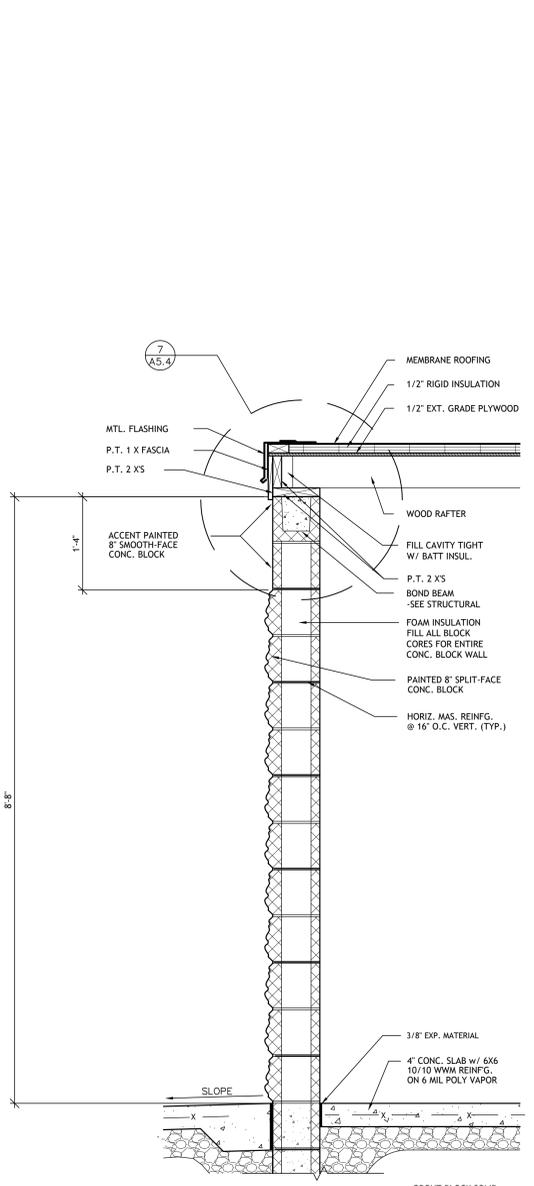
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BT	A1.2
REVIEW	
BT	



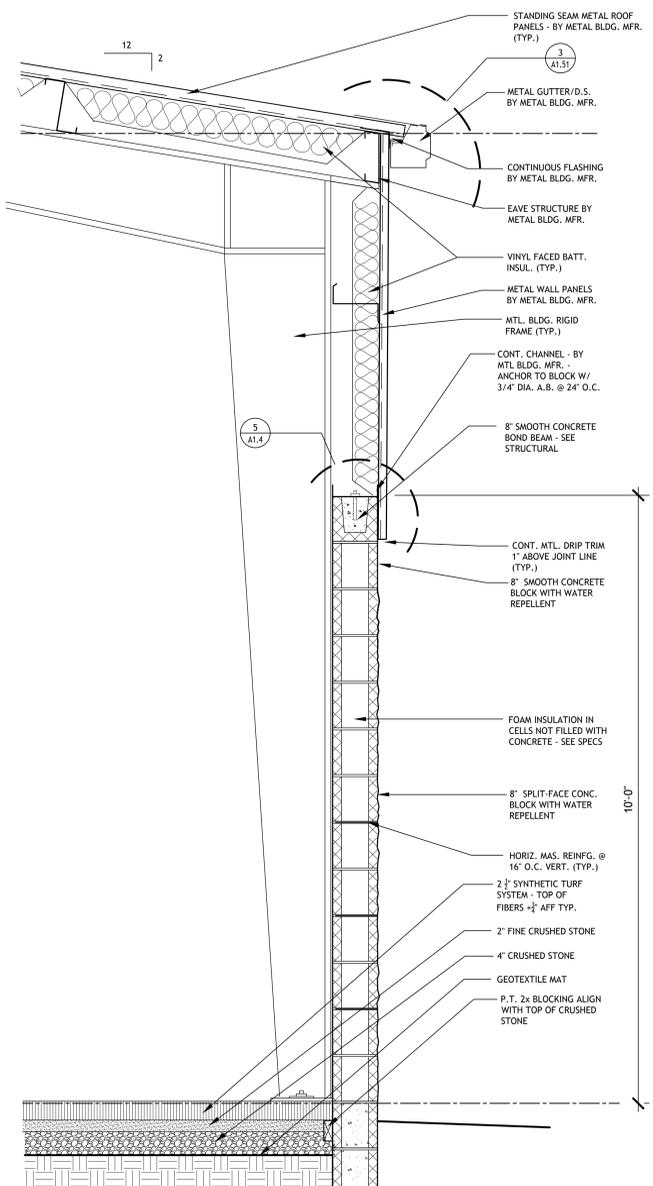
FLASHING DETAIL ⑤



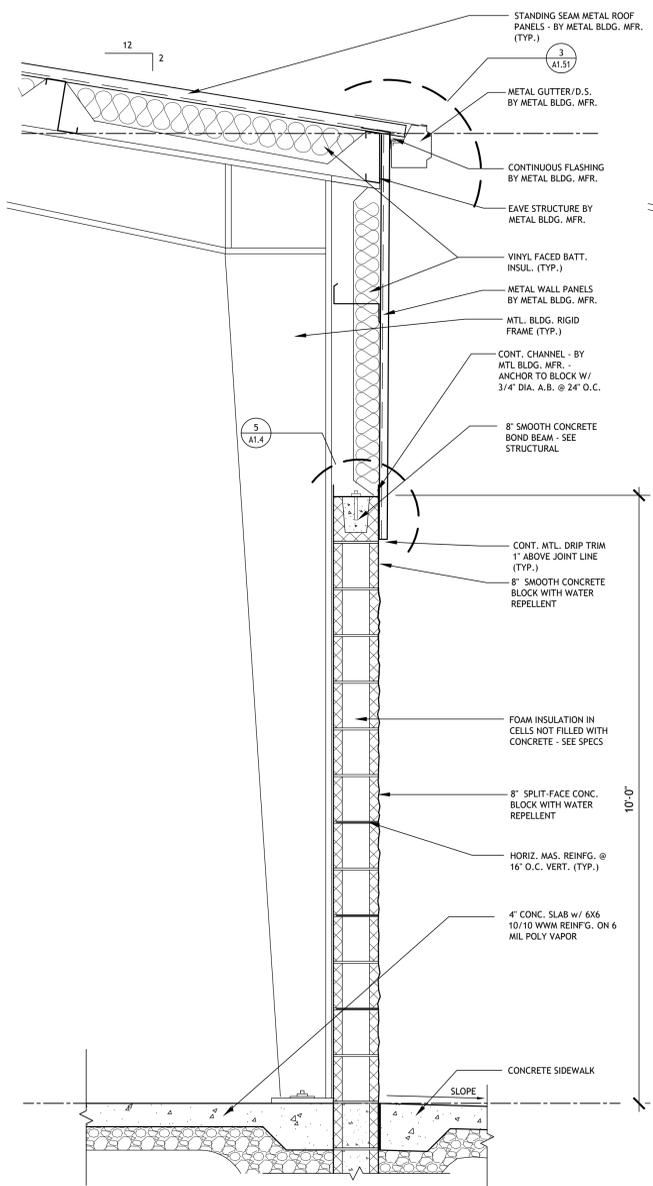
EXT. C.J. DETAIL ⑥



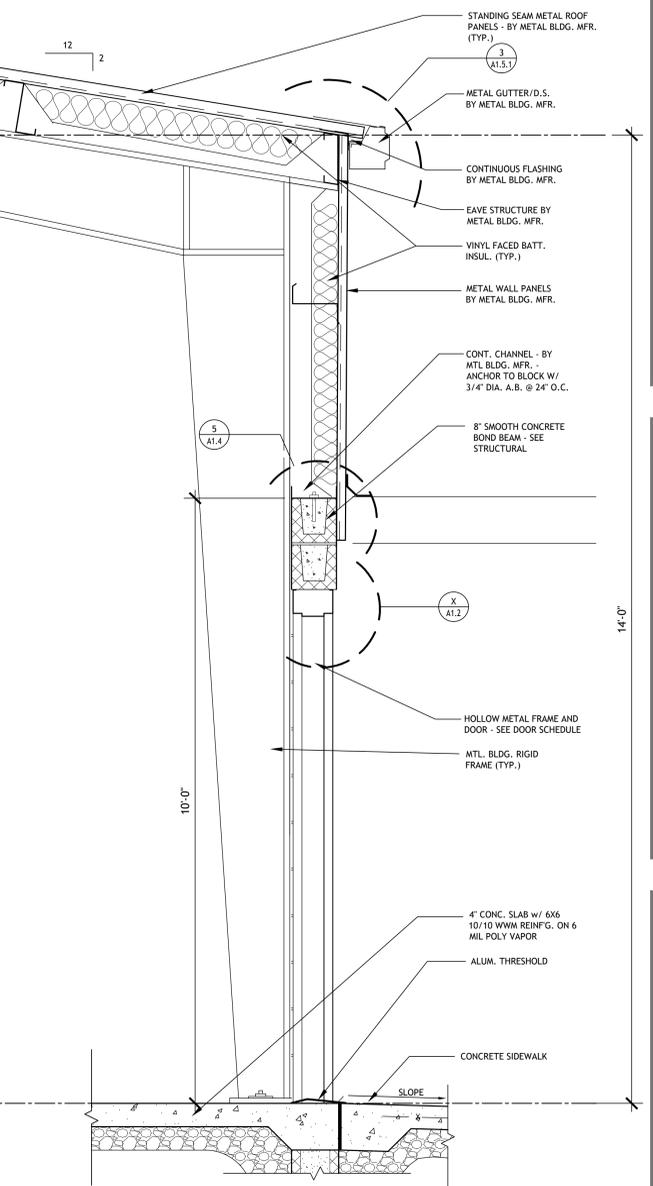
WALL SECTION ①



WALL SECTION ②



WALL SECTION ③



WALL SECTION ④

A new baseball hitting facility for

Stone Memorial High School

SMHS Baseball Booster Club

Crossville, Tennessee

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REVISIONS

JOB NO.

ISSUE DATE

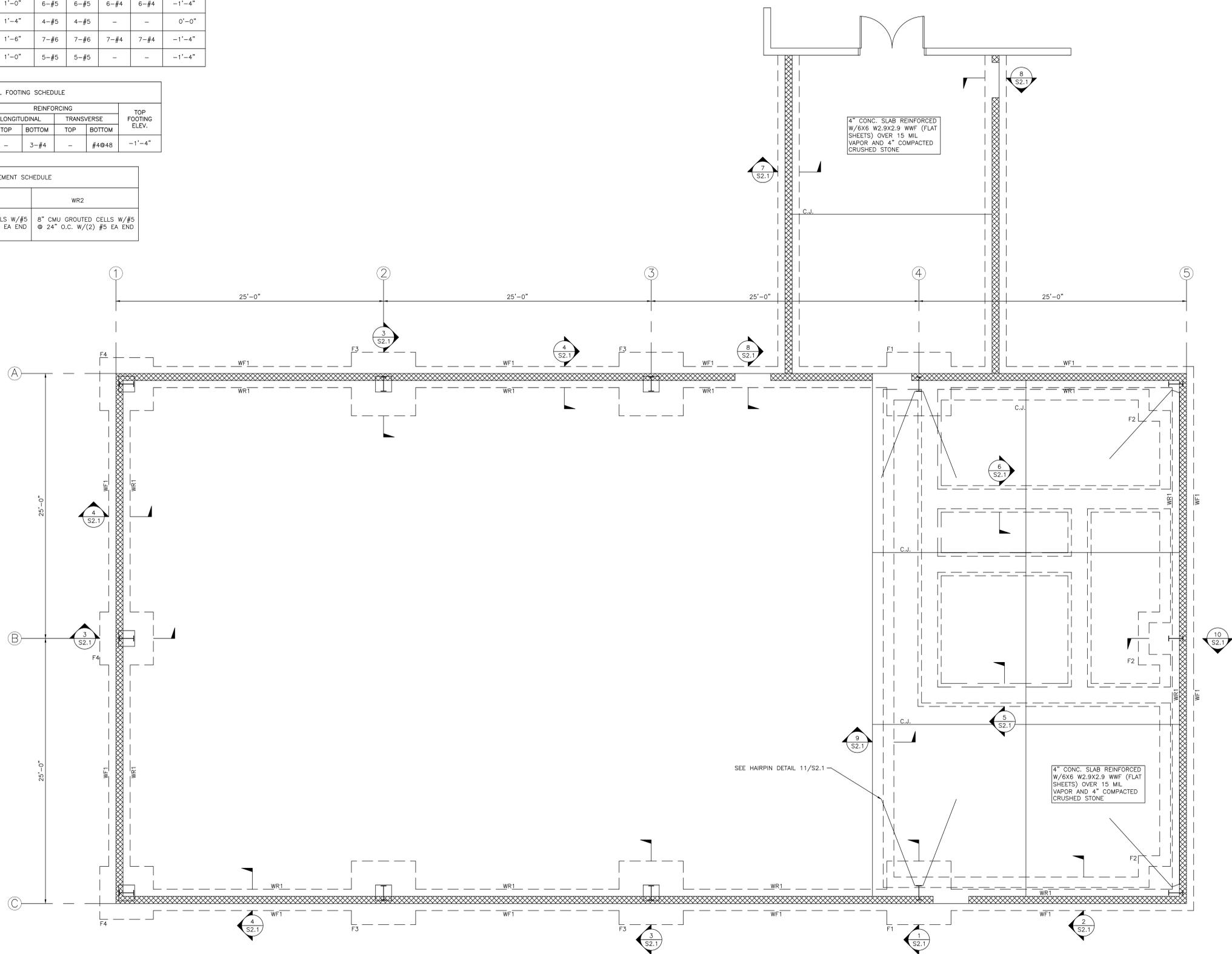
WALL SECTIONS

DRAWN	SHEET NO.
BHT	A1.4
REVIEW	
BHT	

FOOTING SCHEDULE								
FTG TYPE	SIZE		THICKNESS	REINFORCING				TOP FOOTING ELEV.
	N-S	E-W		BOTTOM		TOP		
				N-S	E-W	N-S	E-W	
F1	5'-0"	5'-0"	1'-0"	6-#5	6-#5	6-#4	6-#4	-1'-4"
F2	3'-0"	3'-0"	1'-4"	4-#5	4-#5	-	-	0'-0"
F3	7'-0"	7'-0"	1'-6"	7-#6	7-#6	7-#4	7-#4	-1'-4"
F4	4'-0"	4'-0"	1'-0"	5-#5	5-#5	-	-	-1'-4"

WALL FOOTING SCHEDULE							
FTG TYPE	SIZE		REINFORCING	TOP FOOTING ELEV.			
	WIDTH	THICK			LONGITUDINAL		TRANSVERSE
					TOP	BOTTOM	
WF1	2'-0"	1'-0"	3-#4	-	#4@48	-1'-4"	

WALL REINFORCEMENT SCHEDULE		
LEVEL	WR1	WR2
1ST	8" CMU GROUTED CELLS W/#5 @ 48" O.C. W/(2) #5 EA END	8" CMU GROUTED CELLS W/#5 @ 24" O.C. W/(2) #5 EA END



FOUNDATION & SLAB ON GRADE PLAN 1/4" = 1'-0"

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 SMHS Baseball Booster Club

LOCATION
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REVISIONS

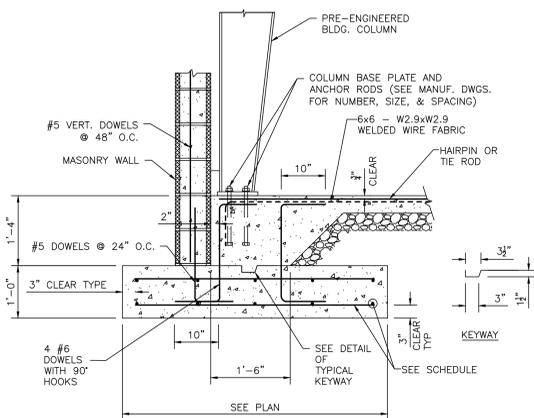
JOB NO.
SMHS

ISSUE DATE
10-10-2022

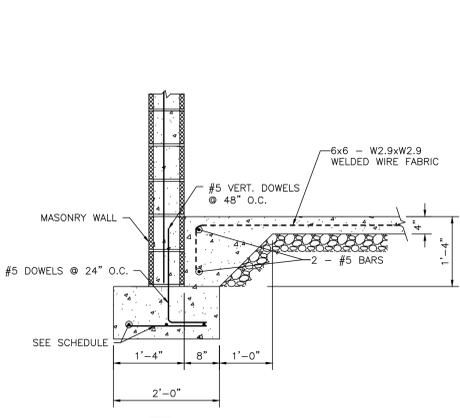
SHEET TITLE
FOUNDATION AND SLAB ON GRADE PLAN

DRAWN SHEET NO.
JDO S1.1

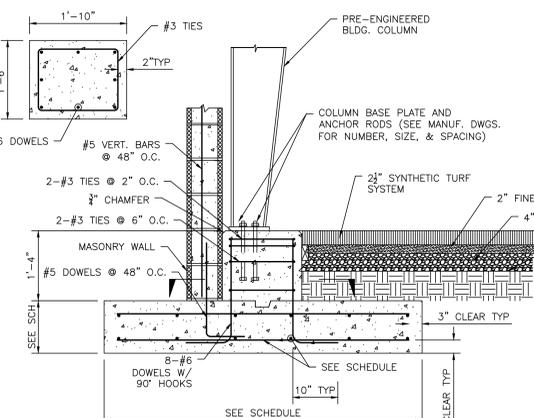
REVIEW
KDM



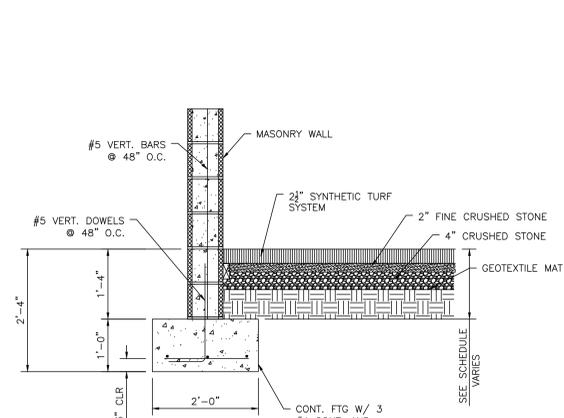
1 SECTION
S2.1 SCALE: 3/4" = 1'-0"



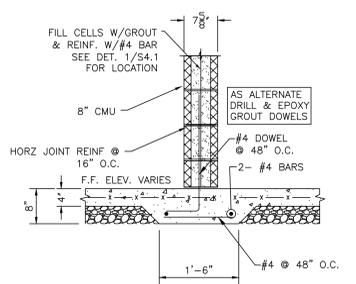
2 SECTION
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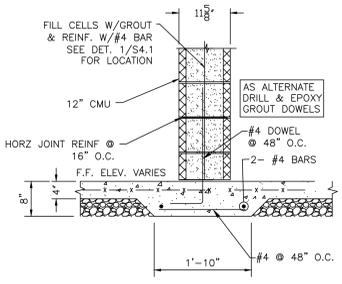
3 DETAIL
S2.1 SCALE: 3/4" = 1'-0"



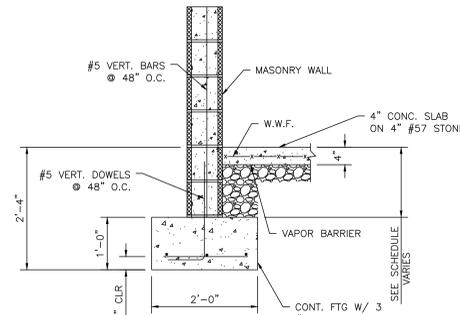
4 SECTION
S2.1 SCALE: 3/4" = 1'-0"



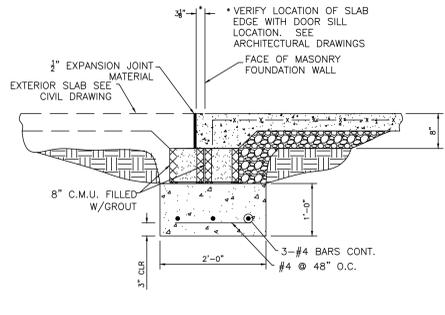
5 SECTION
S2.1 SCALE: 3/4" = 1'-0"



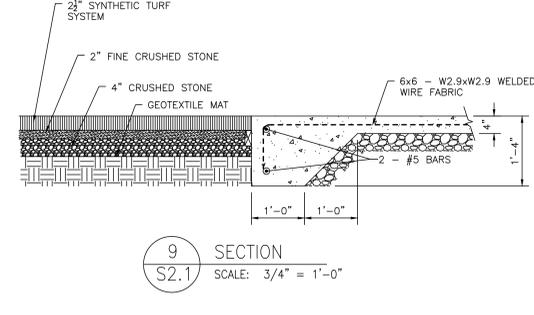
6 SECTION
S2.1 SCALE: 3/4" = 1'-0"



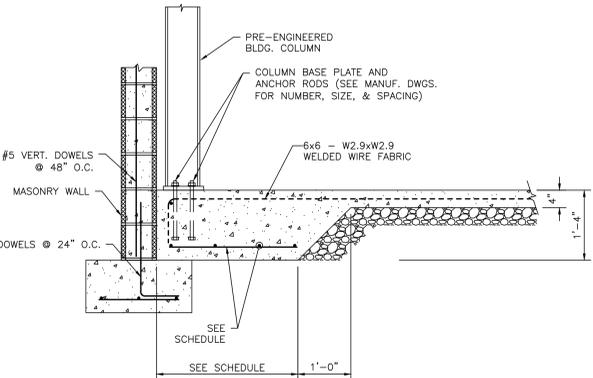
7 SECTION
S2.1 SCALE: 3/4" = 1'-0"



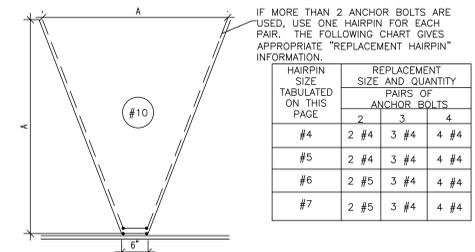
8 SECTION AT DOORWAY
S2.1 SCALE: 3/4" = 1'-0"



9 SECTION
S2.1 SCALE: 3/4" = 1'-0"

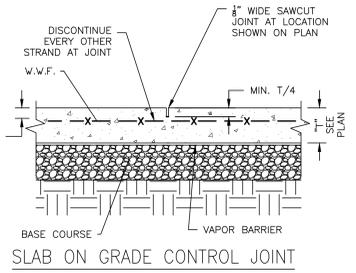


10 SECTION
S2.1 SCALE: 3/4" = 1'-0"

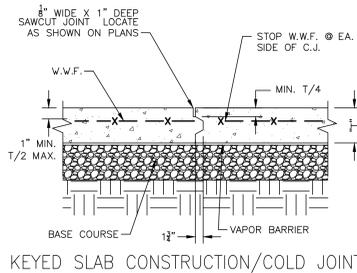


BAR SIZE	"A"		WEIGHT OF BAR IN POUNDS		LENGTH OF BAR REQUIRED		
	25'	20'	25'	20'	25'	20'	
13.3	#5	6'-8"	6'-0"	15.91	14.34	15'-3"	13'-9"
17.4	#6	8'-0"	7'-3"	27.41	24.78	18'-3"	16'-6"
21.7	#7	10'-0"	X	45.99	X	22'-6"	X

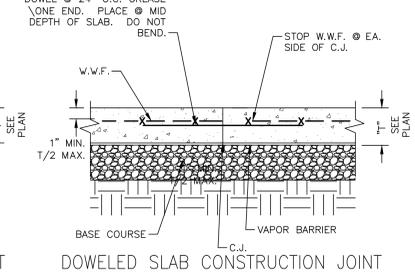
- ALL REINFORCING AND HAIRPINS TO CONFORM TO ASTM A615, "SPECIFICATION FOR DEFORMED BILLET - STEEL BARS FOR CONCRETE REINFORCEMENT."
- STEEL STRENGTH: F_y = 60,000 PSI (GRADE 60) FOR BARS. F_y = 50,000 PSI FOR MESH.
- MINIMUM REINFORCEMENT FOR MINIMUM 6" SLAB TO BE 6x6 - W2.9 x W2.9 WELDED WIRE FABRIC PER ASTM A185 CONTINUOUS THROUGH ALL JOINTS.
- SLAB MUST BE CONTINUOUS IN ONE PLANE THROUGHOUT BUILDING.



SLAB ON GRADE CONTROL JOINT

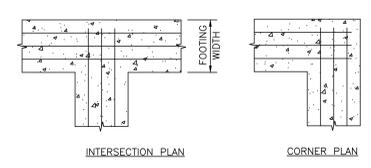


KEYED SLAB CONSTRUCTION/COLD JOINT



DOWELED SLAB CONSTRUCTION JOINT

12 TYPICAL SLAB ON GRADE DETAILS
S2.1 SCALE: 3/4" = 1'-0"



13 TYPICAL CONTINUOUS FOOTING DETAIL
S2.1 SCALE: 3/4" = 1'-0"

11 DETAIL
S2.1 SCALE: 3/4" = 1'-0"

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 ONEIDA, TN 37841
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A New Hitting Facility for
STONE MEMORIAL HIGH SCHOOL BASEBALL
 SMHS Baseball Booster Club

LOCATION
 Crossville, Tennessee

SEAL

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REVISIONS
 REV1-REVISED ROOF FRAMING PLAN

JOB NO.
SMHS

ISSUE DATE
10-10-2022

SHEET TITLE
STRUCTURAL DETAILS

DRAWN SHEET NO.
JDO

REVIEW
KDM

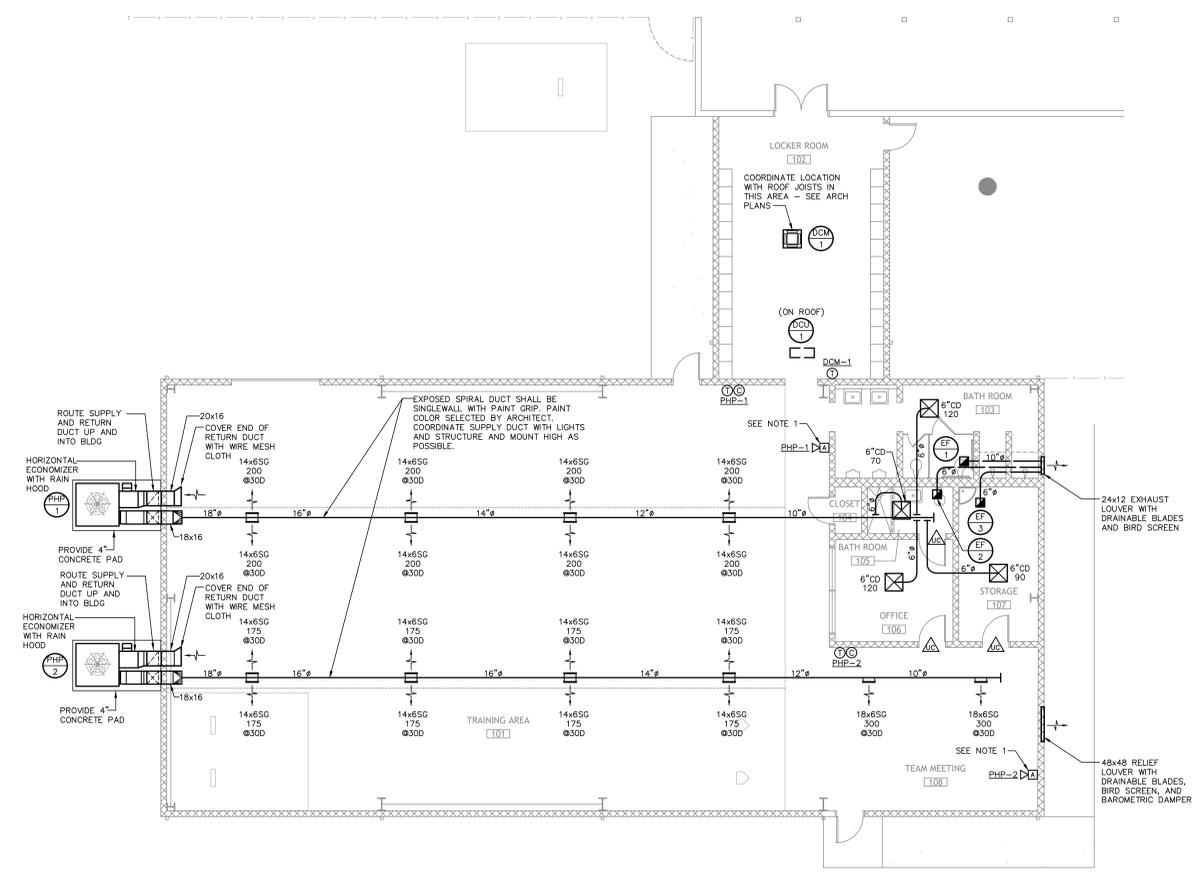
S2.1



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A New Hitting Facility for
STONE MEMORIAL HIGH SCHOOL BASEBALL
 OWNER: SMHS Baseball Booster Club
 LOCATION: Crossville, Tennessee



FLOOR PLAN - HVAC
 1/8"=1'-0"

NOTES:
 1. WHERE MORE THAN ONE VISUAL DEVICE (STROBE) IS LOCATED WITHIN AN AREA, ALL VISUAL DEVICES (STROBES) WITHIN THAT AREA SHALL BE SYNCHRONIZED. THIS APPLIES TO ALL AND ANY LOCATIONS WHERE AN INDIVIDUAL CAN SEE MORE THAN ONE DEVICE FROM THE SAME LOCATION FROM WHERE THEY ARE STANDING, SITTING, ETC. PROVIDE ALL REQUIRED SYNCHRONIZED DEVICES, SYNCHRONIZING MODULES ETC. IN ORDER TO ACCOMPLISH THIS FUNCTION.

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REVISIONS



JOB NO.	SMHS
ISSUE DATE	9-30-2022
SHEET TITLE	FLOOR PLAN - HVAC
DRAWN	SHEET NO.
REVIEW	M1.1

MECHANICAL SPECIFICATIONS

- PART 1 - GENERAL**
- 1.01 WORK INCLUDED
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND INSTALL ALL SYSTEMS, EQUIPMENT, AND RELATED ITEMS DESCRIBED UNDER DIVISION 23.
 - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE CHARACTERISTICS OF ELECTRICAL CURRENT AVAILABLE TO OPERATE THE MECHANICAL EQUIPMENT PRIOR TO ORDERING SUCH EQUIPMENT. ALL ELECTRICALLY OPERATED EQUIPMENT SHALL BE DESIGNED FOR OPERATION WITH THE TYPE OF ELECTRIC CURRENT AVAILABLE TO THE PROJECT. ALL POWER WIRING SHALL BE SPECIFIED UNDER DIVISION 26 OF THE SPECIFICATIONS. CONTROL WIRING AND CONDUIT SHALL BE SPECIFIED AND INSTALLED UNDER DIVISION 23, INSTALLED ACCORDING TO DIVISION 26 REQUIREMENTS.
 - IT SHALL FURTHER BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, LAYOUT AND MAKE PROVISIONS FOR ALL OPENINGS REQUIRED IN PRECAST OR CAST IN PLACE CONCRETE SLABS, ETC., NECESSARY TO ACCOMMODATE HIS WORK.
 - DO ALL EXCAVATION AND BACKFILLING REQUIRED FOR THE INSTALLATION OF PIPING, AND OTHER MECHANICAL WORK UNDERGROUND.
 - ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DRAWINGS AND RECOMMENDATIONS.
 - VERIFY ALL CONNECTIONS AND ROUGH-IN LOCATIONS WITH THE ARCHITECT AND/OR THE EQUIPMENT SUPPLIER OR CONTRACTOR PRIOR TO THE START OF THEIR WORK.

- 1.02 CODES AND FEES
- ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE LOCAL CODES, INTERNATIONAL MECHANICAL CODE, NFPA, UL, ASTM, ASHRAE, SMACNA, ASME AND ANSI.
 - CONTRACTOR SHALL PAY FOR FEES AND INSPECTIONS AS MAY BE REQUIRED FOR ALL SYSTEMS REQUIRING INSPECTIONS BY AGENCIES HAVING JURISDICTION.
 - ALL ELECTRICAL EQUIPMENT TO BE U.L. LISTED.

- PART 2 - PRODUCTS**
- 2.01 DUCTWORK
- ALL DUCTWORK SHALL BE SHEET METAL FABRICATED AND INSTALLED ACCORDING TO SMACNA. DUCT TO BE 26 GA MINIMUM.
- 2.02 CONDENSATE DRAINS
- PROVIDE FULL SIZE CONDENSATE DRAIN LINES FROM EACH AIR HANDLER WITH REQUIRED TRAP. LINES TO BE TYPE "M" COPPER.
- 2.03 GRILLES - REGISTERS
- ALL GRILLES AND REGISTERS TO HAVE BALANCING DAMPERS. SEE ARCHITECTURAL DRAWINGS FOR WALL-CEILING CONSTRUCTION TO DETERMINE FRAME STYLES.

- 2.04 INSULATION - DUCTWORK
- ALL SUPPLY DUCTS AND RETURN DUCTS SHALL BE INSULATED WITH 2" THICK, 3/4# DENSITY FIBERGLASS WITH VAPOR BARRIER.
- 2.05 REFRIGERANT PIPING
- PROVIDE REFRIGERANT PIPING FROM CONDENSING UNIT TO AIR HANDLER AS REQUIRED BY MANUFACTURER. PIPING TO BE TYPE "L" COPPER WITH SILVER SOLDER JOINTS. DRY AND EVACUATE LINES AS REQUIRED.

- 2.06 FLEXIBLE DUCTWORK
- FLEXIBLE DUCT WHERE CALLED FOR SHALL BE FLEXMASTER TYPE 4M OR EQUAL. INSULATED COMPLETE WITH 1-1/2" THICK, 3/4# DENSITY GLASS FIBER WITH FLAME RESISTANT VAPOR BARRIER, R=6.0. PROVIDE CROWN 3300-DS FITTINGS WITH DAMPERS. REFER TO DETAIL ON DRAWINGS.
 - DO NOT USE FLEXIBLE DUCTWORK IN RETURN OR EXHAUST SYSTEMS.

- 2.07 MOTORS
- ALL MOTORS TO BE FURNISHED WITH STARTERS.

- PART 3 - EXECUTION**
- 3.01 TEST AND BALANCE OF AIR SYSTEMS
- ARCHITECT AND ENGINEER RESERVE THE RIGHT TO REQUIRE THE CONTRACTOR TO DEMONSTRATE THE UNIFORMITY OF HEATING AND COOLING IN EACH AREA OF THE BUILDING.

- ALL EQUIPMENT, FANS, MOTORS, ETC., SHALL RUN AT THEIR REQUIRED SPEEDS AND BE FREE FROM EXCESSIVE VIBRATION AND NOISE. NO BEARINGS, JOURNALS, OR ANY PART OF THE MOTORS SHALL HEAT TO A TEMPERATURE IN EXCESS OF 40 C ABOVE THE TEMPERATURE OF THE SURROUNDING AIR.
- ALL AIR BALANCING SHALL BE WITHIN ±10% OF DESIGN FLOWS.

- 3.02 COORDINATION
- THE MECHANICAL WORK SHALL BE INSTALLED AS NEATLY AS POSSIBLE IN THE LOCATIONS SHOWN BUT SHALL BE SUBJECT TO SUCH DEVIATIONS, MODIFICATIONS AND RELOCATIONS AS MAY BE NECESSARY TO CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL DRAWINGS AND AS NECESSARY TO AVOID INTERFERENCES WITH THE STRUCTURAL WORK AND THE WORK OF OTHER TRADES, AND INTERFERENCES BETWEEN THE VARIOUS TRADES. THIS SHALL BE DONE AT NO COST TO THE OWNER. NO DUCTWORK OR EQUIPMENT SHALL BE INSTALLED WHICH WOULD REQUIRE CEILINGS TO BE LOWER THAN REQUIRED BY DRAWINGS, UNLESS APPROVAL IS OBTAINED FROM THE ARCHITECT.

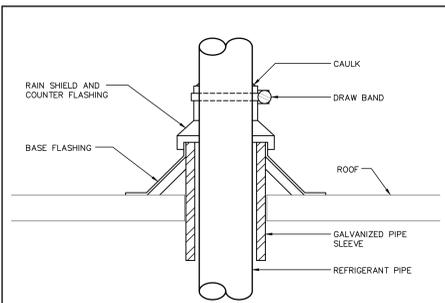
- 3.03 CUTTING AND REPAIRING
- ALL CHASES, RECESSES, SLEEVES AND OTHER OPENINGS IN MASONRY AND CONCRETE SHALL BE BUILT IN AS THE CONSTRUCTION WORK PROGRESSES, AND IT SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR TO SEE THAT SUCH CHASES, RECESSES, SLEEVES AND OTHER OPENINGS REQUIRED FOR THEIR WORK ARE PROPERLY LOCATED AND INSTALLED. IF THIS IS NOT DONE, ANY CUTTING AND PATCHING, OR BOTH, SHALL BE DONE BY THE SUBCONTRACTOR WHOSE WORK REQUIRED SUCH ACCOMMODATION, OR AT HIS EXPENSE.

- 3.04 PROTECTION AND CLEANING
- UPON COMPLETION OF THE WORK AND AFTER ALL TESTS HAVE BEEN MADE AND PIPING SYSTEMS PROVEN TIGHT, CLEAN ALL FIXTURES AND EQUIPMENT, TRAPS, DIRT POCKETS, WATER TANKS, CIRCULATING SYSTEMS, FILTERS, ETC., AND LEAVE IN CORRECT OPERATING CONDITION. NO AIR UNIT SHALL BE OPERATED WITHOUT FILTERS.

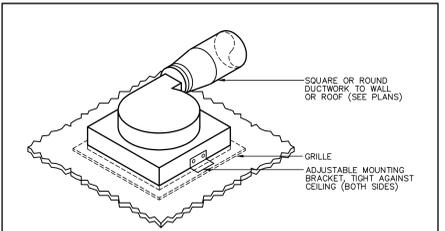
- 3.05 PAINTING
- ALL EQUIPMENT EXPOSED ON THE EXTERIOR FURNISHED WITHOUT FACTORY FINISH SHALL BE PAINTED.
 - EQUIPMENT WITH A FACTORY APPLIED FINISH SHALL HAVE SCRATCHES, CHIPS, ETC., PRIMED AND TOUCHED UP WITH MATERIALS WHICH WILL PROTECT THE SURFACE AND MATCH THE ADJACENT AREA.

- 3.06 OPERATING INSTRUCTIONS
- FURNISH AND DELIVER TO THE OWNER THREE SETS OF OPERATING INSTRUCTIONS FOR ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT, INCLUDING SHOP DRAWINGS, PIPING DIAGRAMS, WIRING DIAGRAMS, MAINTENANCE RECOMMENDATIONS AND INFORMATION CONCERNING REPLACEMENT PARTS.

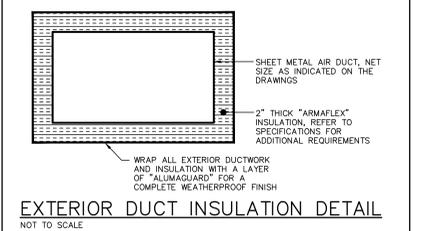
- 3.07 GUARANTEE
- THE CONTRACTOR SHALL GUARANTEE ALL WORK TO BE IN ACCORDANCE WITH CONTRACT REQUIREMENTS AND FREE FROM DEFECTIVE OR INFERIOR MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR, AND HE SHALL GUARANTEE THAT ALL EQUIPMENT IS OF PROPER SIZE AND DESIGN AND SO INSTALLED AS TO PRODUCE THE CAPACITIES AND RESULTS SPECIFIED AND SHOWN ON THE DRAWINGS. ALL COMPRESSORS SHALL HAVE A 5 YEAR GUARANTEE.



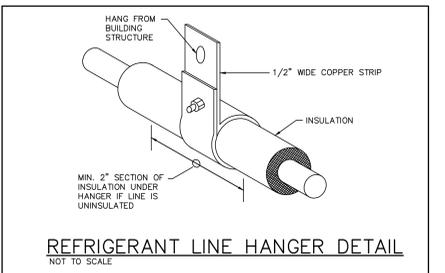
REFRIGERANT PIPING THRU ROOF DETAIL
NOT TO SCALE



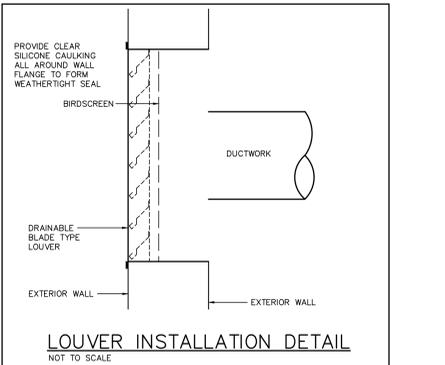
CEILING EXHAUST FAN MOUNTING DETAIL
NOT TO SCALE



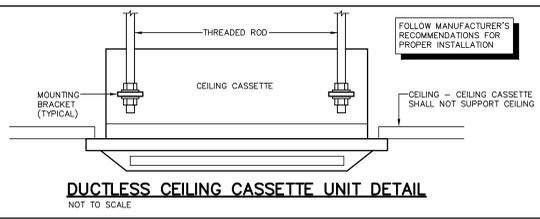
EXTERIOR DUCT INSULATION DETAIL
NOT TO SCALE



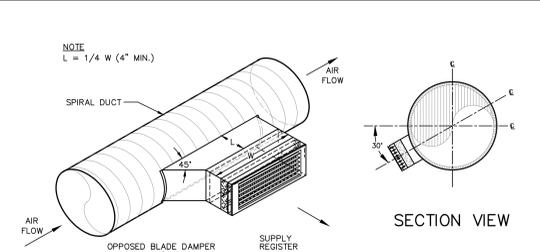
REFRIGERANT LINE HANGER DETAIL
NOT TO SCALE



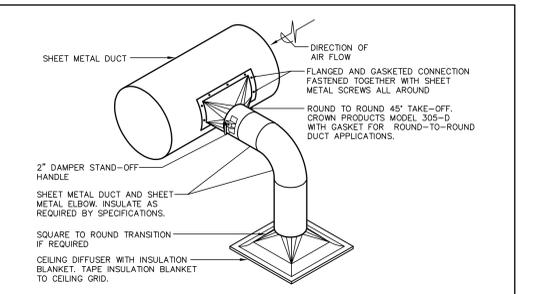
LOUVER INSTALLATION DETAIL
NOT TO SCALE



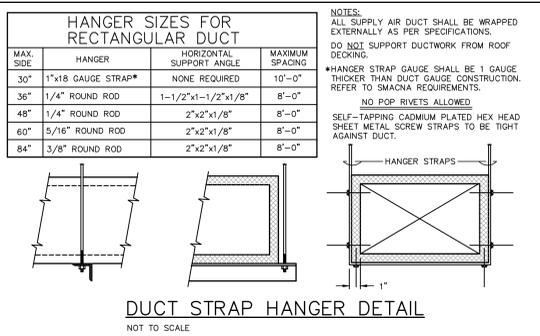
DUCTLESS CEILING CASSETTE UNIT DETAIL
NOT TO SCALE



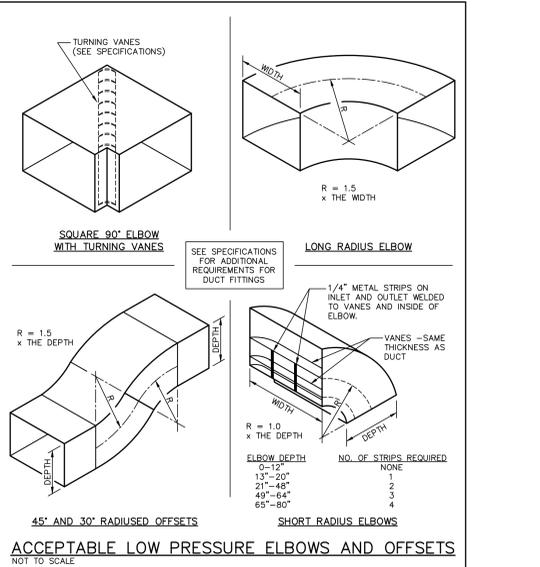
REGISTER TAKE-OFF @ SPIRAL DUCT DETAIL
NOT TO SCALE



DUCT TAKE-OFF AT SHEET METAL DUCT DETAIL
NOT TO SCALE



DUCT STRAP HANGER DETAIL
NOT TO SCALE



ACCEPTABLE LOW PRESSURE ELBOWS AND OFFSETS
NOT TO SCALE

PACKAGE HEAT PUMP SCHEDULE

MARK	CFM	E.S.P. INCHES W.G.	EVAP. FAN HP	OUTSIDE AIR CFM	COOLING CAPACITY AT ARI CONDITIONS SENS. TOTAL	NOM. TONS	SEER / SEER	HEATING BTUH	HSFP	WEIGHT (LBS)	ELECTRICAL DATA EMERGENCY ELEC. HAZ (KW/STEPS)	VOLTS/PHASE	COOLING F.L.A.	MCCP (AMPS)	MANUFACTURER AND MODEL NUMBER	
PHP-1	2000	0.7	1.0	200/400	39.9	57.0	5.0	11.5/15.0	53.5	8.3	500	240/2	240/1	35.4	110	TRANE 4WC26060
PHP-2	2000	0.7	1.0	200/400	39.9	57.0	5.0	11.5/15.0	53.5	8.3	500	240/2	240/1	35.4	110	TRANE 4WC26060

- ROOFTOP HEAT PUMP SCHEDULE NOTES:**
- ALL UNITS SHALL BE U.L. LISTED, AND THE 2-STAGE COMPRESSORS SHALL HAVE A FIVE YEAR WARRANTY.
 - FURNISH EACH UNIT COMPLETE WITH REFRIGERANT, FLATED DISPOSABLE AIR FILTERS (FAIR 30-30 OR APPROVED EQUAL), OUTDOOR THERMOSTAT, TYPE "M" COPPER CONDENSATE DRAIN WITH 4" DEEP P-T-RAP AND CONDENSER COIL HAIL GUARDS.
 - ALL RTU UNITS SHALL HAVE A TRANE PIVOT SMART THERMOSTAT.
 - PACKAGE UNITS SHALL BE PROVIDED WITH A DUCT MOUNTED SMOKE DETECTOR IN BOTH THE SUPPLY AND RETURN AIR DUCT WIRING TO SHUT DOWN EACH INDIVIDUAL UNIT UPON DETECTION PER IMC AND NFPA. DETECTORS SHALL BE FURNISHED AND INSTALLED IN THE DUCT BY THE MECHANICAL CONTRACTOR. INTERLOCK DETECTORS WITH WALL MOUNTED HORN/STROBE UNIT(S) TO NOTIFY OCCUPANTS OF THE ZONE OF ALARM CONDITIONS.
 - ALL UNITS 3 TONS AND LARGER SHALL HAVE ENTHALPHY ECONOMIZER.
 - ALL RTU UNITS SHALL HAVE A TRANE PIVOT SMART THERMOSTAT WITH HUMIDITY SENSOR.
 - PROVIDE UNITS WITH CO2 SENSOR WIRING TO CONTROL OUTSIDE AIR VOLUME. THE DAMPER SHALL BE SET TO THE MINIMUM AMOUNT SHOWN IN SCHEDULE. IF THE ZONE CO2 LEVEL EXCEEDS 1000 PPM OR MORE, THE UNIT OUTSIDE AIR DAMPER SHALL OPEN TO PROVIDE THE MAXIMUM AMOUNT OF OUTSIDE AIR CALLED FOR IN THE UNIT EQUIPMENT SCHEDULES. WHEN THE ZONE CO2 LEVEL FALLS TO NOT MORE THAN 500 PPM ABOVE THE AMBIENT CO2 LEVEL, THEN THE UNIT OUTSIDE AIR SHALL RETURN TO THE CLOSED POSITION.

DUCTLESS SPLIT SYSTEM SCHEDULE

INDOOR UNIT DATA										CONDENSING UNIT DATA							
MARK	TYPE	CFM	COOLING (BTUH) SENSIBLE	SEER	HEATING BTU @ 47	HSFP	VOLTS/PHASE	MCA	MCCP (AMPS)	WEIGHT (LBS)	MANUFACTURER AND MODEL NUMBER	MARK	VOLTS/PHASE	M.C.A.	MCCP (AMPS)	WEIGHT (LBS)	MANUFACTURER AND MODEL NUMBER
DCM-1	2x2 CEILING MOUNT	335	8.8	12.0	22.0	13.0	11.4			31	TRANE MITSUBISHI NTXCKS12A12AA	DCU-1	240/1	9	16	81	TRANE MITSUBISHI NTXCKS12A12AA

- DUCTLESS SPLIT SYSTEM SCHEDULE NOTES:**
- UNITS SHALL BE U.L. LISTED AND THE COMPRESSOR SHALL HAVE A 5 YEAR WARRANTY.
 - FURNISH THE SYSTEM COMPLETE WITH A PERMANENT, WASHABLE AIR FILTER, REFRIGERANT, REFRIGERANT PIPING, INTEGRAL THERMOSTAT, AND LOW AMBIENT COOLING CONTROL TO 0° FAHRENHEIT.
 - FURNISH EACH UNIT WITH AN INTEGRAL CONDENSATE PUMP.
 - PROVIDE DCM-1 WITH REMOTE THERMOSTAT.

EXHAUST FAN SCHEDULE

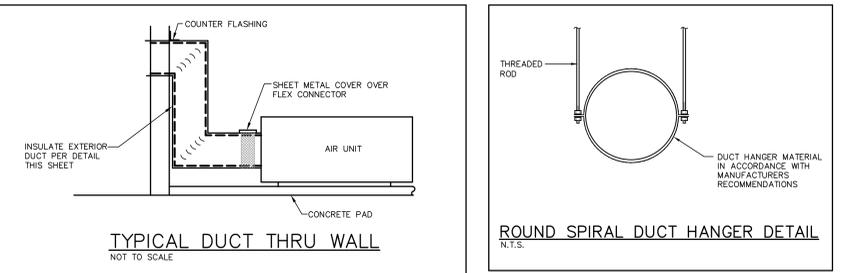
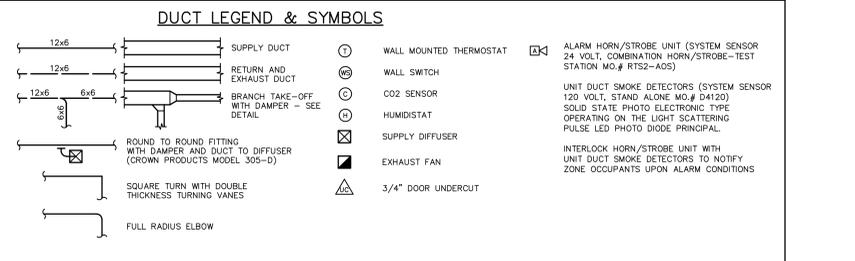
MARK	CFM	SP.WG	HP WATTS	HP WATTS	RPM	SONES	TYPE	DRIVE	CONTROL	VOLTAGE/#	WEIGHT	MANUFACTURER AND MODEL NUMBER
EF-1	350	0.25"	37 WATTS	1563	5.0		CEILING EXHAUST FAN	DIRECT	WALL SWITCH	120/1	30	COOK GC-552
EF-2	75	0.25"	37 WATTS	894	1.5		CEILING EXHAUST FAN	DIRECT	WALL SWITCH	120/1	15	COOK GC-148
EF-3	75	0.25"	37 WATTS	894	1.5		CEILING EXHAUST FAN	DIRECT	WALL SWITCH	120/1	15	COOK GC-148

- EXHAUST FAN AND AIR CURTAIN SCHEDULE NOTES:**
- ALL FANS SHALL BE U.L. LISTED AND AMCA CERTIFIED.
 - ALL FANS TO HAVE BACKDRIFT DAMPER, AND MOTOR STARTER.
 - CEILING FAN ACCESSORIES: LOW NOISE LEVEL, VARIABLE SPEED CONTROLLER, WALL SWITCH.

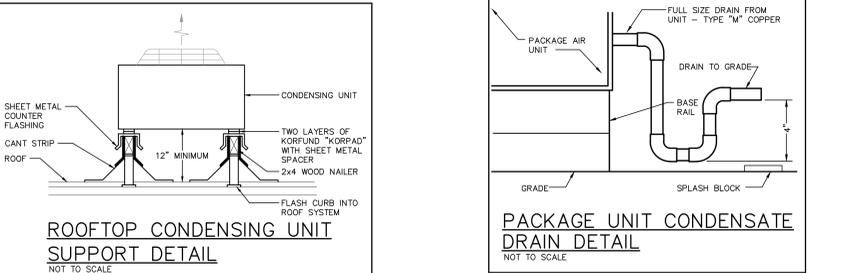
GRILLE, REGISTER, AND DIFFUSER SCHEDULE

MARK	SERVICE	DESCRIPTION	CONSTRUCTION/ FINISH	ACCESSORIES AND FEATURES	DESIGN BASIS
CD	CEILING DIFFUSER	LOUVERED FACE, 4-WAY ADJUSTABLE PATTERN	STEEL / WHITE	T-BAR FRAME OPPOSED BLADE DAMPER	PRICE MODEL SCD4
SG	SIDEWALL GRILLE	HORIZONTAL BLADES, 22.5° DOUBLE DEFLECTION	STEEL / WHITE	SURFACE MOUNT OPPOSED BLADE DAMPER	PRICE MODEL S200

- GRILLE, REGISTER, AND DIFFUSER SCHEDULE NOTES:**
- VERIFY FRAME STYLE, FINISH, AND U.L. RATINGS OF ALL CEILINGS AND WALLS WITH ARCHITECT PRIOR TO ORDERING EQUIPMENT.
 - PROVIDE SQUARE TO ROUND TRANSITIONS AS REQUIRED.



TYPICAL DUCT THRU WALL
NOT TO SCALE



ROOFTOP CONDENSING UNIT SUPPORT DETAIL
NOT TO SCALE



PACKAGE UNIT CONDENSATE DRAIN DETAIL
NOT TO SCALE



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STONE MEMORIAL HIGH SCHOOL BASEBALL

SMHS Baseball Booster Club

OWNER: SMHS Baseball Booster Club
LOCATION: Crossville, Tennessee

SEAL

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REVISIONS

JOB NO.

SMHS

ISSUE DATE

9-30-2022

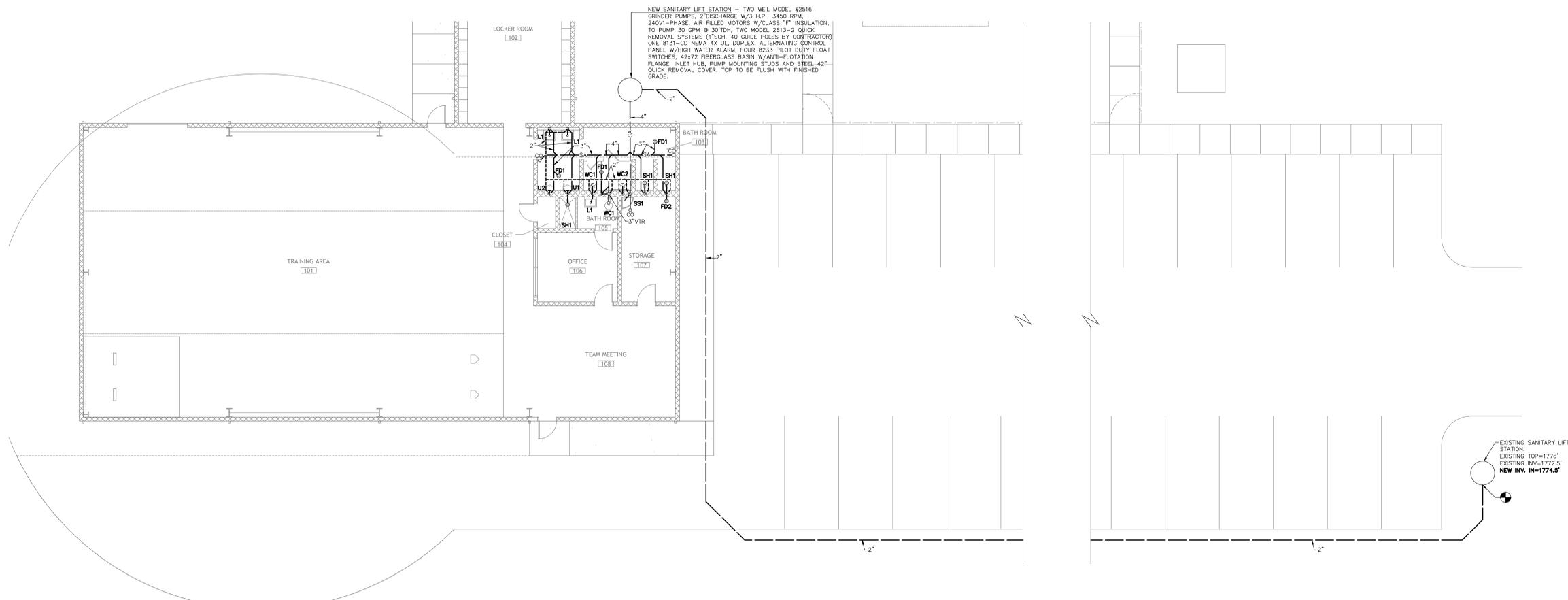
SHEET TITLE

SCHEDULES & DETAILS - HVAC

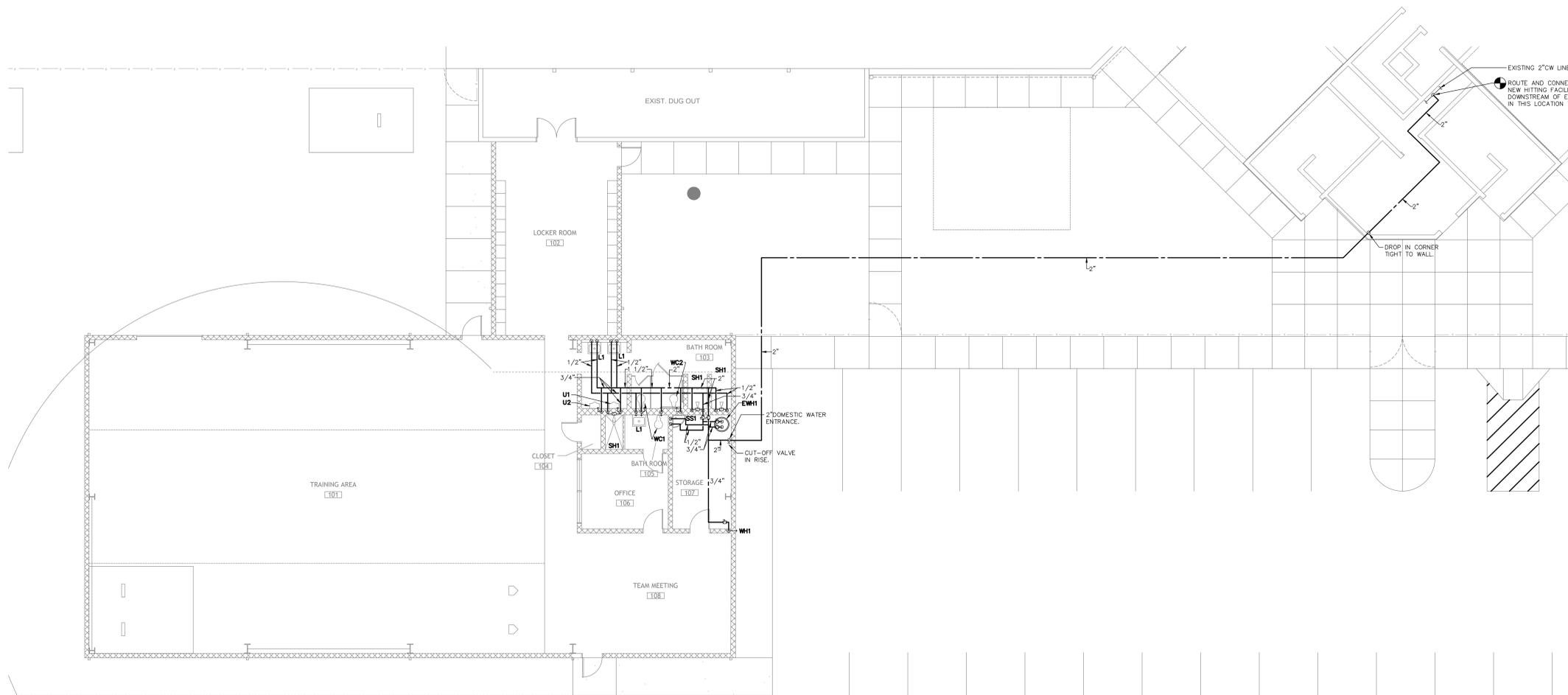
DRAWN SHEET NO.

REVIEW

M2.1



ACTUAL NORTH PLAN NORTH
FLOOR PLAN - WASTE AND VENT
 1/8" = 1'-0"



ACTUAL NORTH PLAN NORTH
FLOOR PLAN - SERVICES
 1/8" = 1'-0"



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A New Hitting Facility for
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OWNER: SMHS Baseball Booster Club

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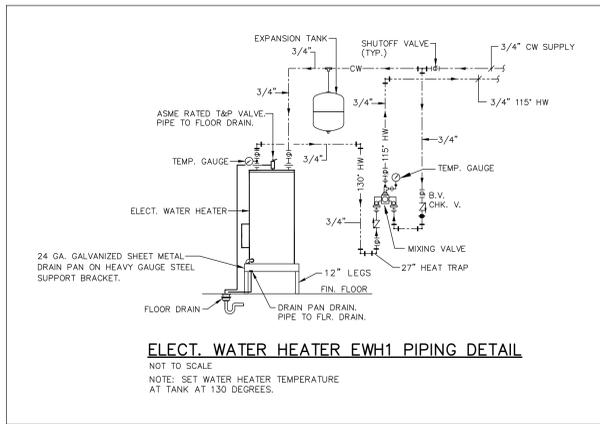
ISSUE DATE
9-30-2022

SHEET TITLE
FLOOR PLAN

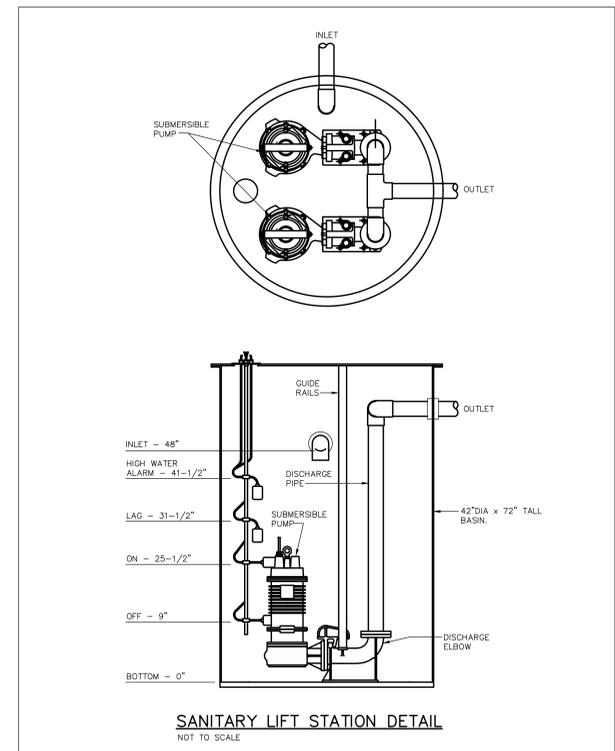
DRAWN SHEET NO.
P1.1

REVIEW

WATER HEATER SCHEDULE										
HEATER NO.	GAL. CAP.	GAS B.T.U. INPUT	VOLTAGE/KW/PHASE	RECOVERY @ 100' RISE	MFR. & MODEL NO.	LOCATION	REDIRCULATION PUMP			EXPANSION TANK
							H.P.	VOLTAGE	MFR. & MODEL #	
EW1	52	---	240/4.5/1	18.45	AO SMITH MODEL DEN-52	STORAGE 107	--	--	---	B & G MODEL PT-12



PLUMBING FIXTURES					
ITEM	DESCRIPTION	Specification			
		CW	HW	W	V
WC1	WATER CLOSET FLUSH VALVE SEAT	ZURN, Z5655-BWL1 1.6, 1.28 OR 1.1GPF SIPHON JET FLUSH ACTION FLOOR MOUNTED STANDARD HEIGHT WATER CLOSET WITH 2-1/8" FULLY GLAZED TRAPWAY ZURN, Z6000AV-WS1 AQUAVANTAGE MANUAL OPERATED FLUSH VALVE 1.6 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. ZURN, Z5955SS-EL-ST5 ELONGATED WHITE OPEN FRONT TOILET SEAT LESS COVER WITH SELF SUSTAINING STAINLESS STEEL CHECK HINGE	1"	4"	2"
WC2	WATER CLOSET (ADA) FLUSH VALVE SEAT	ZURN, Z5665-BWL1 1.6, 1.28 OR 1.1GPF ADA SIPHON JET FLUSH ACTION FLOOR MOUNTED ADA HEIGHT WATER CLOSET WITH 2-1/8" FULLY GLAZED TRAPWAY ZURN, Z6000AV-WS1 AQUAVANTAGE MANUAL OPERATED FLUSH VALVE 1.6 GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS. ZURN, Z5955SS-EL-ST5 ELONGATED WHITE OPEN FRONT TOILET SEAT LESS COVER WITH SELF SUSTAINING STAINLESS STEEL CHECK HINGE	1"	4"	2"
U1	URINAL FLUSH VALVE CARRIER	ZURN, Z5755-U OMNI-FLOW .125 TO 1GPF WALL MOUNTED TOP SPUD ASYMMETRIC BACK WALL URINAL WITH INTEGRAL P-TRAP AND VANDAL RESISTANT OUTLET STRAINER ZURN, Z6003AV-ULF AQUAVANTAGE MANUAL OPERATED FLUSH VALVE .125GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS PROVIDE WITH APPROPRIATE APPROVED ZURN CARRIER	3/4"	2"	1-1/2"
U2	URINAL (ADA) FLUSH VALVE CARRIER	ZURN, Z5755-U OMNI-FLOW .125 TO 1GPF WALL MOUNTED TOP SPUD ASYMMETRIC BACK WALL URINAL WITH INTEGRAL P-TRAP AND VANDAL RESISTANT OUTLET STRAINER ZURN, Z6003AV-ULF AQUAVANTAGE MANUAL OPERATED FLUSH VALVE .125GPF CLOG RESISTANT TRIPLE FILTERED BY-PASS, DUAL SEAL AND CHLORAMINE RESISTANT INTERNAL PARTS PROVIDE WITH APPROPRIATE APPROVED ZURN CARRIER	3/4"	2"	1-1/2"
L1	LAVATORY FAUCET DRAIN SUPPLIES P-TRAP CARRIER	ZURN, Z5844 20"x18" WALL HUNG 4"CC CAST IRON EXPOSED ARM LAVATORY ZURN, Z7440-XL-FC SIERRA SINGLE HANDLE 4CC LAVATORY FAUCET WITH .5GPM AERATOR AND CERAMIC DISC CARTRIDGE ZURN, Z8743-PC 1-1/4" CHROME PLATED CAST BRASS 17GA GRID DRAIN ZURN, Z8804-XL-LRQ-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEONS, 1/4 TURN CHROME PLATED STOPS AND CHROME PLATED COPPER TUBE SUPPLY LINES ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT PROVIDE WITH APPROPRIATE APPROVED ZURN CARRIER	1/2"	1/2"	1-1/4" 1-1/4" 1-1/4"
L2	LAVATORY (ADA) FAUCET DRAIN SUPPLIES P-TRAP TRAP WRAP CARRIER	ZURN, Z5844 20"x18" WALL HUNG 4"CC CAST IRON EXPOSED ARM LAVATORY ZURN, Z7440-XL-FC SIERRA SINGLE HANDLE 4CC LAVATORY FAUCET WITH .5GPM AERATOR AND CERAMIC DISC CARTRIDGE ZURN, Z8743-PC 1-1/4" CHROME PLATED CAST BRASS 17GA GRID DRAIN ZURN, Z8804-XL-LRQ-PC 1/2" X 3/8" COMP X COMP LAVATORY SUPPLY KIT WITH ESCUTCHEONS, 1/4 TURN CHROME PLATED STOPS AND CHROME PLATED COPPER TUBE SUPPLY LINES ZURN, Z8700-PC 1-1/4" CAST BRASS 17GA P-TRAP WITH CLEANOUT ZURN, Z8946-1-NT COMBINATION TRAP WRAP KIT WITH ONE TRAP AND TWO SUPPLY PROTECTION WRAPS PROVIDE WITH APPROPRIATE APPROVED ZURN CARRIER	1/2"	1/2"	1-1/4" 1-1/4" 1-1/4"
SS1	SINK FAUCET	STERN WILLIAMS, S9902-T35-140-BP-2 TERRAZZO 24" X 24" X 12" SERVICE SINK WITH TWO TILING FLANGES, MOP HANGER, BACK SPLASH, HOSE AND BRACKET ZURN, Z841M1-RC SERVICE SINK FAUCET WITH 6" VACUUM BREAKER SPOUT, LEVER HANDLES, PAIL HOOK AND WALL BRACE	1/2"	1/2"	3" 2"
SH1	SHOWER VALVE	SYMMONS, H9015-285-X HYDRAPIPE 900 SERIES SURFACE MOUNTED SHOWER SYSTEM WITH 18GA STAINLESS SHROUD, ADJUSTABLE STOP SCREW TO LIMIT HANDLE TURN, BUILT-IN SCREWDRIVER SUPPLY STOPS, SOAP DISH AND 4-285 FRE-FLO 2.0GPM SHOWER HEAD	1/2"	1/2"	
FD1	FLOOR DRAIN TRAP SEAL	ZURN, ZN415-5B21 FLOOR OR SHOWER DRAIN, DURA-COATED CAST IRON BODY, 5" ROUND POLISHED NICKEL BRONZE STRAINER, PROTECTIVE STRAINER COVER TO PROTECT DURING CONCRETE POUR, POST POUR HEIGHT ADJUSTMENT AND LEVELING SHIMS TO CORRECT TILT ZURN, Z1072 ZSHIELD BARRIER TRAP SEAL DEVICE			3"
FD2	FLOOR DRAIN TRAP SEAL	ZURN, ZN415U DURA-COATED CAST IRON BODY FLOOR DRAIN FOR CONDENSATE WITH 5" POLISHED NICKEL BRONZE STRAINER RECESSED ZURN, Z1072 ZSHIELD BARRIER TRAP SEAL DEVICE			3"
WH1	WALL HYDRANT	ZURN, Z1321 FREEZE PROOF, LOOSE KEY STYLE EXPOSED HOSE BIBB WITH INTEGRAL VACUUM BREAKER	3/4"		



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A New Hitting Facility for
STONE MEMORIAL HIGH SCHOOL BASEBALL
 OWNER: SMHS Baseball Booster Club
 LOCATION: Crossville, Tennessee

SEAL

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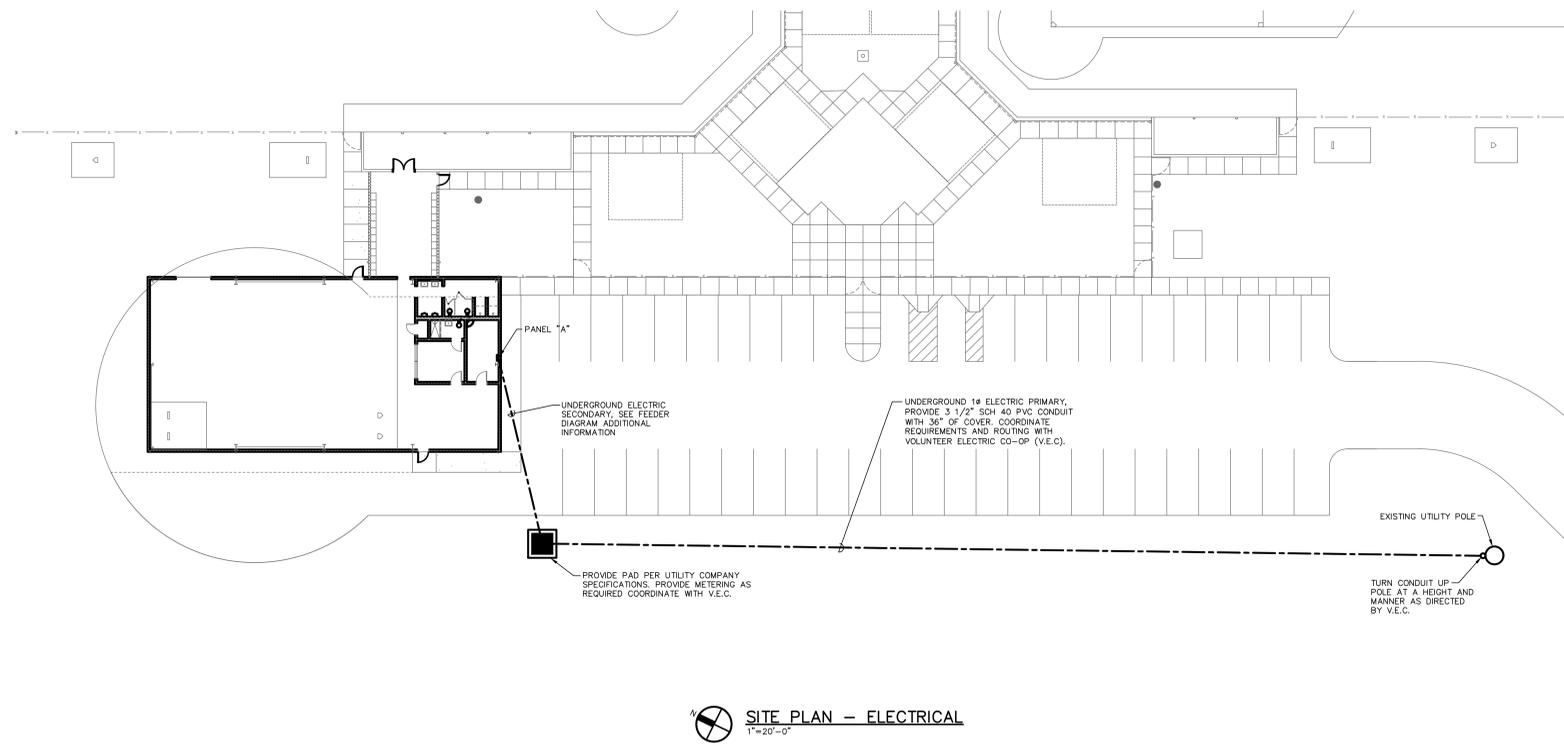
JOB NO.
SMHS

ISSUE DATE
9-30-2022

SHEET TITLE
PLUMBING SCHEDULES AND DETAILS

DRAWN SHEET NO.
P2.1

ESG
 ENGINEERING SERVICES GROUP, INC.
 CONSULTING ENGINEERS
 900 EAST HILL AVE. SUITE 350
 KNOWLEDGE, TENNESSEE 37915
 (615) 522-0593
 PRODUCT NO. 22680



- NOTES:
1. THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN BID PRICE ALL UTILITY COMPANY COSTS RELATIVE TO THE TYPE OF SERVICES PLANNED. THE SERVICES ILLUSTRATED ON THE DRAWINGS ARE BASED ON INFORMATION WHICH WAS AVAILABLE AT THE TIME OF RELEASING PROJECT FOR BIDDING. PRIOR TO BIDDING THE ELECTRICAL CONTRACTOR SHALL CONTACT POWER COMPANY, TELEPHONE COMPANY, AND CABLE T.V. COMPANY TO VERIFY FINAL SERVICE ARRANGEMENT AND ALL UTILITY COMPANY COST INVOLVED WHICH ARE TO BE INCLUDED IN BID PRICE.
 2. ALL BRANCH CIRCUITS SHALL BE SIZED TO COMPLY WITH IECC 440.8. SPECIFICALLY, ALL 120V, 20 AMP CIRCUITS WITH HOMERUNS GREATER THAN 70 FEET SHALL HAVE CIRCUIT AND GROUNDING CONDUCTORS OF #12AWG AS MINIMUM. ANY 120V, 20 AMP CIRCUIT WITH OUTLETS GREATER THAN 100 FEET OF BRANCH CIRCUIT LENGTH SHALL HAVE CIRCUIT AND GROUNDING CONDUCTORS OF #10AWG MINIMUM TO ALL OUTLETS AND HOMERUN. ANY 120V, 20 AMP CIRCUIT WITH HOMERUN GREATER THAN 140 FEET SHALL HAVE BRANCH CIRCUIT AND GROUNDING CONDUCTORS OF #8AWG MINIMUM. PROVIDE ADEQUATE BOX TO SPLICE #12AWG FOR TERMINATION TO DEVICE. LARGER CONDUCTORS MAY REQUIRE THE UTILIZATION OF LARGER CONDUIT SIZES - REFER TO NEC TABLES.
 3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH SITE CIVIL DRAWINGS FOR LOCATIONS FOR LOCATIONS, NUMBER AND ELECTRICAL REQUIREMENTS TO SUPPORT EQUIPMENT SHOWN ON CIVIL DRAWINGS. THIS INCLUDES SIGNAGE, HOTBOXES, POST INDICATOR VALVES ETC.

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A New Hitting Facility for
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OWNER
SMHS Baseball Booster Club

LOCATION
Crossville, Tennessee

SEAL

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REVISIONS

JOB NO.
SMHS

ISSUE DATE
9-30-2022

SHEET TITLE
FLOOR PLAN - ELECTRICAL

DRAWN SHEET NO.
E0.1

REVIEW

ESGA

ENGINEERING SERVICES GROUP, INC.
CONSULTING ENGINEERS
800 EAST HILL AVE. SUITE 300
KNOXVILLE, TENNESSEE 37915
(865) 522-0293
PROJECT NO. 22690

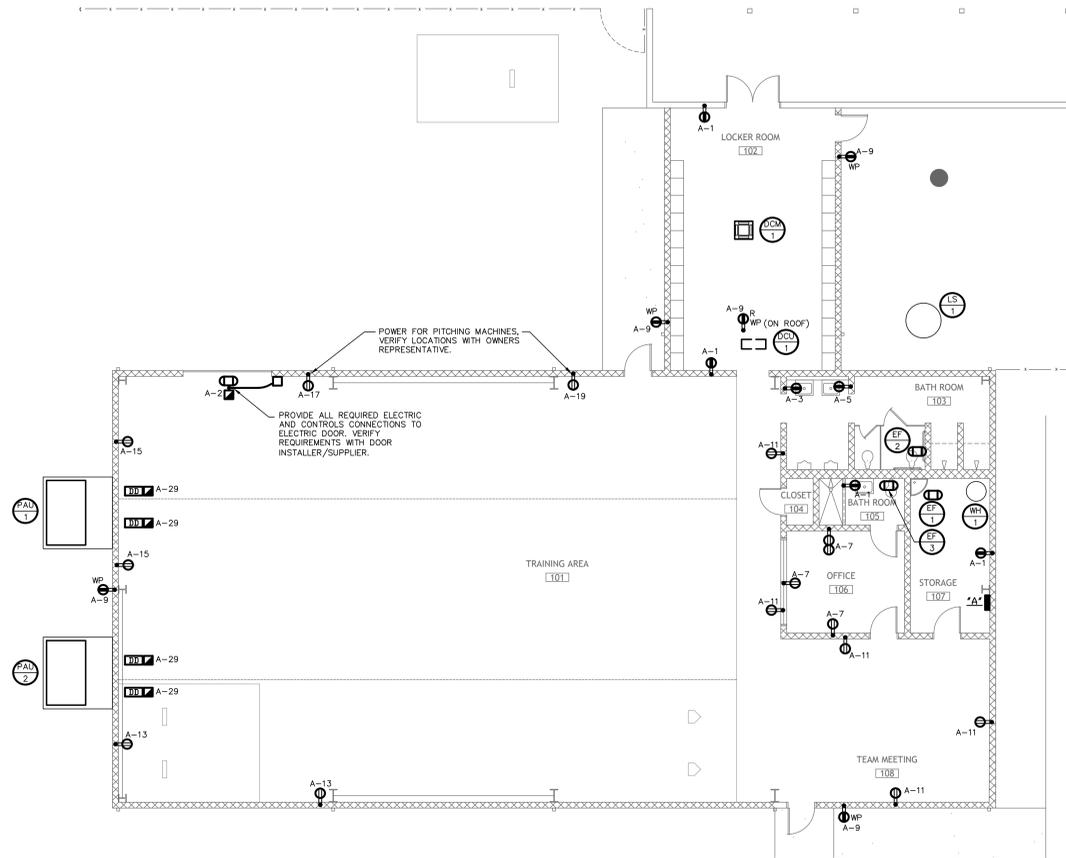
ITEM NO.	EQUIPMENT	EQUIPMENT CHARACTERISTICS				CIRCUIT NUMBER	FULL LOAD AMPS	CIRCUIT CONDUCTORS (COPPER UNLESS NOTED OTHERWISE)	BREAKER (TRIP/POLE)	LOCAL MEANS OF DISCONNECT (FRAME/POLE/FUSE/NEMA)	NOTES	
		VOLTAGE	PHASE	HP	KW							
1	PHP-1	240	1	1	20.0	----	A-18	126.7	1-1/4" 2#1186	110A/2P	200A/2P HD, 110A RKS, NEMA 3R	1,2,3
2	PHP-2	240	1	1	20.0	----	A-22	126.7	1-1/4" 2#1186	110A/2P	200A/2P HD, 110A RKS, NEMA 3R	1,2,3
3	DCM-1	240	1			----	NOTES	0.0	3/4" 2#12120	15A/2P	MOTOR RATED SWITCH	1,5,5
4	DCU-1	240	1			----	A-26	9.0	3/4" 2#12120	15A/2P	30A/2P HD, 15A RKS, NEMA 3R	1,2,3
5	EF-1	120	1		0.1	----	A-30	0.8	3/4" 2#12120	20A/1P	MOTOR RATED SWITCH	1,3
6	EF-2	120	1		0.1	----	A-30	0.8	3/4" 2#12120	20A/1P	MOTOR RATED SWITCH	1,3
7	EF-3	120	1		0.1	----	A-30	0.8	3/4" 2#12120	20A/1P	MOTOR RATED SWITCH	1,3
8	IM-1	240	1		4.5	----	A-25	18.8	3/4" 2#12120	30A/2P	CIRCUIT BREAKER	1,3
9	LS-1	240	1	6		----	A-21	28.0	1" 2#4110G	60A/2P	60A/2P HD, 60A RKS, NEMA 1	1,2,3

MECHANICAL EQUIPMENT CONNECTION SCHEDULE NOTES:

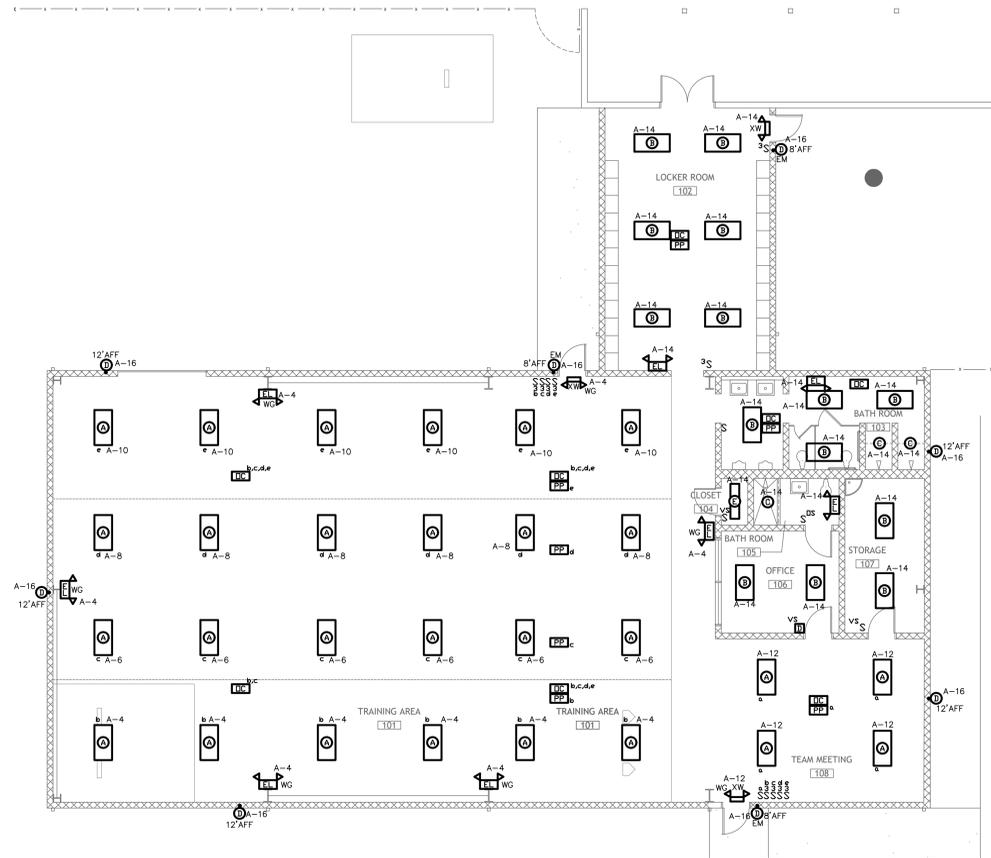
1. THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT TO BE CONNECTED WITH NAMEPLATE DATA PRIOR TO ROUGH-IN.
2. ALL DISCONNECTS LOCATED OUTDOORS SHALL BE WEATHERPROOF, NEMA 3R RATED, UNLESS SPECIFICALLY INDICATED OTHERWISE.
3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FUSED DISCONNECTS FOR EQUIPMENT SHOWN IN THIS LIST AND AS REQUIRED BY THE NEC.
4. INTERNAL MEANS OF DISCONNECT SHALL NOT BE UTILIZED IN LIEU OF SPECIFIED EXTERNAL MEANS OF DISCONNECT EXCEPT WHERE THE WORD "INTERNAL" APPEARS IN THIS SCHEDULE.
5. DCM-1 IS POWERED FROM OUTDOOR UNIT DCU-1. PROVIDE ALL REQUIRED CONDUIT, CABLE AND DISCONNECTS.

NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES. COORDINATE INSTALLATION WITH CEILING RATING. PROVIDE FIRE RATED COVER FOR FIXTURE WHERE REQUIRED. THIS MAY BE A MANUFACTURED U.L. LISTED, COVER, "HAT" OR BOX OR A SITE FABRICATED COVER. THE COVER SHALL MEET OR EXCEED THE FIRE RATING REQUIREMENT AND MEET REQUIREMENTS OF LOCAL AHA. THE COVER SHALL BE COMPATIBLE WITH IC OR NON IC RATING OF THE FIXTURE.
2. PROVIDE AS PART OF THE SHOP DRAWING SUBMITTALS POINT BY POINT CALCULATIONS OF ALL SPACES. CALCULATIONS SHALL BE DRAWN AT SAME SCALE AS THE BID DOCUMENTS, AND SHALL INCLUDE AS A MINIMUM THE FOLLOWING: STATISTICS TABLE INDICATING ROOM NAME, AVERAGE FOOT-CANDELES, MAXIMUM FOOT-CANDELES, MINIMUM FOOT-CANDELES, MAX/MIN RATIOS AND AVG/MIN RATIOS AND A LUMINAIRE SCHEDULE. IN ADDITION FOR ALL INTERIOR AREAS OF THE BUILDING PROVIDE A LIGHTING POWER DENSITY STATISTIC TABLE INDICATING ROOM NAME, NUMBER OF LUMINAIRES, TOTAL WATTS PER AREA, AND DENSITY (WATTS PER SQ. FT.) PER AREA AND A SEPARATE LINE ITEM INDICATING THE TOTALS FOR THE ENTIRE BUILDING INTERIOR. SUBMITTALS WILL NOT BE REVIEWED UNLESS THE ABOVE INFORMATION IS PROVIDED IN WHOLE AS PART OF THE LIGHTING SUBMITTAL PACKAGE. FAILURE TO SUBMIT THIS INFORMATION AS PART OF THE SUBMITTAL WILL RESULT IN REJECTING THE LIGHTING SUBMITTAL IN ITS ENTIRETY; NO EXCEPTIONS.
3. ALL BRANCH CIRCUITS SHALL BE SIZED TO COMPLY WITH IECC 400.9. SPECIFICALLY, ALL 120V, 20 AMP CIRCUITS WITH HOMERUNS GREATER THAN 70 FEET SHALL HAVE CIRCUIT AND GROUNDING CONDUCTORS OF #12AWG AS MINIMUM. ANY 120V, 20 AMP CIRCUIT WITH OUTLETS GREATER THAN 100 FEET OF BRANCH CIRCUIT LENGTH SHALL HAVE CIRCUIT AND GROUNDING CONDUCTORS OF #10AWG MINIMUM TO ALL OUTLETS AND HOMERUN. ANY 120V, 20 AMP CIRCUIT WITH HOMERUN GREATER THAN 140 FEET SHALL HAVE BRANCH CIRCUIT AND GROUNDING CONDUCTORS OF #8AWG MINIMUM. PROVIDE ADEQUATE BOX TO SPICE #12AWG FOR TERMINATION TO DEVICE. LARGER CONDUCTORS MAY REQUIRE THE UTILIZATION OF LARGER CONDUIT SIZES - REFER TO NEC TABLES.
4. CONTRACTOR SHALL PROVIDE ALL REQUIRED BRANCH CIRCUIT RACEWAY AND CONDUCTORS FOR CONNECTION OF DEVICES INDICATED. WIRING MAY BE ROUTED BELOW CONCRETE SLAB OR OVERHEAD. AT THE CONTRACTOR'S OPTION, ALL ABOVE-SLAB RACEWAY SHALL BE CONCEALED FROM VIEW IN WALLS OR ABOVE CEILINGS EXCEPT WHERE SPECIFICALLY NOTED TO BE SURFACE MOUNTED. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR ALL 120V CIRCUITS.
5. PRIOR TO LOCATING ANY AND ALL DEVICES AT CASEWORK, COUNTERTOPS, ETC., THE CONTRACTOR SHALL REFER TO FINAL ARCHITECTURAL CASEWORK ELEVATIONS AND SHOP DRAWINGS TO VERIFY MOUNTING HEIGHTS AND LOCATIONS. ALL DEVICE LOCATIONS SHALL BE COORDINATED WITH THESE DRAWINGS AND/OR THE ARCHITECT PRIOR TO ROUGH-IN.



FLOOR PLAN - POWER & COMMUNICATIONS
1/8"=1'-0"



FLOOR PLAN - LIGHTING
1/8"=1'-0"

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A New Hitting Facility for
STONE MEMORIAL HIGH SCHOOL BASEBALL

OWNER: SMHS Baseball Booster Club
LOCATION: Crossville, Tennessee

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REVISIONS

JOB NO.
SMHS

ISSUE DATE
9-30-2022

SHEET TITLE
FLOOR PLAN - ELECTRICAL

DRAWN SHEET NO.
E1.1

ESG

ENGINEERING SERVICES GROUP, INC.
CONSULTING ENGINEERS
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(866) 522-0393
PROJECT NO. 22690



A New Hitting Facility for
STONE MEMORIAL HIGH SCHOOL BASEBALL
OWNER: SMHS Baseball Booster Club
LOCATION: Crossville, Tennessee

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JOB NO.	SMHS
ISSUE DATE	9-30-2022
SHEET TITLE	ELECTRICAL SPECIFICATIONS
DRAWN	SHEET NO.
REVIEW	E2.2

ELECTRICAL SPECIFICATIONS

THE CONTRACTOR SHALL BE GOVERNED BY THE PRESENT SPECIFICATIONS TOGETHER WITH THE CURRENT RECOMMENDATIONS AND REGULATIONS OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND UL STANDARDS. OBTAIN ALL PERMITS AND INSPECTIONS REQUIRED FOR THE WORK AND PAY ALL FEES AND COSTS THEREOF. THE OWNER RESERVES THE RIGHT TO RELOCATE ANY EQUIPMENT UP TO 10 FEET IN ANY DIRECTION PRIOR TO ROUGH-IN.

COORDINATE ALL CONSTRUCTION DELIVERIES, DISPOSAL OF CONSTRUCTION TRASH, ETC. WITH OWNER AND GENERAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED BY THEIR WORK. COORDINATE WITH GENERAL CONTRACTOR.

WRING FOR MECHANICAL EQUIPMENT:

1. ALL POWER WRING FOR ITEMS FURNISHED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
2. ALL DISCONNECT SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
3. TOGGLE SWITCHES FOR 1/2 HP MOTORS AND LESS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
4. WRING AND CONDUIT FOR SOLENOID VALVES, AND CONTROL TRANSFORMERS INCLUDING THE TRANSFORMERS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
5. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL STARTERS, TOGGLE SWITCHES, DISCONNECTS, AND ALL WRING TO THE RESPECTIVE MOTOR OR DEVICE. WRING AND CONDUIT FROM STARTER TO A CONTROLLER SHALL BE BY THE MECHANICAL CONTRACTOR.
6. DEFINITIONS:
 - A. POWER WRING: LINE VOLTAGE CIRCUITRY ROUGH-IN INCLUDING CONDUIT, BOXES, CONDUCTORS, ETC. BETWEEN THE OVERCURRENT PROTECTION AND THE EQUIPMENT INCLUDING THE CONNECTION OF THE STARTERS BY THE ELECTRICAL CONTRACTOR.
 - B. CONTROL WRING: CIRCUITRY ROUGH-IN INCLUDING CONDUIT, BOXES, CONDUCTORS, ETC. BETWEEN CONTROL ACTIVATOR AND THE CONTROLLER OR STARTER BY THE MECHANICAL CONTRACTOR.
7. CONDUIT: ALL POWER WRING AND LOW CONTROL WRING SHALL BE IN CONDUIT.
8. SMOKE DETECTORS AND FIRESTAYS:
 - A. SMOKE DETECTORS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR UNLESS THE PROJECT HAS A FIRE ALARM SYSTEM, THEN SMOKE DETECTORS SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR. ALL WRING AND CONDUIT FROM THE FIRE ALARM DETECTOR TO THE HVAC UNIT SHALL BE CONSIDERED CONTROL WRING.
 - B. ALL FIRESTAYS SHALL BE FURNISHED, INSTALLED, AND WIRED BY THE MECHANICAL CONTRACTOR.

CONNECT ALL MOTORS WITH SHORT LENGTH OF LIQUIDTIGHT FLEXIBLE METAL CONDUIT.

FURNISH SUBMITTALS AND SHOP DRAWINGS FOR ALL PRINCIPAL DEVICES AND PRICES OF EQUIPMENT FOR REVIEW BY THE ENGINEER, OWNER AND ARCHITECT.

1. PANELBOARDS.
2. SURGE SUPPRESSION DEVICES.
3. FLEXIBLE WRING TYPE "IMC" CABLE.
4. LIGHTING FIXTURES.
5. WRING DEVICES AND PLATES.
6. DISCONNECT SWITCHES.

SITE VISIT: BEFORE SUBMITTING BID, CONTRACTOR SHALL VISIT THE JOB SITE FOR THE PURPOSE OF EXAMINING THE SITE AND CONDITIONS UNDER WHICH THE WORK MUST BE PERFORMED. NO EXTRA CHARGES WILL BE ALLOWED FOR SITUATIONS ARISING FROM FAILURE OF CONTRACTOR TO THOROUGHLY FAMILIARIZE HIMSELF WITH SITE AND EXISTING BUILDING CONDITIONS, INCLUDING CHARGES AND REQUIREMENTS TO UTILITIES AS SHOWN FOR THE PROJECT. CONTRACTOR SHALL VERIFY THAT CONNECTIONS TO EXISTING EQUIPMENT ARE AS INDICATED ON DRAWINGS AND SPECIFICATIONS. ANY DEVIATIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY. ANY DEVIATIONS SHALL BE REPORTED PRIOR TO BIDDING.

RECORD DRAWING

CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS SHOWING ANY CHANGES AND MODIFICATIONS THAT OCCURRED DURING THE CONSTRUCTION PERIOD. AFTER COMPLETION OF CONSTRUCTION THESE RECORD DRAWINGS SHALL BE TURNED OVER TO THE OWNER.

WARRANTY

THE CONTRACTOR SHALL WARRANT AND GUARANTEE ALL WORK EXECUTED UNDER THIS DIVISION TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION.

POWER SERVICE AND GROUNDING

ELECTRICAL POWER SERVICE SHALL BE ARRANGED WITH THE LOCAL ELECTRIC POWER DISTRIBUTOR. BID PRICES SHALL INCLUDE ALL CHARGES BY THE POWER COMPANY FOR INSTALLATION OF SERVICES TO THE BUILDING.

PROVIDE GROUNDING IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND AS SHOWN ON THE DRAWINGS.

THE POWER SERVICE SHALL BE 120/240 VOLTS, 1 PHASE, 3 WIRE. PROVIDE METERING AS REQUIRED BY THE POWER COMPANY.

GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER AND OF THE SAME SIZE CONDUCTOR USED TO INTERCONNECT THE GROUND RODS, AND TO THE WATER PIPING SYSTEM AS REQUIRED BY NEC ARTICLE 250.

GROUND RODS SHALL BE 3/4" DIAMETER BY 10 FEET LONG AND OF COPPER/CLAD CONSTRUCTION.

UNLESS OTHERWISE CALLED FOR, ALL GROUNDING AND GROUND ROD CONNECTIONS SHALL BE BY BURNDY HYGROUND PROCESS.

CONFIRM WITH THE POWER COMPANY THE POWER SERVICE ARRANGEMENTS. INCLUDE IN THE BID PRICE ALL COSTS RELATIVE TO THE POWER SERVICE WITH THE TYPE OF SERVICE PLANNED.

SERVICE ENTRANCE GROUNDING SHALL BE MADE BY GROUND RODS DRIVEN VERTICALLY INTO THE GROUND WHERE THE TOP OF THE ROD IS APPROXIMATELY 12" BELOW GRADE. THERE SHALL BE 3 DRIVEN GROUND RODS WITH THE RODS SPACED A MINIMUM OF 20 FEET APART IN A TRIANGULAR FORM AND INTERCONNECTED. FIRST ROD SHALL BE A GROUNDING ELECTRODE CONDUCTOR EXTENDED TO THE MAIN SERVICE SWITCH. CONNECT AS DIRECTED BY THE CODE. EXTEND THE GROUNDING CONDUCTOR TO THE NEAREST AVAILABLE METAL COLD WATER PIPE OF SIZE NOT LESS THAN 1" AND THE BUILDING STEEL AND MAKE CONNECTION THERETO.

PAD MOUNT TRANSFORMERS SHALL HAVE GROUND RODS PLACED AS DIRECTED BY THE UTILITY COMPANY. EXTEND GROUNDING CONDUCTOR INTO THE TRANSFORMER ENCLOSURE FOR THE TERMINATION TO THE NEUTRAL CONDUCTOR AND TO THE SERVICE ENTRANCE TRANSFORMER GROUNDING CONDUCTORS SHALL BE OF THE SAME SIZE AS THE GROUNDING ELECTRODE CONDUCTOR.

FURNISH AND INSTALL A GROUNDING JUMPER ON ALL WATER METERS OR UNIONS IN THE COLD WATER PIPING.

MINIMUM SIZE GROUNDING ELECTRODE CONDUCTOR SHALL BE A.W.G. NO. 2 FOR SERVICES LESS THAN 400 AMPERE, NO. 2/0 FOR SERVICES 400 TO 1000 AMPERE, AND NO. 4/0 FOR SERVICES 1000 AMPERE AND GREATER.

ALL GROUNDING ELECTRODE CONDUCTORS SHALL BE STRANDED BARE COPPER BURIED A MINIMUM OF 30" BELOW FINISHED GRADE.

SECTION 16030 BASIC MATERIALS

CONDUCTORS

THE MINIMUM SIZE CONDUCTOR FOR ALL POWER AND LIGHTING SHALL BE NO. 12 AWG, SOLID FOR SIZES NO. 10 AWG AND SMALLER, STRANDED FOR NO. 8 AWG AND LARGER.

CONDUCTORS SHALL BE 98% CONDUCTIVITY COPPER AND MEET OR EXCEED UL STANDARD 83, FEDERAL SPECIFICATION J-C-30A AND NATIONAL ELECTRICAL CODE.

ALL CONDUCTORS NO. 6 AWG AND SMALLER SHALL BE INSULATED WITH TYPE "THIN/THIN" DUAL RATED INSULATION. ALL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE EITHER TYPE "THIN/THIN" DUAL RATED OR "THW" INSULATION.

CURRENT CARRYING CAPACITY OF ALL CONDUCTORS IS TO BE BASED ON 60° C FOR 100 AMP AND LESS AND ALL OTHERS SHALL BE BASED ON 75° C, REGARDLESS OF THE CONDUCTOR INSULATION TYPE.

ALL CONDUITS SHALL CONTAIN A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR WHICH MAY NOT BE ILLUSTRATED ON THE PLANS.

NO LUBRICANT OTHER THAN POWDERED SOAPSTONE OR APPROVED PULLING COMPOUND MAY BE USED TO PULL CONDUITS.

CONDUCTORS SHALL NOT BE NICKED DURING INSULATION REMOVAL OR BENT AT SHARP ANGLES DURING DEVICE INSTALLATION OR PANELBOARD MAKE-UP.

CONDUCTORS NO. 8 AWG AND SMALLER FOR LIGHTING AND POWER BRANCH CIRCUITS SHALL BE SPliced WITH SPRING TYPE WIRE CONNECTORS. THE CONNECTOR SHALL BE A UL LISTED PRESSURE-TYPE CONNECTOR RATED AT 600V AND 100° C. IN-LINE SPlicing OF NO. 6 AWG AND LARGER CONDUCTORS SHALL BE WITH COMPRESSION-TYPE SLEEVES. WHERE CONDUCTORS ARE TAPPED OFF FEEDER CONDUCTORS NO. 6 AWG AND LARGER THE CONNECTION SHALL BE MADE AT POWER DISTRIBUTION BLOCKS SECURELY MOUNTED IN AN ENCLOSURE. THE POWER DISTRIBUTION BLOCK SHALL BE RATED AT 600V, 75° C AND UL RECOGNIZED. THE POWER DISTRIBUTION BLOCK SHALL BE COULD-SHANNUT, ILSCO OR APPROVED SUBSTITUTE.

WHERE GROUNDING CONDUCTORS ARE TERMINATED IN JUNCTION OR OUTLET BOXES AN APPROVED GROUNDING SCREW OR CLIP SHALL BE USED. COVER SCREW IS NOT AN ACCEPTABLE MEANS OF TERMINATION. SURFACES SHALL BE FREE OF PAINT, RUST, AND GREASE OR OTHER FOREIGN MATERIAL.

CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH NEC ARTICLE 310.

CONDUIT

USE GALVANIZED RIGID STEEL CONDUIT OR INTERMEDIATE METAL CONDUIT UNDERGROUND, IN CONCRETE, OR WHERE MECHANICAL STRENGTH OR EXPOSURE TO PHYSICAL DAMAGE IS REQUIRED. SCHEDULE 40 RIGID NONMETALLIC CONDUIT MAY ALSO BE USED UNDERGROUND OR IN CONCRETE. ELECTRICAL METALLIC TUBING SHALL BE USED ELSEWHERE UNLESS NOTED OTHERWISE.

ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT EXCEPT WHERE METAL-CLAD CABLE MAY BE PERMITTED BY OTHER SECTIONS OF THIS SPECIFICATION. NON-METALLIC SHEATHED CABLES (TYPES NM, SE, UF, ETC) SHALL NOT BE USED. TYPE 50 SERVICE COORD SHALL ONLY BE UTILIZED WHERE SPECIFICALLY NOTED.

CONDUIT SHALL MEET: GALVANIZED RIGID STEEL - UL 6 AND ANSI C80.1; "IMC" - UL 1242 AND ANSI C80.6; "EMT" - UL 797 AND ANSI C80.3; "LFMC" - UL 360; "RMC" - UL 651 POLYVINYL CHLORIDE.

POWER, TELEPHONE, AND OTHER UNDERGROUND SERVICE ENTRANCE CONDUITS AND PANELBOARD FEEDER CONDUITS WHERE UNDERGROUND OR CONCRETE ENCASED MAY BE SCHEDULE 40 PVC. TRANSITION TO (SCHEDULE 80 PVC) BEFORE EMERGING ABOVE GRADE OR SLAB WHERE EXPOSED TO PHYSICAL DAMAGE. CHECK LOCAL CODES AND UTILITY REQUIREMENTS. PVC CONDUIT SHALL MEET FEDERAL SPECIFICATIONS WC-1094A, NEMA TC2 AND UL 651.

EACH LENGTH OF CONDUIT SHALL BE STAMPED WITH NAME AND TRADE MARK OF MANUFACTURER AND APPROVAL OF NATIONAL BOARD OF FIRE UNDERWRITERS.

PROTECT THREADS OF GALVANIZED RIGID STEEL CONDUIT AND IMC DURING STORAGE.

STACK CONDUIT ON BLOCKING OFF GROUND TO PREVENT THE ENTRY OF FOREIGN MATTER.

TAKE EVERY PRECAUTION TO PREVENT ENTRY OF WATER AND FOREIGN MATTER IN CONDUIT DURING CONSTRUCTION. INSTALL FACTORY CONDUIT CAPS ON CONDUITS PRIOR TO CONSTRUCTION. SWAB TRAPPED RUNS PRIOR TO PULLING CONDUCTORS.

GALVANIZED RIGID STEEL CONDUIT OR "IMC" SHALL BE TERMINATED IN THREADED HUBS OR WITH DOUBLE LOCKNUTS (BONDUIT TYPE) DRAIN TIGHT AND CONDUIT BUSHING.

FIELD CUT CONDUIT SHALL BE CUT SQUARE, REAMED SMOOTH AND THREADED PROPERLY AND FULL PAINT FIELD CUT MALE THREADS WITH CONDUCTIVE AND RUST PREVENTIVE COMPOUND. CUTTING OIL AND DEBRIS SHALL BE REMOVED PRIOR TO INSTALLATION.

PVC CONDUIT SHALL BE TERMINATED WITH APPROVED CONNECTORS AND FITTINGS. PVC CONDUIT SHALL BE HEATED AND BENT WITH MANUFACTURER APPROVED EQUIPMENT AND METHODS. OPEN FLAME OR TORCH IS NOT AN ACCEPTABLE MEANS OF HEATING. FIELD CUTS SHALL BE SQUARE AND REAMED SMOOTH.

FLEXIBLE CONDUIT SHALL BE INSTALLED NEATLY, TERMINATED WITH COUPLINGS LISTED FOR THE APPLICATION, AND SUPPORTED PER NEC.

"EMT" CONDUIT SHALL BE TERMINATED WITH STEEL SET-SCREW TYPE COUPLINGS, CONNECTORS AND FITTINGS. FIELD-CUT CONDUIT SHALL BE SQUARE AND REAMED SMOOTH. ALL CONDUIT 1-1/4" AND LARGER SHALL HAVE INSULATED GROUNDING BUSHINGS INSTALLED.

CONDUIT SHALL BE INSTALLED AND SUPPORTED PER NATIONAL ELECTRICAL CODE ARTICLE 342 (INTERMEDIATE METAL CONDUIT), ARTICLE 344 (RIGID METAL CONDUIT), ARTICLE 350 (LIQUIDTIGHT FLEXIBLE METAL CONDUIT), ARTICLE 352 (RIGID POLYVINYL CHLORIDE CONDUIT), ARTICLE 358 (ELECTRICAL METALLIC TUBING), ARTICLE 300 (GENERAL REQUIREMENTS FOR WIRING METHODS) AND ARTICLE 110 (REQUIREMENTS FOR ELECTRICAL INSTALLATIONS).

WHERE EXPOSED:

1. ORGANIZE THE RUNS INTO GROUPS AND COORDINATE WITH OTHER TRADES TO AVOID INTERFERENCE.
2. ARRANGEMENT SHALL BE NEAT AND ORDERLY WITH RUNS PARALLEL TO STRUCTURAL ELEMENTS. NO DIAGONAL RUNS WILL BE ALLOWED.
3. SUPPORTS SHALL BE "UNISTRUT" WITH SUITABLE CLAMPS THE UNISTRUT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURES. PAINT CUT ENDS OF UNISTRUT WITH RUST PROHIBITOR.

PRIMARY CONDUITS SHALL BE LOCATED A MINIMUM OF 42" BELOW FINISHED GRADE. LOCATE A MARKER TAPE 12" BELOW GRADE DIRECTLY ABOVE THE PRIMARY CONDUIT.

SECONDARY CONDUITS FROM THE TRANSFORMER TO THE SERVICE ENTRANCE SHALL BE A MINIMUM OF 24" BELOW GRADE.

ALL CONDUITS ARE TO CONTAIN A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR WHICH MAY NOT BE ILLUSTRATED.

METAL-CLAD CABLE

METAL-CLAD CABLE (TYPE MC) SHALL BE OF THE INTERLOCKED SHEATH TYPE. THE SHEATH SHALL BE CORRUGATED CLASS A TYPE ALUMINUM.

CONDUCTORS SHALL MEET THE REQUIREMENTS OF SECTION 16030 CONDUCTORS.

METAL-CLAD CABLE SHALL NOT BE UTILIZED FOR CIRCUITS RATED 100 AMPERES OR LARGER. SUCH CIRCUITS SHALL UTILIZE INDIVIDUAL CONDUCTORS IN CONDUIT.

EACH METAL-CLAD CABLE SHALL HAVE A FULL SIZED, GREEN INSULATED, COPPER EQUIPMENT GROUNDING CONDUCTOR. ARMORED CABLE (TYPES AC OR BX) SHALL NOT BE USED.

METAL-CLAD CABLE SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH UNDERWRITERS LABORATORIES, INC., STANDARD FOR METAL-CLAD CABLES, UL508. THE CABLE SHALL BEAR THE UL LABEL AND THE MANUFACTURERS "E" NUMBER. METAL-CLAD CABLE SHALL BE COPRA/CLAD AS MANUFACTURED BY INTERLEX (DIVISION OF COLEMAN CABLE) OR APPROVED SUBSTITUTE. ONE 24 INCH SAMPLE WILL BE REQUIRED WITH SUBMITTALS FOR APPROVAL.

METAL-CLAD CABLE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND IN STRICT ACCORDANCE WITH ARTICLE 334 OF THE NATIONAL ELECTRICAL CODE. SUPPORT CABLES EVERY 6 FEET PER ARTICLE 334 AND BOND CABLE PER ARTICLE 334. DO NOT EXCEED THE MANUFACTURERS MAXIMUM PULLING STRAIN.

USE ONLY METAL CABLE TYPES UN, LISTED FOR PURPOSES. CONNECTORS INTENDED FOR TYPES NM, AC, BX, AND OTHER TYPES ARE NOT ACCEPTABLE.

WRING BOXES

FLUSH SWITCH AND RECEPTACLE BOXES: IN STUO AND PLASTERED MASONRY USE MINIMUM BOX SIZES OF 4" SQUARE X 1-1/2" DEEP WITH DEVICE EXTENSION RING AS REQUIRED TO FLUSH WITH WALL. IN EXPOSED MASONRY AND CONCRETE WALLS USE RACO CO. 2-1/2" DEEP MASONRY TYPE BOXES.

PROPERLY SECURE AND ATTACH ALL BOXES DIRECTLY TO THE BUILDING CONSTRUCTION. SUPPORT BY CONDUIT IS NOT ACCEPTABLE.

ALL BOXES INSTALLED ON OPPOSITE SIDES OF ONE-HOUR AND TWO-HOUR WALLS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.

BOXES INSTALLED ON OPPOSITE SIDES OF A NON-RATED WALL SHALL NOT BE INSTALLED BACK TO BACK.

WRING DEVICES

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
EATON (ARROW HART)
HUBBELL (INCORPORATED); WRING DEVICE-KELLMES
PASS & SEYMOUR/LEGRAND (PASS & SEYMOUR)

SOURCE LIMITATIONS: OBTAIN EACH TYPE OF WRING DEVICE AND ASSOCIATED WALL PLATE FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.

GENERAL WRING-DEVICE REQUIREMENTS

WRING DEVICES, COMPONENTS, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION. ALL WRING DEVICES SHALL BE MINIMUM SPECIFICATION GRADE. COMMERCIAL GRADE NOT ALLOWED.

DEVICES SHALL COMPLY WITH NFPA 70.

DEVICES THAT ARE MANUFACTURED FOR USE WITH MODULAR PLUG-IN CONNECTORS MAY BE SUBSTITUTED UNDER THE FOLLOWING CONDITIONS:

1. CONNECTORS SHALL COMPLY WITH UL 2459 AND SHALL BE MADE WITH STRANDED BUILDING WIRE.
2. DEVICES SHALL COMPLY WITH THE REQUIREMENTS IN THIS SECTION.

STRAIGHT-BLADE RECEPTACLES

CONVENIENCE RECEPTACLES, 125V, 20A, COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION 5-20R, UL 498, AND FS W-C-596. ALL WRING DEVICES SHALL BE MINIMUM SPECIFICATION GRADE. COMMERCIAL GRADE NOT ALLOWED.

TAMPER-RESISTANT CONVENIENCE RECEPTACLES, 125V, 20A, COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION 5-20R, UL 498 SUPPLEMENT 50, AND FS W-C-596. ALL WRING DEVICES SHALL BE MINIMUM SPECIFICATION GRADE. COMMERCIAL GRADE NOT ALLOWED.

GFCI RECEPTACLES

GENERAL DESCRIPTION:
STRAIGHT BLADE, NON-FEED-THROUGH TYPE.

COMPLY WITH NEMA WD 1, NEMA WD 6, UL 498, UL 943 CLASS A, AND FS W-C-596. ALL WRING DEVICES SHALL BE MINIMUM SPECIFICATION GRADE. COMMERCIAL GRADE NOT ALLOWED.

INCLUDE INDICATOR LIGHT THAT SHOWS WHEN THE GFCI HAS MALFUNCTIONED AND NO LONGER PROVIDES PROPER GFCI PROTECTION.

RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE UL 498SE WEATHER RESISTANT COMPLIANT.

DUPLEX GFCI CONVENIENCE RECEPTACLES, 125V, 20A, RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE UL 498SE WEATHER RESISTANT COMPLIANT.

TAMPER-RESISTANT GFCI CONVENIENCE RECEPTACLES, 125V, 20A, RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE UL 498SE WEATHER RESISTANT COMPLIANT.

TOGGLE SWITCHES

SWITCHES SHALL COMPLY WITH NEMA WD 1, UL 20, AND FS W-S-896. ALL WRING DEVICES SHALL BE MINIMUM SPECIFICATION GRADE. COMMERCIAL GRADE NOT ALLOWED.

SWITCHES, 120/277V, 20A:

1. SINGLE POLE
2. TWO POLE
3. THREE WAY
4. FOUR WAY

PILOT-LIGHT SWITCHES, 20A: DESCRIPTION: SINGLE POLE, WITH LIGHTED HANDLE, ILLUMINATED WHEN SWITCH IS "OFF".

KEY-OPERATED SWITCHES, 120/277V, 20A, SINGLE POLE, WITH FACTORY-SUPPLIED KEY IN LIEU OF SWITCH HANDLE.

WALL PLATES

SINGLE AND COMBINATION TYPES SHALL MATCH CORRESPONDING WRING DEVICES.

FINISH:

1. PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE
2. MATERIAL FOR FINISHED SPACES: AS SELECTED BY ARCHITECT
3. MATERIAL FOR UNFINISHED SPACES: GALVANIZED STEEL
4. MATERIAL FOR DAMP, WET, OR OUTDOOR LOCATIONS: DIE-CAST ALUMINUM WITH LOCKABLE LIFT COVER, AND LISTED AND LABELED FOR USE IN WET AND DAMP LOCATIONS PER NEMA 250, COMPLYING WITH UL 5140-2000

EXTRA-DUTY, "WEATHERPROOF IN-USE", TYPE 3R, WEATHER-RESISTANT. PLASTIC HOOD COVERS ARE NOT ACCEPTABLE.

FINISHES

CONDUCTORS:

1. WRING DEVICES CONNECTED TO NORMAL POWER SYSTEM: AS SELECTED BY ARCHITECT UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70 OR ELECTRICAL LISTING
2. WRING DEVICES CONNECTED TO EMERGENCY POWER SYSTEM: RED.
3. TVSS DEVICES: BLUE.

ISOLATED-GROUND RECEPTACLES: AS SPECIFIED ABOVE, WITH ORANGE TRIANGLE ON FACE.

WALL PLATE COLOR: FOR THERMOPLASTIC COVERS, MATCH DEVICE COLOR.

PANELBOARDS

BRANCH CIRCUIT PANELBOARDS SHALL BE OF THE CIRCUIT BREAKER, DEAD-FRONT SAFETY TYPE DOUBLE-RINGED DOOR-IN-DOOR CONSTRUCTION, EQUAL TO CUTLER-HAMMER WITH BOLT-ON DEVICES, WITH CONTENTS AS LISTED ON PANEL SCHEDULE. SHALL BEAR LISTING DEVICE LABEL OF UL, AND SHALL MEET ALL APPLICABLE REQUIREMENTS OF NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION.

ALL BREAKERS 800A AND LARGER SHALL HAVE AN ENERGY REDUCING SWITCH AS REQUIRED BY NEC 240.87.

SERVICE ENTRANCE PANELS SHALL BE UL LISTED AS SERVICE ENTRANCE EQUIPMENT AND SHALL BE EQUIPPED WITH LINE-SIDE TERMINAL GUARDS AND BARRIERS INSTALLED PER NEC 408.3(A)(2).

BALANCE ALL CIRCUITS IN A PANEL TO ACHIEVE NOT MORE THAN 10 PERCENT UNBALANCED NEUTRAL CURRENT IN PANEL FEEDER.

PROVIDE TYPED DIRECTORY CARDS UNDER DOORS.

MINIMUM SHORT CIRCUIT INTERRUPTING CAPACITY SHALL BE AS INDICATED ON PANEL SCHEDULES. ALL PANELS SHALL BE FULLY RATED. SERIES RATINGS SHALL NOT BE APPLIED OR UTILIZED.

EACH UNGROUNDED SYSTEM CONDUIT SHALL BE IDENTIFIED BY PHASE AND SYSTEM, AND PERMANENTLY POSTED AT EACH BRANCH-CIRCUIT PANELBOARD. CONDUCTORS SHALL BE MARKED AT ALL LOCATIONS WHERE ACCESSIBLE. REFER TO NEC-210.4(D).

SECURE SURFACE MOUNTED PANELBOARDS TO WALL USING 1/4" TOGGLE BOLTS, BOLTED TO MASONRY WALL. WHERE HOLLOW BLOCK WALLS DO NOT OCCUR, SUITABLE EXPANSION SHIELDS AND ANCHOR BOLTS SHALL BE UTILIZED.

PRIOR TO PROJECT COMPLETION, PROVIDE A NEW TYPED DIRECTORY CARD UNDER PLASTIC AFFIXED TO THE INTERIOR OF EACH PANELBOARD DOOR FOR IDENTIFICATION OF THE PANELBOARD AND ALL CIRCUITS CONTAINED THEREIN. THIS NEW TYPED DIRECTORY SHALL AT A MINIMUM PROVIDE THE FOLLOWING INFORMATION:

1. PANELBOARD IDENTIFICATION MARK NUMBER.
2. PANELBOARD VOLTAGE AND PHASE.
3. PANELBOARD AMPERAGE.

INSTALLING CONTRACTOR'S COMPANY NAME, SERVICE DEPARTMENT CONTACT INFORMATION, AND THE CONTRACTOR'S PROJECT IDENTIFYING NUMBER.

5. CIRCUIT BREAKERS:
FOR EACH CIRCUIT BREAKER, PROVIDE THE FOLLOWING INFORMATION:
BREAKER AMPERAGE AND NUMBER OF POLES; IDENTIFY EQUIPMENT SERVED.

FOR LIGHTING AND RECEPTACLE CIRCUITS, IDENTIFY ROOM OR ROOMS (BY ROOM NAME, OR ROOM NUMBER AS DESIGNATED ON THE PROJECT DRAWINGS) SERVED BY INDIVIDUAL CIRCUITS.

FOR EQUIPMENT SERVED BY CIRCUIT BREAKERS, PROVIDE DRAWING MARK NUMBER OF THE EQUIPMENT SERVED.

SAFETY SWITCHES

SWITCHES SHALL BE HEAVY-DUTY, HORSEPOWER RATED, QUICK-MADE, QUICK-BREAK FUSED WITH ARC SHIELDS WITH ENCLOSED CONSTRUCTION.

ALL SAFETY SWITCHES SHALL BE MECHANICALLY INTERLOCKED TO PREVENT OPENING WHILE ENERGIZED. SCREWS FROM DOOR TO CAN ARE NOT ACCEPTABLE.

LIGHTING

LIGHTING FIXTURES

LIGHTING FIXTURES: SPECIFIED UNITS INDICATE QUALITY, CONFIGURATION AND PERFORMANCE REQUIRED. ALTERNATES WILL BE ACCEPTED ONLY UPON RECEIPT OF COMPLETE AND ADEQUATE INFORMATION TO ALLOW EVALUATION AND DETERMINATION REGARDING APPROVAL.

CONNECT RECESSED FIXTURES USING "GREENFIELD" AND #12 AWG WIRE. FACTORY INSTALL FIXTURE WIRE OR RIGITALLY IN A SMALLER AWG CONDUCTOR. ACCEPTABLE CONTRACTOR INSTALLED WIRING SHALL BE #12 AWG. DIRECT CONNECTION OF RIGID CONDUIT TO FIXTURE IS UNACCEPTABLE. INSTALL A #12 AWG GREEN INSULATED GROUNDING CONDUCTOR IN EACH SECTION OF GREENFIELD FOR GROUNDING CONTINUITY. MECHANICALLY CONNECT GROUNDING CONDUCTOR IN A PERMANENT AND EFFECTIVE MANNER. CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS.

THE MOUNTING OF LIGHTING FIXTURES SHALL BE CAREFULLY AND SECURELY MADE. ATTACHMENT SHALL BE MADE TO THE BUILDING STRUCTURAL SYSTEM.

LAY-IN FIXTURES SHALL BE SUPPORTED IN THE CEILING'S FRAMING SYSTEM. FIXTURE SUPPORT SHALL MEET THE INTENT OF NEC 410.16 (B) AND OTHER BUILDING CODES. CONTRACTOR SHALL COORDINATE WITH CEILING INSTALLATION TRADE SO AS TO PROVIDE REQUIRED SUPPORT IF THE CEILING SUSPENSION SYSTEM DOES MEET THE NEC OR OTHER BUILDING CODES' REQUIREMENTS FOR SUPPORTING FIXTURES. IF NOT THE RESPONSIBILITY OF THIS ELECTRICAL CONTRACTOR TO SUPPLY HANGER WIRE SUPPORT EQUAL TO THE CEILING SUSPENSION SUPPORT WIRE AT EACH CORNER OF THE FIXTURE.

FIXTURES WHICH ARE SURFACE MOUNTED SHALL BE ATTACHED TO THE CEILING FRAMING, EITHER BY BRIDGING THE FRAMING AND THE USE OF THREADED BOLTS, OR BY SUITABLE CLAMPS ATTACHED TO THE FRAME. ATTACHMENT TO STEEL FRAMING SHALL BE BOLTED CONNECTORS MANUFACTURED ESPECIALLY FOR THE PURPOSE. EXPANSION ANCHORS MAY BE USED PROVIDED THEY HAVE A METAL SHEATH. PLASTIC SHEATH EXPANSION ANCHORS OR SIMILAR DEVICES ARE NOT ACCEPTABLE.

LIGHTING FIXTURES AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE, OR ENGINEER APPROVED SUBSTITUTE, FIXTURE NUMBERS GIVEN INDICATE MINIMUM STANDARDS FOR FIXTURE PHYSICAL DEPTH, DIAMETER AND CONSTRUCTION MATERIALS, EVEN WHEN SUCH DETAILS ARE NOT SPECIFICALLY MENTIONED IN THE LIGHTING FIXTURE SCHEDULE. FIXTURES WHICH DO NOT MEET THESE MINIMUM REQUIREMENTS WILL BE REJECTED.

POINT BY POINT COMPUTER PHOTOMETRIC AND LIGHTING POWER DENSITY CALCULATION PRINTOUTS ARE REQUIRED AS NOTED ON THE DRAWINGS. SUBMITTALS WILL NOT BE APPROVED WITHOUT THE REQUIRED CALCULATIONS.

EXIT SIGNS

INSTALLATIONS FOR CEILING UNITS IN LAY-IN TILE AREAS SHALL BE INDEPENDENT OF THE TILE. ATTACH HANGERS TO THE CONCRETE AND PROPERLY SUPPORTED TO PREVENT SAGGING OF THE CEILING SYSTEM.

EXTERIOR LIGHT CONTROL

THE CONTACTORS SHALL BE MULTIPLE POLE, RATED 25 AMPERES, THEY SHALL BE MECHANICALLY HELD. USE MECHANICALLY HELD, WHERE SPECIFICALLY CALLED FOR.

PHOTOCELL SHALL BE AS MANUFACTURED BY THE YORK COMPANY. IT SHALL BE CATALOG NO. 2101 FOR 120 VOLTS AND 2104 FOR 208 AND 277 VOLTS AND BE RATED SINGLE POLE, SINGLE THROW, 2000 WATTS.

THE TIME SWITCH SHALL BE AS MANUFACTURED BY THE YORK COMPANY. IT SHALL BE CATALOG NO. 7200L FOR 120 VOLTS AND 7202L FOR 208 AND 277 VOLTS AND BE RATED DOUBLE POLE, SINGLE THROW, 40 AMPERES WITH RESERVE POWER.

MISCELLANEOUS WRING & SYSTEMS

STRUCTURAL GROUNDING

GROUNDING OF THE METAL BUILDING SHELL AND STRUCTURAL STEEL SHALL BE ACCOMPLISHED IN ADDITION TO THE GROUNDING PROVIDED IN OTHER SECTIONS OF THIS SPECIFICATION.

CONDUCTORS AND ALL COMPONENTS SHALL BE NEW AND UNUSED. USE ONLY COPPER CONDUCTORS AND COPPER GROUND RODS.

CONNECTION SHALL BE MADE TO THE BUILDING STEEL USING TWO HOLE COMPRESSION LUGS BOLTED TO THE VERTICAL COLUMNS. CLEAN STEEL BEFORE CONNECTING.

PROVIDE PVC CONDUIT DURING THE CONCRETE POUR TO ALLOW INSTALLATION AFTER SLAB IS IN PLACE.

GROUND RODS SHALL BE 3/4" X 10' DRIVEN VERTICALLY INTO THE TOP 12" BELOW EARTH, 10' CLEAR OF BUILDING, GRAVELLED CONTACT.

BENDS IN CONDUCTORS SHALL BE AS FEW AS POSSIBLE AND OF A LONG SWEEPING RADIUS.

TRANSIENT VOLTAGE SURGE PROTECTIVE DEVICE

A PANELBOARD LEVEL TRANSIENT VOLTAGE SURGE PROTECTIVE DEVICE (SPD) SHALL BE CONNECTED TO EACH PANELBOARD INDICATED ON THE ONE-LINE DIAGRAM. THE DEVICE SHALL BE UL LISTED AND COMPLY WITH UL 1449, THIRD EDITION.

WHERE THE ASSOCIATED PANELBOARD IS SURFACE MOUNTED INDOORS AND IS OF NEMA 1 CONSTRUCTION, THE SPD MAY BE SURFACE MOUNTED ADJACENT TO THE PANELBOARD OR INTEGRAL TO THE PANELBOARD

Cumberland County Board of Education

368 Fourth Street, Crossville, TN 38555

Section 1

Due to the fact that these additions, remodels or construction projects when completed become the sole responsibility and liability of Cumberland County Schools, all projects must be reviewed by the Building and Grounds committee and approved by the full Board of Education

Date 9-3-22 / 10-31-22

School Name Stone Memorial

Project Name Hitting facility/locker room

Project Description Adding a locker room and Hitting facility off The 3rd base dugout at baseball field

Estimated Value 150,000.00

Funding Source ~~BO~~ Booster club

Section 2

Plans, designs, installation information and process for funding must be submitted to the Maintenance Department for review. These documents must include Fire Marshall, Codes Inspectors, Playground Inspectors and Insurance approval as needed. Contractor licenses w/ Insurance Copy -

Approved by: I will need copy of letter from SFMO classifying this building. I will need to be copied on all inspections for City Codes Dept.
Director of Maintenance Mary Kungen

Fire Marshall Attached Code Inspectors Attached letter

Playground Inspectors Insurance Approval Attached paperwork.

Director of Schools _____

Building and Grounds Committee _____

Board of Education Approval Date _____