UTES TWO BAY ADDITION

BLDG # C-0200

CAMP JAMES A. GARFIELD JOINT MILITARY TRAINING CENTER

BRACEVILLE TOWNSHIP, TRUMBULL COUNTY, OHIO

THE NATIONAL GUARD BUREAU

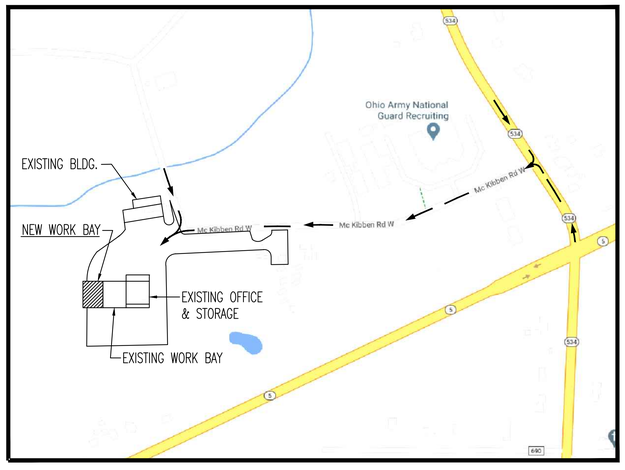
CONTRACT: W9133L-16-D-0005

ORDER: W9136420F0093

OHIO ARMY NATIONAL GUARD

PROJECT # 390321

VACINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

FSB FEDERAL DESIGN GROUP JV

MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK — ANTHONY F. PEDICINI — LIC. NO. 099908 — LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD — SINCE 1788

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	RKF
DRAWN BY:	CN/KZ
REVIEWED BY:	RKF
PROJECT MANAGER:	BG
PROJECT NUMBER:	507101521
SHEET TITLE:	**COVER SHEET**
ISSUE DATE:	NOVEMBER 9, 2022
SHEET NUMBER:	G-001

DWG NAME: C:\USERS\FLO6970\4DMS771495\07101521-G-001.DWG SAVE DATE: 11/16/2022 10:31 AM BY: OU94692 PLOT DATE: 11/16/2022 10:33 AM

BID DOCUMENTS

INDEX OF DRAWINGS

DRAWING TITLE	SHEET NO.	DRAWING NO.
TITLE		
COVER SHEET	G-001	1 OF 57
INDEX OF DRAWINGS, GENERAL NOTES, DEMO. NOTES, ABBREVIATIONS & LEGEND	G-002	2 OF 57
EGRESS PLAN	G-011	3 OF 57
CODE DATA	G-012	4 OF 57
CIVIL		
COVER SHEET AND GENERAL NOTES	C-100	5 OF 57
OVERALL LOCATION PLAN	C-101	6 OF 57
EXISTING CONDITION WITH TOPOGRAPHY	C-102	7 OF 57
DEMOLITION PLAN	C-103	8 OF 57
LAYOUT PLAN	C-104	9 OF 57
UTILITY PLAN	C-105	10 OF 57
GRADING PLAN	C-106	11 OF 57
STORM WATER POLLUTION PREVENTION PLAN	C-107	12 OF 57
STORM WATER POLLUTION PREVENTION PLAN NOTES	C-108	13 OF 57
STORM WATER POLLUTION PREVENTION PLAN DETAILS	C-109	14 OF 57
STANDARD DETAILS	C-110	15 OF 57
STRUCTURAL		
GENERAL NOTES	S-001	16 OF 57
TYPICAL DETAILS	S-002	17 OF 57
TYPICAL DETAILS	S-003	18 OF 57
GROUND FLOOR PLAN	S-101	19 OF 57
LOW ROOF/CRANE RAIL PLAN	S-102	20 OF 57
HIGH ROOF PLAN	S-103	21 OF 57
WALL SECTIONS	S-301	22 OF 57
WALL SECTIONS	S-302	23 OF 57
FOUNDATION DETAILS	S-501	24 OF 57
SECTIONS AND DETAILS	S-502	25 OF 57
ARCHITECTURAL		
FLOOR PLAN	A-101	26 OF 57
REFLECTED CEILING PLAN	A-111	27 OF 57
ROOF PLAN AND DETAILS	A-121	28 OF 57
ROOF DETAILS	A-122	29 OF 57
EXTERIOR ELEVATIONS	A-201	30 OF 57
BUILDING SECTIONS	A-301	31 OF 57
WALL SECTIONS AND DETAILS	A-302	32 OF 57
DOOR AND ROOM FINISH SCHEDULE AND DETAILS	A-601	33 OF 57
WINDOW AND LOUVER SCHEDULES AND DETAILS	A-602	34 OF 57
MECHANICAL		
COVER SHEET	M-001	35 OF 57
FLOOR PLAN – DEMOLITION	M-101	36 OF 57
FLOOR PLAN – NEW WORK	M-102	37 OF 57
FLOOR PLAN – RADIANT HEAT NEW WORK	M-103	38 OF 57
ROOF PLAN – NEW WORK	M-104	39 OF 57
FLOW DIAGRAMS AND DETAILS	M-501	40 OF 57
DETAILS	M-502	41 OF 57
SCHEDULES	M-601	42 OF 57
CONTROL DIAGRAMS	M-701	43 OF 57
PLUMBING		
COVER SHEET	P-001	44 OF 57
FLOOR PLAN – DEMOLITION	P-101	45 OF 57
FLOOR PLAN – NEW WORK	P-102	46 OF 57
DETAILS	P-501	47 OF 57
SCHEDULES	P-601	48 OF 57
RISER DIAGRAMS	P-602	49 OF 57
RISER DIAGRAMS	P-603	50 OF 57
ELECTRICAL		
NOTES, SYMBOLS AND ABBREVIATIONS	E-001	51 OF 57
DEMOLITION PLAN	ED-101	52 OF 57
POWER PLAN	E-101	53 OF 57
RECEPTACLE, DATA AND GROUNDING PLAN	E-102	54 OF 57
POWER AND LIGHTING PROTECTION PLAN	E-103	55 OF 57
LIGHTING PLAN	E-104	56 OF 57
PANEL SCHEDULES, SINGLE LINE DIAGRAM AND FIXTURE SCHEDULE	E-105	57 OF 57

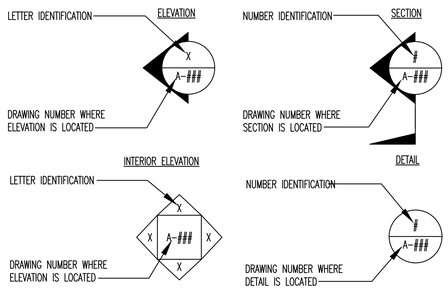
GENERAL NOTES

1. ALL WORK, MATERIALS AND WORKMANSHIP SHALL CONFIRM TO THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL CODES, ORDINANCES, RULES AND REGULATIONS. WHERE SUCH CODES, RULES AND REGULATIONS ARE AT VARIANCE WITH THE PLANS AND NOTES, SAID CODES, RULES AND REGULATIONS, ETC. SHALL TAKE PRECEDENCE OVER THE PLANS AND NOTES.
2. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE BUILDING CODES AND/ REGULATIONS AND PAYING FOR AND OBTAINING ALL NECESSARY AND REQUIRED INSPECTIONS, APPROVALS AND PERMITS, NECESSARY TO PERFORM ALL WORK AND SERVICES HEREIN NOTED OR INDICATED ON THE DRAWINGS.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AT THE JOB SITE AND SHALL REPORT ANY DISCREPANCIES TO THE GOVERNMENT PRIOR TO STARTING CONSTRUCTION. COMMENCEMENT OF THE WORK BY THE CONTRACTOR SHALL IMPLY HIS ACCEPTANCE OF ALL EXISTING CONDITIONS.
4. ALL WORK SHALL BE EXECUTED IN A CAREFUL AND ORDERLY MANNER WITH THE LEAST POSSIBLE NOISE, DUST, OR DISTURBANCE TO OCCUPANTS, ADJACENT SITES AND BUILDINGS.
5. THE CONTRACTOR SHALL PROVIDE PROTECTION FOR THE GENERAL PUBLIC AND CONSTRUCTION WORKERS IN AND AROUND THE CONSTRUCTION SITE.
6. DETAILS ON THE DRAWINGS ARE SHOWN AT SPECIFIC LOCATIONS AND ARE INTENDED TO SHOW GENERAL REQUIREMENTS THROUGHOUT. DETAILS NOTED "TYP." IMPLY ALL CONDITIONS TREATED SIMILARLY.
7. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED ON THE DRAWINGS.
8. THE CONTRACTOR MUST FULLY INFORM HIMSELF OF THE CONDITIONS RELATING TO THE CONSTRUCTION AND LABOR UNDER WHICH THE WORK WILL BE PERFORMED AND COMPARE THE DRAWINGS AND SPECIFICATIONS WITH THE WORK IN PLACE. FAILURE TO DO SO WILL NOT RELIEVE CONTRACTOR OF HIS OBLIGATIONS TO FURNISH ALL LABOR AND MATERIAL NECESSARY TO CARRY OUT THE PROVISIONS OF THE CONTRACT DOCUMENTS AND TO COMPLETE THE CONTEMPLATED WORK FOR THE CONSIDERATION SET FORTH IN HIS BID. EACH CONTRACTOR, IN THE CARRYING OUT OF HIS WORK, SHALL EMPLOY SUCH METHODS OR MEANS THAT WILL NOT CAUSE ANY INTERRUPTIONS OR INTERFERENCE WITHIN THE WORK OF ANY OTHER.
9. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PUBLISHED SPECIFICATIONS AND RECOMMENDED PRACTICES OF THE MANUFACTURERS AND THE APPROPRIATE APPLICABLE STANDARDS.
10. CONTRACTOR SHALL IMPLEMENT THE APPROPRIATE SOIL CONSERVATION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ACCORDANCE WITH THE PROVISIONS OF THE STATE OF OHIO AND CJAG JMTC.
11. ALL EQUIPMENT POWER/ELECTRICAL, GAS, WATER, AND VENTILATION CONNECTIONS ARE BASED ON THE BASIS OF DESIGN EQUIPMENT. IF SUBMITTED EQUIVALENT REQUIRES DIFFERENT POWER/ELECTRIC, GAS, WATER AND VENTILATION CONNECTIONS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL ENGINEERING SIGNED AND SEALED CALCULATIONS, AND DRAWINGS DESIGNING THE UPGRADE UTILITY SIZES AND VERIFYING THAT THE CONTRACT DOCUMENTS DESIGNED SIZES ARE SUFFICIENT FOR THE EQUIPMENT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING WATERTIGHT INTEGRITY OF THE BUILDING AT ALL TIMES. ALL WATER DAMAGE SHALL BE REPAIRED AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE GOVERNMENT.
13. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE/RELOCATE PORTIONS OF THE EXISTING CONSTRUCTION THAT CONFLICTS WITH THE WORK AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE GOVERNMENT.

GENERAL DEMOLITION NOTES

1. PRIOR TO START OF DEMOLITION, INSPECT AREAS IN WHICH WORK WILL BE PERFORMED. NOTE EXISTING CONDITIONS OF STRUCTURE SURFACES, EQUIPMENT, OR SURROUNDING PROPERTY THAT COULD BE MISCONSTRUED AS DAMAGE RESULTING FROM SELECTIVE DEMOLITION WORK; FILE WITH STATE PRIOR TO STARTING WORK.
2. THE CONTRACTING OFFICER ASSUMES NO RESPONSIBILITY FOR ACTUAL CONDITION OF ITEMS OR STRUCTURES TO BE DEMOLISHED OR REMOVED.
3. ALL DEMOLITION ACTIVITIES, CUTTING AND PATCHING REQUIRED IN CONNECTION WITH THE WORK SHALL BE PERFORMED BY MECHANICS OF THE SPECIFIC TRADE INVOLVED AND AS REQUIRED TO EXECUTE EACH LINE OF WORK. ALL PATCHING SHALL BE FINISHED TO MATCH ADJACENT SURFACES EITHER NEW OR EXISTING TO REMAIN.
4. CONDUCT DEMOLITION OPERATIONS AND REMOVAL OF DEBRIS IN A MANNER TO ENSURE MINIMUM INTERFERENCE WITH WALKS AND OTHER ADJACENT OCCUPIED AND USED FACILITIES.
5. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES, LATEST EDITIONS.
6. ALL DEMOLITION MATERIALS AND DEBRIS SHALL BE LEGALLY DISPOSED OFF THE PROPERTY.

GENERAL SYMBOLS



ABBREVIATIONS:

A.F.F.	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
B	BOLLARD
BO	BOTTOM OF
BOD	BASIS OF DESIGN
CF	CEILING FAN
CJ	CONTROL JOINT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DWG	DRAWING
EL/ELEV	ELEVATION
EJ	EXPANSION JOINT
EX	VEHICLE EXHAUST SIR VAC UNIT
EXT	EXTERIOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FT	FOOT/FEET
FV	FIELD VERIFY
FACP	FIRE ALARM CONTROL PANEL
FATP	FIRE ALARM TRANSCEIVER PANEL
GALV	GALVANIZED
GCO	GRADE CLEAN OUT
GFCI	GOVT FURNISHED CONTRACTOR INSTALLED
HM	HOLLOW METAL
HORIZ	HORIZONTAL
IAW	IN ACCORDANCE WITH
IN	INCH
ID	INSIDER DIAMETER
JT	JOINT
LT WT	LIGHT WEIGHT
LBS	POUNDS
LF	LINEAR FEET
MANUF	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
PT	PRESSURE TREATED
RCP	REFLECTED CEILING PLAN
RD	ROOF DAIN
REINF	REINFORCING
RTU	ROOF TOP UNIT
SECT	SECTION
SF	SQUARE FEET
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
SW	SIDEWALK
TO	TOP OF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD

ABI SCHEDULE

ABI NO. 1 OPTIONAL UPGRADE EXISTING BAYS VEHICLE EXHAUST
ABI NO. 2 ELECTRICAL SERVICE UPGRADE (ALLOWANCE)
ABI NO. 3 ADDITIONAL LIGHTNING PROTECTION SYSTEMS
ABI NO. 4 OPTIONAL CEILING MOUNTED CIRCULATION FANS
ABI NO. 5 FLOOR UTILITY TRENCHES
ABI NO. 6 OPTIONAL PLUMBING FIXTURES/UPGRADES
ABI NO. 7 BRIDGE CRANES
ABI NO. 8 TRENCH BETWEEN BAYS
ABI NO. 9 WEST GRAVEL PARKING TO CONCRETE

FSB FEDERAL DESIGN GROUP JV
MM MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK — ANTHONY F. FEDERICO — LICENSED PROFESSIONAL ENGINEER — NO. 099080

OHIO NATIONAL GUARD — SINCE 1774

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

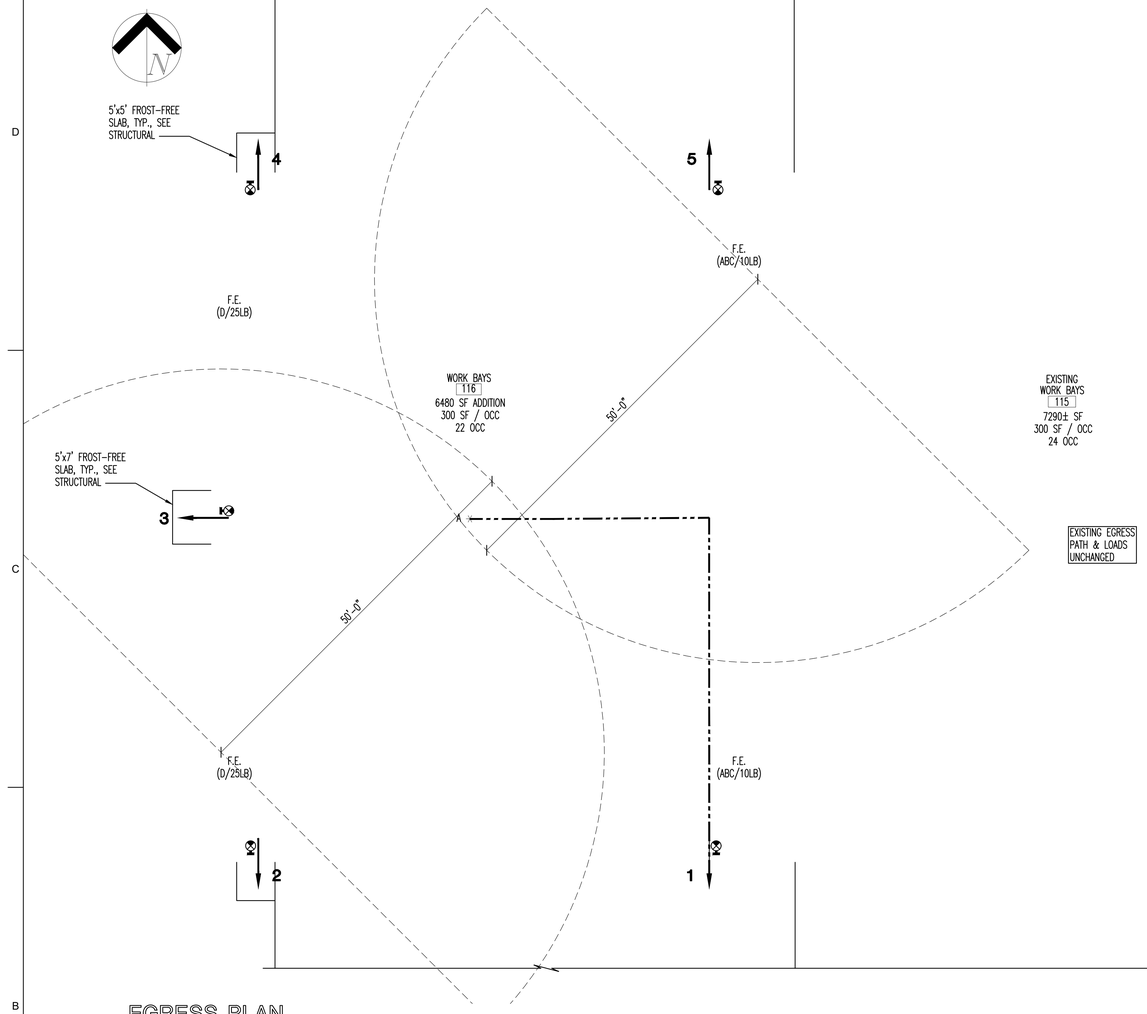
REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

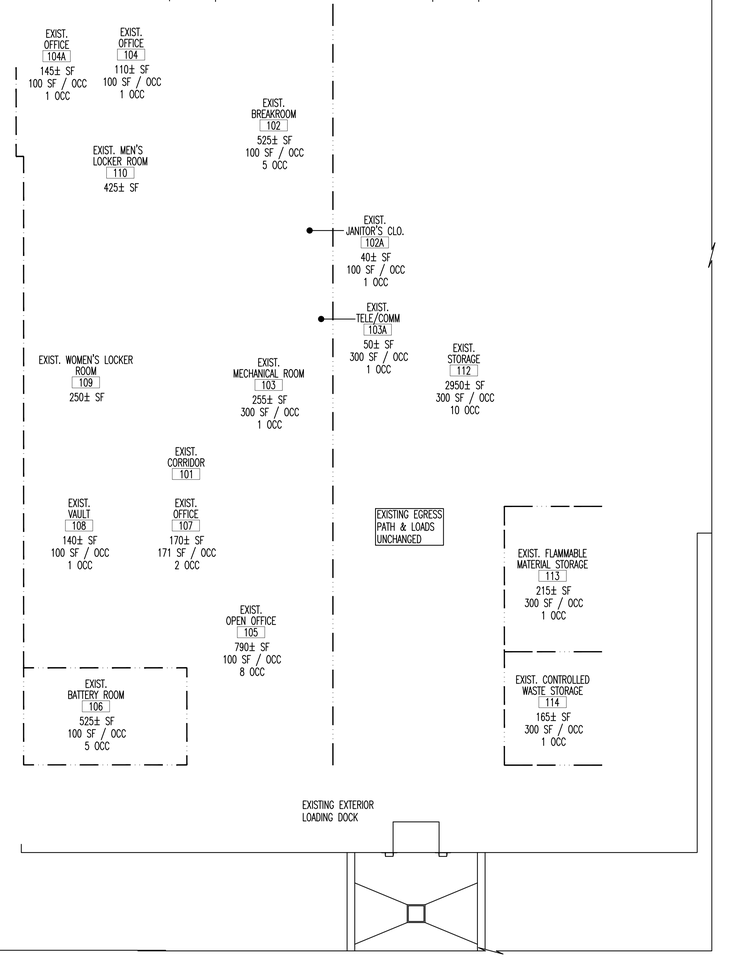
PROJECT INFORMATION:

DESIGNED BY: RKF
DRAWN BY: CN/KZ
REVIEWED BY: RKF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **INDEX OF DRAWINGS. GENERAL NOTES, DEMO. NOTES, ABBREVIATIONS & LEGEND**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: G-002

DWG NAME: C:\USERS\FLO897041DMS7714\507101521-G-002.DWG SAVE DATE: 11/1/2022 5:51 PM BY: OU94692 PLOT DATE: 11/16/2022 10:35 AM



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



TRAVEL DISTANCE					
POINT	DOOR	TOTAL DISTANCE TRAVEL	MAX TRAVEL DISTANCE	COMMON PATH OF TRAVEL	MAX COMMON PATH OF TRAVEL
A	1	80'-0"	200'-0"	31'-2"	50'-0"

NOTE: ALL DOORS ARE EQUAL TO OR LESS THAN 80'-0" FROM ANY POINT IN WORK BAYS 116 ADDITION.

EGRESS PLAN LEGEND:

- 1 ← TRAVEL DISTANCE (SEE TRAVEL DISTANCE TABLE FOR LENGTH)
- EMERGENCY EXIT SIGN
- F.E. — WALL MOUNTED FIRE EXTINGUISHER CLASS AND WEIGHT
- TRAVEL DISTANCE FOR FIRE EXTINGUISHER PER NFPA 10
- XXX SF/OCC / XX OCC — NUMBER OF OCCUPANTS PER ARE AND TOTAL OCCUPANTS AT EACH ROOM
- SAFETY SHOWER AND EYEWASH

FIRE RATING LEGEND:

- 1-HR
- 2-HR
- 3-HR
- 4-HR

NOTE:

SEE SHEET G-012 FOR CODE DATA

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

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV
M MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

ANTHONY F. PRINO — STATE OF NEW YORK — NO. 099908 — LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD — 121st — SINCE 1793

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

PROJECT INFORMATION:

DESIGNED BY:	RKF
DRAWN BY:	CN/KZ
REVIEWED BY:	RKF
PROJECT MANAGER:	BG
PROJECT NUMBER:	507101521
SHEET TITLE:	EGRESS PLAN
ISSUE DATE:	NOVEMBER 9, 2022
SHEET NUMBER:	G-011

DWG NAME: C:\USERS\FLO8970\DMS77149\507101521-G-011.DWG SAVE DATE: 11/10/2022 5:51 PM BY: OU894692 PLOT DATE: 11/16/2022 10:37 AM

PROJECT NARRATIVE:

THIS PROJECT INCLUDES THE CONSTRUCTION OF A 6,480 GROSS SQUARE FOOT ADDITION TO THE EXISTING UTES VEHICLE MAINTENANCE FACILITY. THE EXISTING FACILITY INCLUDES THE FOLLOWING EXISTING FUNCTIONS: VEHICLE MAINTENANCE SHOP, VEHICLE OPS ADMIN., BASE SUPPLY ADMIN., AND, BASE SUPPLY WAREHOUSE. THE PROJECT ALSO INCLUDES THE SITE DESIGN SURROUNDING THE BUILDING INCLUDING DRIVEWAY AND HEAVY EQUIPMENT PARKING.

THE EXISTING BUILDING CONSISTS OF THREE SEPARATE BUILDING TYPES. THE EXISTING CENTRAL TOILETS, OFFICE, BREAKROOM, AND STORAGE AREAS CONSIST OF A TRADITIONALLY BUILT MASONRY LOAD - BEARING EXTERIOR WALL BUILDING AND A PRE-ENGINEERED METAL BUILDING ADDITION TO THE NORTH IN 2013. THE EXISTING TWO VEHICLE SERVICE BAYS ARE PROVIDED IN AN EXISTING PRE-ENGINEERED METAL BUILDING, TALLER THAN THE TOILETS/STORAGE AREA.

THE ADDITION TO THE FACILITY WILL BE DESIGNED AND CONSTRUCTED USING NONCOMBUSTIBLE MATERIALS AS DEFINED BY TYPE II CONSTRUCTION IN THE INTERNATIONAL BUILDING CODE (IBC). THE ADDITION WILL CONSIST OF A TRADITIONAL PRE-ENGINEERED METAL BUILDING AN ASSEMBLY OF INSULATED METAL WALL PANELS. THE ROOF WILL CONSIST OF PRE-ENGINEERED METAL BUILDING FRAMES, PURLINS, METAL ROOF DECK AND INSULATED STANDING SEAM ROOF PANELS.

PER UFC 3-600-01 25 MARCH 2018, PARAGRAPH 3-2.1.2, THE IBC (2018):

> *"MUST BE UTILIZED TO DETERMINE THE OCCUPANCY CLASSIFICATION AS IT RELATES TO ALLOWABLE CONSTRUCTION TYPE, BUILDING HEIGHT, BUILDING AREA, BUILDING SEPARATION DISTANCE, OCCUPANCY SEPARATION AND ASSOCIATED REQUIREMENTS."*

PER UFC 3-600-01 25 MARCH 2018, PARAGRAPH 3-3.1.1. THE NFPA 101 (2018):

> *"MUST BE UTILIZED TO DETERMINE THE OCCUPANCY CLASSIFICATION AS IT RELATES TO FIRE/SMOKE RESISTANCE RATING OF INTERIOR NON-LOAD BEARING PARTITIONS (OTHER THAN OCCUPANCY SEPARATION), MEANS OF EGRESS, INTERIOR FINISH, FEATURES OF FIRE PROTECTION (INCLUDING VERTICAL OPENINGS) AND ASSOCIATED REQUIREMENTS."*

SEE SECTION 2 BELOW FOR A DETAILED CODE DATA TABLE WHICH BREAKS DOWN HOW AND WHEN EITHER IBC OR NFPA 101 IS APPLIED.

1. APPLICABLE OHIO ARMY NATIONAL GUARD (OHARNG) STANDARDS & FACILITY DESIGN GUIDES:

2018 (OHARNG) "DESIGN AND CONSTRUCTION STANDARDS", STATE OF OHIO, ADJUTANT GENERALS DEPARTMENT.
INTERNATIONAL BUILDING CODE (IBC) 2018 (AS MODIFIED BY UFC 1-200-01 AND UFC 3-600-01.)
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101 LIFE SAFETY CODE - 2018 (AS MODIFIED BY UFC 1-200-01 AND UFC 3-600-01.)
ARCHITECTURAL BARRIERS ACT (ABA) STANDARDS (2015)
ANSI/ASHRAE/IESNA STANDARD 90.1-2016, ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS
UFC 1-200-01 DoD BUILDING CODE, CHANGE 1, 01 OCTOBER 2020
UFC 1-200-02 HIGH PERFORMANCE AND SUSTAINABLE BUILDING REQUIREMENTS, 01 DECEMBER 2020
UFC 3-201-01 CIVIL ENGINEERING, CHANGE 4, 28 SEPTEMBER 2020
UFC 3-101-01 ARCHITECTURE, CHANGE 5, 25 SEPTEMBER 2020
UFC 4-010-01 DOD MINIMUM ANTI-TERRORISM STANDARDS FOR BUILDINGS, CHANGE 1, 19 AUGUST 2020

2. TABLE OF APPLICABLE FIRE LIFE SAFETY CODE REQUIREMENTS:

CATEGORY:	CODE OR STANDARD REQUIREMENT:	ACTUAL IMPLEMENTED CODE/STANDARD REQUIREMENT:
2. OCCUPANCY CLASSIFICATION: UFC APPENDIX B AND IBC CHAPTER	EXISTING & ADDITION VEHICLE MAINTENANCE: MODERATE HAZARD STORAGE GROUP S-1 (IBC: 311.2) STORAGE ORDINARY HAZARD (NFPA101 6.1.12 AND 40) EXISTING UNHEATED STORAGE: MODERATE HAZARD STORAGE GROUP S-1 (IBC: 311.2) STORAGE ORDINARY HAZARD (NFPA101 6.1.13 AND 42) EXISTING ADMINISTRATION (OFFICES, TOILETS, BREAKROOM, JC, MECH ROOM): BUSINESS GROUP B (IBC: 304.1) NEW BUSINESS (NFPA101 6.1.11 AND 38) EXISTING FLAMMABLE MATERIALS STORAGE: HIGH HAZARD GROUP H-3 (IBC: 307.5) EXISTING CONTROLLED WASTE STORAGE: HIGH HAZARD GROUP H-3 (IBC: 307.5) EXISTING BATTERY ROOM: HIGH HAZARD GROUP H-4 (IBC: 307.6)	REQUIRED OCCUPANCIES WILL BE USED. EXISTING MIXED USES ARE SEPARATED BY EXISTING FIRE RATED PARTITIONS. SEE 2A AND 5 BELOW.
2A. CODE COMPLIANCE APPROACH	IBC: 508.4: SEE **5. FIRE RESISTIVE REQUIREMENTS:** SECTION BELOW	IBC, MIXED OCCUPANCY - SEPARATED OCCUPANCY APPROACH IS USED. NFPA, SEPARATED OCCUPANCY APPROACH IS USED.
3. CONSTRUCTION TYPE: IBC CHAPTER 6	TYPE II-B (IBC: TABLE 601)	TYPE II-B
4. AREA LIMITATIONS:	IBC CHAPTER 5, TABLE 506.2, 508.4.2	
ALLOWABLE FLOOR AREAS IBC SECTION 506, 507, 508:	VEHICLE MAINTENANCE: S-1, NS, II-B = 17,500 SF MAX. WITH FRONTAGE INCREASE = 26,250 SF MAX. EXISTING STORAGE: S-1, NS, II-B = 17,500 SF MAX. EXISTING ADMINISTRATIVE: B, NS, II-B = 23,000 SF MAX. 508.4.2: THE SUM OF THE RATIOS OF THE ACTUAL BUILDING AREA OF EACH SEPARATED OCCUPANCY DIVIDED BY THE ALLOWABLE BUILDING AREA OF EACH SEPARATED OCCUPANCY SHALL NOT EXCEED 1	VEHICLE MAINTENANCE: EXISTING BAYS AND ADDITION = 7,290± SF + 6,480SF = 13,770± SF ACTUAL EXISTING BUILDING TOTAL AREA: 14,990± SF + ADDITION: 6,480 SF = 21,470± SF (2)EXISTING FIRE AREAS: SEPARATED BY EXISTING 3-HOUR FIRE-RATING ALSO SEE **5. FIRE RESISTIVE REQUIREMENTS:** SECTION BELOW FIRE AREA 1 TOTAL: 17,954± SF S-1: VEHICLE MAINTENANCE: 6,480 SF (ADDITION) 7,290± SF (EXISTING BAYS) EXISTING ADMINISTRATIVE 4,184± SF (INCL. PARTS, VAULT, BATTERY ROOM AND TOILETS) FIRE AREA 2: EXISTING STORAGE: 3,516± SF INCLUDING (EXIST'G FLAMMABLE MATERIALS STORAGE & EXIST'G CONTROLLED WASTE STORAGE)

CATEGORY:	CODE OR STANDARD REQUIREMENT:	ACTUAL IMPLEMENTED CODE/STANDARD REQUIREMENT:
ALLOWABLE AREA INCREASES IBC SECTION 506, 507:	506.3 FRONTAGE INCREASE	INCREASE FACTOR = 0.50
MAXIMUM HEIGHT OF BUILDING: IBC SECTION 504	VEHICLE MAINTENANCE: S-1 = 3 STORIES (TABLE 504.4) S-1 = 55 FEET MAX (TABLE 504.3) H-2 = 55 FEET MAX (TABLE 504.3) WAREHOUSE: S-1 = 3 STORIES (TABLE 504.4) S-1 = 55 FEET MAX (TABLE 504.3) H-3 = 2 STORIES (TABLE 504.4) H-3 = 55 FEET MAX (TABLE 504.3) ADMINISTRATIVE: B = 4 STORIES (TABLE 504.4) B = 55 FEET MAX (TABLE 504.3) H-4 = 3 STORIES (TABLE 504.4) H-4 = 55 FEET MAX (TABLE 504.3)	VEHICLE MAINTENANCE (ADDITION): S-1 = 1 STORY S-1 = 40'-0" VEHICLE MAINTENANCE (EXISTING): S-1 = 1 STORY S-1 = 27'-0"± EXISTING STORAGE (WAREHOUSE): S-1, H-3 = 1 STORY S-1, H-3 = 14'-0"± EXISTING ADMINISTRATIVE: B, H-4 = 1 STORY B, H-4 = 14'-0"±
5. FIRE RESISTIVE REQUIREMENTS: IBC TABLES 601 & 602	S-1, II-B, ADDITION	
PRIMARY STRUCTURAL FRAME:	0 HOURS (TABLE 601)	0 HOURS
EXTERIOR BEARING WALLS:	0 HOURS (TABLE 601)	0 HOURS
INTERIOR BEARING WALLS:	0 HOURS (TABLE 601)	0 HOURS
INTERIOR NON-BEARING WALLS	0 HOURS (TABLE 601)	0 HOURS
FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS	0 HOURS (TABLE 601)	0 HOURS
ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS	0 HOURS (TABLE 601)	0 HOURS
FIRE SEPARATION:	IBC TABLE 508.4 (NS): S-1 (ADDITION) / S-1 (EXISTING BAYS) = 0 HOURS S-1/ B = 0 HOURS S-1/ H-2 = 3 HOURS S-1/ H-3, H-4 = 2 HOURS	S-1 (ADDITION BAYS) / S-1 (EXISTING BAYS) = 0 HOURS S-1/ B = 1 HOUR (EXISTING) BETWEEN EXISTING WORK BAYS AND EXISTING ADMINISTRATIVE S-1/ B = 3 HOURS (EXISTING) BETWEEN EXISTING UNHEATED STORAGE AND EXISTING ADMINISTRATIVE S-1/ H-3 = 4 HOURS (EXISTING) BETWEEN EXISTING UNHEATED STORAGE AND EXISTING FLAMMABLE STORAGE AND CONTROLLED WASTE S-1/ H-4 = 2 HOURS (EXISTING) BETWEEN EXISTING WORK BAYS AND EXISTING BATTERY ROOM.
6. ENCLOSURE PROTECTION:		
CORRIDOR: NFPA101	VEHICLE MAINTENANCE: NOT APPLICABLE - NO CORRIDORS.	N/A
ACCESSORY USE AREA:	0 HOURS FOR USE NOT OCCUPYING MORE THAN 10% OF THE AREA OF ANY FLOOR (IBC 509.3)	AREAS <10% NO RATING REQUIRED.
MECHANICAL ROOMS:	FURNACE ROOMS W/ EQUIPMENT OVER 400 MBH REQUIRE FIRE EXTINGUISHING SYSTEM OR 1-HOUR SEPARATION. (IBC TABLE 509)	N/A EXISTING MECHANICAL ROOM DOES NOT HAVE A FURNACE.
8. AUTOMATIC SPRINKLERS AND OTHER EXTINGUISHING EQUIPMENT: UFC 3-600-01	NOT REQUIRED PER NFPA 30A 7.4.6 (2) PER UFC 3-600-01 4.45.1.2 FOR VEHICLE MAINTENANCE FACILITIES THAT ARE ONE STORY AND LESS THAN 12,000 SF	ADDITION SHALL BE NON-SPRINKLERED, PER AHJ. EXISTING TO REMAIN NON-SPRINKLERED.
9. STANDPIPE SYSTEM UFC 3-600-01	REQUIRED IN BUILDINGS THAT ARE FOUR STORIES OR MORE IN HEIGHT.	NOT REQUIRED. ONE STORY BUILDING.
10. FIRE AND SMOKE DAMPERS: NFPA 90A 5.3.1.1.	REQUIRED IN DUCTWORK THROUGH 2-HOUR FIRE-RATED PARTITIONS OR GREATER.	NOT APPLICABLE. NO 2-HOUR WALLS IN ADDITION SCOPE OF WORK.

CATEGORY:	CODE OR STANDARD REQUIREMENT:	ACTUAL IMPLEMENTED CODE/STANDARD REQUIREMENT:
11. DETECTION ALARM AND COMMUNICATION: UFC 3-600-01, CHAPTER 5 NFPA 101 PAR. 3.4 (CHAPTERS 38, 40, 42)	FIRE ALARM EVACUATION SYSTEM REQUIRED AUTOMATIC FIRE DETECTION SYSTEM REQUIRED.	NEW FIRE ALARM EVACUATION SYSTEM AND DETECTION SYSTEM SHALL BE PROVIDED
12. INTERIOR FINISHES (CLASSIFICATION): NFPA 101		
EXITS, CORRIDORS AND EXIT ACCESS	EXIT ENCLOSURES CLASS A OR B, LOBBIES AND CORRIDORS. CLASS A OR B AND OTHER SPACES CLASS A, B, OR C. (NFPA 38.3.3.2)	NO CORRIDORS, NOT APPLICABLE.
13. MEANS OF EGRESS, SEPARATION OF MEANS OF EGRESS: NFPA 101 CHAPTERS 7, 38, 40, 42		
OCCUPANT LOAD: NFPA 101	VEHICLE MAINTENANCE: STORAGE = 1 PERSON PER 300 SF (NFPA TABLE 7.3.1.2). WAREHOUSE: STORAGE = 1 PERSON PER 300 SF (NFPA TABLE 7.3.1.2). ADMINISTRATIVE: BUSINESS = 1 PERSON PER 100 SF (NFPA TABLE 7.3.1.2).	VEHICLE MAINT (ADDITION): (22 P TOTAL) VEHICLE MAINT (EXISTING): 25P EXIST. STORAGE: (12P TOTAL) EXIST. ADMINISTRATIVE: (26P TOTAL) TOTAL: 83 PEOPLE
EGRESS CAPACITY (DOORS): NFPA 101	CORRIDORS/DOORS: 0.20"/PERSON MIN DOOR WIDTH: 32" CLEAR WIDTH FOR EXISTING DOORS (NFPA 7.2.1.2.3.2 FOR EXISTING BUILDINGS)	MINIMUM 34" CLEAR DOORS WILL BE USED.
EXIT ACCESS CORRIDORS NFPA	CORRIDORS USED AS EXIT ACCESS SERVING AN AREA HAVING AN OCCUPANT LOAD EXCEEDING 30 SHALL BE SEPARATED FROM OTHER PARTS OF THE BUILDING BY WALLS HAVING NOT LESS THAN A 1-HOUR FIRE RESISTANCE RATING. (NFPA 7.1.3.1)	NOT APPLICABLE. NO CORRIDORS IN ADDITION.
MINIMUM CORRIDOR WIDTH: NFPA 101	ADMINISTRATIVE: BUSINESS: 44" MINIMUM CLEAR CORRIDOR WIDTH SERVING 50 OR MORE PEOPLE (NFPA 38.2.3.2) 0.20" PER PERSON CORRIDORS (NFPA 7.3.3.1)	NOT APPLICABLE. NO CORRIDORS IN ADDITION.
NUMBER OF MEANS OF EGRESS: NFPA 101	MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY: VEHICLE MAINTENANCE: STORAGE: MINIMUM NUMBER OF EXITS PER STORY: 2 EXITS (NFPA 42.2.4.1)	EACH BUILDING AREA WILL HAVE A MINIMUM OF 2 MEANS OF EGRESS. ADDITION PROVIDED. EXISTING TO REMAIN UNALTERED.
DEAD END LIMITS: NFPA 101	VEHICLE MAINTENANCE, ORDINARY HAZARD: STORAGE, NOT SPRINKLERED: SHALL NOT EXCEED 50 FT. (NFPA 42.2.5)	VEHICLE MAINTENANCE: NO CORRIDORS. COMPLIES.
COMMON PATH OF TRAVEL: NFPA 101	VEHICLE MAINTENANCE, ORDINARY HAZARD: STORAGE, NOT SPRINKLERED: SHALL NOT EXCEED 50 FT. (NFPA 42.2.5)	VEHICLE MAINTENANCE: 31'-2"
MEASUREMENT OF TRAVEL DISTANCE TO EXITS: NFPA 101	VEHICLE MAINTENANCE: STORAGE, NOT SPRINKLERED: TRAVEL DISTANCE TO AN EXIT SHALL NOT EXCEED 200 FT. (NFPA 42.2.6)	VEHICLE MAINTENANCE (ADDITION): 80'-0"
EXIT DOOR SWING: NFPA 101	EXIT DOORS SHALL SWING IN DIRECTION OF THE PATH OF EXIT TRAVEL WHERE THE AREA SERVED HAS AN OCCUPANT LOAD OF 50 OR MORE. (NFPA 7.2.1.4.2)	ALTHOUGH THE OCCUPANT LOAD OF THE ROOMS ARE LESS THAN 50 PEOPLE, ALL EGRESS DOORS AND EXTERIOR DOORS SHALL SWING IN THE DIRECTION OF TRAVEL, TOWARDS THE EXTERIOR.
ILLUMINATION OF MEANS OF EGRESS: NFPA 101	WALKING SURFACES WITHIN EXIT ACCESS AND DISCHARGE SHALL HAVE AT LEAST 1 FOOT/CANDLE MEASURED AT THE FLOOR. (NFPA 7.8.1.3)	EMERGENCY LIGHTING SHALL BE PROVIDED TO PROVIDE MINIMUM OF 1 FOOT/CANDLE.

CATEGORY:	CODE OR STANDARD REQUIREMENT:	ACTUAL IMPLEMENTED CODE/STANDARD REQUIREMENT:
EMERGENCY LIGHTING: NFPA 101	REQUIRED. (NFPA 38.2.9, 40.2.9, 42.2.9, 7.9.1.1 AND 7.9.1.2)	EMERGENCY LIGHTING SHALL BE PROVIDED TO PROVIDE MINIMUM OF 1 FOOT/CANDLE.
MARKING OF MEANS OF EGRESS: NFPA 101	ILLUMINATED EXIT AND DIRECTIONAL SIGNAGE REQUIRED. (NFPA 7.10.1.2)	ILLUMINATED EXIT AND DIRECTIONAL SIGNAGE WILL BE PROVIDED AT EVERY EGRESS DOOR.

3. INSULATION REQUIREMENTS AS BASED ON ASHRAE 90.1, 2013, TABLE 5.5-5, "BUILDING ENVELOPE REQUIREMENTS" (R-VALUE MINIMUMS, U-VALUE & AIR LEAKAGE & SHGC & AIR LEAKAGE MAXIMUMS):

CLIMATE ZONE 5A

PRE-ENGINEERED METAL BUILDING VEHICLE MAINTENANCE ADDITION:

ROOFS:	R-19 + R-11 LS OR R-25 + R-8 LS
WALLS, ABOVE GRADE:	R-0 + R-19 CONTINUOUS BATT INSULATION.
WALLS, BELOW GRADE:	R-7.5 CONTINUOUS INSULATION.
SLAB-ON-GRADE FLOORS (HEATED):	R-20 FOR 48 INCHES
FIXED FENESTRATION:	U-0.36; SHGC-0.38; VT/SHGC-1.10 (MIN)
OPAQUE SWINGING DOORS:	U-0.37
METAL COILING DOORS	U-0.440; AIR LEAKAGE 0.4 CFM/SQ. FT.

4. ADDITIONAL INSULATION REQUIREMENTS TO SATISFY THE ENERGY POLICY ACT OF 2005:

PRE-ENGINEERED METAL BUILDING VEHICLE MAINTENANCE ADDITION:

STANDING SEAM METAL ROOF

R-11 BATT INSULATION IS BETWEEN THE ROOF PURLINS AND R-19 CONTINUOUS BATT INSULATION IS INSTALLED.

WALLS

R-19 CONTINUOUS BATT INSULATION IS INSTALLED. R-3 THERMAL SPACERS ARE USED WHERE THE ROOF PANEL CLIPS COMPRESS THE INSULATION.

WALLS, BELOW GRADE: R-10, 2" THICK CONTINUOUS RIGID INSULATION.

SLAB-ON-GRADE FLOORS: R-20, 4" THICK CONTINUOUS RIGID INSULATION FOR 48" FROM EXTERIOR FOUNDATION WALL.

EXTERIOR WINDOWS: AN ASSEMBLY WITH A MAXIMUM U FACTOR OF U-0.24.

FSB FEDERAL DESIGN GROUP JV
M MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK — ANTHONY F. PISCIOTTA — NO. 090906 — LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD — SEAL — SINCE 1state

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKF
DRAWN BY: CN/KZ
REVIEWED BY: RKF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **CODE DATA**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: G-012

DWG NAME: C:\USERS\FLO8970\DMS7714\9507101521-G-012.DWG SAVE DATE: 11/16/2022 10:40 AM BY: FLO8970 PLOT DATE: 11/16/2022 10:42 AM

BID DOCUMENTS

FEATURES

EX: PR:

- BENCH MARK
- PIN - IRON
- POST, BOLLARD
- POST, FENCE - ROUND
- POST, SIGN
- TRASH - REFUSE DUMPSTER
- TREE - DECIDUOUS

UTILITIES

EX: PR:

- SANITARY CAP / PLUG
- SANITARY CLEAN-OUT
- SANITARY MANHOLE
- CATCH BASIN - SQUARE
- CATCH BASIN - ROUND
- STORM CLEAN-OUT
- STORM MANHOLE
- ROOF DOWNSPOUT - BUILDING
- FIRE HYDRANT
- WATER VALVE W/ TEXT
- AIR CONDITIONER UNIT
- ELECTRIC TRANSFORMER
- GAS VALVE W/ TEXT

EROSION & SEDIMENT CONTROL

EX: PR:

- CWA — CONCRETE WASHOUT AREA
- CONSTRUCTION ENTRANCE
- OUTLET PROTECTION
- FUEL — FUEL STORAGE & VEHICLE FUELING AREA

FEATURES

EXISTING:

- BOUNDARY LINE (SITE)
- PROPERTY LINE
- SETBACK - STREAM
- WTLND — WETLAND LINE
- FENCE - CHAIN LINK

PROPOSED:

- FENCE - CHAIN LINK

GROUND

EXISTING:

- 650 — CONTOUR - MAJOR
- 649 — CONTOUR - MINOR
- TREE LINE

PROPOSED:

- 650 — CONTOUR - MAJOR
- 649 — CONTOUR - MINOR
- TREE LINE

UTILITES

EXISTING:

- SAN — SANITARY LINE
- SS — SANITARY SERVICE
- STM — STORM LINE
- RD — STORM ROOF DRAIN
- WAT — WATER LINE
- WS — WATER SERVICE
- ELEC-ABAN — ELECTRIC LINE - ABAN.
- ELEC-UG — ELECTRIC SERVICE - UG
- GAS — GAS LINE
- GS — GAS SERVICE
- TEL-UG — TELEPHONE SERVICE - UG

PROPOSED:

- STM — STORM LINE
- RD — STORM ROOF DRAIN

EROSION & SEDIMENT CONTROL

PROPOSED:

- CONSTRUCTION LIMIT
- SOIL DISTURBANCE LIMIT
- SF — SILT FENCE
- FS — FILTER SOCK
- SW — STRAW WATTLE
- CF — CONSTRUCTION FENCE
- TREE PRESERVATION

ABBREVIATIONS

ABND	ABANDON
A/C	AIR CONDITIONER UNIT
AC	ACRE
ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDENDUM
AGG	AGGREGATE
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
ATTN	ATTENTION
AWG	AMERICAN WIRE GAUGE
APPROX	APPROXIMATE
ARCH	ARCHITECT
AVG	AVERAGE
BARR	BARRICADE
BFE	BOTTOM OF FOOTING ELEVATION
BM	BENCH MARK
BMPS	BEST MANAGEMENT PRACTICES
BLDG	BUILDING
CB	CATCH BASIN
CF	CUBIC FEET
CFS	CUBIC FEET PER SECOND
CL	CLASS
CLF	CHAIN LINK FENCE
CO	CLEANOUT
CONC	CONCRETE
CY	CUBIC YARD
DECID	DECIDUOUS TREE
DEG OR °	DEGREE
DESC	DESCRIPTION
DI	DUCTILE IRON
DIA OR Ø	DIAMETER
DOM	DOMESTIC
DOT	DEPARTMENT OF TRANSPORTATION
DS	DOWNSPOUT
DUMP ENCL	DUMPSTER ENCLOSURE
EA	EACH
EL OR ELEV	ELEVATION
ELEC	ELECTRIC
ELEC ENGR	ELECTRICAL ENGINEER
ENCL	ENCLOSURE
EPA	ENVIRONMENTAL PROTECTION AGENCY
EX	EXISTING
FFE	FINISH FLOOR ELEVATION
FN	FENCE
FND	FOUND
FT	FOOT OR FEET
G	GAS
GAL	GALLON
GB	GRADE BREAK
GEO ENGR	GEOTECHNICAL ENGINEER
GIS	GEOGRAPHICAL INFORMATION SYSTEM
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GLOBAL POSITIONING SYSTEM
GV	GAS VALVE
GVL	GRAVEL
HDWL	HEADWALL
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT ELEVATION
HT	HEIGHT
HYD	HYDRANT
IB	INLET BASIN
ID	IDENTIFICATION
ID	INSIDE DIAMETER
INFO	INFORMATION
INV	INVERT
IPF	IRON PIPE / PIN FOUND
JT	JOINT
K	CURVE COEFFICIENT
L	LENGTH OF CURVE
LB OR #	POUND
LF	LINEAL FOOT
LP	LOW POINT
LS	LUMP SUM
LTMA	LONG-TERM MAINTENANCE AGREEMENT
MAX	MAXIMUM
MECH ENGR	MECHANICAL ENGINEER
MEP	MECHANICAL/ELECTRICAL/PLUMBING ENGINEER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MS4	MUNICIPAL SEPARATE STORM SEWER SYSTEM
MTD	MOUNTED
N/F	NOW OR FORMERLY
NGS	NATIONAL GEODETIC SURVEY
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO OR #	NUMBER
NOI	NOTICE OF INTENT
NOM	NOMINAL
NOT	NOTICE OF TERMINATION
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
OD	OUTSIDE DIAMETER
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
O/O	OUT TO OUT
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
OUPS	OHIO UTILITY PROTECTION SERVICE
P	PAVEMENT ELEVATION
PERF	PERFORATED
PL	PLASTIC
P/L	PROPERTY LINE
PR	PROPOSED
PREL	PRELIMINARY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PVT	PRIVATE
QTY	QUANTITY
R OR RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RD	ROOF DRAIN
REBAR	REINFORCING BAR
REC	RECORD
REV	REVISION
RIM	TOP OF STRUCTURE
RL	ROOF LEADER
SAN	SANITARY SEWER
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
SERV	SERVICE
SF	SQUARE FEET
SHT	SHEET
SPEC	SPECIFICATION
STD	STANDARD
STL	STEEL
STM	STORM SEWER
STOR	STORAGE
STRUC	STRUCTURE
STRUC ENGR	STRUCTURAL ENGINEER
SWMF	STORM WATER MANAGEMENT FACILITY
SWP3	STORM WATER POLLUTION PREVENTION PLAN
SWCD	SOIL & WATER CONSERVATION DISTRICT
SY	SQUARE YARD
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCH MARK
TC	TOP OF CASTING
TC	TOP OF CURB
TEMP	TEMPORARY
THRU	THROUGH
THW	TOP OF HEADWALL
TMDL	TOTAL MAXIMUM DAILY LOAD
TP	TOP OF PIPE ELEVATION
TYP	TYPICAL
UG	UNDERGROUND
UNK	UNKNOWN
USGS	UNITED STATES GEOLOGIC SURVEY
UT	UTILITY
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VLY	VALLEY
VOL	VOLUME
W/	WITH
W OR WM	WATER MAIN (POTABLE)
WAN	WIDE AREA NETWORK
WF	WOOD FENCE
W/O	WITHOUT
WS	WATER SERVICE (POTABLE)
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER

GENERAL NOTES

1. THE CONTRACTOR MUST CONTACT OUPS (OHIO UTILITIES PROTECTION SERVICE) AT 800-362-2764 OR 811 AT LEAST 48 HOURS, BUT NO MORE THAN 10 WORKING DAYS, BEFORE BEGINNING ANY DIGGING, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY. IT IS THE CONTRACTOR RESPONSIBILITY TO BE FAMILIAR WITH THE REQUIREMENTS OF OUPS. THE CONTRACTOR SHALL COORDINATE THE MARKINGS AND/OR LOCATING TO STAY A MINIMUM OF 2 WORKING DAYS AHEAD OF PLANNED CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A SUBSURFACE UTILITY LOCATING SERVICE (I.E. PRIVATE UTILITY LOCATING COMPANY) TO SUPPLEMENT OUPS MARKINGS, AND LOCATE AND MARK UTILITIES ON PRIVATE PROPERTY.
3. ALL WORK REQUIRED TO COMPLETE THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE 2019 EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS PROVIDED ON THESE CONSTRUCTION PLANS. WHERE CONFLICTS OCCUR IN THE ABOVE, THE NOTES AND DETAILS ON THESE CONSTRUCTION PLANS SHALL TAKE PRECEDENCE, UNLESS OTHERWISE DIRECTED BY THE DESIGN ENGINEER.
4. THERE SHALL BE NO DEVIATION FROM THE CONSTRUCTION PLANS WITHOUT PRIOR WRITTEN APPROVAL FROM THE DESIGN ENGINEER. ANY DEVIATION WITHOUT PRIOR APPROVAL SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.
5. ALL WORK INCLUDING PERMIT AND INSPECTION FEES REQUIRED FOR REMOVAL, RELOCATION OR NEW WORK AS PART OF THESE CONSTRUCTION PLANS SHALL BE PERFORMED BY AND AT THE EXPENSE OF THE CONTRACTOR AND INCLUDED IN THE BID PRICES FOR THE VARIOUS WORK ITEMS, UNLESS DIRECTED IN WRITING BY THE OWNER. THE CONTRACTOR SHALL CONTACT, OBTAIN FROM AND PAY TO THE APPROPRIATE CITY OR COUNTY DEPARTMENTS OR UTILITY COMPANIES FOR PERMITS AND FEES REQUIRED TO PERFORM THE WORK PRIOR TO STARTING CONSTRUCTION WORK.
6. BEFORE SUBMITTING A BID, THE BIDDER SHALL EXAMINE THESE CONSTRUCTION PLANS TO BECOME WITH ALL MATTERS WHICH MAY AFFECT PERFORMANCE AND COMPLETION OF THE WORK. QUANTITIES PROVIDED ARE ESTIMATED, AND THE BIDDER IS RESPONSIBLE FOR VERIFYING BID QUANTITIES PRIOR TO SUBMITTING A BID. IF DISCREPANCIES ARE DISCOVERED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND DESIGN ENGINEER SO THE APPROPRIATE ADJUSTMENT OR CORRECTION MAY BE MADE. THE ACT OF SUBMITTING A BID SHALL MEAN THAT THE BIDDER HAS COMPLIED WITH ALL REQUIREMENTS OF THIS NOTE, AND THEREFORE NO CONCESSION WILL BE GRANTED BECAUSE OF CLAIM OF MISUNDERSTANDING OR LACK OF INFORMATION.
7. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A TESTING AGENCY FOR ANY REQUIRED TESTING.
8. THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL RECOMMENDATION MEMO PREPARED BY MOTT MACDONALD (REFERENCE 507101521) DATED NOVEMBER 13, 2020, AND ANY SUBSEQUENT REVISIONS. THE CONTRACTOR SHALL ADHERE TO ALL ASPECTS AND RECOMMENDATIONS OF THE REPORT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT STAKING INCLUDING HORIZONTAL AND VERTICAL CONTROL. THESE CONSTRUCTION PLANS HAVE BEEN DEVELOPED FOR ELECTRONIC LAYOUT STAKING. ANY DISCREPANCIES DISCOVERED IN THE CONSTRUCTION PLAN INFORMATION, OR BETWEEN THE CONSTRUCTION PLAN AND ELECTRONIC DATA, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DESIGN ENGINEER SO THE APPROPRIATE ADJUSTMENTS MAY BE MADE PRIOR TO THE START OF CONSTRUCTION OR THE CONTINUATION OF THE SAME. THE DESIGN ENGINEER MAKES NO REPRESENTATION REGARDING FITNESS FOR ANY PARTICULAR PURPOSE, OR SUITABILITY FOR USE WITH ANY SOFTWARE OR HARDWARE. DUE TO THE EASILY ALTERABLE NATURE OF ELECTRONIC DOCUMENTS, THROUGH EITHER UNINTENTIONAL OR INTENTIONAL MEANS, THE DESIGN ENGINEER DOES NOT MAKE ANY EXPRESS OR IMPLIED WARRANTY FOR THE ACCURACY OR COMPLETENESS OF THIS INFORMATION AND THEREFORE, ACCEPTS NO LIABILITY FOR THE COMPLETENESS, CORRECTNESS OR LEGIBILITY OF THE ELECTRONIC DATA. HARD COPIES (I.E., PRINTS, PAPER COPIES, ETC.) SHALL PREVAIL IN ANY DISPUTE OVER ACCURACY OR SUFFICIENCY OF ELECTRONIC DOCUMENTS.
10. ALL WORK IS SUBJECT TO INSPECTION. THE OWNER RESERVES THE RIGHT TO HALT CONSTRUCTION ACTIVITY FOR NONCONFORMANCE OF CONSTRUCTION PLANS, SPECIFICATIONS OR OTHER STANDARDS OR REGULATIONS.
11. ANY DEFECTS IN THE CONSTRUCTION, INCLUDING MATERIALS OR WORKMANSHIP, SHALL BE REPLACED OR CORRECTED BY THE CONTRACTOR BY REMOVAL AND REPLACEMENT OR OTHER APPROVED METHODS PRIOR TO ACCEPTANCE BY THE OWNER WITH NO ADDITIONAL COMPENSATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, STORM OR SANITARY SYSTEMS RESULTING FROM NON-CONFORMANCE WITH THE APPLICABLE STANDARDS OR THROUGH GENERAL NEGLIGENCE. FAILURE BY THE CONTRACTOR TO VERIFY AND/OR DETERMINE EXISTING INFORMATION WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.
12. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS ON SITE AT ALL TIMES. ATTENTION IS DIRECTED TO THE FACT THE CONSTRUCTION PLANS MAY HAVE BEEN ALTERED IN SIZE DURING PRINTING OR REPRODUCTION, AND MUST BE CONSIDERED WHEN OBTAINING SCALED DATA FROM THE CONSTRUCTION PLANS.
13. THE CONTRACTOR SHALL SUBMIT A PLAN OF OPERATIONS THAT WILL INDICATE EQUIPMENT STAGING AREAS, STOCKPILE LOCATIONS, TRAILERS AND SANITATION FACILITIES.
14. THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT ALL TIMES AND IS SOLELY RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF STABLE, TEMPORARY EXCAVATIONS PER LOCAL, STATE AND FEDERAL REGULATIONS INCLUDING OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION). NEITHER THE OWNER OR DESIGN ENGINEER ASSUME RESPONSIBILITY FOR CONSTRUCTION SAFETY OR THE CONTRACTOR'S OR OTHER PARTIES' COMPLIANCE WITH SAFETY REGULATIONS; SUCH RESPONSIBILITY IS NOT BEING IMPLIED AND SHOULD NOT BE INFERRED.
15. OUTLINES OF FEDERAL PROTECTED WETLANDS AND STREAMS SHOWN WERE OBTAINED FROM THE 2018 CJAG WETLAND DELINEATION PREPARED BY ENVIRONMENTAL OFFICE RAVENNA TRAINING AND LOGISTICS SITE (JOB 180460) DATED JANUARY 17, 2019.
16. THE BUILDING WILL REMAIN IN USE DURING THE COURSE OF THIS WORK. SAFE PEDESTRIAN ACCESS AROUND, IN AND OUT OF THE BUILDING MUST BE MAINTAINED. VEHICULAR ACCESS TO DRIVE LANES, PARKING LOTS AND BUILDINGS MUST BE MAINTAINED. THE CONTRACTOR SHALL PROVIDE BARRIERS AND ENCLOSURES AS NECESSARY TO ENSURE SAFE ACCESS.
17. ANY EXISTING ROADWAY, DRIVEWAY, DRIVE CULVERT, LAWN, WALK, SIGN, FENCE OR OTHER APPURTENANCE DISTURBED DURING CONSTRUCTION BUT NOT DESIGNATED FOR REMOVAL OR REPLACEMENT SHALL BE RESTORED BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO DISTURBANCE AND TO THE SATISFACTION OF THE OWNER.
18. THE CONTRACTOR SHALL DESIGNATE A PERSON IN RESPONSIBLE CHARGE (SUPERVISOR) WITH A CELL PHONE AT THE CONSTRUCTION SITE DURING ALL CONSTRUCTION ACTIVITIES, INCLUDING SUBCONTRACTOR ACTIVITIES.
19. THE CONTRACTOR MUST COMPLETE THE DESIGN ENGINEER PROJECT PUNCH LIST. ALL PUNCH LIST ITEMS SHALL BE COMPLETED WITHIN 2 MONTHS OF THE PUNCH LIST DATE.
20. AS-BUILT INFORMATION IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PERFORMED BY A REGISTERED SURVEYOR. AS-BUILT INFORMATION SHALL CONSIST OF POST-CONSTRUCTION FIELD SURVEY DATA OF LOCATIONS, LENGTHS, INVERTS, RIM ELEVATIONS, PIPE MATERIAL AND PERCENT GRADES FOR STORM SEWERS AND STRUCTURES; AND TOPOGRAPHY AND VOLUME OF DETENTION BASINS. THE CONTRACTOR SHALL DOCUMENT INFORMATION PERTAINING TO CONSTRUCTION THAT DEVIATED FROM THE CONSTRUCTION PLANS. AS-BUILT PLANS SHALL BE ON THE SAME SIZE AS THE ORIGINAL CONSTRUCTION PLANS, WITH DIGITAL COPIES PROVIDED IN AUTOCAD AND PDF FORMATS. AS-BUILTS SHALL INCLUDE ALL ADDITIONAL INFORMATION SHALL BE SHOWN IN BLACK, WITH AS-BUILT INFORMATION SHOWN IN RED WITH THE AS-DESIGNED INFORMATION BEING STRUCK OUT WITH A SINGLE LINE. THE CONTRACTOR SHALL PROVIDE AS-BUILTS TO THE OWNER.

EXISTING CONDITION AND SURVEY NOTES

1. EXISTING UNDERGROUND UTILITIES SHOWN ON THESE CONSTRUCTION PLANS WERE OBTAINED FROM VARIOUS SOURCES INCLUDING, BUT NOT LIMITED TO, FIELD OBSERVATIONS (E.G. ABOVE GROUND FEATURES, FLAGGED OR PAINTED MARKED UNDERGROUND UTILITIES) AND RECORDS MADE AVAILABLE (E.G. ORIGINAL CONSTRUCTION PLANS, AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, GIS DATABASES, AERIAL PHOTOGRAPHY) TO CREATE A COMPOSITE DRAWING OF EXISTING CONDITIONS. ALTHOUGH GRAPHICALLY SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION MADE AVAILABLE, THERE IS NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OF THE COMPLETENESS, CORRECTNESS OR ACCURACY OF SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES WITHIN AND ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. THE CONTRACTOR SHALL NOT ASSUME EXISTING UTILITIES WERE INSTALLED AT TYPICAL DEPTHS OR AT UNIFORM SLOPES, GRADES OR DEPTHS BETWEEN ACCESS POINTS (I.E. CATCH BASINS, MANHOLES).
3. THE CONTRACTOR SHALL CONFIRM OR LOCATE ALL UNDERGROUND UTILITIES WITHIN EXCAVATION LIMITS, WHETHER OR NOT SHOWN ON THE CONSTRUCTION PLANS OR FIELD MARKED BY OUPS, OGPUPS OR OTHER UTILITY MARKING SERVICE. THE CONTRACTOR SHALL DOCUMENT ANY UTILITY NOT SHOWN OR DIFFERING FROM THE CONSTRUCTION PLANS, AND PROVIDE THE INFORMATION TO THE OWNER SHOWING LOCATIONS WITH MEASUREMENTS TO REFERENCE POINTS. ANY RESULTING UTILITY CONFLICTS WITH PROPOSED IMPROVEMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND DESIGN ENGINEER.
4. THE SURVEY AND STREET ALIGNMENTS SHOWN WERE OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY, AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR OTHER PURPOSES.
5. THE CONTRACTOR SHALL PRESERVE BENCHMARKS, PROPERTY LINE REFERENCES (E.G., PINS) AND CONTROL POINTS. IF DISTURBED, THE CONTRACTOR SHALL REPLACE THEM AT HIS EXPENSE. BE RESPONSIBLE FOR ERRORS CAUSED BY THEIR LOSS OR DISTURBANCE, AND FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THEY HAVE BEEN RESTORED.

DEMOLITION NOTES

1. NO ATTEMPT HAS BEEN MADE TO NOTE ALL LOCATIONS OR SPECIFIC EXTENT OF DEMOLITION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL DEMOLITION NECESSARY TO EXECUTE THE NEW PLAN INCLUDING COORDINATION OF DEMOLITION WORK WITH NEW WORK SO AS NOT TO CREATE CONFLICTS OF NEW INSTALLATION.
2. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A SUBSURFACE UTILITY LOCATING SERVICE TO FIELD LOCATE PRIVATE UTILITY SERVICES (E.G. ROOF LEADER, SANITARY, WATER, ELECTRIC, LIGHTING, GAS AND TELEPHONE). THE CONTRACTOR MUST DOCUMENT ANY UTILITY NOT SHOWN OR DIFFERING FROM THE CONSTRUCTION PLANS, AND PROVIDE THE INFORMATION TO THE DESIGN ENGINEER SHOWING LOCATIONS WITH MEASUREMENTS TO REFERENCE POINTS. ANY RESULTING UTILITY CONFLICTS WITH PROPOSED IMPROVEMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DESIGN ENGINEER.
3. PRIOR TO ANY LAND CLEARING, GRADING OR GRUBBING, THE CONTRACTOR SHALL MARK THE SITE BY INSTALLING ORANGE CONSTRUCTION FENCING AND SIGNS TO INDICATE BOUNDARIES OF WETLAND AREAS OR WETLAND SETBACKS.
4. TREES, BRUSH AND OTHER VEGETATION WITHIN THE PROJECT LIMITS THAT INTERFERE WITH CONSTRUCTION SHALL BE REMOVED. CLEARING AND GRUBBING SHALL BE PERFORMED WHERE EARTHWORK IS REQUIRED INCLUDING CLEARING, GRUBBING, SCALPING, TREE AND STUMP REMOVAL, AND THE REMOVAL AND DISPOSAL OF ALL VEGETATION AND DEBRIS.
5. THE CONTRACTOR SHALL REMOVE ALL SURPLUS, DEMOLISHED AND WASTE MATERIALS INCLUDING TREES, STUMPS AND BRUSH FROM THE PROJECT AND DISPOSE OF OFF-SITE. IN NO INSTANCE SHALL MATERIAL BE BURIED ON-SITE.
6. THE CONTRACTOR SHALL REMOVE FROM THE SITE MATERIAL DEEMED UNSUITABLE FOR EMBANKMENT BY THE ENGINEER OR GEOTECHNICAL ENGINEER AND BE DISPOSED OF OFF-SITE.
7. NO TREES GREATER THAN 3 IN. DIAMETER AT BREAST HEIGHT (4 FT.) AND GREATER THAN 10 FT. TALL SHALL BE CUT, REMOVED OR DISTURBED FROM APRIL 1 TO SEPTEMBER 30.
8. PAVEMENT SHALL BE REMOVED WITHOUT DAMAGING OR UNDERMINING THE PAVEMENT TO REMAIN. IF ADJACENT PAVEMENT IS DAMAGED, THE CONTRACTOR SHALL REMOVE THE DAMAGED AREA AND REPAIR AS NECESSARY WITH NO ADDITIONAL COMPENSATION.

LAYOUT NOTES

1. THE CONTRACTOR SHALL INSTALL AN 8 FEET HIGH TEMPORARY CONSTRUCTION FENCE CONSISTING OF A MOVEABLE PANEL FENCE SYSTEM RESTING ON STANDS WITH SANDBAGS AROUND THE ENTIRE PROJECT LIMIT. IN NON-PAVED AREAS, CHAIN LINK FENCE SUPPORTED BY TEMPORARY METAL POSTS DRIVEN INTO THE GROUND MAY BE USED. SITE ACCESS CONTROL SHALL CONSIST OF A GATE(S). THE CONTRACTOR SHALL MAINTAIN THE FENCING DURING THE LIFE OF THE PROJECT AND, UPON COMPLETION OF THE PROJECT, BE REMOVED.
2. ALL CONCRETE PLACED SHALL BE PROTECTED ACCORDING TO ACI 305 & 306 REQUIREMENTS FOR HEAT AND COLD.
3. PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE ODOT SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED ON THESE PLANS. CONCRETE TESTING SHALL BE:
   A. SAMPLING FRESH CONCRETE PER ASTM C-172, EXCEPT MODIFIED FOR SLUMP TO COMPLY WITH ASTM C-94.
   B. SLUMP PER ASTM C-143: 1 TEST AT POINT OF DISCHARGE FOR EACH DAY'S POUR OF EACH CONCRETE CLASS AND ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY SEEMS TO HAVE CHANGED.
   C. AIR CONTENT PER ASTM C-231 PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE: 1 FOR EACH POUR OF EACH TYPE OF AIR-ENTRAINED CONCRETE, AND EACH TIME A SET OF COMPRESSION TEST SPECIMENS IS MADE.
   D. COMPRESSION TEST SPECIMEN PER ASTM C-31: 1 SET OF 4 STANDARD CYLINDERS FOR EACH COMPRESSIVE STRENGTH TEST. 1 SET FOR EACH DAY'S POUR OF EACH CONCRETE CLASS EXCEEDING 5 CU YD. PLUS ADDITIONAL SETS FOR EACH 50 CU.YD. OVER THE FIRST 25 CU.YD. OF EACH CONCRETE CLASS PLACED THE SAME DAY.
   E. COMPRESSIVE STRENGTH TEST PER ASTM C-39: 1 SPECIMEN TESTED AT 7 DAYS, 2 SPECIMENS TESTED AT 28 DAYS, AND 1 SPECIMEN RETAINED IN RESERVE FOR LATER TESTING IF REQUIRED.

LANDSCAPE NOTES

1. ALL LAWN INSTALLATION SHALL BE PERFORMED BY A FIRM SPECIALIZING IN LANDSCAPE WORK.
2. AREAS DISTURBED DURING CONSTRUCTION SHALL BE FINE GRADED TO A SMOOTH, UNIFORM SURFACE WITH LOOSE, UNIFORMLY FINE TEXTURE INCLUDING REMOVAL OF ALL STONES GREATER THAN 1/2", STICKS, ROOTS AND OTHER EXTRANEOUS MATTER USING ROCKHOUND RAKE EQUIPMENT.
3. STOCKPILED TOPSOIL SHALL BE SCREENED FROM CLAY LUMPS, BRUSH, WEEDS, LITTER, ROOTS, STONES LARGER THAN 1/2", AND OTHER EXTRANEOUS MATTER BEFORE PLACEMENT.
4. SEED SHALL BE AN APPROVED SEED MIX BY OHARNG AND MEET THE SPECIFICATIONS AS TO THE PERCENTAGE PURITY, WEED SEED AND GERMINATION AS OUTLINED IN THE OHARNG ENVIRONMENTAL PROCEDURES.
5. MULCH SHALL BE CLEAN STRAW FREE OF WEED SEED.
6. LAWN AREAS SHALL RECEIVE A 2 IN. MINIMUM THICKNESS OF TOPSOIL AND, AFTER LIGHT ROLLING, MEET THE GRADES AND ELEVATIONS SHOWN ON THE GRADING PLANS.
7. DO NOT INSTALL SEED UNTIL ACCEPTANCE OF FINISH GRADE BY THE DESIGN ENGINEER.
8. ALL SEEDING WORK SHALL BE GUARANTEED FOR ONE (1) FULL GROWING SEASON TO COMMENCE UPON FINAL ACCEPTANCE. LAWN AREAS SHALL BE RESEEDED IF SATISFACTORY ESTABLISHMENT DOES NOT OCCUR.

UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE NECESSARY LEVELS OF PROTECTION AND SAFEGUARDING OF ALL OPEN TRENCHES, WHEN WORK IS EITHER ACTIVE, COMPLETED AT THE END OF THE DAY OR SUSPENDED FOR ANY OTHER REASON. THIS INCLUDES TRENCH PROTECTION SUCH AS TRENCH BOXES, WOOD SHEETING AND BRACING, OR ANY OTHER METHOD DETERMINED BY THE CONTRACTOR TO MAINTAIN A SAFE WORKING ENVIRONMENT. ALL EXCAVATIONS SHALL COMPLY WITH APPLICABLE LAWS AND REGULATIONS (FEDERAL, STATE AND LOCAL).
2. THE CONTRACTOR SHALL CLEAN ALL NEW STORM SEWERS WITHIN THE PROJECT LIMITS BEFORE ACCEPTANCE.
3. ALL STORM SEWER JOINTS AND PIPES SHALL BE WATERTIGHT.
4. KNOCKOUT TYPE CONCRETE CATCH BASINS ARE NOT ALLOWED. CONCRETE CATCH BASINS SHALL BE POURED WITH SPECIFIC HOLE LOCATIONS AS PER PLAN.
5. COUPLINGS FOR CONNECTING DISSIMILAR PIPE MATERIALS OR PIPE SIZES SHALL BE A NON-SHEAR, SOLID BANDED WATERTIGHT RUBBER TYPE COUPLING WITH TYPE 316 STAINLESS STEEL SHEAR RINGS AND CONFORM TO ASTM C-425 AND C-1173.
6. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
7. STORM SEWERS AND SERVICE LATERALS SHALL BE AS FOLLOWS OR PER PLAN:
   A. PVC SDR 26 SHALL BE INTEGRAL BELL AND SPIGOT TYPE CONFORMING TO ASTM D-3034, GASKET MATERIAL TO ASTM F-477, JOINTS TO ASTM D-3212 AND BEDDING CLASSIFICATION PER ASTM D-2321.
   B. HDPE SHALL BE SMOOTH INTERIOR, CORRUGATED EXTERIOR CONFORMING TO AASHTO M-252 TYPE S AND M-294 TYPE S, BELL AND SPIGOT JOINT TO ASTM F-2648, GASKET MATERIAL TO ASTM F-477, FITTINGS TO ASTM F-2306, AND BEDDING CLASSIFICATION PER ASTM D-2321.

GRADING NOTES

1. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS AND MATERIALS OF CONSTRUCTION. THE DESIGN ENGINEER SHALL NOT BE RESPONSIBLE FOR THE SUITABILITY OF MATERIAL UNDERLYING THE PROJECT SITE. THE CONTRACTOR SHALL PERFORM INVESTIGATIONS OR TESTING NECESSARY TO ADEQUATELY DETERMINE OR ESTIMATE TO THEIR SATISFACTION ANY EXISTING SITE CONDITION WHICH COULD AFFECT HIS BID OR THE PERFORMANCE OF THE PROPOSED IMPROVEMENTS. THIS COULD INCLUDE, BUT NOT BE LIMITED TO, UNSUITABLE OR UNSTABLE SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHED OR FREE), SPRINGS, OBSTRUCTIONS, ETC. SEE THE GEOTECHNICAL RECOMMENDATION MEMO FOR ADDITIONAL INFORMATION.
2. THE CONTRACTOR SHALL PROVIDE FINAL GRADING TO WITHIN 1 IN. OF GRADES SHOWN ON THE GRADING PLANS.
3. THE CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, PAVEMENTS AND WALKS TO REMAIN FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING OR WASHOUT CREATED BY EARTH MOVING OPERATIONS.
4. THE INTENT OF THIS PROJECT IS TO UTILIZE ALL USEABLE MATERIALS EFFICIENTLY. ACTUAL FIELD CONDITIONS MAY REQUIRE DECISIONS ON MATERIAL HANDLING AND USAGE. THE CONTRACTOR IS RESPONSIBLE FOR MONITORING AND MAINTAINING SITE CONDITIONS.
5. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FROM AREAS TO BE GRADED, TO WHATEVER DEPTH ENCOUNTERED, AND IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL. SOIL SHALL NOT BE STOCKPILED NEAR THE EDGE OF EXCAVATIONS OR WITHIN DRIP LINES OF TREES TO REMAIN.
6. EXCESS MATERIAL GENERATED FROM TRENCH EXCAVATIONS SHALL BE INCORPORATED IN THE UNIT PRICE BID FOR EXCAVATION INCLUDING EMBANKMENT CONSTRUCTION.
7. THE CONTRACTOR SHALL FOLLOW THE REC

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:		
A	PRELIMINARY REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: GEA

DRAWN BY: GEA

REVIEWED BY: SA

PROJECT MANAGER: GEA

CT PROJECT NUMBER:
200606

SHEET TITLE:
OVERALL LOCATION PLAN

ISSUE DATE:
NOVEMBER 9, 2022

SHEET NUMBER:
C-101

BID DOCUMENTS

OHIO NATIONAL GUARD SINCE 1788

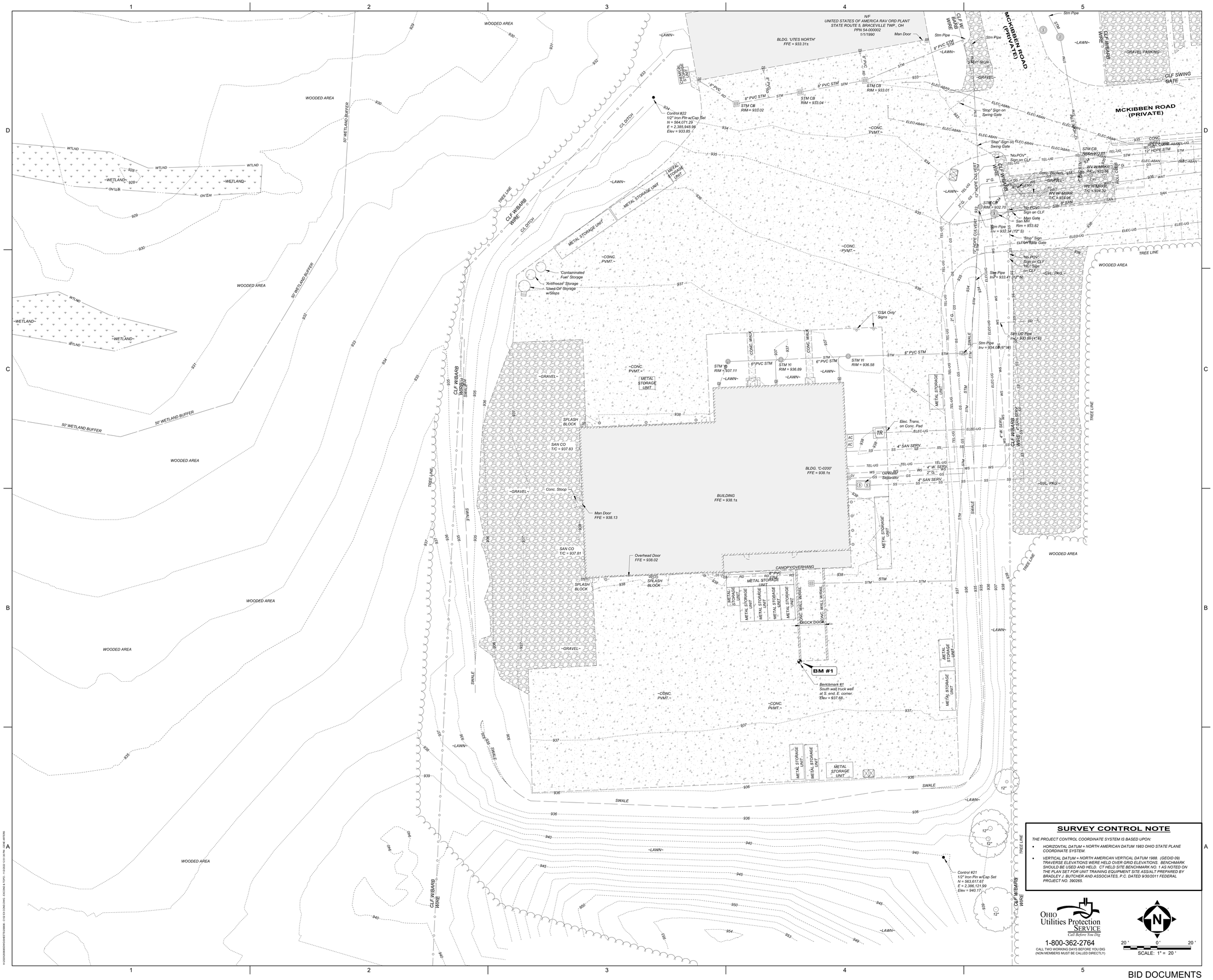
THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THEY COMPLY WITH THE APPLICABLE CODES, RULES AND REGULATIONS. ALL PLANS ARE DESIGNED AND SEALED, INCLUDING STANDARDS GREATER THAN MINIMUM WHERE, IN ANY OPINION, SUCH ADDITIONAL SAFEGUARDS NEEDED TO PROTECT THE HEALTH AND SAFETY.

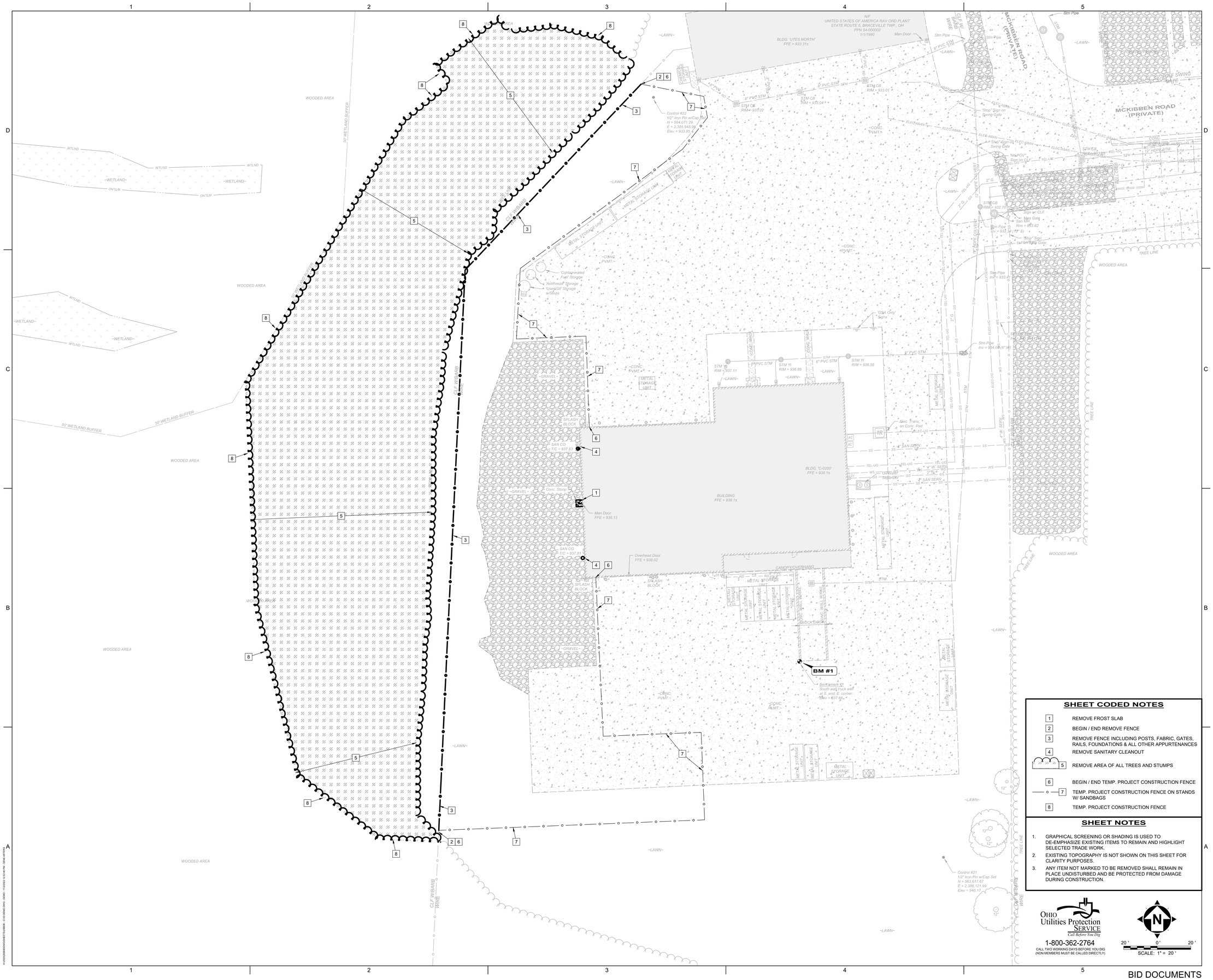
GENE E. ARTERS, P.E.
OHIO PROFESSIONAL ENGINEER

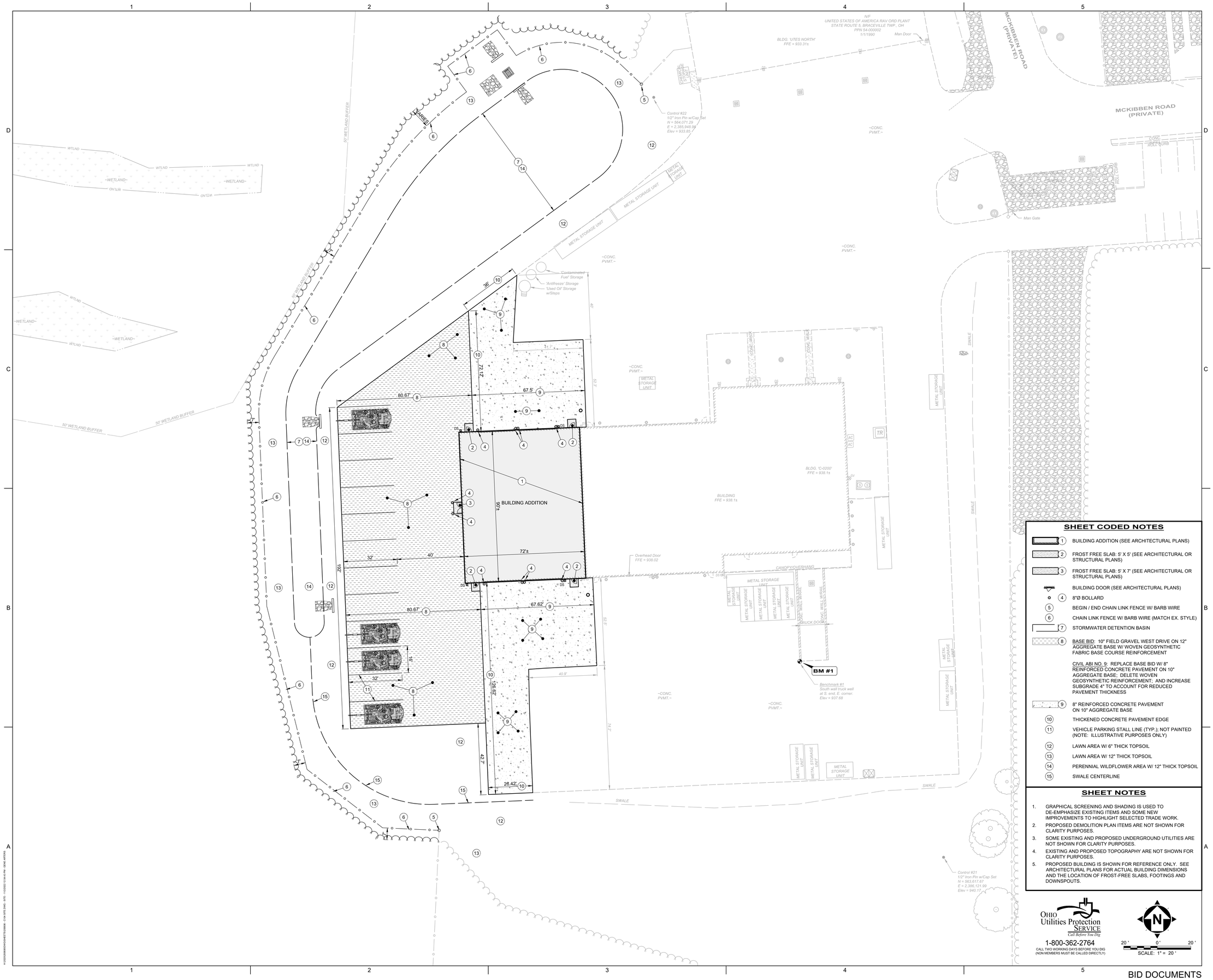
FSB
FEDERAL DESIGN GROUP JV

CT Consultants, Inc.
3875 Embassy Parkway, Suite 200
Akron, OH 44333
Phone: 330.375.0880
Gene E. Arters, PE

SR 534
FAIRPORT RD.
SR 5
STEVENS ST.
BRADY ST.
EAST GATE
GUARD HOUSE
ARMORY BUILDING
BUILDING 'TSSF'
BULDING 'BARRACK'
BULDING 'BARRACK'
McKIBBEN RD. W (PRIVATE)
'TANK COMPOUND'
'TANK SIMULATOR' BUILDING 'UTES NORTH'
'UTES FACILITY' BUILDING 'C-0200'
CONC. APRON
BUILDING ADDITION
CONC. APRON
GRAVEL LOT
LAWN
LAWN
DETENTION BASIN & WATER QUALITY
PROJECT SITE
Wetland
Stream
SCALE: 1" = 80'


NF
UNITED STATES OF AMERICA RAV ORD PLANT
STATE ROUTE 5, BRACEVILLE TWP., OH
PPN 54-000002
1/1/1990
BLDG. 'UTES NORTH'
FFE = 933.31±
MCKIBBEN ROAD (PRIVATE)
CLF SWING GATE
GRAVEL PARKING
Control #22
1/2" Iron Pin w/Cap Set
N = 564,071.29
E = 2,385,948.99
Elev = 933.85
CL DITCH
50' WETLAND BUFFER
WOODED AREA
WETLAND
TREE LINE
CLF W/BARB WIRE
METAL STORAGE UNIT
'Contaminated Fuel' Storage
'Antifreeze' Storage
'Used Oil' Storage
w/Steps
'GSA Only' Signs
CONC. WALK
CONC. PVMT.
GRAVEL
LAWN
SPLASH BLOCK
SAN CO
T/C = 937.83
Conc. Stoop
Man Door
FFE = 938.13
BUILDING
FFE = 938.1±
BLDG. 'C-0200'
FFE = 938.1±
Overhead Door
FFE = 938.02
CANOPY/OVERHANG
SWALE
TR
Elec. Trans. on Conc. Pad
Oil/Water Separator
BM #1
Benchmark #1
South wall truck well at S. end, E. corner.
Elev = 937.69.
TRUCK DOOR
CONC. WALL W/SHELF
Control #21
1/2" Iron Pin w/Cap Set
N = 563,617.57
E = 2,386,121.99
Elev = 940.17
Stop" Sign on Swing Gate
Stop" Sign on Slab Gate
No POV Sign on CLF
Man Gate
San MH
Rim = 933.82
Inv = 932.34 (12" S)
Inv = 933.41 (12" N)
Inv = 934.08 (6"W)
Inv= 933.60 (4"E)
Gravel Pkg
Conc. Bollard
WV W MRR
T/C = 934.04
WV W MRR
T/C = 934.32
WV W MRR
T/C = 933.96
STM CB
RIM = 932.70
STM CB
RIM = 933.55
STM CB
RIM = 933.01
STM CB
RIM = 933.02
STM CB
RIM = 933.04
STM YI
RIM = 937.11
STM YI
RIM = 936.89
STM YI
RIM = 936.58
8" PVC STM
6" PVC STM
8" PVC RD
12" HDPE STM
7" HDPE CULVERT
2" G
4" SAN SERV
4" W. SERV
2" W SERV
3" SAN
4" W. SERV
SS MH
SAN MH
WV W MRR
WV W MRR
WV W MRR
Stm Pipe
Stm Pipe
Stm Pipe


NF
UNITED STATES OF AMERICA RAV ORD PLANT
STATE ROUTE 5, BRACEVILLE TWP., OH
PPN 54-00002
1/1/1990
BLDG. 'UTES NORTH'
FFE = 933.31±
Man Door
MCKIBBEN ROAD (PRIVATE)
Stm Pipe
Inv = 933.42
Inv = 933.42 (12" W)
Inv = 934.08 (6" W)
STM CB
RIM = 933.01
STM CB
RIM = 933.04
STM CB
RIM = 933.02
STM CB
RIM = 932.70
STM CB
RIM = 933.82
STM YI
RIM = 936.89
STM YI
RIM = 936.58
STM YI
RIM = 937.11
6" PVC STM
8" PVC STM
12" HDPE STM
Control #22
1/2" Iron Pin w/Cap Set
N = 564,071.29
E = 2,385,949.99
Elev = 933.85
Control #21
1/2" Iron Pin w/Cap Set
N = 563,617.67
E = 2,386,121.99
Elev = 940.17
BM #1
Benchmark #1
South wall truck well
at S. end, E. corner
Elev = 937.89
BUILDING
FFE = 938.1±
BLDG. 'C-0200'
FFE = 938.1±
Man Door
FFE = 938.13
Overhead Door
FFE = 938.02
CANOPY/OVERHANG
Contaminated Fuel Storage
Aboveground Storage Used Oil Storage w/Skids
METAL STORAGE UNIT
CONC. PVMT.
GRAVEL
SPLASH BLOCK
SAN CO
T/C = 937.83
Conc. Stoop
CONC. WALK
CONC. RAMP
CONC. WALL
CONC. FTG.
CONC. PAD
BROCK DOOR
GAS
ELEC-UG
TEL-UG
SAN SERV
W SERV
STM
WS
GS
SS
TREE LINE
WOODED AREA
LAWN
WETLAND
WTLND
50' WETLAND BUFFER
CLF WIRE
CLF SWING GATE
Stop Sign on Swing Gate
NAPOV
Man Gate
USA Only Signs
Elec. Trans. on Conc. Pad
Gas Meter
Gas Regulator
Stop Sign w/ CLF
Stop Sign
Stop Sign on Swing Gate
Stop Sign on Swing Gate
Stop Sign on Swing Gate



SHEET CODED NOTES

	1	BUILDING ADDITION (SEE ARCHITECTURAL PLANS)
	2	FROST FREE SLAB: 5' X 5' (SEE ARCHITECTURAL OR STRUCTURAL PLANS)
	3	FROST FREE SLAB: 5' X 7' (SEE ARCHITECTURAL OR STRUCTURAL PLANS)
		BUILDING DOOR (SEE ARCHITECTURAL PLANS)
	4	8"Ø BOLLARD
	5	BEGIN / END CHAIN LINK FENCE W/ BARB WIRE
	6	CHAIN LINK FENCE W/ BARB WIRE (MATCH EX. STYLE)
	7	STORMWATER DETENTION BASIN
	8	BASE BID: 10" FIELD GRAVEL WEST DRIVE ON 12" AGGREGATE BASE W/ WOVEN GEOSYNTHETIC FABRIC BASE COURSE REINFORCEMENT CIVIL ABI NO. 9: REPLACE BASE BID W/ 8" REINFORCED CONCRETE PAVEMENT ON 10" AGGREGATE BASE; DELETE WOVEN GEOSYNTHETIC REINFORCEMENT; AND INCREASE SUBGRADE 4" TO ACCOUNT FOR REDUCED PAVEMENT THICKNESS
	9	8" REINFORCED CONCRETE PAVEMENT ON 10" AGGREGATE BASE
	10	THICKENED CONCRETE PAVEMENT EDGE
	11	VEHICLE PARKING STALL LINE (TYP.); NOT PAINTED (NOTE: ILLUSTRATIVE PURPOSES ONLY)
	12	LAWN AREA W/ 6" THICK TOPSOIL
	13	LAWN AREA W/ 12" THICK TOPSOIL
	14	PERENNIAL WILDFLOWER AREA W/ 12" THICK TOPSOIL
	15	SWALE CENTERLINE

SHEET NOTES

1. GRAPHICAL SCREENING AND SHADING IS USED TO DE-EMPHASIZE EXISTING ITEMS AND SOME NEW IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK.
2. PROPOSED DEMOLITION PLAN ITEMS ARE NOT SHOWN FOR CLARITY PURPOSES.
3. SOME EXISTING AND PROPOSED UNDERGROUND UTILITIES ARE NOT SHOWN FOR CLARITY PURPOSES.
4. EXISTING AND PROPOSED TOPOGRAPHY ARE NOT SHOWN FOR CLARITY PURPOSES.
5. PROPOSED BUILDING IS SHOWN FOR REFERENCE ONLY. SEE ARCHITECTURAL PLANS FOR ACTUAL BUILDING DIMENSIONS AND THE LOCATION OF FROST-FREE SLABS, FOOTINGS AND DOWNSPOUTS.

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

N
20' 0' 20'
SCALE: 1" = 20'

FSB FEDERAL DESIGN GROUP JV

SITE/CIVIL ENGINEER
CT Consultants, Inc.
3875 Embassy Parkway, Suite 200
Akron, OH 44333
Phone: 330.375.0800
Gene E. Arters, PE

THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THEY COMPLY WITH THE APPLICABLE CODES, RULES AND REGULATIONS AS OF THE DATE SIGNED AND SEALED, INCLUDING STANDARDS GREATER THAN MINIMUM WHERE IN MY PROFESSIONAL OPINION THEY ARE NEEDED TO PROTECT PUBLIC HEALTH AND SAFETY.

GENE E. ARTERS, PROFESSIONAL ENGINEER
OHIO PROFESSIONAL ENGINEER

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: GEA
DRAWN BY: GEA
REVIEWED BY: SA
PROJECT MANAGER: GEA
CT PROJECT NUMBER: 200606
SHEET TITLE: **LAYOUT PLAN**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: C-104

BID DOCUMENTS

H:\2020\390321\SHEETS\390321_Civil_SITE.DWG - Civil_SITE DWG - SITE - 11/2/2022 12:54:51 PM - GENE ARTERS

STM HW W/ OUTLET PROTECTION
INV = 930.13 (45° SE)

11' - 15" HDPE
STM @ 2.00%

STM OUTLET CONTROL
(SEE DETAIL)

14' - 12" HDPE
STM @ 0.00%

STM HW W/ OUTLET
PROTECTION
INV = 930.50 (12" NW)

EMERGENCY
OVERFLOW

STORM WATER MANAGEMENT FACILITY
DETENTION BASIN W/ WATER QUALITY

50' WETLAND BUFFER

WETLAND

'Contaminated Fuel' Storage
'Antifreeze' Storage
'Used Oil' Storage
w/Slops

STM WYE
INV = 934.30 (6" S)
INV = 933.50 (8" W & E)

84' - 6" PVC SDR 26 STM @ 1.00%

STM HW W/ OUTLET
PROTECTION
INV = 932.66 (8" E)

10' - 6" PVC SDR
26 STM @ 2.00%

ROOF LEADER
INV = 934.50 (6" N)

STM WYE
INV = 934.30 (6" S)
INV = 934.09 (8" W & E)

59' - 8" PVC SDR 26 STM @ 1.00%

10' - 6" PVC SDR
26 STM @ 2.00%

13' - 8" PVC SDR
26 STM @ 1.00%

STM CO
RIM = 937.34
INV = 934.30 (6" S)
INV = 934.22 (8" W)

10' - 6" PVC SDR
26 STM @ 2.00%

CONNECT EX.
ROOF LEADER
INV = 934.50 (6" N)

BUILDING ADDITION
FFE = 938.00

Overhead Door
FFE = 938.02

CONNECT EX.
ROOF LEADER
INV = 934.50 (6" S)

ROOF LEADER
INV = 934.50 (6" S)

ROOF LEADER
INV = 934.50 (6" S)

STM HW W/ OUTLET
PROTECTION
INV = 932.69 (8" E)

10' - 6" PVC SDR
26 STM @ 2.00%

81' - 8" PVC SDR 26 STM @ 1.00%

59' - 8" PVC SDR 26 STM @ 1.00%

10' - 6" PVC SDR
26 STM @ 2.00%

STM CO
RIM = 937.95
INV = 934.30 (6" N)
INV = 934.22 (8" W)

STM WYE
INV = 934.30 (6" N)
INV = 934.09 (8" W & E)

STM WYE
INV = 934.30 (6" N)
INV = 933.50 (6" W & E)

13' - 8" PVC SDR
26 STM @ 1.00%

BM #1

MCKIBBEN ROAD
(PRIVATE)

BLDG. 'UTES NORTH'
FFE = 933.31±

BLDG. 'C-0200'
FFE = 938.1±

BUILDING
FFE = 938.1±

CANOPY/OVERHANG

CONC. WALL W/RAIL

CONC. WALL W/GRATE

TRUCK DOOR

SPLASH BLOCK

SWALE

Man Door

Stm Pipe

STM CB
RIM = 933.02

STM CB
RIM = 933.04

STM CB
RIM = 933.01

STM CB
RIM = 932.70

San MH
Rim = 933.82

Stm Pipe
Inv = 932.34 (12" S)

Stm Pipe
Inv = 933.43 (12" N)

San UD Pipe
Inv = 933.60 (4" E)

Stm Pipe
Inv = 934.08 (6" W)

STM YI
RIM = 937.11

STM YI
RIM = 936.89

STM YI
RIM = 936.58

Elec. Trans.
on Conc. Pad

FR

AC

12" HDPE STM

6" PVC STM

8" PVC STM

6" PVC RD

4" SAN SERV.

2" G.

4" W. SERV.

W.W.WARMER
T/C = 934.86
INV = 934.46

W.W.WARMER
T/C = 934.32

3" SAN

Conc. Retaining Wall

TEL-UG

ELEC-UG

ELEC-ABAN

GAS-ABAN

WAT

SAN

STM

WS

SS

GS

UD

TR

RD

DS

50' WETLAND BUFFER

STORM WATER MANAGEMENT FACILITY
DETENTION BASIN W/ WATER QUALITY

PR. ROOF
0.04 AC.

EX. Roof
0.04 AC.

PR. ROOF
0.04 AC.

PR. ROOF
0.04 AC.

EX. Roof
0.04 AC.

PR. ROOF
0.04 AC.

STORM DRAINAGE AREAS

1" = 40'

LATERAL STORM CONNECTIONS TO BUILDING COMPUTATIONS

NOTE: This table shows engineering calculations for pipe sizing and capacities. Do NOT use for any construction purposes.

10 Year Frequency
T_C = 15.0 Min. (Ditch Catch Basin)
T_C = 10.0 Min. (Pavement Catch Basin)

25 Year Intensity
i = 1.00 (used to check hydraulic gradient)

MANNING'S EQUATION

$Q = \frac{C_M}{n} A R^{2/3} S^{1/2}$

Q = Discharge
C_M = 1.486
A = Cross-Sectional Flow Area
R = Hydraulic Radius (Area / Wetted Perimeter)
n = Manning's Roughness Coefficient
S = Slope

V_{ACT} 2 min.

MANNING'S ROUGHNESS COEFFICIENT

n = 0.015 (PVC & HDPE ≤12")
n = 0.013 (PVC & HDPE ≥ 15")

LEGEND:

PVC = Polyvinyl Chloride Pipe
HDPE = High Density Polyethylene Pipe
CFS = Cubic Feet per Second
FT = feet
AC = acres
IN = inches
Q = flow rate
MIN = minutes
V = velocity

FROM	TO	ΔA (AC)	ΣA (AC)	ΔT (MIN)	ΣT (MIN)	I	C	ΔCA	ΣCA	Q (CFS)	Q_{NYDL} (CFS)	d_{CALC} (IN)	d_{USED} (IN)	n	PIPE TYPE	HYD. RAD	SLOPE	LENGTH (FT)	Q_{FULL} (CFS)	V_{FULL} (FT/SEC)	Q/Q_{FULL}	V/V_{FULL}	V_{ACT} (FT/SEC)	HYD. SLOPE	HYD. (FT/SEC)	HYD.V UP	HYD. ELEV. DOWN	INV. ELEV. UP	INV. ELEV. DOWN	TOP ELEV. CONTROL	TOP ELEV.- HYD. ELEV.	TOP ELEV.- TOP PIPE
North Side of Building Addition																																
Bldg.	C.Out	0.04	0.04	0.00	10.00	5.10	0.95	0.04	0.04	0.19	0.19	3.73	6.00	0.015	PVC	0.125	0.0200	10	0.69	3.50	0.28	0.72	2.52	0.0105	0.19	934.19	934.09	934.50	934.30	938.00	3.81	3.00
C.Out	wye	0.04	0.08	0.07	10.07	5.08	0.95	0.04	0.08	0.19	0.39	5.50	8.00	0.015	PVC	0.167	0.0100	72	1.05	3.00	0.37	0.78	2.33	0.0061	0.22	934.09	933.65	934.22	933.50	937.95	3.86	3.06
wye	HW	0.04	0.12	0.52	10.58	4.97	0.95	0.04	0.11	0.19	0.57	6.35	8.00	0.015	PVC	0.167	0.0100	84	1.05	3.00	0.54	0.88	2.64	0.0078	0.33	933.65	932.99	933.50	932.66	937.95	4.30	3.78
South Side of Building Addition																																
Bldg.	C.Out	0.04	0.04	0.00	10.00	5.10	0.95	0.04	0.04	0.19	0.19	3.73	6.00	0.015	PVC	0.125	0.0200	10	0.69	3.50	0.28	0.72	2.52	0.0105	0.19	934.20	934.10	934.50	934.30	938.00	3.80	3.00
C.Out	wye	0.04	0.08	0.07	10.07	5.08	0.95	0.04	0.08	0.19	0.39	5.50	8.00	0.015	PVC	0.167	0.0100	72	1.05	3.00	0.37	0.78	2.33	0.0061	0.22	934.10	933.66	934.22	933.50	937.95	3.85	3.06
wye	HW	0.04	0.12	0.52	10.58	4.97	0.95	0.04	0.11	0.19	0.57	6.35	8.00	0.015	PVC	0.167	0.0100	81	1.05	3.00	0.54	0.88	2.64	0.0078	0.33	933.66	933.02	933.50	932.69	937.95	4.29	3.78

SHEET NOTES

1. GRAPHICAL SCREENING AND SHADING IS USED TO DE-EMPHASIZE EXISTING ITEMS AND SOME NEW IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK.
2. PROPOSED DEMOLITION PLAN ITEMS ARE NOT SHOWN FOR CLARITY PURPOSES.
3. SEE ARCHITECTURAL, STRUCTURAL AND PLUMBING PLANS FOR HOW UTILITY SERVICES ENTER THE BUILDING.

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

20' 0' 20'
SCALE: 1" = 20'

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV

SITE/CIVIL ENGINEER
CT Consultants, Inc.
3875 Embassy Parkway, Suite 200
Akron, OH 44333
Phone: 330.375.0800
Gene E. Arters, PE

THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THEY COMPLY WITH THE APPLICABLE CODES, RULES AND REGULATIONS AS OF THE DATE SIGNED AND SEALED, INCLUDING STANDARDS GREATER THAN MINIMUM VOLUMES IN MY PROFESSIONAL OPINION THEY ARE NEEDED TO PROTECT PUBLIC HEALTH AND SAFETY.

GENE E. ARTERS, PROFESSIONAL ENGINEER
OHIO PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SINCE 1798

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

PROJECT INFORMATION:

DESIGNED BY:	GEA
DRAWN BY:	GEA
REVIEWED BY:	SA
PROJECT MANAGER:	GEA

CT PROJECT NUMBER: 200606

SHEET TITLE: **UTILITY PLAN**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: C-105

CALCULATED BY: Gene E. Arters, PE
PROJECT NO.: 200606
PROJECT NAME: CJAG JMTC UTES Two Bay Addition
TOWNSHIP: Braceville
COUNTY: Trumbull
STATE: Ohio
DATE: 2/1/2022

H:\2020\200606\DWG\SHEETS\200606 - C105 UTILITY.DWG - UTILITY - 11/3/2022 2:57:14 PM - GENE ARTERS

BUILDING ADDITION
FFE = 938.00
LANDSCAPE MOUND
LANDSCAPE MOUND
BM #1
MCKIBBEN ROAD (PRIVATE)
NF
UNITED STATES OF AMERICA RAV ORD PLANT
STATE ROUTE 5, BRACEVILLE TWP., OH
PPN 54-000002
1/1/1990
BLDG. 'UTES NORTH'
FFE = 933.31±
BLDG. 'C-0200'
FFE = 938.1±
BUILDING
FFE = 938.1±
Overhead Door
FFE = 938.02
Man Door
Elec. Trans. on Conc. Pad
CANOPY OVERHANG
6" PVC STM
SPLASH BLOCK
CONC WALL W/RAIL
CONC WALL W/RAIL
TRUCK DOOR
SWALE
50' WETLAND BUFFER
WETLAND
WTLND
GN'LVM
STM CB RIM = 933.02
STM CB RIM = 933.04
STM CB RIM = 933.01
STM CB RIM = 933.65
STM CB RIM = 932.76
Conc. Retaining Wall
WV W-WATER T/C = 934.96
WV W-WATER T/C = 934.32
937.06 EP
937.40 EP
937.52 EP
938.09 EP
937.93 EP
938.00 ER
937.95 EW
938.00 EW
937.89 P
935.09 EP
936.09 EP
937.90 EW
938.00 W
938.00 EP
937.93 EP
937.55 EW
937.69 P
936.09 EP
937.31 EP
937.55 EP
937.22 EP
936.09 EP
936.61 EP
936.90 EP
936.35 EP
936.03 G
938.00 EW
DSH
DSH
DSH

SEDIMENT TRAP

DEWATERING ZONE VOLUME:
REQUIRED = (2.46 AC) X (1,800 CF/AC)
= 4,428 CF
PROVIDED = 4,899 CF

SEDIMENT STORAGE ZONE VOLUME:
REQUIRED = (2.46 AC) X (1,000 CF/AC)
= 2,460 CF
PROVIDED = 2,511 CF

SHEET CODED NOTES

CWL	CONSTRUCTION WORK LIMIT
SDL	SOIL DISTURBANCE LIMIT
CE	CONSTRUCTION ENTRANCE
CW	CONCRETE WASHOUT
ES	EQUIPMENT STAGING
FSA	FUEL STORAGE & VEHICLE FUELING AREA
SA	SANITARY FACILITY
MS	MATERIAL STOCKPILE LOCATION
CC	CHEMICAL COMPOUND MIXING & STORAGE AREA
SF	SILT FENCE
GF	GRASS FILTER STRIP
OP	OUTLET PROTECTION
ST	SEDIMENT TRAP

SHEET NOTES

1. GRAPHICAL SCREENING AND SHADING IS USED TO DE-EMPHASIZE EXISTING ITEMS AND SOME NEW IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK.
2. PROPOSED DEMOLITION PLAN ITEMS ARE NOT SHOWN FOR CLARITY PURPOSES.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF DIRECTING OVERLAND WATER INTO THE SEDIMENT TRAPS DURING THE VARIOUS STAGES OF EARTHWORK ACTIVITY AND CONSTRUCTION. THE SIZE, ELEVATIONS OR LOCATION OF SEDIMENT TRAPS MAY NEED ADJUSTED AS CONSTRUCTION PROGRESSES.
4. SEE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

SCALE: 1" = 20'

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV

SITE/CIVIL ENGINEER
CT Consultants, Inc.
3875 Embassy Parkway, Suite 200
Akron, OH 44333
Phone: 330.375.0800
Gene E. Arters, PE

THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THEY COMPLY WITH THE APPLICABLE CODES, RULES AND REGULATIONS AS OF THE DATE SIGNED AND SEALED, INCLUDING STANDARDS GREATER THAN MINIMUM VOLUMES IN MY PROFESSIONAL OPINION THEY ARE NEEDED TO PROTECT PUBLIC HEALTH AND SAFETY.

GENE E. ARTERS, PROFESSIONAL ENGINEER
OHIO PROFESSIONAL ENGINEER

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	1/19/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	GEA
DRAWN BY:	GEA
REVIEWED BY:	SA
PROJECT MANAGER:	GEA
CT PROJECT NUMBER:	200606
SHEET TITLE:	STORM WATER POLLUTION PREVENTION PLAN
ISSUE DATE:	NOVEMBER 9, 2022
SHEET NUMBER:	C-107

H:\2020\200606\SHEETS\200606 - C107 (SWPPP).DWG - SWPP - 1/12/2022 1:04:58 PM - GENE ARTERS

FINAL CERTIFICATION AND NOTIFICATION FOR EROSION AND SEDIMENT CONTROL

PROJECT NAME: _____

PROJECT ADDRESS: _____

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED FOR THE DESIGNATED PROJECT. BASED ON MY INQUIRY OF THE PERSON(S) WHO MANAGED THE SYSTEM OR DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THERE ARE SUBSTANTIAL PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

COMPANY NAME _____ PHONE NO. _____

STREET ADDRESS _____

PRINT NAME AND TITLE _____

SIGNATURE _____ DATE _____

DELEGATION OF AUTHORITY FOR EROSION AND SEDIMENT CONTROL

PROJECT NAME: _____

PROJECT ADDRESS: _____

I, _____, HEREBY DESIGNATE THE PERSON OR DESCRIBED POSITION BELOW TO BE A DULY AUTHORIZED REPRESENTATIVE FOR THE PURPOSE OF OVERSEEING COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS, INCLUDING THE OHIO EPA NPDES CONSTRUCTION GENERAL PERMIT, AT THE DESIGNATED PROJECT. THE DESIGNEE IS AUTHORIZED TO SIGN REPORTS, STORM WATER POLLUTION PREVENTION PLANS (SWP3) AND OTHER DOCUMENTS AS REQUIRED BY THE NPDES PERMIT.

NAME OF QUALIFIED PERSON AND/OR POSITION

COMPANY NAME _____ PHONE NO. _____

STREET ADDRESS _____

BY SIGNING THIS AUTHORIZATION, I CERTIFY UNDER THE PENALTY OF LAW THAT ALL REQUIRED DOCUMENTS WILL BE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON(S) WHO MANAGES THE SYSTEM OR IS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION TO BE SUBMITTED WILL BE, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THERE ARE SUBSTANTIAL PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

COMPANY NAME _____ PHONE NO. _____

STREET ADDRESS _____

PRINT NAME AND TITLE _____

SIGNATURE _____ DATE _____

EROSION AND SEDIMENT CONTROL AMENDMENT LOG

PROJECT NAME: _____ SHEET NO.: _____

PROJECT ADDRESS: _____

AMENDMENT NO.	DATE OF AMENDMENT	DESCRIPTION OF AMENDMENT	DESCRIPTION OF STABILIZATION MEASURE AND LOCATION (ATTACH SKETCH IF NECESSARY)

GRADING AND STABILIZATION ACTIVITY LOG

PROJECT NAME: _____ SHEET NO.: _____

PROJECT ADDRESS: _____

DATE GRADING ACTIVITY INITIATED	DESCRIPTION OF GRADING ACTIVITY	DATE GRADING ACTIVITY CEASED	STABILIZATION MEASURE INITIATED		DESCRIPTION OF STABILIZATION MEASURE AND LOCATION (ATTACH SKETCH IF NECESSARY)
			DATE	TYPE	
				☐ TEMP. ☐ PERM.	
				☐ TEMP. ☐ PERM.	
				☐ TEMP. ☐ PERM.	
				☐ TEMP. ☐ PERM.	
				☐ TEMP. ☐ PERM.	
				☐ TEMP. ☐ PERM.	
				☐ TEMP. ☐ PERM.	
				☐ TEMP. ☐ PERM.	

SUBCONTRACTOR AGREEMENT FOR EROSION AND SEDIMENT CONTROL

PROJECT NAME: _____

PROJECT ADDRESS: _____

BY SIGNING THIS AGREEMENT, I CERTIFY UNDER THE PENALTY OF LAW THAT I HAVE READ AND UNDERSTAND THE TERMS AND CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN (SWP3) FOR THE DESIGNATED PROJECT AND AGREE TO FOLLOW THE PRACTICES DESCRIBED. AS A SUBCONTRACTOR, I AM REQUIRED TO COMPLY WITH THE SWP3 FOR ANY WORK I PERFORM AT THE PROJECT. IT IS MY RESPONSIBILITY TO OBTAIN A COPY OF THE SWP3 FROM THE CONTRACTOR AND TO ADVISE MY EMPLOYEES WORKING ON THIS PROJECT OF THE REQUIREMENTS. I AM AWARE THERE ARE SUBSTANTIAL PENALTIES OR LOSS OF CONTRACT FOR VIOLATING ANY CONDITION OF THE SWP3, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

COMPANY NAME _____ PHONE NO. _____

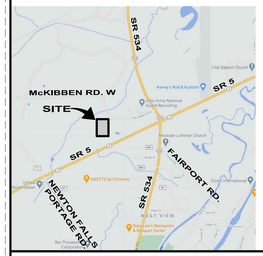
STREET ADDRESS _____

PRINT NAME AND TITLE _____

SIGNATURE _____ DATE _____

DESCRIPTION OF CONSTRUCTION SERVICE(S) I AM TO PROVIDE:

VICINITY MAP



SCALE: 1" = 2,000'

SITE INFORMATION

PROJECT INFORMATION:
CAMP JAMES A. GARFIELD
1438 STATE ROUTE 534 SW
BRACEVILLE TOWNSHIP, TRUMBULL COUNTY, OHIO 44444
LATITUDE: 41.204532 LONGITUDE: -80.982551

OWNER INFORMATION:
OHIO ARMY NATIONAL GUARD
CAMP JAMES A. GARFIELD
1438 STATE ROUTE 534 SW
NEWTON FALLS, OHIO 44444
CONTACT: TIMOTHY M. MORGAN, STATE ENV SUPERVISOR
PHONE: 614-336-6568
EMAIL: TIMOTHY.M.MORGAN.NFG@MAIL.MIL

SITE-CIVIL ENGINEER INFORMATION:
CT CONSULTANTS, INC.
3875 EMBASSY PARKWAY, SUITE 200
AKRON, OHIO 44333
CONTACT: GENE E. ARTERS, PE
PHONE: 330-375-0800
EMAIL: GARTERS@CTCONSULTANTS.COM

TYPE OF CONSTRUCTION:
NEW

TYPE OF PROJECT:
MILITARY

DESCRIPTION OF PROJECT:
CONSTRUCTION OF BUILDING ADDITION, CONCRETE DRIVE APRONS, GRAVEL PARKING LOT AND STORM WATER MANAGEMENT SYSTEM.

SOIL DISTURBING ACTIVITIES:
EROSION AND SEDIMENT CONTROL INSTALLATION; REMOVAL OF TREES, VEGETATION AND TOPSOIL; BUILDING FOUNDATION; EARTHWORK GRADING; AND INSTALLATION OF BUILDING, STORM WATER MANAGEMENT SYSTEM AND PAVEMENT.

DESCRIPTION OF PRIOR LAND USE:
BUILDINGS WITH DRIVEWAYS, PARKING AREAS AND UTILITIES.

SITE AREA INFORMATION:

TOTAL PROPERTY AREA:	N/A	AC.
PROJECT LIMIT/CONSTRUCTION AREA:	2.46	AC.
AREA OF SOIL DISTURBANCE:	2.46	AC.
EXISTING IMPERVIOUS AREA:	0	AC.
PROPOSED IMPERVIOUS AREA:	1.15	AC.
INCREASE/DECREASE OF IMPERVIOUS AREA:	100	%
PRE-CONSTRUCTION RUNOFF COEFFICIENT:	77.0	
POST-CONSTRUCTION RUNOFF COEFFICIENT:	88.1	

NAME OF RECEIVING STREAM:
UNNAMED TRIBUTARY TO MAHONING RIVER

QUALITY OF STORM WATER DISCHARGE FROM SITE:
UNKNOWN

ESTIMATED CONSTRUCTION START DATE: 1/1/2023
ESTIMATED CONSTRUCTION COMPLETION DATE: 12/31/2023

EROSION CONTROL TIMETABLE

STABILIZATION TYPE	YEAR J	F	M	A	M	J	J	A	S	O	N	D
TEMPORARY SEEDING				O	O	⊗	⊗	⊗	⊗	O	O	
PERMANENT SEEDING					O	⊗	⊗	⊗	⊗	O	O	
MULCHING	O	O	O	O	O	O	O	O	O	O	O	O
PAVING						O	O	O	O	O	O	O

⊗ IRRIGATION NEEDED

SOIL TYPES

NAME	DESCRIPTION	
FcB	FITCHVILLE SILT LOAM, 2 TO 6 PERCENT SLOPES	100.0%

GENERAL NOTES

1. THIS SWP3 HAS BEEN PREPARED SHOWING THE ITEMS LISTED BELOW, BUT THE CONTRACTOR MAY NEED TO MOVE OR ADD ITEMS AS CONSTRUCTION PROGRESSES OR DURING THE VARIOUS STAGES OF CONSTRUCTION. SOME ITEMS MAY ALREADY BE SHOWN ON THE SWP3, BUT MOVED TO BETTER SUIT THE CONTRACTOR'S MEANS AND METHODS.
   - LIMITS OF EARTH DISTURBING ACTIVITY
   - CONSTRUCTION ENTRANCE
   - EROSION AND SEDIMENT CONTROL MEASURES
   - CONCRETE WASHOUT PIT
   - EQUIPMENT STAGING
   - FUEL STORAGE AND VEHICLE FUELING AREA
   - SANITATION FACILITY
   - MATERIAL STOCKPILE LOCATION
   - CHEMICAL COMPOUND MIXING AND STORAGE AREA
   - ANY OTHER EROSION CONTROL REQUIRED
2. ALL WORK REQUIRED TO IMPLEMENT THE SWP3 INCLUDING INSPECTION FEES, MAINTENANCE AND REPAIRS SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL AMEND THE SWP3 WHEN THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT REQUIRES INSTALLATION OF BMPS OR MODIFICATION TO EXISTING BMPS.
4. ADDITIONAL OR DIFFERENT BMPS MAY BE NEEDED AS CONSTRUCTION PROGRESSES OR AS REQUIRED BY THE OWNER, SWCD OR OHIO EPA.
5. PHASE CONSTRUCTION ACTIVITIES TO MINIMIZE LAND DISTURBED AT ANY ONE TIME AND LEAVE EXISTING VEGETATION IN PLACE AS LONG AS POSSIBLE.

ADMINISTRATIVE NOTES

1. AN OHIO EPA NPDES PERMIT IS REQUIRED WHERE CONSTRUCTION ACTIVITIES DISTURB 1 OR MORE ACRES OF LAND. DISTURBED LAND IS LAND IN WHICH VEGETATION HAS BEEN CLEARED AND SOILS ARE EXPOSED TO STORM WATER. A NOI IS REQUIRED FOR THIS PROJECT AND MUST BE FILED WITH THE OHIO EPA AT LEAST 21 DAYS PRIOR TO THE START OF CONSTRUCTION BECAUSE THE TOTAL LAND DISTURBANCE IS GREATER THAN 1 ACRE.
2. THE CONTRACTOR SHALL FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE OHIO EPA NPDES CONSTRUCTION SITE STORM WATER GENERAL PERMIT OHC000005 AND THE ODNR RAINWATER AND LAND DEVELOPMENT MANUAL, AND BE RESPONSIBLE FOR ALL NPDES TERMS AND CONDITIONS UNTIL A NOT IS FILED.
3. NO CONSTRUCTION ACTIVITIES MAY BEGIN UNTIL ALL OF THE FOLLOWING OCCUR:
   - OHIO EPA NPDES AUTHORIZATION LETTER RECEIVED
   - THE CONTRACTOR FILES A CO-PERMITTEE APPLICATION
4. OHIO EPA APPLICATION FORMS (I.E. NOI, NOT, CO-PERMITTEE NOI/NOT AND PERMIT TRANSFER) ARE ONLY ACCESSIBLE ELECTRONICALLY VIA THE OHIO EPA STREAMS APPLICATION SUBMITTAL SYSTEM USING AN INDIVIDUAL EBUSINESS CENTER ACCOUNT. VISIT THE OHIO EPA'S ELECTRONIC BUSINESS SERVICES WEBSITE FOR MORE INFORMATION, GUIDANCE AND REPORTING QUESTIONS.
5. THE CONTRACTOR SHALL SELECT INDIVIDUALS TO BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND COMPLETING INSPECTION AND MAINTENANCE REPORTS. THE CONTRACTOR SHALL COMPLETE A "DELEGATION OF AUTHORITY FOR STORM WATER POLLUTION PREVENTION PLAN".
6. ALL PROCEDURES AND REQUIREMENTS CONTAINED IN THIS SWP3 APPLY TO ALL GENERAL AND SUBCONTRACTORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, INFORM, REQUIRE AND ENFORCE ALL ASPECTS AND PROCEDURES OF THE SWP3. THE CONTRACTOR SHALL HAVE ALL SUBCONTRACTORS THAT ARE OR MAY BE ENGAGED IN ACTIVITIES THAT COULD IMPACT STORMWATER COMPLETE A "SUBCONTRACTOR AGREEMENT FOR EROSION AND SEDIMENT CONTROL".
7. THE CONTRACTOR SHALL KEEP ON-SITE COPIES OF THE NOI, NPDES, SWP3 AND INSPECTION LOGS/REPORTS.

EROSION CONTROL NOTES

1. SPECIAL MEASURES SHALL BE TAKEN TO STABILIZE DRAINAGE CHANNELS AND STORM WATER OUTFALLS.
2. DIVERT SURFACE RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHEREVER PRACTICABLE.
3. STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN THE TIME FRAMES IN THE FOLLOWING TABLES:

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY CONTROLS
AREA WITHIN 50 FEET OF A SURFACE WATER, NOT AT FINAL GRADE AND TO REMAIN IDLE MORE THAN 14 DAYS	WITHIN 2 DAYS OF MOST RECENT DISTURBANCE
ANY OTHER AREA TO BE DORMANT MORE THAN 14 DAYS, BUT LESS THAN 1 YEAR	WITHIN 7 DAYS OF MOST RECENT DISTURBANCE
AREA TO REMAIN IDLE OVER WINTER	PRIOR TO ONSET OF WINTER WEATHER
AREA TO BE PAVED	STABILIZE WITH STONE SUBBASE UNTIL PAVED

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY CONTROLS
AREA TO BE DORMANT FOR 1 YEAR OR MORE	WITHIN 7 DAYS OF MOST RECENT DISTURBANCE
AREA WITHIN 50 FEET OF A SURFACE WATER AND AT FINAL GRADE	WITHIN 2 DAYS OF REACHING FINAL GRADE
ANY OTHER AREA AT FINAL GRADE	WITHIN 7 DAYS OF REACHING FINAL GRADE

SEDIMENT CONTROL NOTES

1. SEDIMENT PONDS AND PERIMETER SEDIMENT BARRIERS MUST BE INSTALLED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF CLEARING AND GRUBBING, AND CONTINUE TO FUNCTION UNTIL ALL DISTURBED UPLAND AREAS ARE STABILIZED.
2. SEDIMENT CONTROLS MUST POND RUNOFF TO BE CONSIDERED FUNCTIONAL.
3. SEDIMENT-LADEN TRENCH OR GROUND WATER MUST PASS THROUGH A SEDIMENT-SETTLING POND OR BE DEWATERED IN-PLACE USING A SUMP PIT, FILTER BAG OR OTHER COMPARABLE METHOD, PRIOR TO DISCHARGE FROM THE SITE.
4. TRENCH AND GROUND WATER FREE FROM SEDIMENT OR OTHER POLLUTANTS MAY BE DISCHARGED WITHOUT TREATMENT, PROVIDED THIS WATER DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
5. SETTLED MATERIAL SHALL BE DISPOSED OF IN A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL.

OTHER WASTE CONTROL NOTES

1. SOIL STOCKPILES SHALL BE RINGED WITH SILT FENCE ALONG THE BOTTOM FOOTPRINT. IF THE STOCKPILE WILL BE INACTIVE FOR 14 DAYS OR MORE, THE SURFACE SHALL BE SEEDED OR STABILIZED WITHIN 7 DAYS OF LAST DISTURBANCE.
2. CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS. ALL EXCESS CONCRETE AND CONCRETE WASHOUT, INCLUDING FROM HAND MIXERS AND LIGHT EQUIPMENT, MUST BE DISPOSED OF IN A CONCRETE WASHOUT AREA TO COLLECT AND HARDEN.
3. OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES MUST BE MINIMIZED. THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADS TO REMOVE MUD, DIRT OR ROCK TRACKED FROM THE SITE AT THE END OF EACH WORK DAY OR AS REQUIRED DURING THE DAY. DUMP TRUCKS HAULING MATERIAL FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.
4. IT IS PROHIBITED TO BURN, BURY OR POUR ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS SOLID OR LIQUID WASTE INCLUDING TRASH, CONSTRUCTION DEBRIS, SOLVENTS, PAINT, DIESEL FUEL, GASOLINE, MOTOR OIL, HYDRAULIC FLUID, CEMENT CURING COMPOUND, ANTIFREEZE OR OTHER TOXIC OR HAZARDOUS WASTE. WASTE MATERIALS SHALL BE COLLECTED IN A SECURELY LIDDED DUMPSTER, DISPOSED OF IN AN APPROVED LANDFILL AND EMPTIED AS NECESSARY.
5. FUEL TANKS, DRUMS AND OTHER CONTAINERS HOLDING CHEMICALS MUST BE STORED WITHIN A DIKED AREA WITH A VOLUME OF AT LEAST 110% OF THE LARGEST TANK. A DIKED AREA IS NOT NECESSARY IF A SELF-CONTAINED SPILL PROOF TANK IS USED.
6. THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY FACILITIES AT THE SITE. SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS 1 TIME PER WEEK, OR MORE OFTEN IF NECESSARY.
7. ANY TOXIC OR HAZARDOUS MATERIAL SPILL, REGARDLESS OF SIZE, MUST BE REPORTED WITHIN 30 MINUTES TO THE LOCAL FIRE DEPARTMENT AND OHIO EPA.
8. CONTAMINATED SOIL, SOIL WHERE CONSTRUCTION CHEMICALS HAVE BEEN SPILLED OR HAZARDOUS WASTE MATERIALS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
9. STORM WATER THAT COMES IN CONTACT WITH CONTAMINATED SOIL OR HAS A VISIBLE SHEEN MUST BE COLLECTED BY A VACUUM TRUCK AND DISPOSED OF AS A WASTE WATER.

TMDLS AND BMPS SELECTED

1. APPLICABLE TMDLS FOR THE SITE: PHOSPHORUS, BACTERIA, NITROGEN AND DISSOLVED OXYGEN/ORGANIC ENRICHMENT.
2. THE FOLLOWING BMPS ARE SELECTED TO ADDRESS APPLICABLE TMDLS FOR THE PROJECT:
   - A. CONSTRUCTION SITE: MAINTAIN PORTABLE TOILET AND EMPTY W/OUT SPILL; PROPER STORAGE OF LANDSCAPE FERTILIZER; MS4 MONTHLY INSPECTIONS DURING CONSTRUCTION; RESOLVE NON-COMPLIANCE SWP3 INSPECTION ITEMS; AND FINAL INSPECTION TO ENSURE BMP IMPLEMENTATION.
   - B. TEMPORARY EROSION CONTROL:: DEWATERING.
   - C. TEMPORARY SEDIMENT CONTROL: SEDIMENT TRAP; SILT FENCE; AND FILTER SOCK.
   - D. SOIL STABILIZATION: DUST CONTROL; MULCHING; CLEARING AND GRUBBING; TEMPORARY SEEDING; TOPSOILING; PERMANENT SEEDING; CONSTRUCTION ENTRANCE; AND TREE / NATURAL AREA PRESERVATION.
   - E. PERMANENT EROSION CONTROL: GRASSED SWALE; AND ROCK OUTLET PROTECTION.
   - F. POLLUTION PREVENTION AND GOOD HOUSEKEEPING: ROUTINE FACILITY INSPECTIONS; VISUAL ASSESSMENT OF STORM WATER DISCHARGE; SWEEP PARKING LOT AND DRIVE LANES; AND STORE WASTE IN LIDDED CONTAINER.
   - G. POST-CONSTRUCTION: WETLAND SETBACK; STREAM SETBACK; WATER QUALITY POND; GRASS FILTER STRIP; LTMA; OPEN CHANNEL SWALES; SUBMIT LTMA ANNUAL MAINTENANCE REPORT TO MS4; DISCONNECT DOWNSPOUT AND REDIRECT TO BMP; VEGETATE MAINTENANCE/STORAGE YARD OPEN AREAS; AND IMPLEMENT LOW-MOW OR NO-MOW PRACTICES.

PERMIT CLOSURE REQUIREMENTS

1. FINAL STABILIZATION REQUIRES THE CONTRACTOR TO REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROLS FROM THE SITE AND ALL SEDIMENT TRAPPED BY THOSE CONTROLS BE PERMANENTLY STABILIZED.
2. THE CONTRACTOR SHALL COMPLETE A "FINAL CERTIFICATION AND NOTIFICATION FOR EROSION AND SEDIMENT CONTROL" UPON PROJECT COMPLETION.
3. ONCE CONSTRUCTION ACTIVITIES HAVE CEASED AND THE SITE REACHES FINAL STABILIZATION, THE CONTRACTOR MUST TERMINATE THE NPDES PERMIT COVERAGE BY FILING A NOT WITH THE OHIO EPA WITHIN 45 DAYS OF FINAL STABILIZATION. FINAL STABILIZATION IS DEFINED AS AN ESTABLISHED VEGETATIVE GROUND COVER OF AT LEAST 70% GROWTH DENSITY, OR OTHER MEANS OF PERMANENT STABILIZATION, OVER ALL AREAS DISTURBED DURING CONSTRUCTION.
4. THE CONTRACTOR MUST MAINTAIN ALL REPORTS FOR 3 YEARS AFTER THE NOT IS FILED, AND PROVIDE DIGITAL COPIES TO THE OWNER AND SWCD.

MAINTENANCE REQUIREMENTS

1. BMPS SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL UPSLOPE AREAS THEY CONTROL ARE STABILIZED.
2. THE CONTRACTOR SHALL PROVIDE A QUALIFIED PERSON KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROLS, POSSESS THE TECHNICAL SKILLS TO ASSESS SITE CONDITIONS THAT COULD IMPACT STORM WATER QUALITY, AND CAN ASSESS THE EFFECTIVENESS OF ANY BMP SELECTED.
3. A QUALIFIED PERSON MUST INSPECT BMPS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL IN A 24-HOUR PERIOD TO DETERMINE IF THE SWP3 WAS PROPERLY IMPLEMENTED.
4. THE QUALIFIED PERSON MUST PREPARE A WRITTEN REPORT AFTER EACH INSPECTION SUMMARIZING INSPECTION RESULTS INCLUDING THE FOLLOWING:
   - DATE OF INSPECTION
   - NAME AND QUALIFICATION OF THE INSPECTOR
   - WEATHER CONDITIONS
   - LOCATIONS WHERE OFF-SITE SEDIMENTATION OR OTHER POLLUTANTS WERE OBSERVED.
   - LOCATIONS OF BMPS NEEDING MAINTENANCE.
   - LOCATIONS OF BMPS FAILING TO OPERATE CORRECTLY OR PROVIDE ADEQUATE PROTECTION.
   - LOCATION OF AREAS IN NEED OF ADDITIONAL BMPS NOT IN PLACE AT THE TIME OF INSPECTION.
   - CORRECTIVE ACTIONS REQUIRED, CHANGES TO THE SWP3 AND IMPLEMENTATION DATES.
   - GRADING AND STABILIZATION ACTIVITY LOG
   - EROSION AND SEDIMENT CONTROL AMENDMENT LOG
5. ALL INCIDENCES OF NON-COMPLIANCE MUST BE IDENTIFIED IN THE REPORT. IF A REPORT DOES NOT IDENTIFY INCIDENCES OF NON-COMPLIANCE, IT MUST CONTAIN A CERTIFICATION THE SITE IS IN COMPLIANCE AT THE TIME OF INSPECTION.
6. BMP MAINTENANCE OR REPAIR MUST BE COMPLETED WITHIN 3 DAYS, AND SEDIMENT POND MAINTENANCE OR REPAIR WITHIN 10 DAYS, OF THE INSPECTION THAT REVEALED A DEFICIENCY.
7. WHEN AN INSPECTION REVEALS A BMP IS NOT EFFECTIVE AND A MORE APPROPRIATE BMP IS REQUIRED, THE SWP3 SHALL BE AMENDED, THE NEW BMP INSTALLED WITHIN 10 DAYS OF THE INSPECTION THAT REVEALED THE DEFICIENCY, AND THE "STORM WATER POLLUTION PREVENTION PLAN AMENDMENT LOG" FORM COMPLETED.
8. WHEN AN INSPECTION REVEALS A BMP HAS NOT BEEN INSTALLED, BUT IS REQUIRED TO PROVIDE ADEQUATE CONTROL, IT MUST BE INSTALLED PRIOR TO THE NEXT STORM EVENT WHICH PRODUCES RUNOFF, BUT IN NO CASE LATER THAN 10 DAYS FROM THE INSPECTION THAT REVEALED THE DEFICIENCY.
9. ONCE A DEFINABLE AREA HAS BEEN FULLY STABILIZED, IT MAY BE MARKED ON THE SWP3 AND NO FURTHER INSPECTION REQUIREMENTS ARE REQUIRED FOR THAT AREA OF THE SITE.
10. INSPECTIONS SHALL BE PERFORMED UNTIL A NOT IS FILED WITH THE OHIO EPA.

SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES

1. HOLD A PRE-CONSTRUCTION MEETING TO DISCUSS OHIO EPA NPDES PERMIT REQUIREMENTS.
2. BEGIN INSPECTION, MAINTENANCE, RECORD KEEPING AND SITE POSTING OF BMPS.
3. ESTABLISH STAGING AREA AND NON-SEDIMENT BMPS.
4. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE.
5. INSTALL OTHER TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS AS SOON AS POSSIBLE, BUT NO LATER THAN 7 DAYS AFTER FIRST SOIL DISTURBANCE. INSPECT AND MAINTAIN BMPS FOR THE PROJECT DURATION UNTIL UPSLOPE AREAS ARE PERMANENTLY STABILIZED.
6. BEGIN SITE DEMOLITION AND CONSTRUCTION.
7. INSTALL DEWATERING MEASURES.
8. BEGIN EARTHWORK OPERATIONS.
9. APPLY TEMPORARY SEED.
10. INSTALL STORM SEWERS, BUILDING AND PAVING.
11. INSPECT AND CLEAN EXISTING AND NEW STORM SEWERS AND INLETS.
12. APPLY PERMANENT SEED.
13. CONTINUE INSPECTIONS, MAINTENANCE, RECORD KEEPING, AND SITE POSTING UNTIL FINAL STABILIZATION ACHIEVED.
14. REMOVE TEMPORARY BMPS FROM STORM SEWER AND OPEN DITCHES TO OBTAIN FREE DRAINAGE.
15. DISPOSE OF ALL DEBRIS AND WASTE MATERIAL.

SPECIAL OHARNG ENVIRONMENTAL PROEDURES

1. THE CONTRACTOR SHALL REVIEW THE OWNER'S 'ENVIRONMENTAL PROCEDURES' DATED JANUARY 25, 2018.
2. THE CONTRACTOR SHALL FOLLOW AND ADHERE TO ALL ASPECTS OF ENVIRONMENTAL COMPLIANCE REQUIREMENTS.
3. PRIOR TO THE CONTRACTOR SUBMITTING ANY PAPERWORK OR PERMITS ASSOCIATED WITH THE SWPPP, ALL SUBMITTALS MUST BE REVIEWED AND APPROVED BY OHARNG PRIOR TO SUBMITTAL TO ANY REGULATORY AGENCY.

FSB FEDERAL DESIGN GROUP JV

SITE/CIVIL ENGINEER
CT Consultants, Inc.
3875 Embassy Parkway, Suite 200
Akron, OH 44333
Phone: 330.375.0800
Gene E. Arters, PE

THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THEY COMPLY WITH THE APPLICABLE CODES, RULES AND REGULATIONS AS OF THE DATE SIGNED AND SEALED, INCLUDING STANDARDS GREATER THAN MINIMUM WHERE, IN MY PROFESSIONAL OPINION, THEY ARE NEEDED TO PROTECT PUBLIC HEALTH AND SAFETY.

GENE E. ARTERS, PE
OHIO PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SINCE 1798

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: GEA
DRAWN BY: GEA
REVIEWED BY: SA
PROJECT MANAGER: GEA

CT PROJECT NUMBER: 200606

SHEET TITLE: **STORM WATER POLLUTION PREVENTION PLAN NOTES**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: C-108

H:\2020\200606\SHEETS\200606 - C108 SW POLLUTION PREVENTION PLAN NOTES.DWG - 11/2/2022 1:48:02 PM - GEA

BID DOCUMENTS

WATER QUALITY VOLUME (WQv) FOR STANDARD BMPS

TYPE OF CONSTRUCTION:
(X) NEW

PER OHIO EPA NPDES CGP #OHC000005 (EXPIRATION DATE 4/22/2023) SECTION 2(E) PAGE 20, WQv FOR STANDARD BMPS (TREATMENT BY DETENTION AND SETTLING VOLUME) SHALL BE EQUIVALENT TO THE RUNOFF VOLUME FROM A 0.90 IN RAINFALL USING EQUATIONS:

$WQv = Rv * P * A_{TOT} / 12$

$Rv = 0.05 + (0.9 * i)$

TYPE OF STANDARD BMP (EXTENDED DETENTION) USED:
( ) WET EXTENDED DETENTION BASIN
(X) DRY EXTENDED DETENTION BASIN

STEP 1: DETERMINE WQv
- A_{TOT} = 2.46 AC
- A_{IMP} = 1.15 AC
- i = A_{IMP} / A_{TOTAL} = 1.15 AC / 2.46 AC = 0.4675 [~47% IMPERVIOUS]
- Rv = 0.05 + (0.9 * i) = 0.05 + [0.9 * 0.4675] = 0.4708
- WQv = Rv * P * (A / 12) = 0.4708 * 0.90 IN * [(2.46 AC) / (12 IN/FT)] = 0.0869 AC-FT = 3,785 FT^3

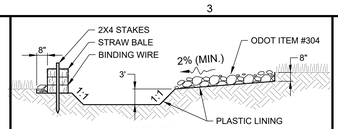
STEP 2: DETERMINE WQv AVERAGE RELEASE RATE
- $Q_{AVG} = WQv / t_D$ = 3,785 FT^3 / [(48 HR) * (3,600 S/HR)] = 0.0219 FT^3/S

STEP 3: ESTIMATE OUTLET ORIFICE AREA
- $H_{AVG} = H_{MAX} / 2$ = 0.5 FT / 2 = 0.25 FT
- C = 0.6 (SHARP-EDGE ORIFICE)
- $A_{ORIF} = Q_{AVG} / [C * (2 * g * H_{AVG})^{0.5}]$ = [(0.0219 FT^3/S) / (0.6 * (2 * 32.2 FT/S^2 * 0.25 FT) 0.5] = 0.0045 FT^2

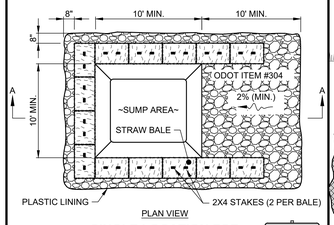
STEP 4: DETERMINE ORIFICE DIMENSIONS
- FOR CIRCULAR ORIFICE: $D_{ORIF} = [(4 * A_{ORIF}) / \pi]^{0.5}$ = [(4 * 0.0045 FT^2) / 3.14159] $^{0.5}$ = 0.0757 FT = 0.91 IN [~7/8 IN]

WHERE:

WQv	= WATER QUALITY VOLUME (AC-FT)
Rv	= VOLUMETRIC RUNOFF COEFFICIENT
P	= PRECIPITATION DEPTH (0.90 IN)
i	= FRACTION OF POST-CONSTRUCTION IMPERVIOUS AREA
A_{TOT}	= TOTAL AREA DRAINING INTO BMP (AC)
A_{IMP}	= IMPERVIOUS AREA DRAINING INTO BMP (AC)
i	= IMPERVIOUS FRACTION
t_D	= MINIMUM DRAIN TIME PER TABLES 4A & 4B (HR)
Q_{AVG}	= AVERAGE DISCHARGE RATE (FT^3/S)
H_{MAX}	= (BRIMFUL WQv ELEVATION) - (WQv OUTLET ELEVATION)
H_{AVG}	= H_{MAX} / 2 = AVERAGE HYDRAULIC HEAD (FT)
C	= COEFFICIENT OF DISCHARGE
g	= ACCELERATION OF GRAVITY (32.2 FT/S^2)
D_{ORIF}	= ORIFICE DIAMETER (IN)
A_{ORIF}	= ORIFICE AREA (FT^2)

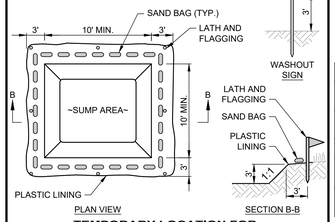


SECTION A-A



PLAN VIEW

SINGLE LOCATION FOR SMALL PROJECT



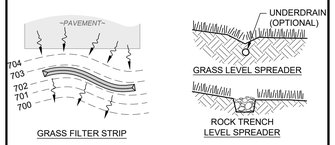
PLAN VIEW SECTION B-B

TEMPORARY LOCATION FOR MULTIPLE PHASE OR LARGE PROJECT

NOTES:
1. CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 100' FROM STORM SEWER INLETS, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS.
2. IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE, CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO A CONSTRUCTION ENTRANCE.
3. CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE WASTE GENERATED. LARGE SITES MAY REQUIRE MULTIPLE CONCRETE WASHOUT AREAS.
4. PLASTIC LINING SHALL BE DOUBLE-LINED, CONTINUOUS 10-ML POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS INSTALLED ON A SMOOTH, LEVEL SURFACE, FREE OF LARGE ROCKS AND DEBRIS.
5. CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
6. CONCRETE WASHOUT AREA SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOW.
7. PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE.
8. CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR PLASTIC LINING SHALL BE REPAIRED IMMEDIATELY. REPLACE THE ENTIRE CONCRETE WASHOUT AREA WHEN IT IS 75% FULL.

CONCRETE WASHOUT DETAIL

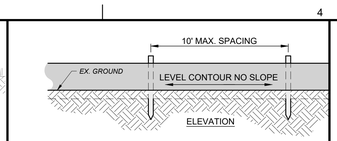
SCALE: NONE



NOTES:
1. ONLY A DENSE STAND OF VEGETATION WITHOUT RILLS OR GULLIES SHALL BE ACCEPTABLE. IF RILLS OR GULLIES FORM, OR IF VEGETATIVE COVER IS NOT DENSE, A NEW SEEDBED SHALL BE PREPARED AND REPLANTED.

GRASS FILTER STRIP DETAIL

SCALE: NONE

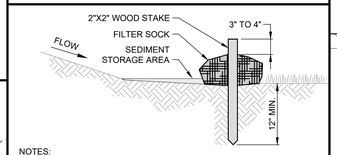


FABRIC PROPERTIES	VALUES	TEST METHOD
GRAB TENSILE STRENGTH	90 LB. MIN	ASTM D-1682
MULLEN BURST STRENGTH	190 PSI MIN	ASTM D-3786
SLURRY FLOW RATE	0.3 GAL./MIN./S.F. MAX.	
EQUIVALENT OPENING SIZE	40-80	US STD. SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY	90% MIN	ASTM-G-26

NOTES:
1. PRESERVE VEGETATION FOR 5 FEET OR AS MUCH AS POSSIBLE UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RE-ESTABLISHED WITHIN 7 DAYS FROM SILT FENCE INSTALLATION.
2. THE MAXIMUM DRAINAGE AREA PER 100 FEET OF SILT FENCE IS DEPENDENT ON THE SLOPE, BUT NO MORE THAN 1/2 ACRE. SILT FENCE CANNOT BE USED FOR DRAINAGE AREAS WITH SLOPES GREATER THAN 50%.
3. SILT FENCE MAY ONLY PASS RUNOFF AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, THEN CHANGE THE LAYOUT OF THE SILT FENCE, REMOVE ACCUMULATED SEDIMENT OR INSTALL OTHER PRACTICES.
4. SILT FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, VERIFICATION FABRIC IS SECURELY ATTACHED TO FENCE POSTS, AND VERIFICATION FENCE POSTS ARE FIRMLY IN THE GROUND. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED 1/3 THE FENCE HEIGHT.

SILT FENCE DETAIL

SCALE: NONE

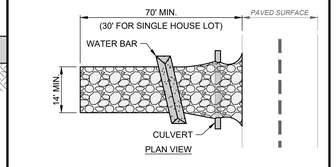


NOTES:
1. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST.
2. COMPOST SHALL BE WEED, PATHOGEN AND INSECT FREE, FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH, BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2".
3. FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES PARALLEL TO THE BASE OF THE SLOPE. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND MID-SLOPE.
4. FILTER SOCKS SHALL BE PLACED AT LEAST 5' FROM THE TOE OF SLOPE FOR SEDIMENT DEPOSIT.
5. BUILT UP SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED 1/3 THE FILTER SOCK HEIGHT.
6. WHEN A FILTER SOCK IS NO LONGER REQUIRED, IT SHALL BE DISPERSED ON-SITE.
7. THE MAXIMUM DRAINAGE AREA PER 100 FEET OF FILTER SOCK IS 1/2 ACRE AND IS DEPENDENT ON THE SLOPE FOLLOWING THE GUIDANCE CHART BELOW:

MAX. SLOPE LENGTH ABOVE FILTER SOCK					
SLOPE	RATIO (H:V)	8"	12"	18"	24"
0% - 2%	0 - 50:1	125'	250'	300'	350'
2% - 10%	50:1 - 10:1	100'	125'	200'	250'
10% - 20%	10:1 - 5:1	75'	100'	150'	200'
20% - 50%	5:1 - 2:1	N/A	50'	75'	100'
≥ 50%	≥ 2:1	N/A	25'	50'	75'

FILTER SOCK DETAIL

SCALE: NONE



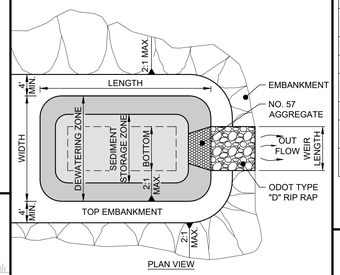
NOTES:
1. GEOTEXTILE SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS MEETING THE FOLLOWING:

TENSILE STRENGTH	200 LB
PUNCTURE STRENGTH	80 PSI
TEAR STRENGTH	50 LB
BURST STRENGTH	320 PSI
ELONGATION	20%
EQUIVALENT OPENING SIZE	< 0.6 MM
PERMITTIVITY	0.001 CM/SEC.

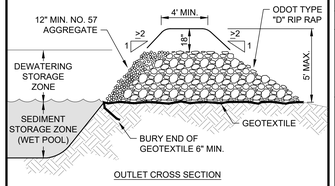
2. INSTALL WATER BAR, AS NEEDED, TO PREVENT SURFACE RUNOFF FROM FLOWING OUT ONTO PAVEMENT.
3. APPLY ADDITIONAL STONE AS CONDITIONS DEMAND. REPLENISH STONE WHEN THE DEPTH IS LESS THAN 6", AND REPLACE IF STONES BECOMES MUD-LADEN.
4. IMMEDIATELY REMOVE MUD DROPPED, WASHED OR TRACKED ONTO ROADS OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS BY SCRAPING OR SWEEPING.
5. CONSTRUCTION ENTRANCE SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES OR PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
6. CONSTRUCTION ENTRANCE SHALL REMAIN UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY.

CONSTRUCTION ENTRANCE DETAIL

SCALE: NONE



DRAINAGE AREA	WEIR LENGTH
≤ 1 AC.	4 FT.
≤ 2 AC.	6 FT.
≤ 3 AC.	8 FT.
≤ 4 AC.	10 FT.
≤ 5 AC.	12 FT.



NOTES:
1. WORK SHALL CONSIST OF INSTALLATION, MAINTENANCE AND REMOVAL OF SEDIMENT TRAP.
2. SEDIMENT TRAP MUST BE CONSTRUCTED AND OPERATIONAL PRIOR TO UPSLOPE LAND DISTURBANCE.
3. THE AREA BENEATH THE EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF VEGETATION TO A MINIMUM DEPTH OF 6". THE POOL SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEANOUT.
4. EMBANKMENT FILL SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION, LARGE ROCKS, ORGANICS OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL SHALL BE PLACED IN 6" LIFTS AND COMPACTED. CONSTRUCTION SHALL NOT BE PERMITTED IF THE FILL OR COMPACTION SURFACE IS FROZEN.
5. DIKES DIRECTING WATER TO THE TRAP SHALL BE HIGHER THAN THE HEIGHT OF THE EMBANKMENT.
6. 67 C.Y. OF STORAGE VOLUME IS REQUIRED BELOW THE OUTLET CREST FOR EACH 1 AC. OF CONTRIBUTING DRAINAGE AREA. THIS STORAGE VOLUME IS ACHIEVED BY THE DIMENSIONS SHOWN ON THE PLANS.
7. ESTABLISH TEMPORARY SEEDING ON ALL NON-SUBMERGED AREAS AND MAINTAIN OVER THE LIFE OF THE SEDIMENT TRAP.
8. WHERE GEOTEXTILE IS USED, OVERLAPS SHALL BE 2' MINIMUM WITH THE UPPER MOST LAYER PLACED LAST.
9. WARNING SIGNS AND SAFETY FENCE SHALL BE PLACED AROUND THE ENTIRE SEDIMENT TRAP AND MAINTAINED UNTIL THE SEDIMENT TRAP IS REMOVED.
10. REMOVE SEDIMENT AND RESTORE THE SEDIMENT TRAP TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS FILLED 40% OF THE TRAP'S ORIGINAL DEPTH. SPREAD REMOVED SEDIMENT IN A SUITABLE AREA AND STABILIZED SO IT WILL NOT ERODE.
11. AFTER UPSLOPE SEDIMENT PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, THE SEDIMENT TRAP AND ALL SEDIMENT SHALL BE REMOVED, BACKFILLED AND SEEDED.

SEDIMENT TRAP DETAIL

SCALE: NONE

NOTES:
1. DISTURBED AREAS SHALL BE GRADED AND TOPSOIL SPREAD.
2. THE SEED BED SHALL BE PREPARED BY APPLYING AGRICULTURAL GROUND LIMESTONE OR FERTILIZER AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 3".
3. APPLY SEED UNIFORMLY ON FIRM, MOIST SEED BED BETWEEN MARCH 1 AND MAY 31 OR AUGUST 1 AND SEPTEMBER 30. SEEDING SHOULD NOT BE APPLIED BETWEEN OCTOBER 1 AND NOVEMBER 20 BECAUSE SEEDS MAY GERMINATE, BUT WILL NOT SURVIVE WINTER. IF SEEDING MUST OCCUR, INCREASE THE SEEDING RATE BY 50% AND ANCHOR. APPLY ADDITIONAL MULCH AND IRRIGATION TO ENSURE GERMINATION.
4. MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
5. SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS.
6. SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF SEEDING. DURING THIS PERIOD INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.
7. ADEQUATE PERMANENT VEGETATION SHALL BE GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE BASED ON VISUAL INSPECTION.

PERMANENT SEEDING FERTILIZATION AND MOWING CHART				
MIXTURE	FORMULA	LB/ AC.	TIME	MOW
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	10-10-10	500	FALL, YEARLY, OR AS NEEDED	≥3"
TALL FESCUE	10-10-10	500		≥4"
TURF-TYPE FESCUE	10-10-10	500		
CROWN VETCH FESCUE	0-20-20	400	SPRING, AND YEARLY AFTER ESTABLISHED	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		

PERMANENT SEEDING SPECIES SELECTION		
SEED MIX	SEED RATE LB/AC.	NOTES:
GENERAL USE		
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20 - 40 10 - 20 20 - 40	FOR CLOSE MOWING AND WATERWAYS WITH <2.0 FT./SEC. VELOCITY
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE	90	
STEEP BANKS OR CUT SLOPES		
TALL FESCUE	40 - 50	
CROWN VETCH TALL FESCUE	10 - 20 20 - 30	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20 - 25 20 - 30	DO NOT SEED LATER THAN AUGUST
ROAD DITCHES AND SWALES		
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE KENTUCKY BLUEGRASS	90 5	
LAWN		
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100 - 120 100 - 120	
KENTUCKY BLUEGRASS CREEPING RED FESCUE	100 - 120 100 - 120	FOR SHADED AREAS

PERMANENT SEEDING DETAIL

NOTES:
1. THE SEED BED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION.
2. SOIL AMENDMENTS MAY BE REQUIRED TO ESTABLISH VEGETATION. PERFORM SOIL TESTS TO PREDICT THE NEED FOR LIME OR FERTILIZER. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS
3. APPLY SEED UNIFORMLY. COVER BROADCASTED SEED BY RAKING OR DRAGGING, AND LIGHTLY TAMPING INTO PLACE.
4. MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
5. INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.

TEMPORARY SEEDING SPECIES SELECTION			
DATES	SPECIES	LB/1,000 SF	LB/AC.
MARCH 1 - AUGUST 15	OATS TALL FESCUE PERENNIAL RYEGRASS	3 1 1	128 40 40
	PERENNIAL RYEGRASS TALL FESCUE	2 1	40 40
AUGUST 16 - OCTOBER 31	RYE TALL FESCUE PERENNIAL RYEGRASS	3 1 1	112 40 40
	WHEAT TALL FESCUE PERENNIAL RYEGRASS	3 1 1	120 40 40
	PERENNIAL RYEGRASS TALL FESCUE	2 1	40 40
NOVEMBER 1 - FEBRUARY 28	ONLY MULCH OR DORMANT SEEDING.		

TEMPORARY SEEDING DETAIL

NOTES:
1. MULCH SHALL CONSIST OF ONE OF THE FOLLOWING:
   - UNROTTED SMALL GRAIN STRAW SPREAD UNIFORMLY AT 2 TONS/AC. (2 TO 3 BALES).
   - WOOD-CELLULOSE FIBER (I.E. HYDROSEEDING) APPLIED AT 1 TON/AC.
   - ROLLED EROSION CONTROL PRODUCT OR MULCH MATTING APPLIED PER MANUFACTURER RECOMMENDATION.
   - WOOD MULCH OR CHIPS APPLIED AT 6 TONS/AC.
2. MULCH SHALL BE ANCHORED IMMEDIATELY BY ONE OF THE FOLLOWING METHODS:
   - PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL USING A DISK, CRIMPER OR SIMILAR TOOL. DO NOT FINELY CHOP STRAW TO BE MECHANICALLY ANCHORED, BUT LEAVE LONGER THAN 6".
   - NETTING PER MANUFACTURER RECOMMENDATION IN AREAS OF CONCENTRATED RUNOFF OR ON CRITICAL SLOPES.
   - SYNTHETIC BINDERS AT MANUFACTURER RATE.
   - WOOD-CELLULOSE FIBER BINDER AT A NET DRY WEIGHT OF 750 LB/AC., MIXED WITH WATER, AND CONTAIN 50 LB/100 GAL. MAX. OF WOOD CELLULOSE FIBER.

MULCHING DETAIL

FSB FEDERAL DESIGN GROUP JV

SITE/CIVIL ENGINEER
CT Consultants, Inc.
3875 Embassy Parkway, Suite 200
Akron, OH 44333
Phone: 330.375.0800
Gene E. Arters, PE

THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THEY COMPLY WITH THE APPLICABLE CODES, RULES AND REGULATIONS AS OF THE DATE SIGNED AND SEALED, INCLUDING STANDARDS GREATER THAN MINIMUM REQUIRED IN MY PROFESSIONAL OPINION THEY ARE NEEDED TO PROTECT PUBLIC HEALTH AND SAFETY.

GENE E. ARTERS, P.E. OHIO PROFESSIONAL ENGINEER

GENE E. ARTERS E-64533 REGISTERED PROFESSIONAL ENGINEER 11-9-22

OHIO NATIONAL GUARD SINCE 1798

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

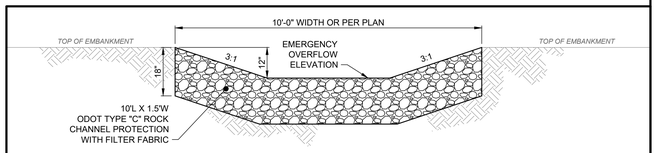
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: GEA
DRAWN BY: GEA
REVIEWED BY: SA
PROJECT MANAGER: GEA
CT PROJECT NUMBER: 200606
SHEET TITLE: **STORM WATER POLLUTION PREVENTION PLAN DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: C-109

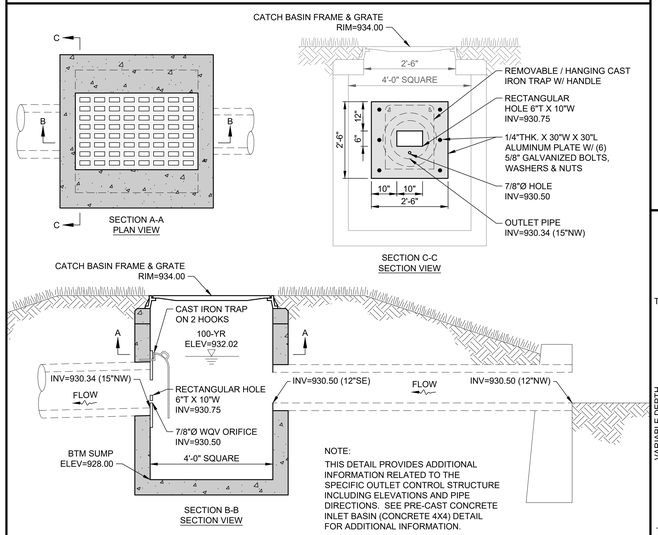
H:\2020\390\DWG\SHEETS\SWPPP - CVM-109 SWPP NOTES.DWG - DETAILS - 11/2/2022 1:08:07 PM - GENE ARTERS

BID DOCUMENTS



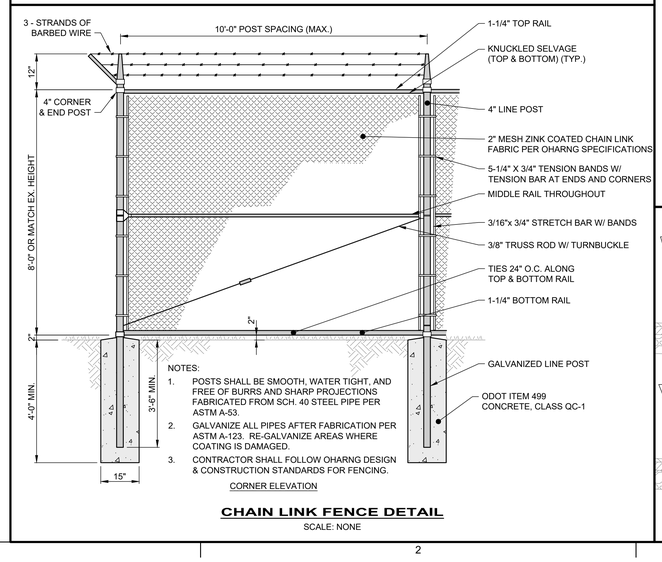
EMERGENCY OVERFLOW DETAIL

SCALE: NONE



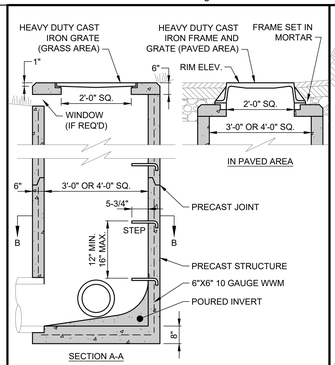
STORMWATER OUTLET CONTROL STRUCTURE DETAIL

SCALE: NONE



CHAIN LINK FENCE DETAIL

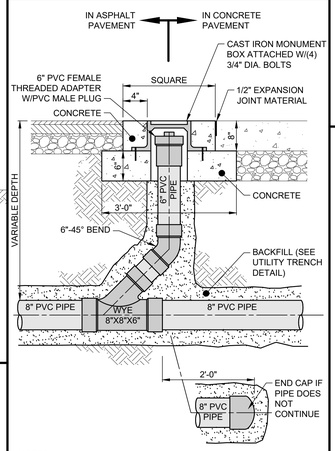
SCALE: NONE



NOTES:
1. CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
2. STRUCTURE SHALL MEET H-20 LOADING.
3. INSTALL STEPS IF STRUCTURE IS MORE THAN 4' DEEP.
4. PRECAST KNOCKOUT SIDES FOR CURB DRAIN, PIPE CONNECTION HOLES AND WINDOWS, AS REQUIRED. PIPE OPENINGS SHALL BE O.D. OF PIPE PLUS 2", AND INTERSTITIAL SPACE FILLED WITH GROUT.
5. GRADE ADJUSTMENT BY PRE-CAST CONCRETE ADJUSTING COLLAR OR MAX. 2 COURSES ASTM C-32 BRICK MASONRY SET IN MORTAR.
6. GRATE MUST INCLUDE LETTERING "DUMP NO WASTE" AND FISH IMAGE.
7. BASIN SHALL INCLUDE SUMP, IF REQUIRED, PER PLAN.
8. THIS DETAIL IS FOR REFERENCE AND DIMENSION CONTROL ONLY; SEE UTILITY PLAN FOR ACTUAL SIZES.

(CONCRETE 3'X3' & 4'X4') INLET BASIN DETAIL

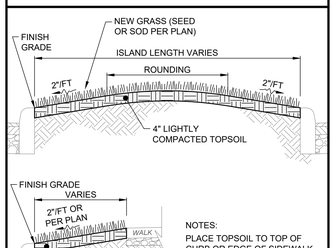
SCALE: NONE



NOTES:
1. ALL CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
2. STRUCTURE TO MEET H-20 LOADING IF WITHIN PAVEMENT.
3. USE 4" CLEANOUT FOR 4" PVC SEWERS; AND USE 6" CLEANOUT FOR 6" AND ABOVE (6" CLEANOUT SHOWN IN DETAIL).

STORM CLEANOUT TYPE 2 DETAIL

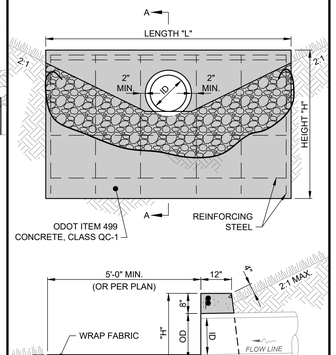
SCALE: NONE



NOTES:
PLACE TOPSOIL TO TOP OF CURB OR EDGE OF SIDEWALK AND FINE GRADE TO A SMOOTH FINISH, FREE OF LUMPS AND DEPRESSIONS.

GRASS PLANTING DETAIL

SCALE: NONE



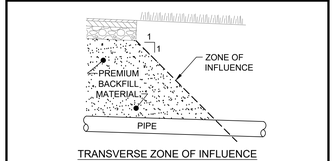
SECTION A-A

	PIPE ID						
DIM.	12"	15"	18"	21"	24"	30"	36"
"H"	4'-11"	5'-2"	5'-5"	5'-8"	5'-11"	6'-5"	7'-0"
"L"	5'-8"	7'-0"	8'-4"	9'-8"	11'-0"	13'-8"	16'-4"
"B"	1'-8"	1'-9"	1'-10"	1'-11"	2'-0"	2'-2"	2'-4"

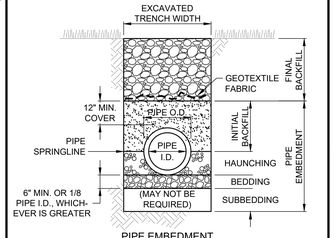
NOTES:
1. THE HEADWALL BASE SHALL BE INCREASED BY 12" IF SOIL BEARING CAPACITY IS LESS THAN 2,600 PSF.
2. IF THE HEADWALL IS PRECAST, THE PIPE OPENING SHALL BE THE PIPE O.D. + 2" AND INTERSTITIAL SPACE FILLED WITH GROUT. BRICK, STONE AND SPRAY FOAM ARE UNACCEPTABLE.
3. REINFORCING STEEL SHALL BE NO. 5 BARS 18" O.C., MAX OF 24".
4. REINFORCING STEEL SHALL HAVE 3" MINIMUM COVERAGE.
5. BAR BENDS SHALL BE MADE COLD. BARS SHALL NOT BE BENT AFTER ANY PORTION OF THE BAR IS ENCASED IN CONCRETE.
6. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
7. ROCK CHANNEL PROTECTION SHALL CONFORM TO THE GRADING LIMITS AS SHOWN ON THE GRADING PLAN.
8. THE WIDTH OF ROCK CHANNEL PROTECTION SHALL BE THE WIDTH OF THE HEADWALL OR 4' WIDER THAN THE PIPE DIAMETER, WHICHEVER IS GREATER.
9. GEOTEXTILE SHALL BE LAID WITH THE LONG DIMENSION PARALLEL TO THE FLOW DIRECTION AND LAID LOOSELY WITHOUT WRINKLES OR CREASES. WHERE JOINTS ARE NECESSARY, STRIPS SHALL BE PLACED TO PROVIDE A 12" MINIMUM OVERLAP, WITH THE UPSTREAM STRIP OVERLAPPING THE DOWNSTREAM STRIP.
10. GEOTEXTILE SHALL BE SECURELY ANCHORED USING PINS WITH WASHERS A MINIMUM OF 2' APART ALONG JOINTS AND A MINIMUM OF 5' EVERYWHERE ELSE.

HEADWALL WITH OUTLET PROTECTION DETAIL

SCALE: NONE



TRANSVERSE ZONE OF INFLUENCE

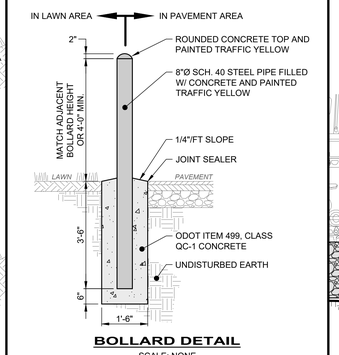


PIPE EMBEDMENT

NOTES:
1. EXCAVATED TRENCH WIDTH: MEASURED FROM BOTTOM OF TRENCH TO 12" OVER TOP OF PIPE (WITHIN THE PIPE EMBEDMENT), THE MIN. TRENCH WIDTH SHALL BE 9" AND THE MAX. SHALL BE O.D.+24" FOR 24" AND SMALLER I.D. PIPE
2. FINAL BACKFILL: ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE SHALL BE PREMIUM BACKFILL (ODOT ITEM 304 LIMESTONE). NO SLAG OR SLACKER AGGREGATES ALLOWED. IN ALL OTHER AREAS, THE FINAL BACKFILL SHALL BE SUITABLE ON-SITE MATERIAL.
3. PIPE EMBEDMENT:
BEDDING AND HAUNCHING SHALL BE NO. 8 OR 57 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE NO. 8 OR 57 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN ALL OTHER AREAS, THE INITIAL BACKFILL MAY BE SUITABLE ON-SITE MATERIAL FOR RIGID PIPE, AND SHALL BE NO. 8 OR 57 COURSE INTERLOCKING LIMESTONE AGGREGATE FOR FLEXIBLE PIPE.
4. SUBBEDDING: WHERE AN UNSTABLE TRENCH BOTTOM CONDITION IS ENCOUNTERED, EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH MATERIAL AS DIRECTED BY THE ENGINEER.
5. GEOTEXTILE FABRIC SHALL BE PER ODOT 712.09, TYPE A, AND INSTALLED AFTER ALL INITIAL BACKFILL.

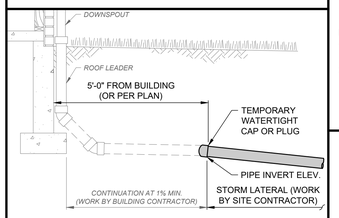
TRENCHING, EMBEDMENT AND BACKFILL DETAIL

SCALE: NONE



BOLLARD DETAIL

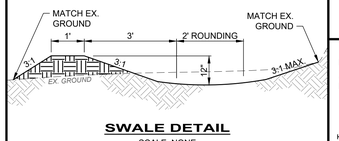
SCALE: NONE



NOTES:
1. THIS DETAIL IS FOR REFERENCE PURPOSES ONLY TO SHOW THE SITE-CIVIL ENGINEER'S DESIGN ASSUMPTIONS TO DETERMINE THE STORM LATERAL ELEVATION RELATIVE TO THE BUILDING ROOF LEADER. SEE THE UTILITY PLAN FOR ELEVATIONS. SEE THE ARCHITECTURAL BUILDING PLANS FOR ACTUAL CONTINUATION SLOPES INCLUDING TIE-IN.
2. THE CAP OR PLUG MUST BE REMOVED BY THE BUILDING CONTRACTOR UPON CONTINUATION OF THE LATERAL.

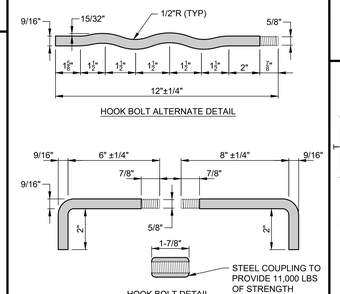
BUILDING ROOF LEADER STUB DETAIL

SCALE: NONE

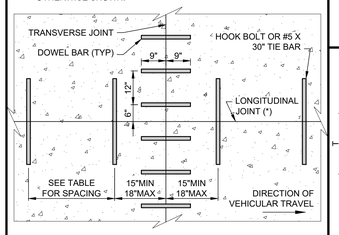


SWALE DETAIL

SCALE: NONE



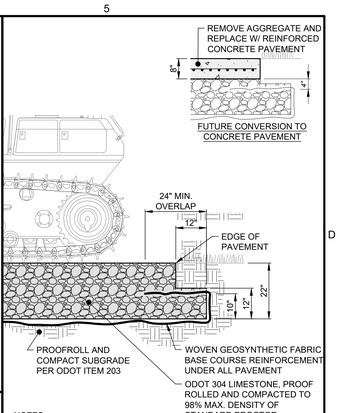
(*) LONGITUDINAL JOINTS TO BE ALONG THE PAVEMENT CENTERLINE UNLESS OTHERWISE SHOWN.



TIE BAR OR HOOK BOLT SPACING			
PAVEMENT THICKNESS	TRANSVERSE JOINT SPACING	NUMBER OF BARS PER SLAB	MAX. SPACING BETWEEN BARS
10" OR LESS	15'	7	26"
	21'	10	26"
GREATER THAN 10"	15'	9	20"
	21'	13	20"

TIE BAR OR HOOK BOLT SPACING DETAIL

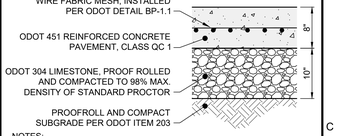
SCALE: NONE



NOTES:
1. THE LOWER PAVEMENT MUST EXTEND 12" MINIMUM BEYOND OUTSIDE PERIMETERS OF PARKING LOTS AND DRIVE LANES.
2. IF UNSUITABLE SOILS EXISTS, UNDERCUT SUBGRADE AND REPLACE WITH ODOT ITEM 304 CRUSHED LIMESTONE, 12" MIN.

FIELD GRAVEL PAVEMENT DETAIL

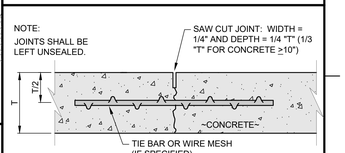
SCALE: NONE



NOTES:
1. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL JOINTS. DIVIDE JOINTS INTO EQUALLY SPACED RECTANGULAR BLOCKS.
2. IF UNSUITABLE SOILS EXISTS, UNDERCUT SUBGRADE AND REPLACE WITH ODOT ITEM 304 CRUSHED LIMESTONE, 12" MIN.
3. APPLY LIQUID-MEMBRANE CURING COMPOUND (200 S.F./GAL.)

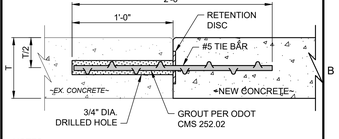
REINFORCED CONCRETE PAVEMENT DETAIL

SCALE: NONE



CONTRACTION JOINT DETAIL

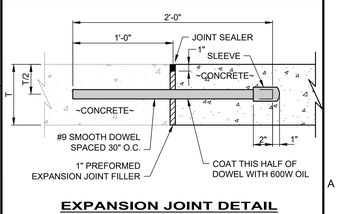
SCALE: NONE



NOTES:
1. SELF DRILLING EXPANSION SHIELD ANCHORS NOT PERMITTED.
2. WHEN CONSTRUCTED/RECONSTRUCTED LONGITUDINALLY:
   A. SPACE BARS 24" TO 30" O.C.
   B. BEGIN/END BARS 15" FROM TRANSVERSE JOINTS
3. WHEN CONSTRUCTED/RECONSTRUCTED TRANSVERSELY:
   A. SPACE BARS 12" O.C. ALONG TRANSVERSE JOINTS
   B. PROVIDE 15" TO 18" SPACE ADJACENT TO TIED LONGITUDINAL JOINT
   C. PROVIDE 12" SPACE ADJACENT TO UNTIED LONGITUDINAL JOINT OR EDGE OF PAVEMENT

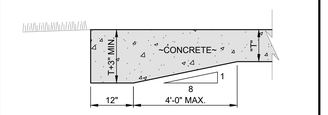
DRILLED TIED JOINT DETAIL

SCALE: NONE



EXPANSION JOINT DETAIL

SCALE: NONE



THICKENED CONCRETE EDGE DETAIL

SCALE: NONE

FSB FEDERAL DESIGN GROUP JV

SITE/CIVIL ENGINEER
CT Consultants, Inc.
3875 Embassy Parkway, Suite 200
Akron, OH 44333
Phone: 330.375.0800
Gene E. Arters, PE

THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THEY COMPLY WITH THE APPLICABLE CODES, RULES AND REGULATIONS AS OF THE DATE SIGNED AND SEALED, INCLUDING STANDARDS GREATER THAN MINIMUM VOLUMES IN MY PROFESSIONAL OPINION THEY ARE NEEDED TO PROTECT PUBLIC HEALTH AND SAFETY.

GENE E. ARTERS, PE
OHIO PROFESSIONAL ENGINEER

GENE E. ARTERS E-64533 REGISTERED PROFESSIONAL ENGINEER 11-4-22

OHIO NATIONAL GUARD SINCE 1798

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: GEA

DRAWN BY: GEA

REVIEWED BY: SA

PROJECT MANAGER: GEA

CT PROJECT NUMBER: 200606

SHEET TITLE: **STANDARD DETAILS**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: C-110

H:\2020\390321\CIVIL\SHEETS\390321_C110 STDDETAILS.DWG - 11/9/2022 2:27:11 PM - JDM_ARTERS

BID DOCUMENTS

GOVERNING CODE:

GC-1. GOVERNING CODE AND REFERENCES:
- 2018 OHARNG DESIGN CONSTRUCTION STANDARDS
- INTERNATIONAL BUILDING CODE 2018
- ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- AISC 14TH EDITION STEEL CONSTRUCTION MANUAL
- ACI 318-14- BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- UNIFIED FACILITIES CRITERIA 1-200-01
- UNIFIED FACILITIES CRITERIA 3-301-01
- UNIFIED FACILITIES CRITERIA 4-010-01

GC-2. DESIGN CRITERIA:
- ASCE 7 BUILDING RISK CATEGORY II

GC-3. SEISMIC LOADS:
- SITE CLASS = E
- S_S = 12.8% g (0.2 SECOND MCE SPECTRAL ACCELERATION)
- S_1 = 4.8% G (1.0 SECOND MCE SPECTRAL ACCELERATION)
- SEISMIC DESIGN CATEGORY = C
- S_{DS} = 20.5% g
- S_{D1} = 13.4% g
- SEISMIC LOAD RESISTING SYSTEM (SLRS)
  - STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE R = 3.0, OVERSTRENGTH = 3.0, DEFL. AMPLIFICATION FACTOR C_d = 3.0

GC-4. WIND LOADS:
- BASIC WIND SPEED (3 SECOND GUST) = 109 (MPH), STRENGTH WIND SPEED
- WIND EXPOSURE = C
- FOR SERVICEABILITY CALCULATIONS, THE BASIC WIND SPEED = 75 MPH (SERVICE WIND SPEED BASED ON THE 10 YEAR MEAN REOCCURRENCE INTERVAL).

GC-5. SNOW LOADS:
- GROUND SNOW LOAD = 20 PSF
- SNOW EXPOSURE FACTOR C_e = 1.0
- SNOW LOAD IMPORTANCE FACTOR I_s = 1.0
- ROOF THERMAL FACTOR C_t = 1.10
- BALANCED SNOW LOAD = 20.0 PSF
- FLAT ROOF SNOW LOAD P_f = 13.9 PSF
- COMBINED RAIN ON SNOW ROOF LOAD = 18.9 PSF
- SEE PLANS FOR DRIFT AND SLIDING SNOW LOADS WHERE APPLICABLE

GC-6. LIVE LOADS:
- ROOF = 20 PSF

GC-7. DEAD LOADS (INCLUDING FRAMING):
- SELF WEIGHT OF STRUCTURAL SYSTEM
- COLLATERAL LOAD (ROOF) = 10 PSF

GENERAL NOTES:

G-1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, COORDINATES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCY IMMEDIATELY.

G-2. COORDINATE STRUCTURAL SHEETS WITH ALL OTHER SHEETS FOR PIPE SIZES AND LOCATIONS, BEAM POCKETS, GRATING LEDGES, BLOCK OUTS, ELECTRICAL REQUIREMENTS AND ANCHOR BOLT ATTACHMENTS.

G-3. STRUCTURAL SYSTEM IS DESIGNED TO WORK AS A COMPLETED SYSTEM, ANY TEMPORARY SHORING OR BRACING NEEDED DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR; CONTRACTOR IS RESPONSIBLE FOR ADEQUACY OF TEMPORARY SHORING.

G-4. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING PLANS FOR ADDITIONAL SLEEVES, INSERTS, ETC.

G-5. ALL SUBTERRANEAN STRUCTURES, UTILITIES, PIPING, ETC. IN THE AREA OF ALL EXCAVATIONS TO BE LOCATED AND MARKED BY CONTRACTOR PRIOR TO EARTH REMOVAL WORK. FLAGS OR PAINT ARE ACCEPTABLE METHODS. CONTRACTOR TO MAINTAIN MARKERS UNTIL ALL EXCAVATION ACTIVITIES HAVE CEASED. COORDINATE WITH GOVERNMENT.

G-6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY AND ALL ACCIDENTS WHICH RESULT IN DEATH, PERSONAL INJURY OR DAMAGE TO PROPERTY ARISING OUT OF OR IN CONNECTION WITH THE PERFORMANCE OF THE WORK, WHETHER ADJACENT TO OR AT THE SITE.

G-7. NO PIPES OR SLEEVES FOR MECHANICAL TRADES SHALL PASS THROUGH STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

G-8. ALL SECTIONS, DETAILS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE SHOWN.

G-9. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE ARCHITECT. STRUCTURAL ENGINEER'S REVIEW SHALL BE FOR SIZES AND GENERAL CONFORMANCE WITH INFORMATION GIVEN IN CONSTRUCTION DOCUMENTS ONLY. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW. BASED ON SUCH REVIEWS, ACTIONS WILL BE NOTED FOR EACH SHOP DRAWING SUBMITTAL AS LISTED BELOW:
- NO EXCEPTIONS TAKEN: FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED ON THE BASIS THAT THE SUBMITTAL IS IN CONFORMANCE WITH THE DESIGN CONCEPT AND THE CONTRACT DOCUMENTS.
- FURNISH AS CORRECTED: FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED AFTER MAKING THE NOTED CORRECTIONS TO SATISFY COMPLIANCE WITH THE DESIGN CONCEPT AND/OR THE CONTRACT DOCUMENTS.
- REVISE AND SUBMIT: NO FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED. RESUBMIT FOR REVIEW AFTER REQUESTED REVISIONS ARE MADE.
- SUBMIT SPECIFIED ITEM: NO FABRICATION, MANUFACTURING OR CONSTRUCTION MAY PROCEED. SUBMIT SPECIFIED ITEM TO HANSON FOR REVIEW.
- REJECTED-SEE REMARKS: NO FABRICATION, MANUFACTURING OR CONSTRUCTION MAY OCCUR FOR REASONS STATED IN "REMARKS".

G-10. ALL ASTM DESIGNATIONS SHALL BE THE LATEST UNLESS OTHERWISE NOTED.

FOUNDATION:

F-1. NET ALLOWABLE SOIL BEARING PRESSURE = 3,000 PSF.

F-2. ALL FOOTING EXCAVATIONS SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER AND LOOSE SOIL AND BE INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.

F-3. ALL FILL MATERIALS SHALL BE APPROVED FOR USE IN ADVANCE OF PLACEMENT BY THE OWNER'S REPRESENTATIVE. NO FILL SHALL BE PLACED OVER FROZEN, MUDDY OR OTHER DELETERIOUS MATERIAL. LIFT THICKNESS SHALL BE MINIMIZED TO ALLOW EFFICIENT COMPACTION. NO FILL MAY BE PLACED OVER A PREVIOUS LIFT THAT HAS NOT BEEN ADEQUATELY COMPACTED AND ACCEPTED BY THE OWNER'S REPRESENTATIVE.

F-4. BACKFILL AGAINST FOUNDATION WALLS SHALL BE PLACED EVENLY ON ALL SIDES IN ORDER TO ACHIEVE GENERALLY BALANCED LOADINGS. DO NOT BACKFILL AROUND BASEMENT WALLS UNTIL FIRST FLOOR AND BASEMENT FLOOR SLABS ARE IN PLACE.

F-5. ALL COLUMN FOOTINGS ARE TO BE CENTERED UNDER COLUMN CENTERLINES, UNLESS NOTED OR DETAILED OTHERWISE.

F-6. COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS FOR MISCELLANEOUS FOUNDATIONS NOT SHOWN ON STRUCTURAL DRAWINGS.

F-7. EXISTING SOILS MAY EXPERIENCE A LOSS OF STRENGTH IF SURFACE WATER IS ALLOWED TO ACCUMULATE IN THE EXCAVATIONS; DO NOT ALLOW SURFACE WATER TO ACCUMULATE IN THE BOTTOM OF THE EXCAVATIONS.

F-8. A LEAN CONCRETE MUD SLAB 3" TO 4" THICK SHALL BE USED IN THE FOOTING EXCAVATION IF THE BOTTOM OF THE EXCAVATION TENDS TO BECOME MUDDY AND SOFT DUE TO CONSTRUCTION ACTIVITY. LEAN CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI.

CONCRETE:

C-1. MATERIAL PROPERTIES (U.N.O.)
- CONCRETE 28-DAY COMPRESSIVE STRENGTH - f'_c = 4,500 psi
- CONCRETE REINFORCEMENT - F_y = 60 ksi (ASTM A615 GR 60)
- WELDED WIRE FABRIC - F_y = 60 ksi (ASTM A185)

C-2. PROTECTIVE COVERING FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED ON THE PLANS:
- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH = 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER = 2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER = 1 1/2"

C-3. ALL REINFORCEMENT BARS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES AND SHALL BE CLEAN AND FREE OF GREASE AND SCALING RUST.

C-4. CONTINUOUS TOP AND BOTTOM BARS, WHEN SHOWN IN SECTION ONLY, SHALL BE LAPPED AS FOLLOWS: TOP BARS NEAR MIDSPANS, BOTTOM BARS DIRECTLY OVER SUPPORTS.

C-5. A 3/4" x 3/4" CHAMFER SHALL BE PROVIDED AT THE EDGE OF ALL FINISHED WALLS, BEAMS AND COLUMNS.

C-6. FOR SLABS ON GRADE, PROVIDE 1/2" THICK PREMOLDED JOINT FILLER AND SEALANT TO ISOLATE THE SLAB FROM CONTACT WITH THE STRUCTURES ALONG ITS PERIMETER UNLESS DETAILED OTHERWISE. REFER TO FOUNDATION DETAILS FOR ADDITIONAL INFORMATION.

C-7. TWO #5 BARS EACH FACE SHALL BE PROVIDED DIAGONALLY AT ALL CORNERS OF WALL AND SLAB OPENINGS AND AT ALL REENTRANT CORNERS OF SLABS. BARS SHALL BE EXTENDED 36" MINIMUM BEYOND CORNERS OF THE OPENINGS.

C-8. PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLAB-ON-GRADE AT 15 FEET MAXIMUM SPACES EACH DIRECTION. CONTRACTOR SHALL SUBMIT PLANS OF JOINT LOCATIONS FOR APPROVAL.

C-9. ALL CONTROL JOINTS SHALL BE TOOLED OR SAWN.

C-10. WATERSTOPS SHALL BE PROVIDED IN HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS WHERE FINISHED FLOOR IS BELOW EXTERIOR GRADE UNLESS OMISSION IS APPROVED BY THE ENGINEER.

C-11. WALLS CAN BE CAST UP TO 120 FEET (MAXIMUM) PROVIDED CONSTRUCTION AND / OR CONTROL JOINT SPACING DOES NOT EXCEED 30 FEET. PROVIDE VERTICAL "V" GROOVE AT ALL CONSTRUCTION AND CONTROL JOINTS. CONTRACTORS SHALL SUBMIT PLANS OR JOINT LOCATIONS FOR APPROVAL.

C-12. LAP ALL BARS AS FOLLOWS U.N.O. (CLASS B), FOR TOP BARS, PROVIDE AN ADDITIONAL 1.3 TIMES THE INDICATED LAP LENGTH:
#3=1'-7" #4=2'-1" #5=2'-7"
#6=3'-1" #7=4'-6" #8=5'-2"
#9=5'-10" #10=6'-7" #11=7'-4"

C-13. HOOK REINFORCEMENT BARS AT DISCONTINUOUS ENDS, TYPICAL UNLESS OTHERWISE NOTED. EXTEND REINFORCEMENT TO FAR FACE OF PEDESTALS AND / OR COLUMNS UNLESS NOTED OTHERWISE.

C-14. PITCH CONCRETE AS REQUIRED TO FLOOR DRAINS 1/4" PER FOOT UNLESS OTHERWISE NOTED. SEE ARCHITECTURAL AND PLUMBING DRAWINGS.

C-15. REFER TO DIVISION 03 SPECIFICATION "CAST-IN-PLACE CONCRETE" FOR CONCRETE FINISH REQUIREMENTS.

C-16. COUPLER AND STRUCTURAL CONNECTORS: WHERE SPECIFIED, PROVIDE COUPLER / CONNECTOR CAPABLE OF DEVELOPING 125% OF THE YIELD STRENGTH OF THE SPLICED / CONNECTED BAR. PROVIDE THREADED DOWELS WHERE REQUIRED.

C-17. REFER TO DIVISION 03 SPECIFICATION "CAST-IN-PLACE CONCRETE" FOR CONCRETE PLACEMENT REQUIREMENTS.

C-18. FORMWORK AND SHORING OF FORMWORK SHALL BE DESIGNED BY THE CONTRACTOR.

C-19. WELDED WIRE FABRIC:
- WELDED WIRE FABRIC SHALL BE SUPPLIED IN FLAT SHEETS AND SHALL NOT BE ROLLED.
- WELDED WIRE FABRIC SHALL BE SECURELY SUPPORTED ON CHAIRS TO PREVENT EXCESSIVE DISPLACEMENT DURING CONCRETE PLACEMENT.
- LAP ADJACENT LAYERS OF WELDED WIRE FABRIC 9" MIN. AT SIDES AND ENDS.

STRUCTURAL STEEL:

S-1. MATERIAL PROPERTIES (U.N.O.)
- W AND WT SHAPES - F_y = 50 KSI - (ASTM A992)
- C-SHAPES - F_y = 36 KSI - (ASTM A36 OR ASTM A572)
- ANGLES - F_y = 36 KSI - (ASTM A36 OR ASTM A572)
- PLATES & BARS - F_y = 36 KSI - (ASTM A36 OR ASTM A572)
- STEEL PIPE - F_y = 35 KSI - (ASTM A53 Gr B)
- HSS SHAPES - F_y = 50 KSI - (ASTM A500 Gr C)
- RODS - F_y = 36 KSI - (ASTM F1554 Gr 36)
- ANCHOR BOLTS - F_y = 36 KSI - (ASTM F1554 Gr 36)
- HEADED STUDS - (ASTM A108)

S-2. ALL DETAILING, FABRICATION, AND ERECTION OF STRUCTURAL STEEL MEMBERS SHALL BE IN ACCORDANCE WITH THE AISC - "STEEL CONSTRUCTION MANUAL", FOURTEENTH EDITION.

S-3. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE LATEST "AWS" SPECIFICATIONS BY CERTIFIED WELDERS. ALL WELDS SHALL BE MADE WITH E70XX ELECTRODES UNLESS NOTED OTHERWISE.

S-4. CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE SELECTED IN ACCORDANCE WITH AISC SPECIFICATIONS, "SIMPLE CONNECTIONS" USING 3/4" DIAMETER ASTM A325 N-BOLTS (SNUG TIGHT). UNLESS OTHERWISE NOTED, REFER TO TYPICAL DETAILS FOR CONNECTION TYPES AND MINIMUM NUMBER AND SIZE OF BOLTS.

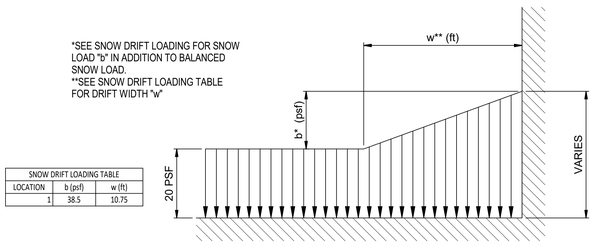
S-5. OPENINGS REQUIRED IN STRUCTURAL STEEL MEMBERS SHALL BE SHOWN ON THE DRAWINGS. FIELD CUTTING OF HOLES IN STRUCTURAL STEEL MEMBERS SHALL NOT BE ALLOWED WITHOUT WRITTEN PERMISSION OF THE ENGINEER.

S-6. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO STRUCTURAL STEEL FABRICATION.

S-7. ALL CONNECTIONS TO PIPE AND TUBE COLUMNS SHALL BE THRU-PLATE TYPE UNLESS OTHERWISE SHOWN.

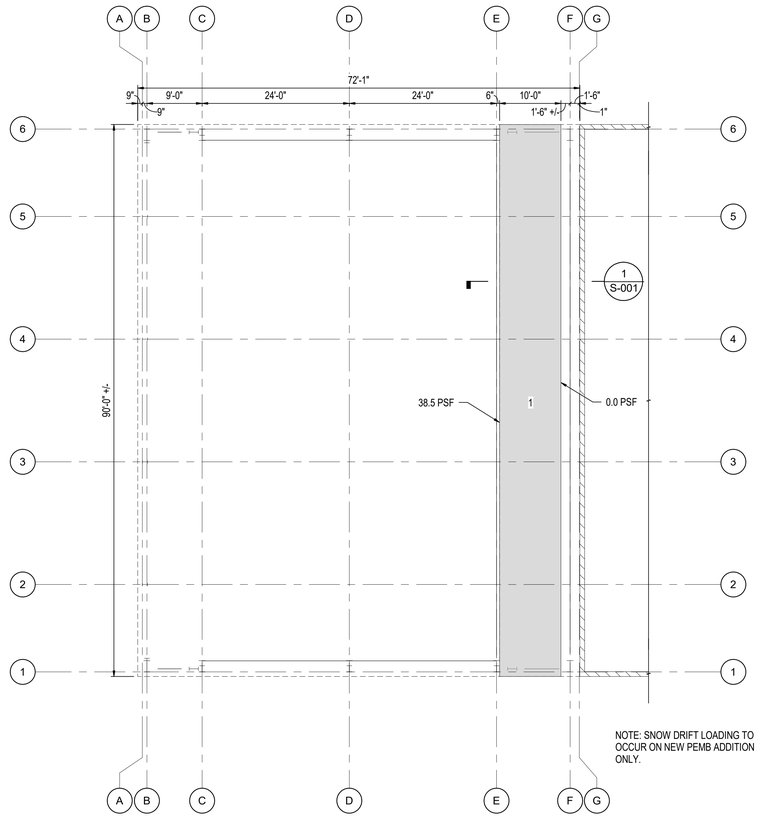
S-8. THE CONTRACTOR SHALL FURNISH AND INSTALL MISCELLANEOUS STEEL (CURBS, HANGERS, BRACING, ETC.) AS CALLED FOR OR AS NECESSARY PER ARCHITECTURAL AND MECHANICAL / ELECTRICAL DRAWINGS.

S-9. WHENEVER CONSTRUCTION SCHEDULING REQUIRES THE ERECTION OF STRUCTURAL MEMBERS WHICH BY THEMSELVES WOULD BE CONSIDERED LATERALLY UNSTABLE, ADEQUATE TEMPORARY BRACING SHALL BE PROVIDED.



SNOW DRIFT LOADING TABLE		
LOCATION	b (psf)	w (ft)
1	38.5	10.75

1 DRIFT LOAD
3/4" = 1'-0"



NOTE: SNOW DRIFT LOADING TO OCCUR ON NEW PEMB ADDITION ONLY.

2 SNOW DRIFT LOADING PLAN
1" = 10'-0"

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO — RYNE M. FIORITO — PE.85843 — REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

OHIO NATIONAL GUARD — SEMPER PARATUS — SINCE 1803
AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

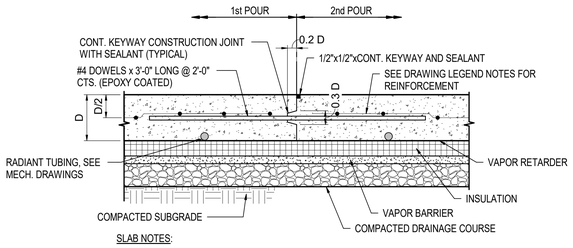
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: JMC
DRAWN BY: JMC
REVIEWED BY: RMF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **GENERAL NOTES**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: S-001

BID DOCUMENTS

11/4/2022 8:41:18 AM
C:\Users\jcase\OneDrive - Hanson Professional Services Inc\Documents\DRAWING_FILES\Braceville\Addition_JCB_dana5431.rvt



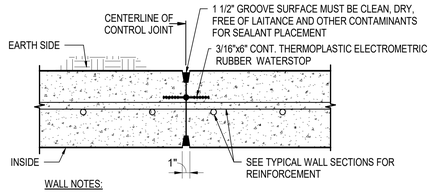
SLAB NOTES:

1. CONSTRUCTION OR CONTRACTION JOINTS SHALL BE PLACED SO SLAB POURS DO NOT EXCEED 250 SQUARE FEET. SEE PLAN FOR LAYOUT.

2. CONTRACTION JOINTS MAY BE SAWED JOINTS OR MADE WITH PLASTIC INSERTS (.25D MIN. DEPTH). FILL ALL JOINTS WITH SEALANT. SAWING TO BE COMPLETED WITHIN THE FIRST 12 HOURS.

3. CONSTRUCTION AND CONTRACTION JOINTS PARALLEL WITH THICKENED SLABS SHOULD OCCUR OUTSIDE THE LIMITS OF THE THICKENED SLAB.

1 TYPICAL SLAB ON GRADE CONSTRUCTION JOINT
1 1/2" = 1'-0"

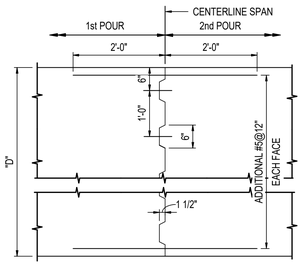


WALL NOTES:

1. LOCATE CONTROL JOINTS AT ALL EXTERIOR CONCRETE WALLS AT 1/3 POINTS BETWEEN SUPPORTS (COLUMNS, STRUTS, ETC.) OR AT 30'-0" MAXIMUM CENTERS.

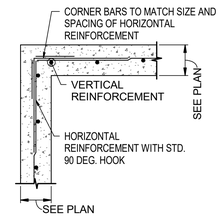
2. DO NOT LAP SPLICE CONTINUOUS REINFORCEMENT AT CONTROL JOINTS.

2 TYPICAL VERTICAL CONTROL JOINT
1 1/2" = 1'-0"

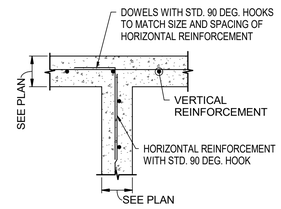


NOTE: CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND ALL LAITANCE REMOVED. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED THE JOINT SHALL BE WETTED AND COATED WITH NEAT CEMENT GROUT.

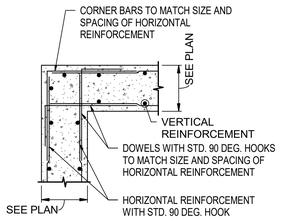
3 TYPICAL GRADE BEAM CONSTRUCTION JOINT
3/4" = 1'-0"



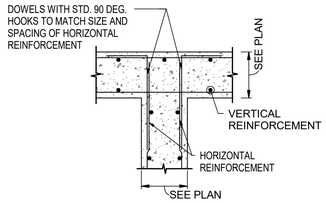
4 TYPICAL 1 LAYER REINF. CORNER
3/4" = 1'-0"



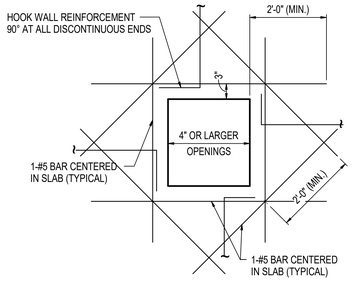
5 TYPICAL 1 LAYER REINF. INTERSECTION
3/4" = 1'-0"



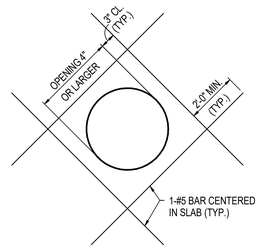
6 TYPICAL 2 LAYER REINF. CORNER
3/4" = 1'-0"



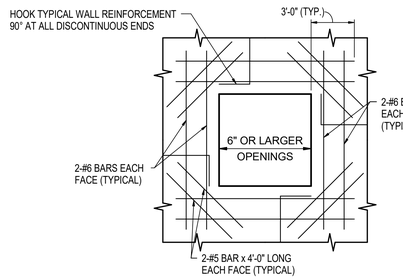
7 TYPICAL 2 LAYER REINF. INTERSECTION
3/4" = 1'-0"



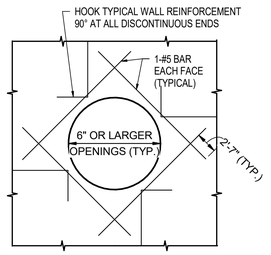
8 TYPICAL FLOOR OPENING REINF. RECTANGULAR
1" = 1'-0"



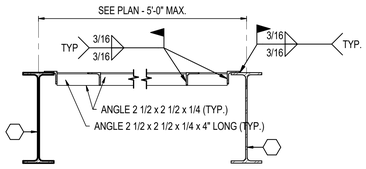
9 TYPICAL FLOOR OPENING REINF. CIRCULAR
1" = 1'-0"



10 TYPICAL WALL OPENING REINF. RECTANGULAR
1" = 1'-0"



11 TYPICAL WALL OPENING REINF. CIRCULAR
1" = 1'-0"

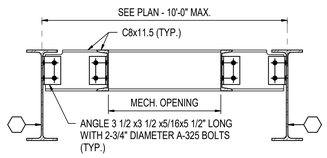


NOTE:

1. COORDINATE OPENING SIZE WITH MECH. AND ARCH.

2. PROVIDE FRAMING FOR OPENINGS SHOWN ON PLANS AND AT ROOF DRAIN LOCATIONS.

12 TYPICAL ROOF DECK SUPPORT 5'-0" OR LESS
1" = 1'-0"



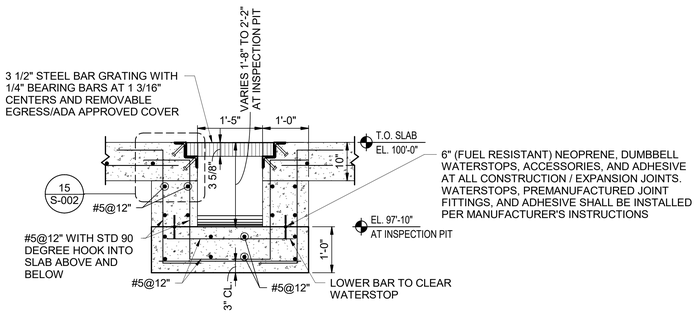
NOTE:

COORDINATE OPENING SIZE WITH MECH. AND ARCH.

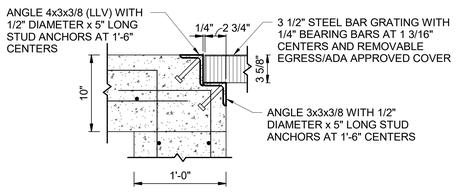
PROVIDE FRAMING FOR OPENINGS SHOWN ON PLANS AND AT ROOF DRAIN LOCATIONS.

TYPICAL METAL ROOF DECK, COMPOSITE FLOOR DECK, AND NON-COMPOSITE FORMDECK FRAMING AT OPENINGS 5'-1" TO 10'-0" MAX.

13 TYPICAL ROOF DECK SUPPORT 5'-0" OR MORE
1" = 1'-0"



14 UTILITY TRENCH DETAIL
3/4" = 1'-0"



15 GRATING SUPPORT DETAIL
1 1/2" = 1'-0"

KEYED NOTES

X — KEYNOTE SYMBOL WITH NOTE NUMBER

NOTE 1: 10" CONCRETE SLAB ON GRADE WITH #5 BARS @ 10" ON CENTER ON 15 MIL VAPOR BARRIER ON 6" FREE-DRAINING COMPACTED GRANULAR FILL. SEE DETAIL 9/S002 FOR TYPICAL SLAB CONSTRUCTION JOINT.

NOTE 2: 6" CONCRETE STOOP WITH #5@12" EACH WAY (CENTERED) IN SLAB. REFER TO CIVIL AND ARCHITECTURAL FOR LIMITS OF STOOP.

NOTE 3: 1/2"x1/2" PREFORMED NOTCH AND SEALANT.

NOTE 4: 1/2" PREFORMED JOINT FILLER AND SEALANT

NOTE 5: STRUCTURAL CONNECTOR WITH THREADED SPLICE BAR CAPABLE OF DEVELOPING 125% OF SPECIFIED REINFORCING STEEL YIELD STRENGTH. SIZE AND SPLICING AS INDICATED. WELD ALL AROUND STRUCTURAL MEMBER PER MANUFACTURER'S WRITTEN DIRECTIONS.

FSB FEDERAL DESIGN GROUP JV
HANSON Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO — RYNE M. FIORITO PE.85843 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 11.09.2022
EXPIRES:11.30.2024

OHIO NATIONAL GUARD — SEAL — SINCE 1791

AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

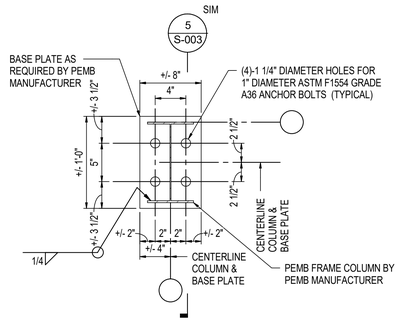
△	DESCRIPTION	DATE

PROJECT INFORMATION:

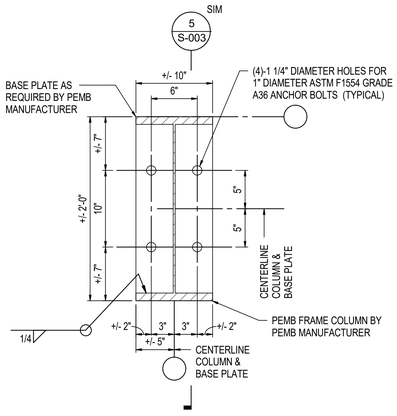
DESIGNED BY: JMC
DRAWN BY: JMC
REVIEWED BY: RMF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **TYPICAL DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: S-002

BID DOCUMENTS

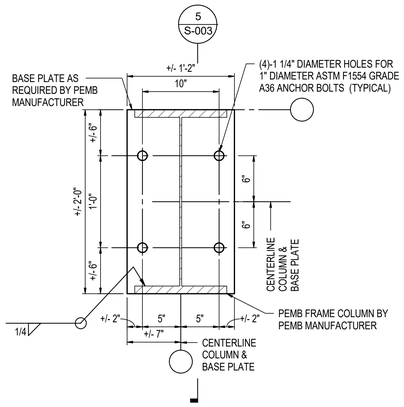
11/9/2022 8:45:15 AM
C:\Users\bgarr\AppData\Local\Temp\acpublish_13752\Drawings\DRAWING_TITLE\TBlock\Arch_ADD_drawing14314.rvt



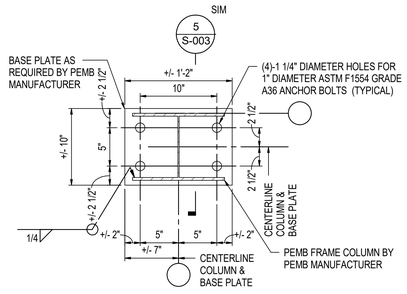
1 FRAME A BASE PLATE
1 1/2" = 1'-0"



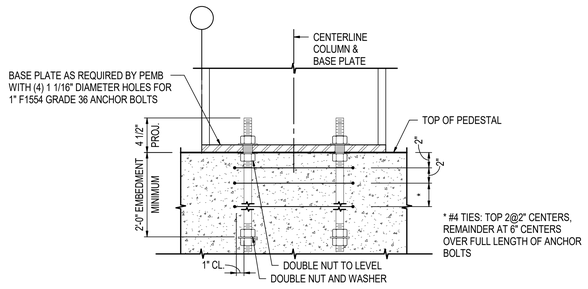
2 FRAME B AND D BASE PLATE
1 1/2" = 1'-0"



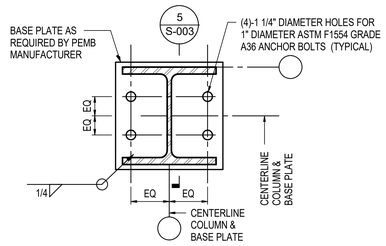
3 FRAME C BASE PLATE
1 1/2" = 1'-0"



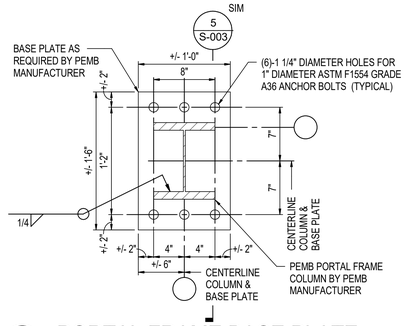
4 FRAME E BASE PLATE
1 1/2" = 1'-0"



5 TYPICAL ANCHOR BOLTS
1 1/2" = 1'-0"



6 WIND COLUMN BASE PLATE
1 1/2" = 1'-0"



7 PORTAL FRAME BASE PLATE
1 1/2" = 1'-0"

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO
RYNE M. FIORITO
PE.88843
REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

OHIO NATIONAL GUARD
AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	JMC
DRAWN BY:	JMC
REVIEWED BY:	RMF
PROJECT MANAGER:	BG

PROJECT NUMBER: 507101521

SHEET TITLE: **TYPICAL DETAILS**

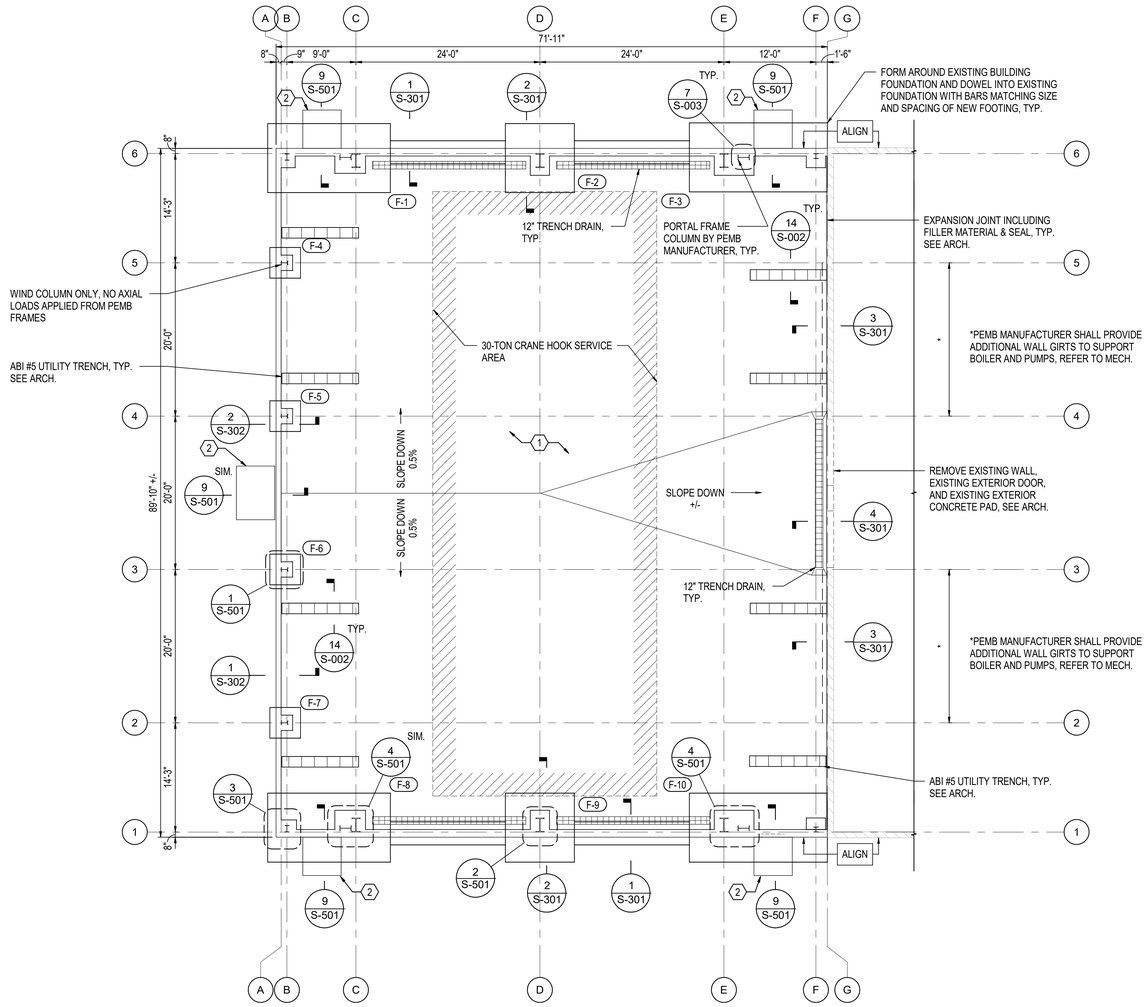
ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: S-003

BID DOCUMENTS

11/9/2022 8:46:15 AM
C:\Users\JMC\...\S-003.dwg

PROJECT GENERAL NOTES, TYPICAL DETAILS AND SHEET KEYNOTES FOR STRUCTURAL DISCIPLINE ARE LOCATED ON SHEETS S-002 AND S-003.



1 GROUND FLOOR
1/8" = 1'-0"

N

FSB FEDERAL DESIGN GROUP JV
HANSON Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO
RYNE M. FIORITO
PE.85843
REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

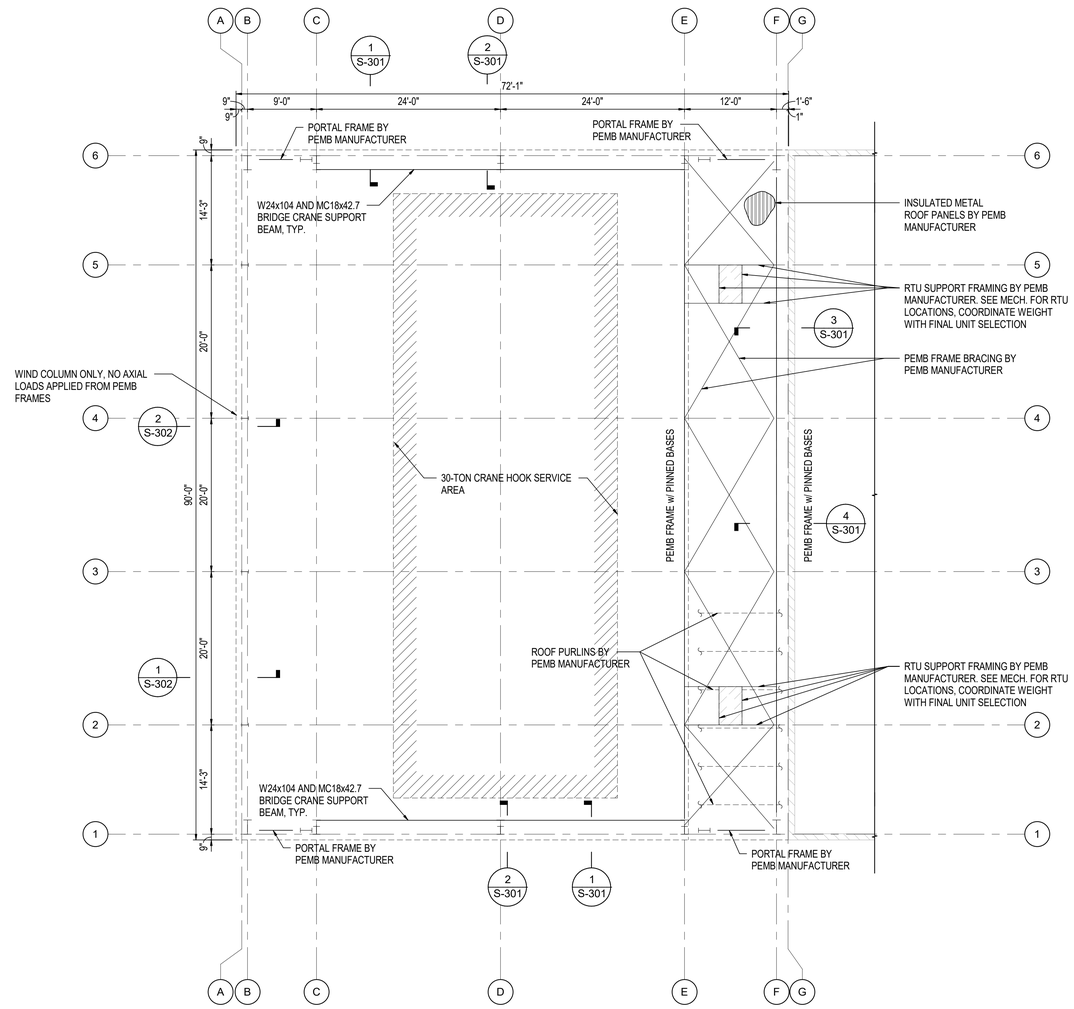
PROJECT INFORMATION:

DESIGNED BY: JMC
DRAWN BY: JMC
REVIEWED BY: RMF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **GROUND FLOOR PLAN**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: S-101

BID DOCUMENTS

11/4/2022 8:45:13 AM
C:\Users\bgarb\OneDrive\Documents\DRAWING_SITES\Braceville_Addition_JCP_bgarb2431.rvt

PROJECT GENERAL NOTES, TYPICAL DETAILS AND SHEET KEYNOTES FOR STRUCTURAL DISCIPLINE ARE LOCATED ON SHEETS S-002 AND S-003.



1 LOW ROOF / CRANE RAIL PLAN
1/8" = 1'-0"

N

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO
RYNE M. FIORITO
PE.85843
REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

OHIO NATIONAL GUARD
AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

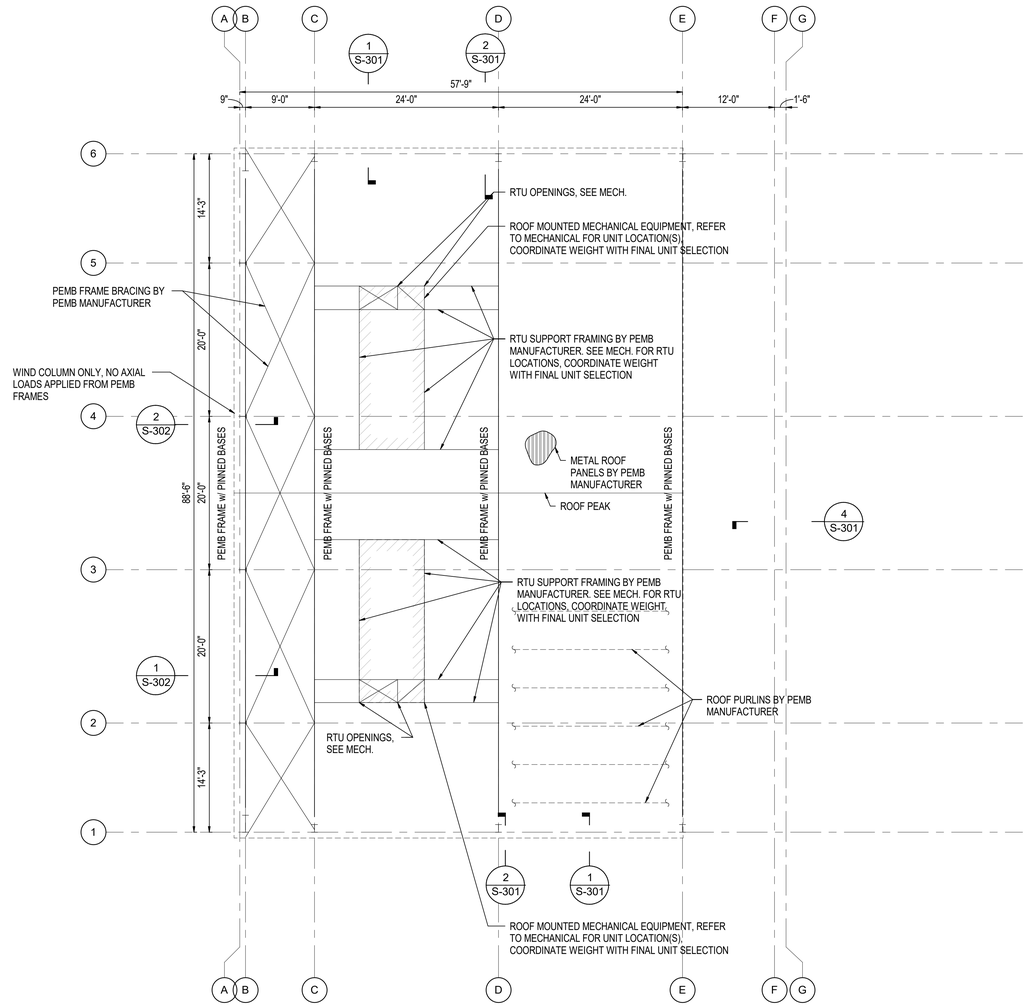
PROJECT INFORMATION:

DESIGNED BY:	JMC
DRAWN BY:	JMC
REVIEWED BY:	RMF
PROJECT MANAGER:	BG
PROJECT NUMBER:	507101521
SHEET TITLE:	LOW ROOF / CRANE RAIL PLAN
ISSUE DATE:	NOVEMBER 9, 2022
SHEET NUMBER:	S-102

BID DOCUMENTS

11/4/2022 8:42:20 AM
C:\Users\jmc\AECOM\Documents\DRAWING_UTES\Braceville_IOS_Grant24311.rvt

PROJECT GENERAL NOTES, TYPICAL DETAILS AND SHEET KEYNOTES FOR STRUCTURAL DISCIPLINE ARE LOCATED ON SHEETS S-002 AND S-003.



1 HIGH ROOF PLAN
1/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO
RYNE M. FIORITO
PE.85843
REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

OHIO NATIONAL GUARD
AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	JMC
DRAWN BY:	JMC
REVIEWED BY:	RMF
PROJECT MANAGER:	BG
PROJECT NUMBER:	507101521

SHEET TITLE:

HIGH ROOF PLAN

ISSUE DATE:

NOVEMBER 9, 2022

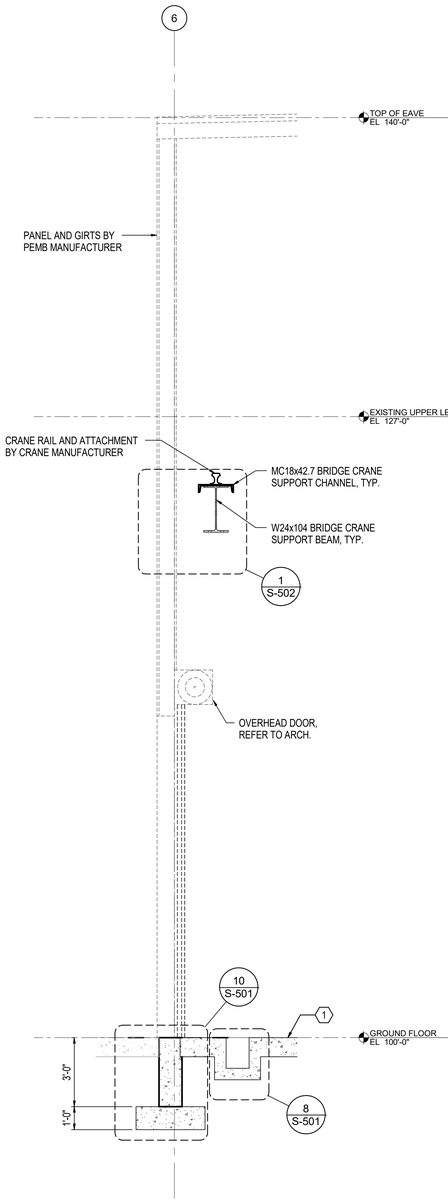
SHEET NUMBER:

S-103

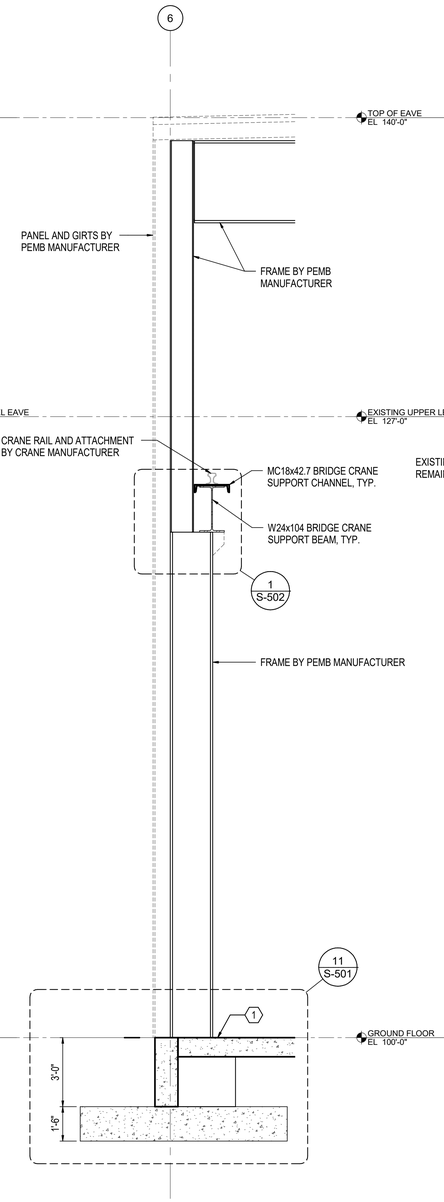
BID DOCUMENTS

11/4/2022 8:42:20 AM
C:\Users\jmc\ACCELENTData\Documents\DRAWING_UTES\Braceville_IOR_Grandv14311.rvt

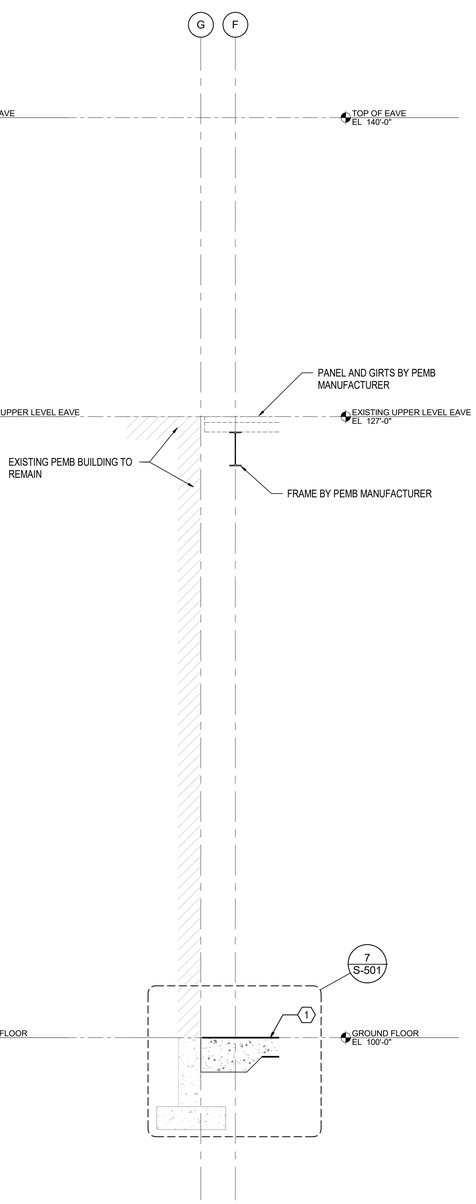
PROJECT GENERAL NOTES, TYPICAL DETAILS AND SHEET KEYNOTES FOR STRUCTURAL DISCIPLINE ARE LOCATED ON SHEETS S-002 AND S-003.



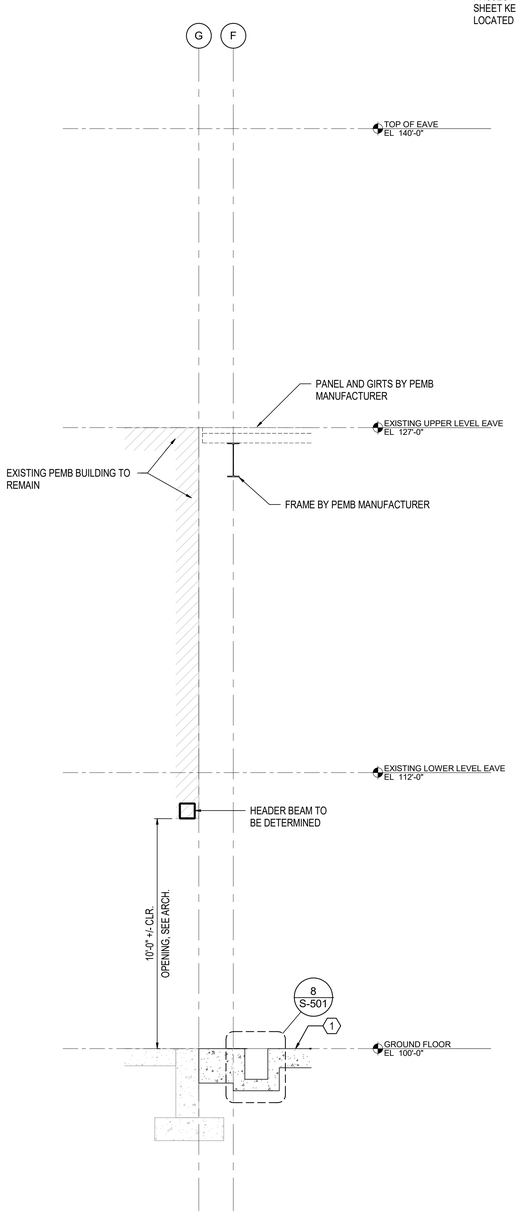
1 WALL SECTION
3/8" = 1'-0"



2 WALL SECTION
3/8" = 1'-0"



3 WALL SECTION
3/8" = 1'-0"



4 WALL SECTION
3/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO RYNE M. FIORITO PE.85843 REGISTERED PROFESSIONAL ENGINEER

SIGNED: 11.09.2022
EXPIRES: 11.30.2024

AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	JMC
DRAWN BY:	JMC
REVIEWED BY:	RMF
PROJECT MANAGER:	BG

PROJECT NUMBER: 507101521

SHEET TITLE: **WALL SECTIONS**

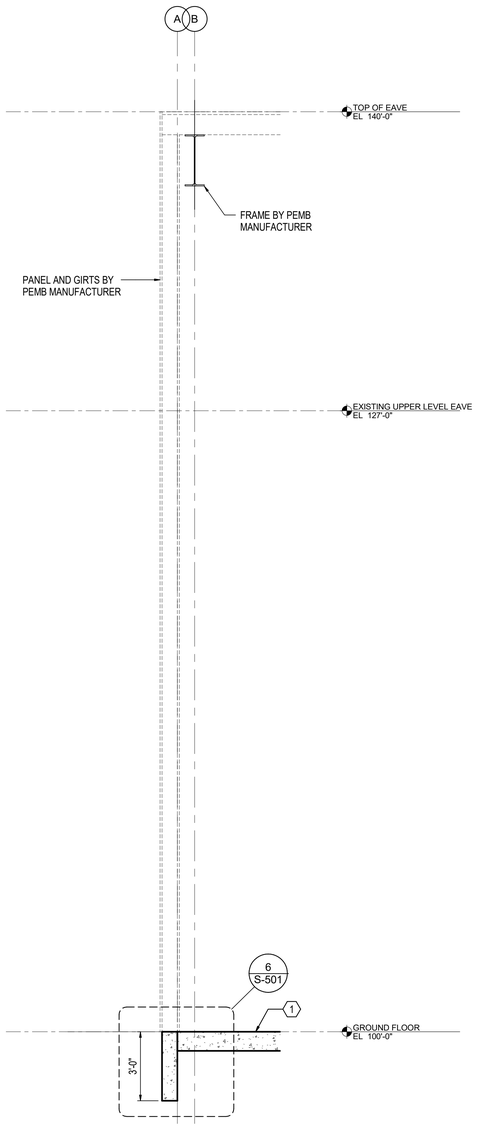
ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: S-301

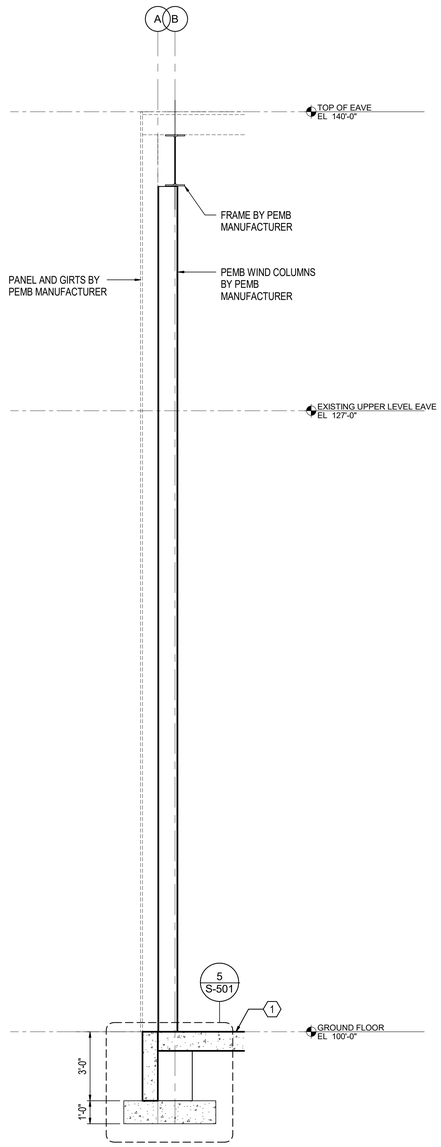
BID DOCUMENTS

11/9/2022 8:42:21 AM
C:\Users\bgood\ARTDocuments\CHORNO_UTES\BldgA\Bldg_ADS_rbgood21521.rvt

PROJECT GENERAL NOTES, TYPICAL DETAILS AND SHEET KEYNOTES FOR STRUCTURAL DISCIPLINE ARE LOCATED ON SHEETS S-002 AND S-003.



1 WALL SECTION
3/8" = 1'-0"



2 WALL SECTION
3/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO
RYNE M. FIORITO
PE.85843
REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	JMC
DRAWN BY:	JMC
REVIEWED BY:	RMF
PROJECT MANAGER:	BG

PROJECT NUMBER: 507101521

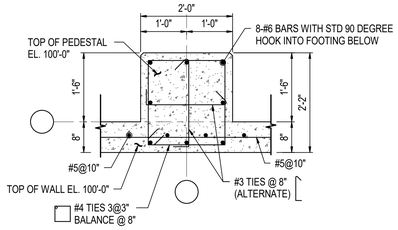
SHEET TITLE: **WALL SECTIONS**

ISSUE DATE: NOVEMBER 9, 2022

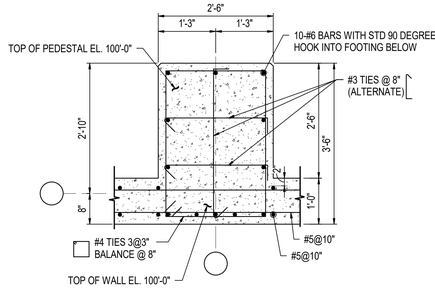
SHEET NUMBER: S-302

11/9/2022 8:43:22 AM
C:\Users\JMC\DATA\Documents\DRAWING_SITES\Braceville_S2V_dmc24311.rvt

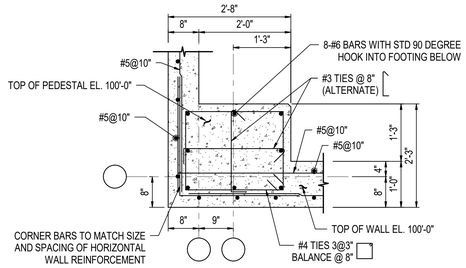
PROJECT GENERAL NOTES, TYPICAL DETAILS AND SHEET KEYNOTES FOR STRUCTURAL DISCIPLINE ARE LOCATED ON SHEETS S-002 AND S-003.



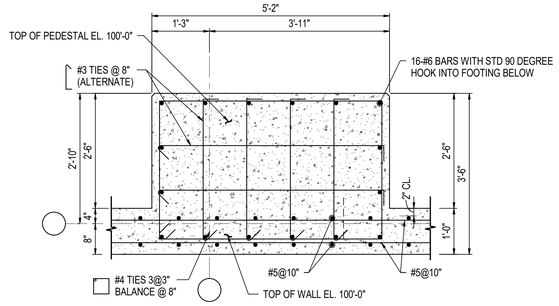
1 PEDESTAL DETAIL
3/4" = 1'-0"



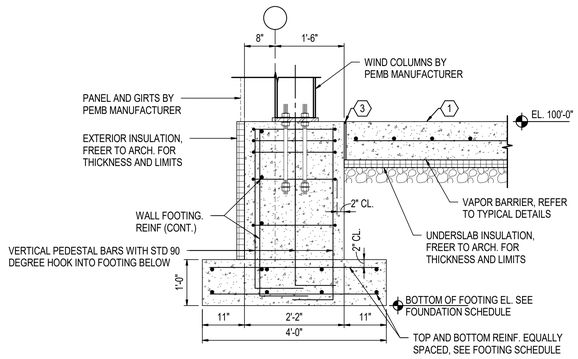
2 PEDESTAL DETAIL
3/4" = 1'-0"



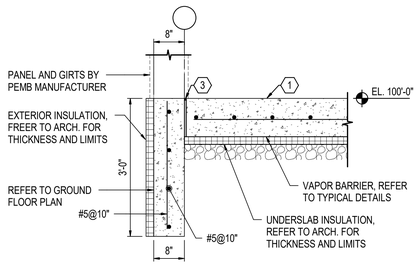
3 PEDESTAL DETAIL
3/4" = 1'-0"



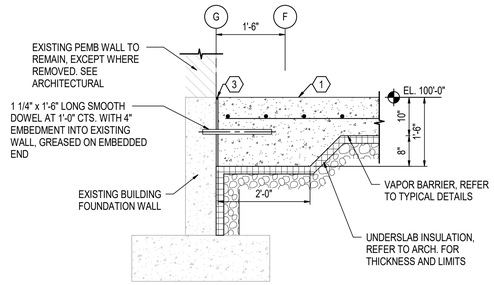
4 PEDESTAL DETAIL
3/4" = 1'-0"



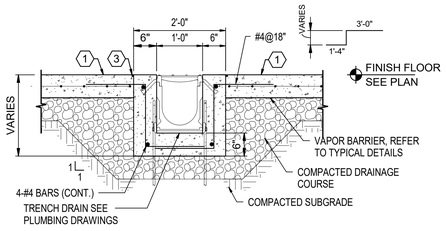
5 WALL FOUNDATION DETAIL
3/4" = 1'-0"



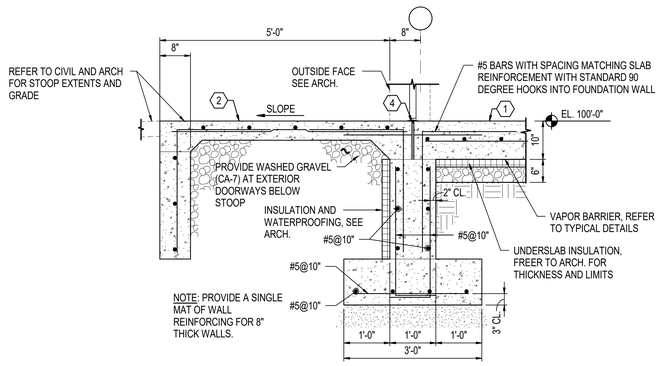
6 WALL FOUNDATION DETAIL
3/4" = 1'-0"



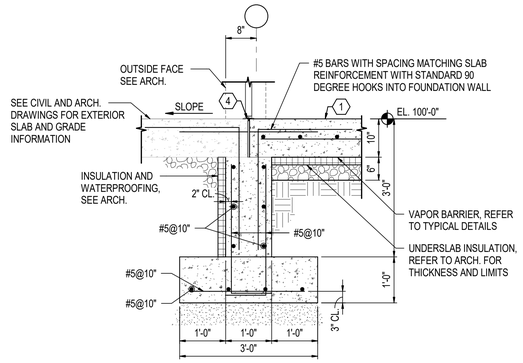
7 SLAB DETAIL
3/4" = 1'-0"



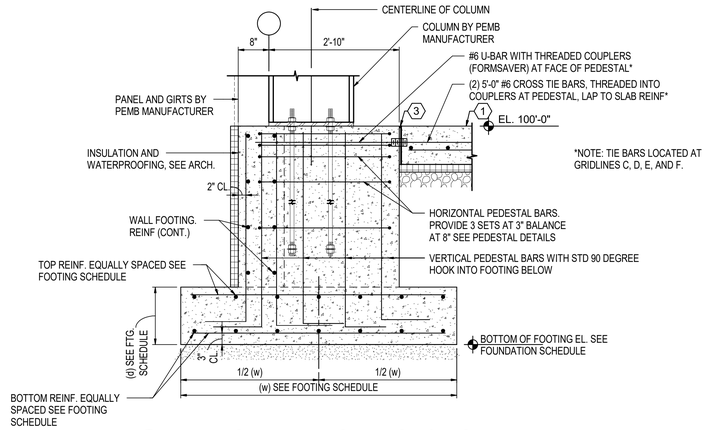
8 TRENCH DRAIN DETAIL
3/4" = 1'-0"



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



10 FOUNDATION DETAIL AT OVERHEAD DOOR
3/4" = 1'-0"



11 TYPICAL PEDESTAL SECTION
3/4" = 1'-0"

STRUCTURAL FOUNDATION SCHEDULE

MARK NO. F-X	FOOTING WIDTH	FOOTING LENGTH	FOOTING THICKNESS	FOOTING REINFORCEMENT TOP	FOOTING REINFORCEMENT BOTTOM	BOTTOM ELEVATION	COMMENT
1	9'-0"	16'-0"	1'-6"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	95'-6"	PEMB FRAME
2	9'-0"	9'-0"	1'-6"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	95'-6"	PEMB FRAME
3	9'-0"	18'-0"	1'-6"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	95'-6"	PEMB FRAME
4	4'-0"	4'-0"	1'-0"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	96'-0"	WIND COLUMN
5	4'-0"	4'-0"	1'-0"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	96'-0"	WIND COLUMN
6	4'-0"	4'-0"	1'-0"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	96'-0"	WIND COLUMN
7	4'-0"	4'-0"	1'-0"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	96'-0"	WIND COLUMN
8	9'-0"	16'-0"	1'-6"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	95'-6"	PEMB FRAME
9	9'-0"	9'-0"	1'-6"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	95'-6"	PEMB FRAME
10	9'-0"	18'-0"	1'-6"	#6 BARS @ 12" E.W.	#6 BARS @12" E.W.	95'-6"	PEMB FRAME

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO
RYNE M. FIORITO
PE.85843
REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: JMC

DRAWN BY: JMC

REVIEWED BY: RMF

PROJECT MANAGER: BG

PROJECT NUMBER: 507101521

SHEET TITLE: **FOUNDATION DETAILS**

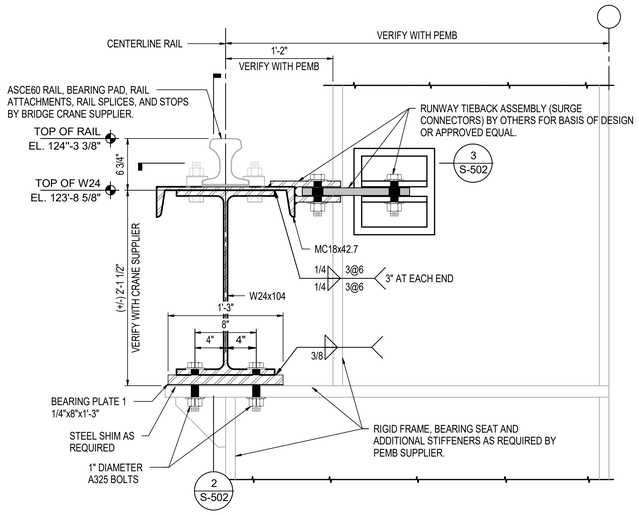
ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: S-501

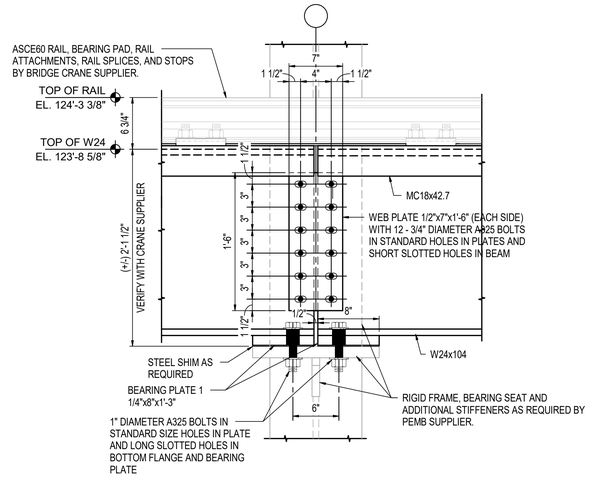
BID DOCUMENTS

11/9/2022 8:49:23 AM
C:\Users\jmc\AEC Documents\ProWorks\JMC_UTES\Bldg\Addition_v20_jmc507101.rvt

PROJECT GENERAL NOTES, TYPICAL DETAILS AND SHEET KEYNOTES FOR STRUCTURAL DISCIPLINE ARE LOCATED ON SHEETS S-002 AND S-003.



1 BRIDGE CRANE SUPPORT SECTION
1 1/2" = 1'-0"



2 BRIDGE CRANE SUPPORT SECTION
1 1/2" = 1'-0"

3 BRIDGE CRANE SUPPORT PLAN
1 1/2" = 1'-0"

4 BRIDGE CRANE SUPPORT ELEVATION
1 1/2" = 1'-0"

FSB FEDERAL DESIGN GROUP JV
HANSON
Engineering | Planning | Allied Services
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

STATE OF OHIO
RYNE M. FIORITO
PE.85843
REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11.09.2022
EXPIRES: 11.30.2024

AIR NATIONAL GUARD
OHIO

CJAG JMTC UTES Two-Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

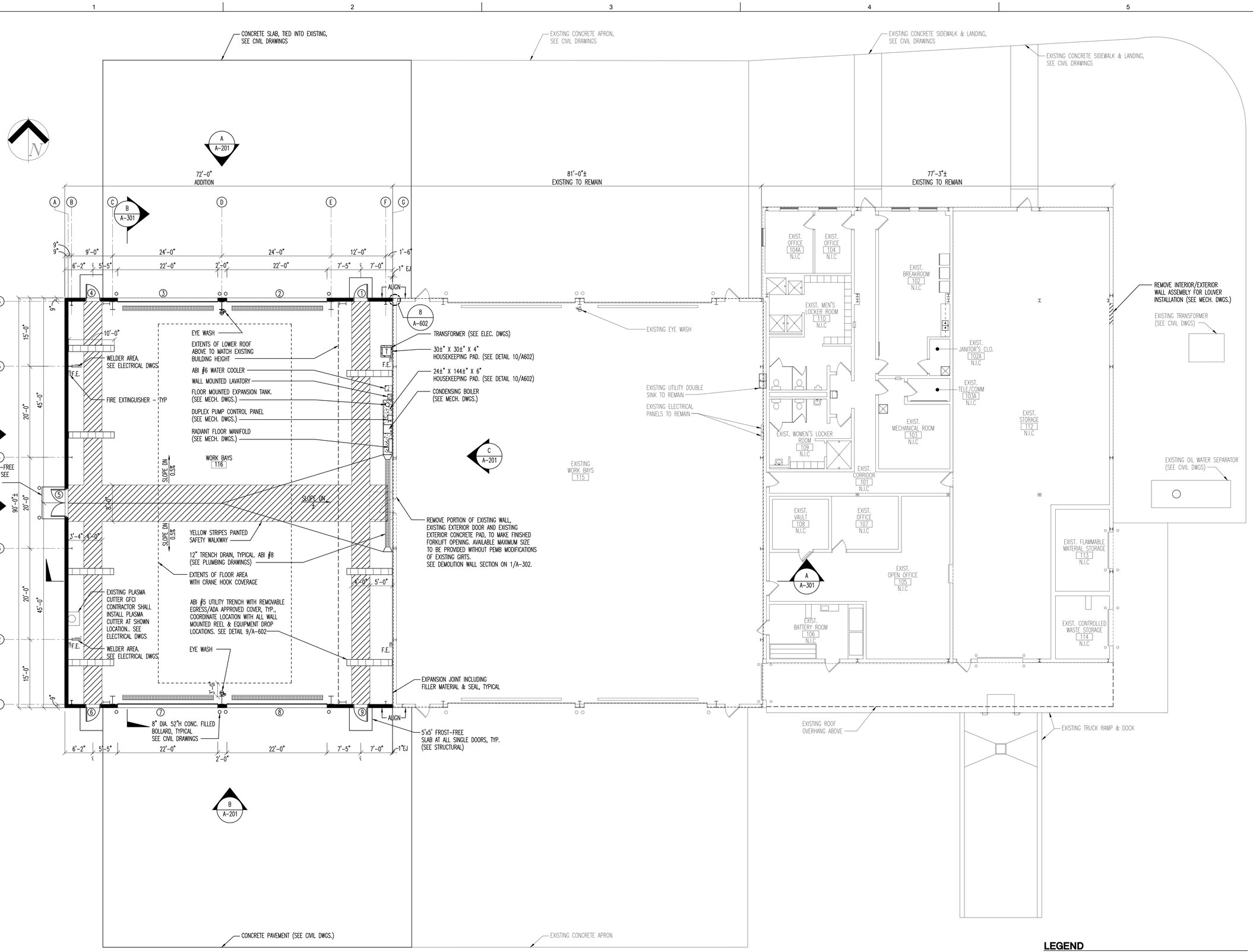
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
C	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: JMC
DRAWN BY: JMC
REVIEWED BY: RMF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **SECTIONS AND DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: S-502

11/9/2022 8:43:34 AM
C:\Users\bsaxe\OneDrive\Documents\DRAWING_UTES\Braceville\Addition_v20_bsaxe.rvt

BID DOCUMENTS



FLOOR PLAN

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

LEGEND

- (X) DOOR NUMBER (SEE DOOR AND FRAME SCHEDULE ON DWG A601).
- (X) WINDOW TYPE (SEE WINDOW SCHEDULE ON DWG A602 AND EXTERIOR ELEVATIONS FOR LOCATIONS).
- LOUVER TYPE (SEE MECHANICAL DWGS.; SEE LOUVER SCHEDULE ON DWG A601; SEE EXTERIOR ELEVATIONS FOR LOCATIONS).

0 4 8 16
SCALE: 1/8" = 1'-0"

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV
MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK — ANTHONY F. PEDICINI — LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD — SINCE 1821

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKF

DRAWN BY: CN/KZ

REVIEWED BY: RKF

PROJECT MANAGER: BG

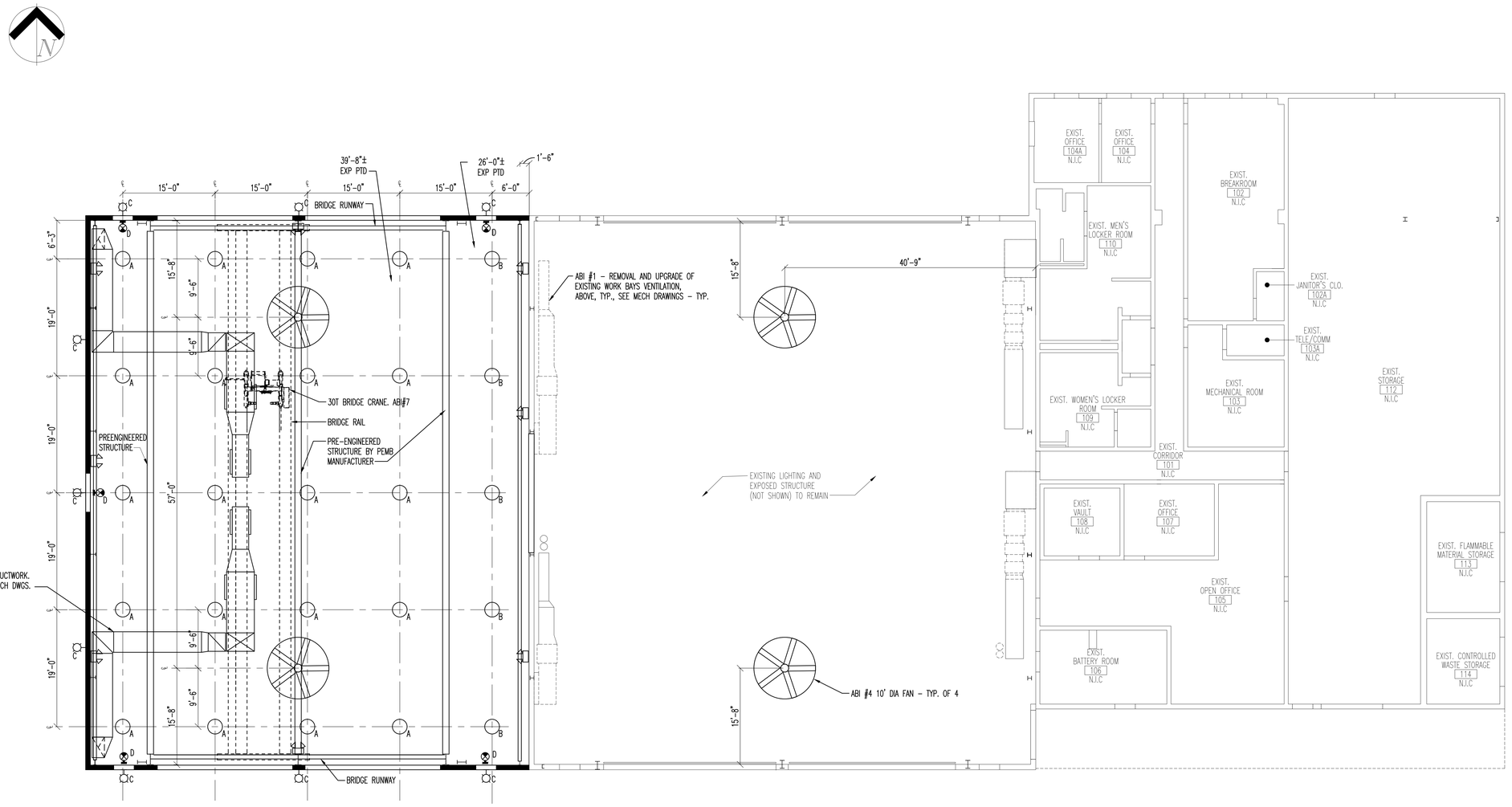
PROJECT NUMBER: 507101521

SHEET TITLE: **FLOOR PLAN**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: A-101

DWG NAME: C:\USERS\FLO897\04\MOTT MACDONALD\BELEN GARCIA - SHARE WITH PAM-BEN\507101521\507101521-A-101.DWG SAVE DATE: 11/12/2022 2:57 PM BY: FLO89704 PLOT DATE: 11/16/2022 10:47 AM



REFLECTED CEILING PLAN

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

REFLECTED CEILING PLAN LEGEND:

X'-X"——	CEILING HEIGHT ABOVE FINISHED FLOOR
MATERIAL —	CEILING MATERIAL
EXP PTD	EXPOSED DECK, TO BE PAINTED
A	HIGH BAY LED FIXTURE, SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION
B	LOW BAY LED FIXTURE, SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION
C	EXTERIOR WALL MOUNTED LIGHT FIXTURE
D	WALL MOUNTED EXIT SIGN
	WALL MOUNTED EMERGENCY LIGHTS

REFLECTED CEILING PLAN NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR LIGHT FIXTURE SCHEDULE
2. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL FAN INFORMATION

0 4 8 16
SCALE: 1/8" = 1'-0"

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV
M MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK — ANTHONY F. PERRI — 090906 — LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD — SEAL — SINCE 1stSE

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

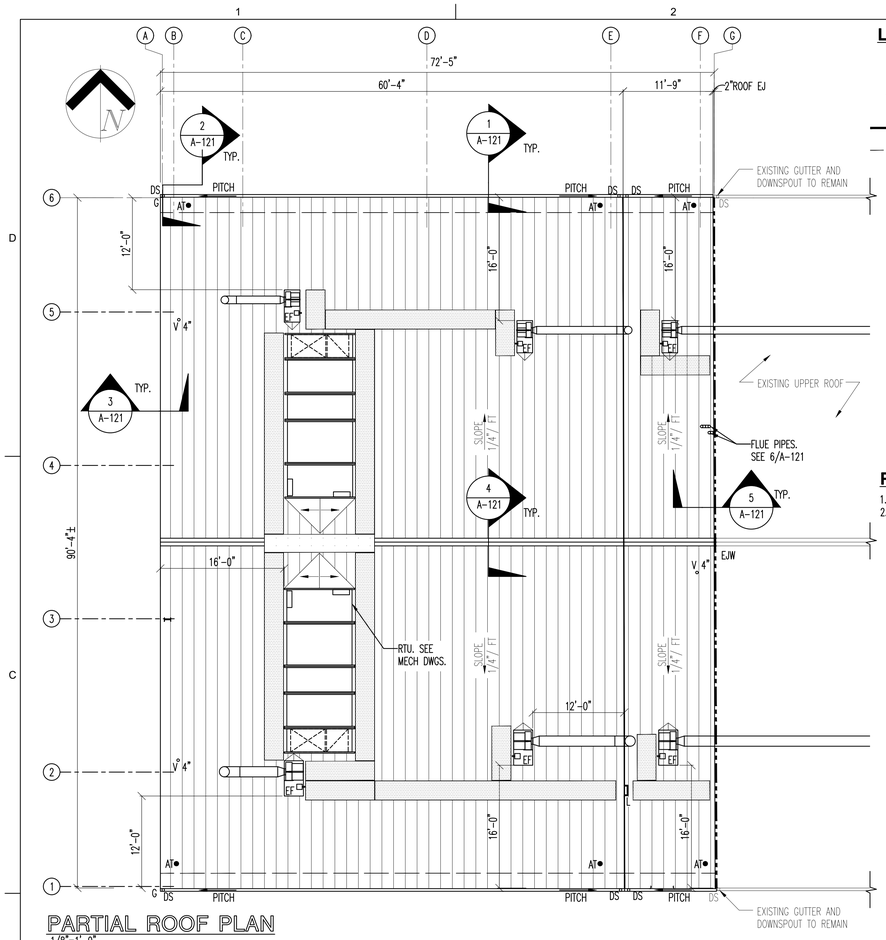
REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	RKF
DRAWN BY:	CN/KZ
REVIEWED BY:	RKF
PROJECT MANAGER:	BG
PROJECT NUMBER:	507101521
SHEET TITLE:	REFLECTED CEILING PLAN
ISSUE DATE:	NOVEMBER 9, 2022
SHEET NUMBER:	A-111

DWG NAME: C:\USERS\FLO89704\MOTT MACDONALD\BELEN GARCIA - SHARE WITH PAM-BEN\507101521\507101521-A-111.DWG SAVE DATE: 11/10/2022 6:25 PM BY: OU94692 PLOT DATE: 11/16/2022 10:59 AM



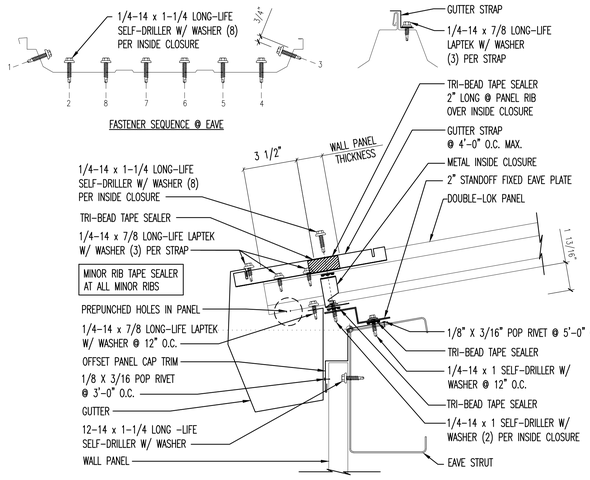
PARTIAL ROOF PLAN
1/8"=1'-0"

LEGEND

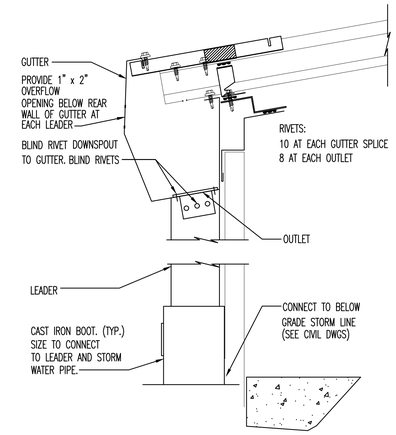
- 3" X 4" PLAIN RECTANGULAR PREFINISHED ALUM DOWNSPOUT
- TAPERED POLYISO CRICKET ON HIGH SIDE OF CURB
- EJW — DECK TO DECK ROOF EXPANSION JOINT. SEE DETAIL 5/A-121
- SNOW GUARD. SEE DETAIL 11/A-121
- EF — EXHAUST FAN. (SEE MECHANICAL DRAWINGS)(SEE 4/A-122 FOR EQUIPMENT RAIL DETAIL, AND SEE DETAIL 3/A-122 FOR DUCT PENETRATION DETAIL)
- SLOPE X"/FT — INDICATES SLOPE AND DIRECTION
- ROOF WALKWAYS SYSTEM SHALL BE ROOFWALK 24" WIDE BY LENGTH INDICATED ON THE DRAWINGS. ROOFWALK SHALL BE COMPATIBLE W/ PEMB MANUFACTURER.
- V — ROOF VENT PIPE. SEE DETAIL 6/A-121, SEE PLUMBING DWGS. INDICATES PIPE SIZE
- AT — LIGHTNING PROTECTION SYSTEM AIR TERMINAL. SEE DETAIL 7,8/A-121, SEE ELECTRICAL DWGS.
- OSHA COMPLIANT LADDER, WITH CABLE VERTICAL SAFETY SYSTEM SEE DETAIL 1/A-122

ROOF NOTES:

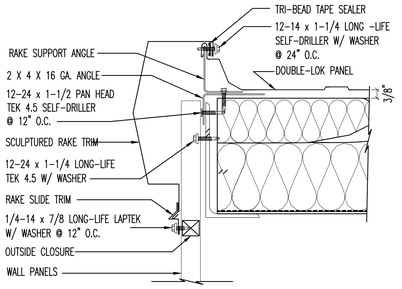
1. SEE ELECTRICAL DWGS FOR LIGHTNING PROTECTION SYSTEM.
2. SEE STRUCTURAL DWGS FOR ROOF STRUCTURE.



TYPICAL EAVE DETAIL
3"=1'-0" — 1 / A-121

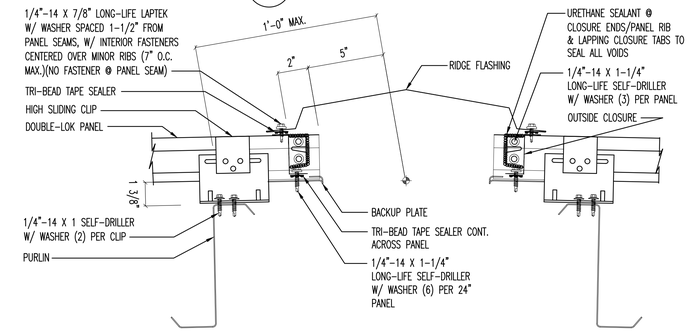


ROOF DOWNSPOUT DETAIL
3"=1'-0" — 2 / A-121

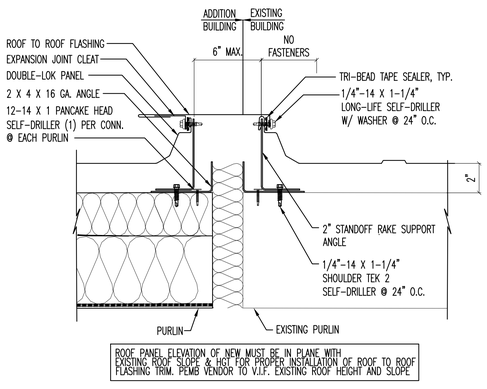


NOTE:
THE FASTENING LEG OF RAKE TRIM SHALL NEVER BE FASTENED TO HI-RIB OF ROOF SHEET OR TO THE PURLINS.

RAKE DETAIL
3"=1'-0" — 3 / A-121

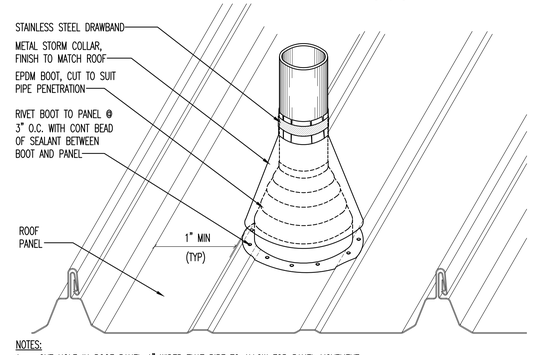


RIDGE DETAIL
3"=1'-0" — 4 / A-121



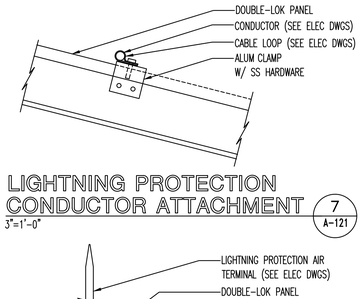
ROOF PANEL ELEVATION OF NEW MUST BE IN PLANE WITH EXISTING ROOF SLOPE & HGT FOR PROPER INSTALLATION OF ROOF TO ROOF FLASHING TRIM. PEMB VENDOR TO V.I.F. EXISTING ROOF HEIGHT AND SLOPE

ROOF EXPANSION JOINT DETAIL
3"=1'-0" — 5 / A-121

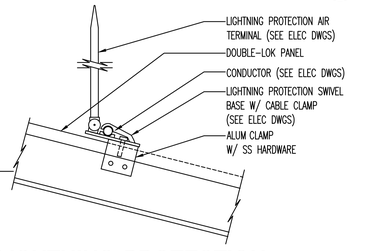


NOTES:
1. CUT HOLE IN ROOF PANEL 1" WIDER THAT PIPE TO ALLOW FOR PANEL MOVEMENT.
2. LOCATE PIPE PENETRATIONS BETWEEN PANEL RIBS.

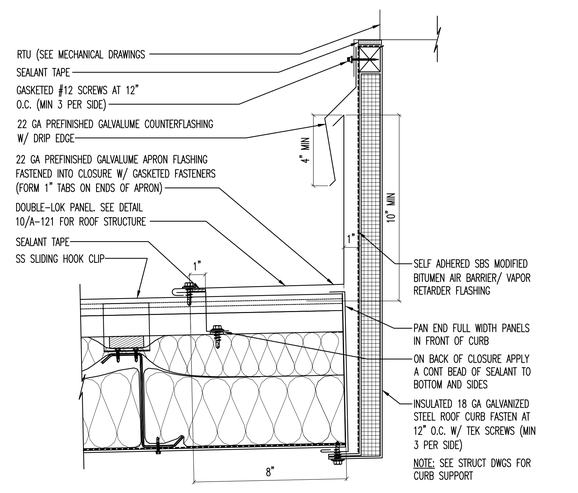
VENT/FLUE PIPE FLASHING DETAIL
3"=1'-0" — 6 / A-121



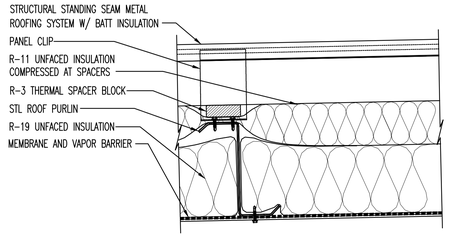
LIGHTNING PROTECTION CONDUCTOR ATTACHMENT
3"=1'-0" — 7 / A-121



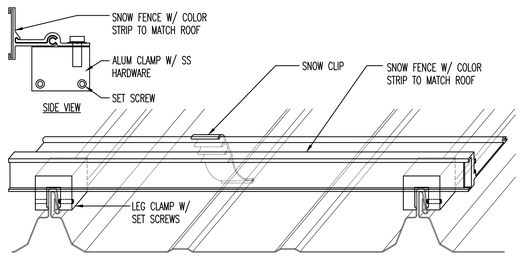
LIGHTNING PROTECTION AIR TERMINAL ATTACHMENT
3"=1'-0" — 8 / A-121



RTU CURB DETAIL
3"=1'-0" — 9 / A-121



TYPICAL ROOF DETAIL BY PEMB MANUFACTURER
3"=1'-0" — 10 / A-121



SNOW GUARD DETAIL
3"=1'-0" — 11 / A-121

SCALE: 3" = 1'-0"

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

FSB FEDERAL DESIGN GROUP JV
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com
MOTT MACDONALD

STATE OF NEW YORK — ANTHONY F. PEDICINI — LICENSED PROFESSIONAL ENGINEER — LIC. NO. 099906

OHIO NATIONAL GUARD — SEAL — SINCE 1/1/1903

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

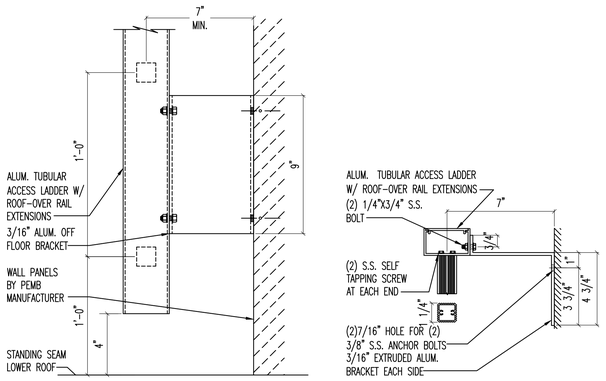
A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKF
DRAWN BY: CN/KZ
REVIEWED BY: RKF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **ROOF PLAN AND DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: A-121

BID DOCUMENTS

DWG NAME: C:\USERS\FLO8970\MOTT MACDONALD\BELEN GARCIA - SHARE WITH PAM-BEN\507101521\507101521-A-121.DWG SAVE DATE: 11/10/2022 6:25 PM BY: OU94692 PLOT DATE: 11/16/2022 11:00 AM

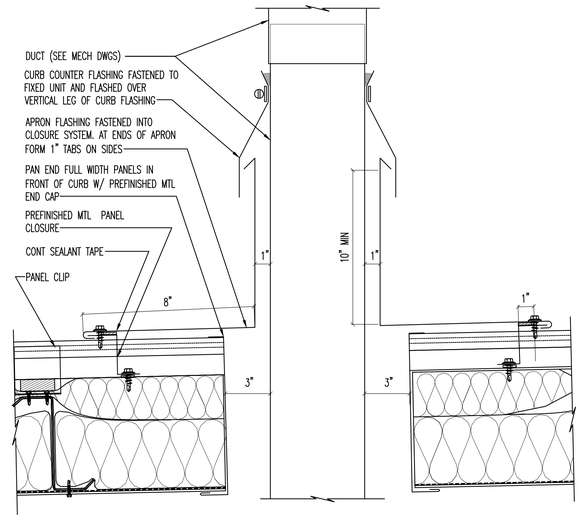


OFF FLOOR LADDER SUPPORT (1 / A-122)

3"=1'-0"

FLUE DETAIL (NOT USED) (2 / A-122)

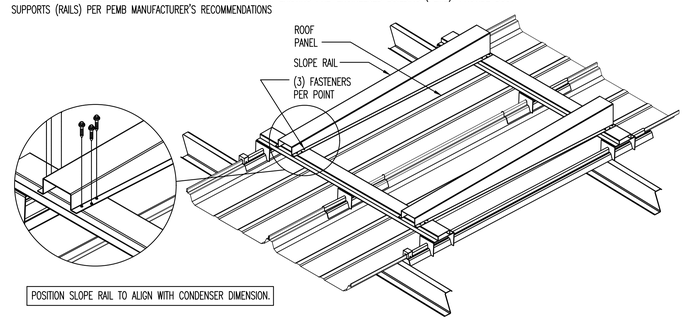
3"=1'-0"



DUCT PENETRATION DETAIL AT EXHAUST FANS (3 / A-122)

3"=1'-0"

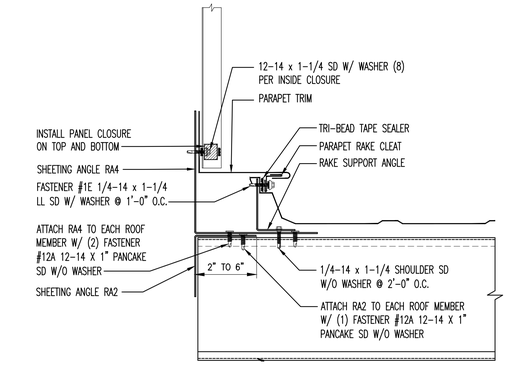
NOTE: SIMILAR DETAIL SHALL BE USED FOR DUCT PENETRATIONS AT EXISTING PRE-ENGINEERED BUILDING (PEMB). PROVIDE DUCT SUPPORTS (RAILS) PER PEMB MANUFACTURER'S RECOMMENDATIONS



ROOF EQUIPMENT RAIL DETAIL AT EXHAUST FANS (4 / A-122)

N.T.S.

NOTE: PROVIDE DUCT SUPPORTS (RAILS) PER PEMB MANUFACTURER'S RECOMMENDATIONS.



LOW ROOF WALL DETAIL (5 / A-122)

3"=1'-0"

0 1

SCALE: 3" = 1'-0"

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV
MM MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

ANTHONY F. PERRI NO. 099906 STATE OF NEW YORK LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SINCE 1state

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKF

DRAWN BY: CN

REVIEWED BY: RKF

PROJECT MANAGER: BG

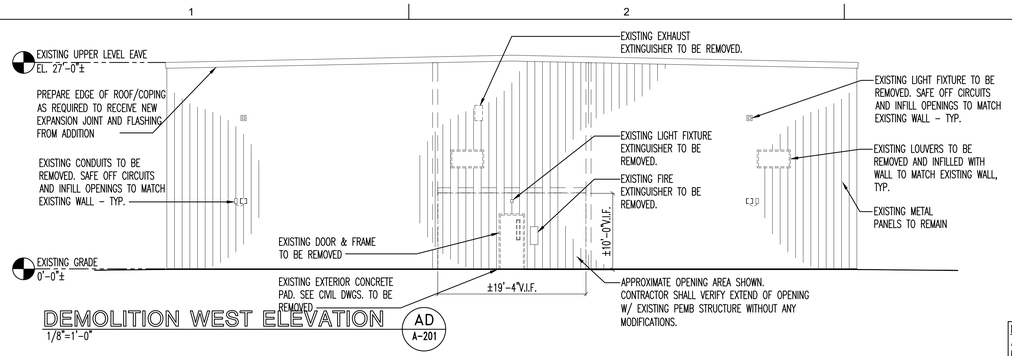
PROJECT NUMBER: 507101521

SHEET TITLE: **ROOF DETAILS**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: A-122

DWG NAME: C:\USERS\FLO897041\MOTT MACDONALD\BELEN GARCIA - SHARE WITH PAM-BEN\507101521\507101521-A-122.DWG SAVE DATE: 11/10/2022 6:24 PM BY: OU94892 PLOT DATE: 11/16/2022 11:02 AM

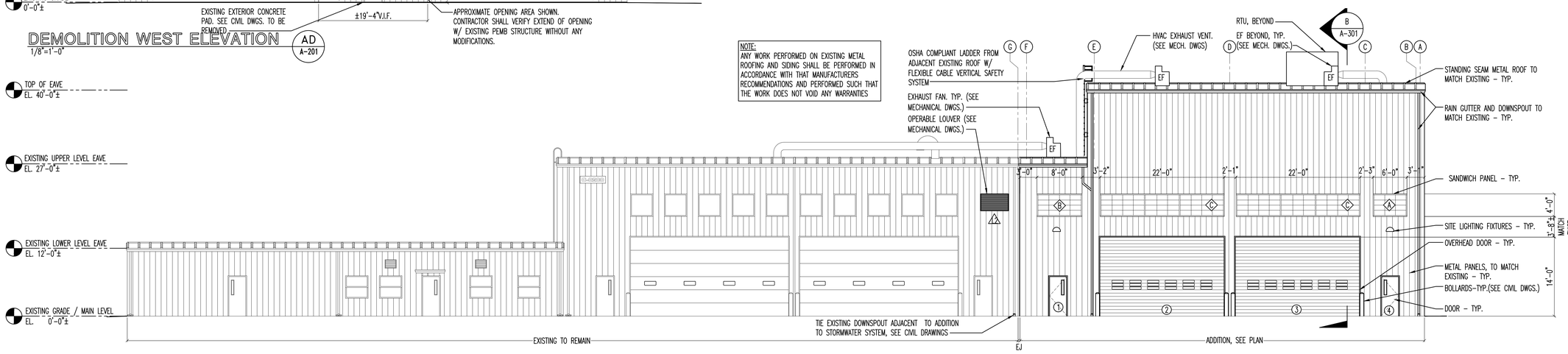


DEMOLITION WEST ELEVATION
1/8"=1'-0" — AD / A-201

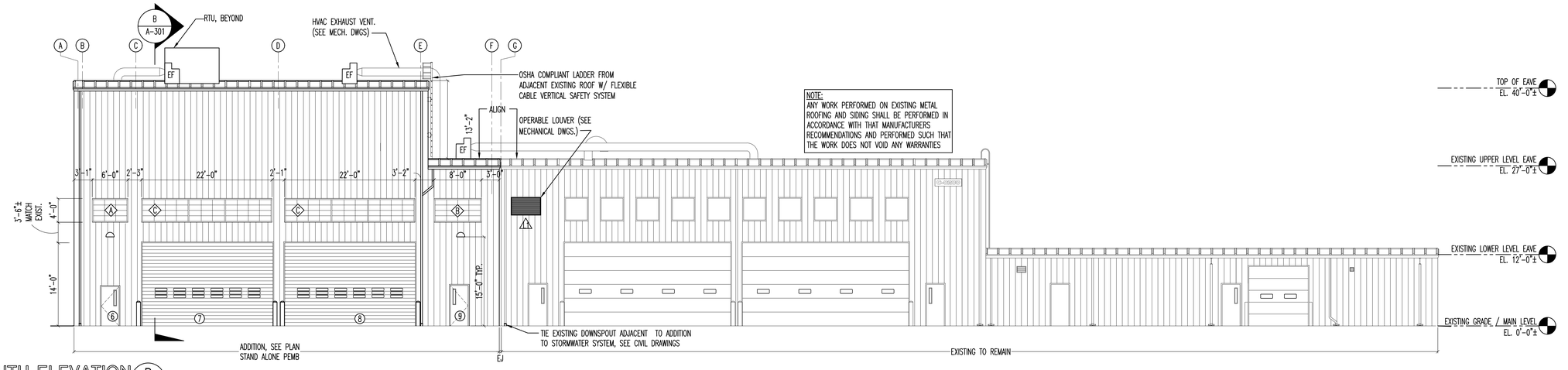
LEGEND

- (X) DOOR NUMBER (SEE DOOR AND FRAME SCHEDULE ON DWG A601).
- ◇X SANDWICH PANEL TYPE (SEE SANDWICH PANEL SCHEDULE ON DWG A602 AND EXTERIOR ELEVATIONS FOR LOCATIONS).
- △X LOUVER TYPE (SEE MECHANICAL DWGS.; SEE LOUVER SCHEDULE ON DWG A601; SEE EXTERIOR ELEVATIONS FOR LOCATIONS).

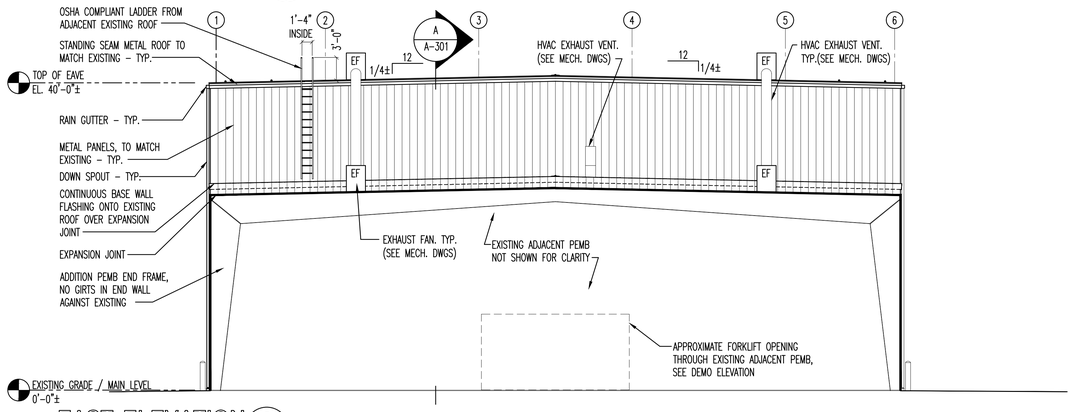
NOTE:
ANY WORK PERFORMED ON EXISTING METAL ROOFING AND SIDING SHALL BE PERFORMED IN ACCORDANCE WITH THAT MANUFACTURERS RECOMMENDATIONS AND PERFORMED SUCH THAT THE WORK DOES NOT VOID ANY WARRANTIES



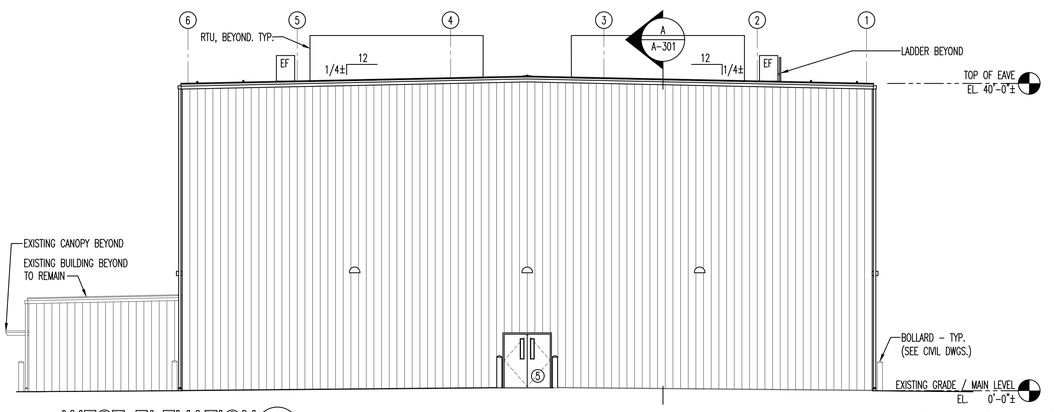
NORTH ELEVATION
1/8"=1'-0" — A / A-201



SOUTH ELEVATION
1/8"=1'-0" — B / A-201



EAST ELEVATION
1/8"=1'-0" — C / A-201



WEST ELEVATION
1/8"=1'-0" — D / A-201

0 4 8 16
SCALE: 1/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV
MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK — VINCENT F. PEDICINI — NO. 099906 — LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD — SEMPER PARATUS — SINCE 1stAD

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

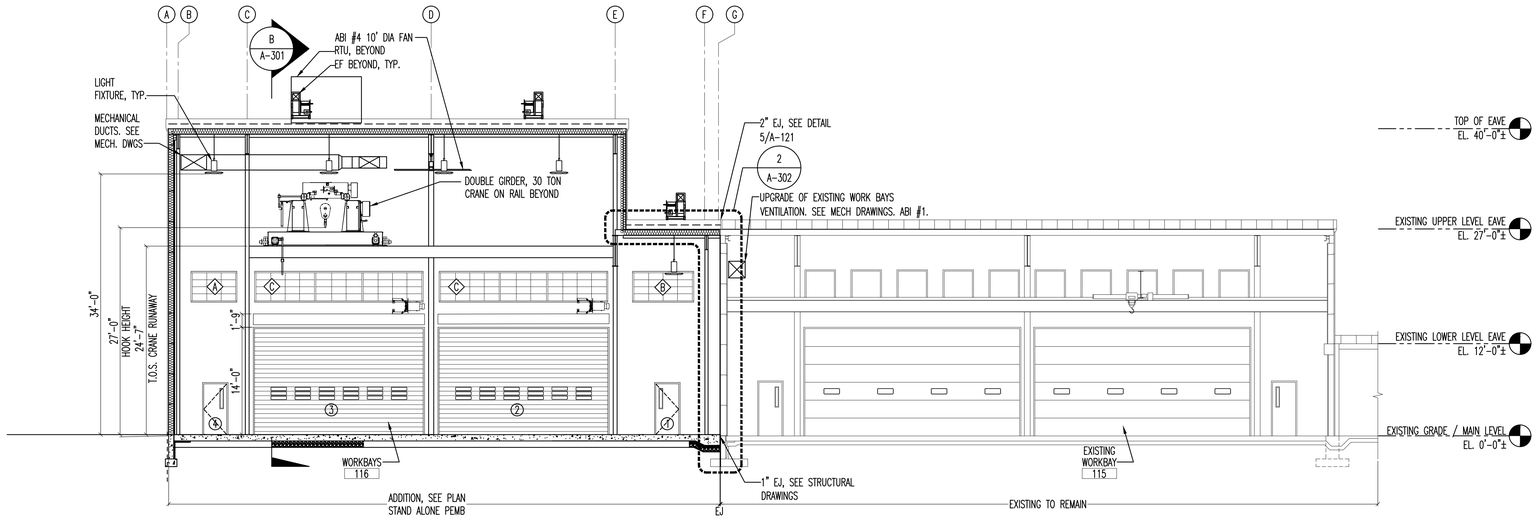
DESIGNED BY: RKF
DRAWN BY: CN/KZ
REVIEWED BY: RKF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **EXTERIOR ELEVATIONS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: A-201

BID DOCUMENTS

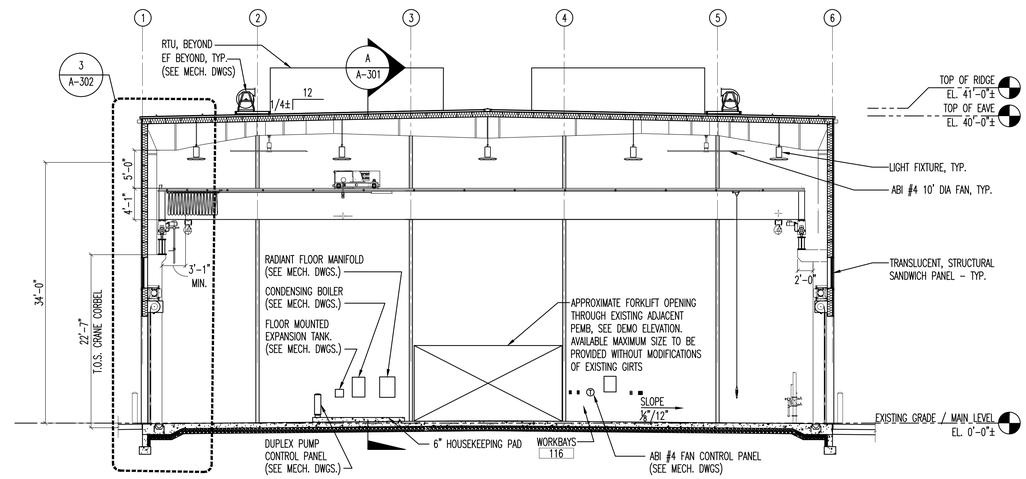
DWG NAME: C:\USERS\FLO8970\DMS7714950\7101521-A-201.DWG SAVE DATE: 11/10/2022 8:24 PM BY: OU94682. PLOT DATE: 11/16/2022 9:56 AM

LEGEND

- (X) DOOR NUMBER (SEE DOOR AND FRAME SCHEDULE ON DWG A601).
- ◇X SANDWICH PANEL TYPE (SEE SANDWICH PANEL SCHEDULE ON DWG A602 AND EXTERIOR ELEVATIONS FOR LOCATIONS).
- △X LOUVER TYPE (SEE MECHANICAL DWGS.; SEE LOUVER SCHEDULE ON DWG A601; SEE EXTERIOR ELEVATIONS FOR LOCATIONS).



SECTION A-A (A / A-301)
1/8"=1'-0"



SECTION B-B (B / A-301)
1/8"=1'-0"

0 4 8 16
SCALE: 1/8" = 1'-0"

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV
MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK — ANTHONY F. PEDICINI — LICENSED PROFESSIONAL ENGINEER — NO. 099098

OHIO NATIONAL GUARD — SINCE 1791

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

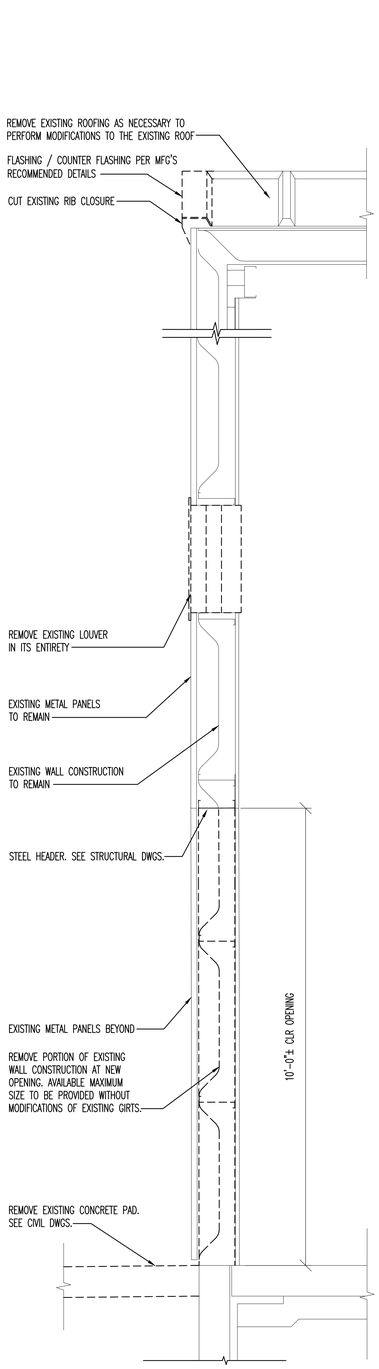
REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

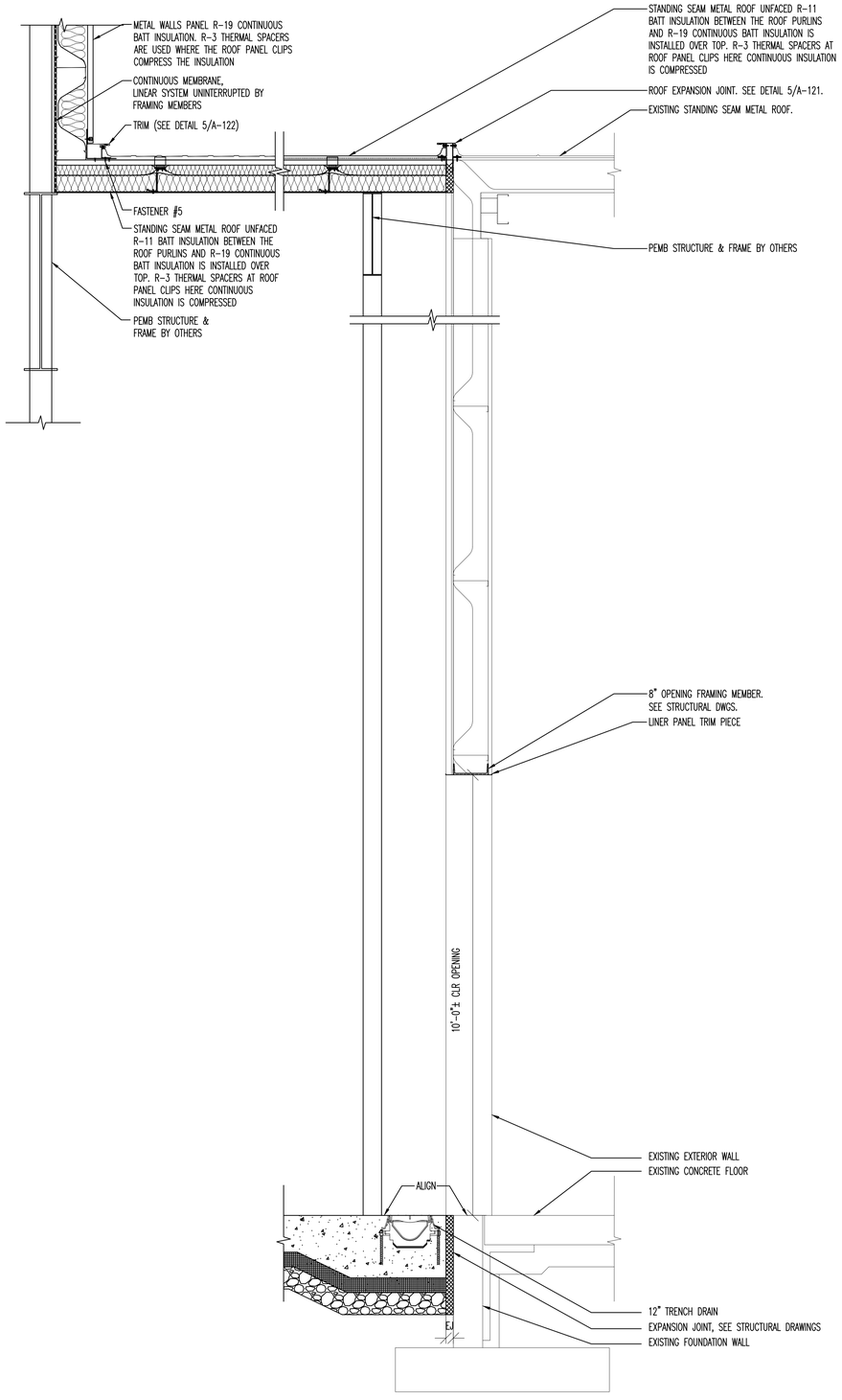
PROJECT INFORMATION:

DESIGNED BY: RKF
DRAWN BY: CN/KZ
REVIEWED BY: RKF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **BUILDING SECTIONS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: A-301

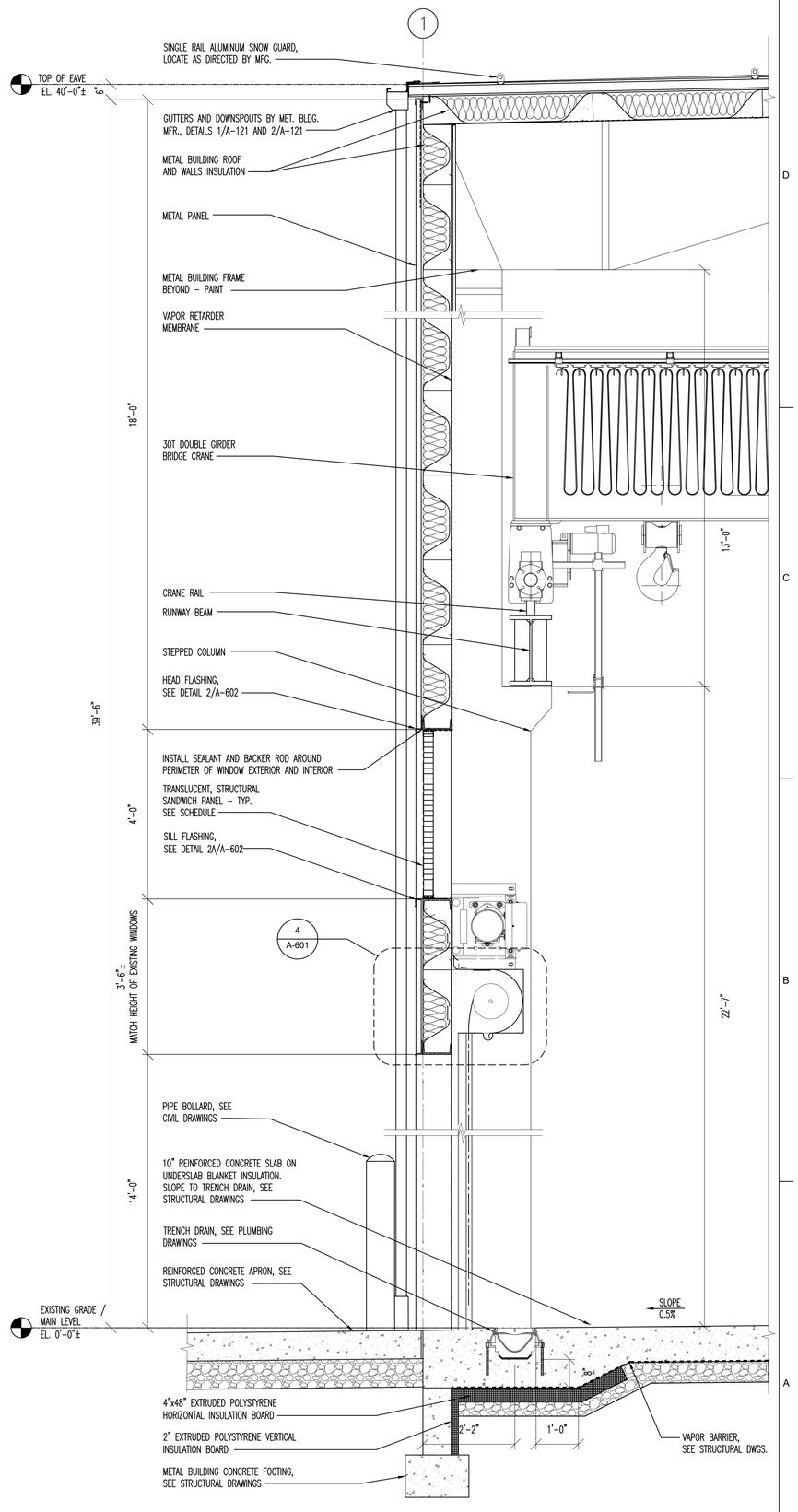
DWG NAME: C:\USERS\FLO89704\DMS7714\9507101521-A-301.DWG SAVE DATE: 11/10/2022 6:24 PM BY: OU94692 PLOT DATE: 11/16/2022 9:54 AM



DEMOLITION WALL SECTION 1 A-302
3/4"=1'-0"



WALL SECTION 2 A-302
3/4"=1'-0"



WALL SECTION 3 A-302
3/4"=1'-0"

0 1 2 3
SCALE: 3/4" = 1'-0"

FSB FEDERAL DESIGN GROUP JV
MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

THE STATE OF NEW YORK
ANTHONY F. PEDICINI
LICENSED PROFESSIONAL ENGINEER
NO. 099906

OHIO NATIONAL GUARD
SINCE 1state

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	RKF
DRAWN BY:	CN/KZ
REVIEWED BY:	RKF
PROJECT MANAGER:	BG

PROJECT NUMBER: 507101521

SHEET TITLE: **WALL SECTIONS AND DETAILS**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: A-302

BID DOCUMENTS

DWG NAME: C:\USERS\FLO897040\DMS7714\95\507101521-A-302.DWG SAVE DATE: 11/10/2022 6:24 PM BY: OU894692 PLOT DATE: 11/16/2022 9:39 AM

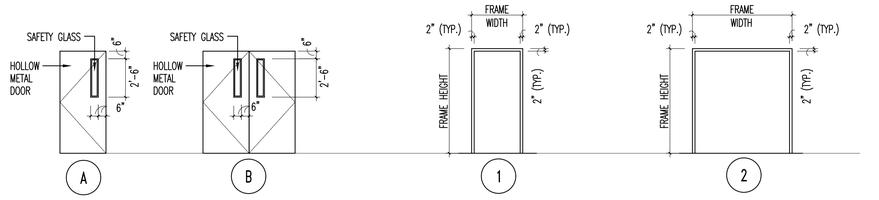
DOOR AND FRAME SCHEDULE

DOOR NO.	DOORS FROM ROOM NAME	FROM NO.	TO ROOM NAME	TO NO.	TYPE	MAT	FINISH	SIZE WIDTH	SIZE HEIGHT	SIZE THK	FRAME SIZE WIDTH	FRAME SIZE HEIGHT	FRAME TYPE	FRAME MAT	FRAME JAMB	FRAME HEAD	FIRE RATING	THRESHOLD DTL	THRESHOLD MAT	HDWR SET	REMARKS
1	WORK BAY	116	EXTERIOR	–	A	HM	PTD	3'–0"	7'–0"	1 3/4"	3'–4"	7'–2"	1	HM	J1	H1	–	T1	ALUM	HW–1	–
2	EXTERIOR	–	WORK BAY	116	–	ST	PTD	22'–0"	14'–0"	–	–	–	–	ST	5/A–601	4/A–601	–	–	–	–	ROLL–UP COILING DOOR
3	EXTERIOR	–	WORK BAY	116	–	ST	PTD	22'–0"	14'–0"	–	–	–	–	ST	5/A–601	4/A–601	–	–	–	–	ROLL–UP COILING DOOR
4	WORK BAY	116	EXTERIOR	–	A	HM	PTD	3'–0"	7'–0"	1 3/4"	3'–4"	7'–2"	1	HM	J1	H1	–	T1	ALUM	HW–1	–
5	WORK BAY	116	EXTERIOR	–	B	HM	PTD	(2)3'–0"	7'–0"	1 3/4"	6'–4"	7'–2"	2	HM	J1	H1	–	T1	ALUM	HW–2	–
6	WORK BAY	116	EXTERIOR	–	A	HM	PTD	3'–0"	7'–0"	1 3/4"	3'–4"	7'–2"	1	HM	J1	H1	–	T1	ALUM	HW–1	–
7	EXTERIOR	–	WORK BAY	116	–	ST	PTD	22'–0"	14'–0"	–	–	–	–	ST	5/A–601	4/A–601	–	–	–	–	ROLL–UP COILING DOOR
8	EXTERIOR	–	WORK BAY	116	–	ST	PTD	22'–0"	14'–0"	–	–	–	–	ST	5/A–601	4/A–601	–	–	–	–	ROLL–UP COILING DOOR
9	WORK BAY	116	EXTERIOR	–	A	HM	PTD	3'–0"	7'–0"	1 3/4"	3'–4"	7'–2"	1	HM	J1	H1	–	T1	ALUM	HW–1	–

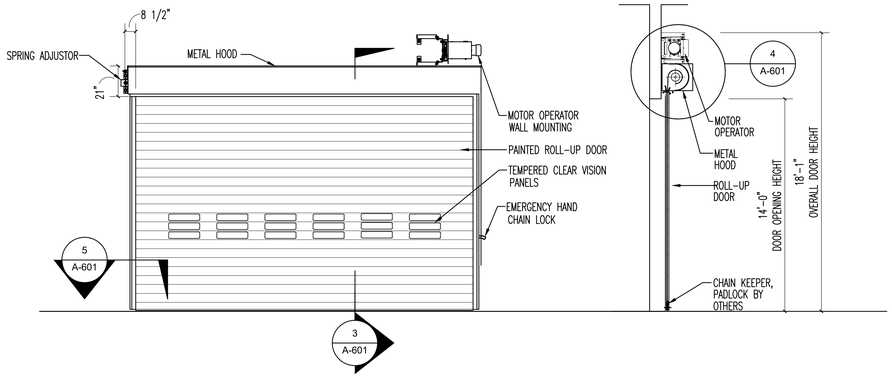
ROOM FINISH SCHEDULE

SPACE	FLOOR	BASE	WALL	CEILING MATERIAL	CEILING HEIGHT	REMARKS
WORK BAY 116	CONC	–	PTD/MTL	PTD MTL	VARIES, EXPOSED	PEMB LINER PANELS

LEGEND:
ALUM ALUMINUM
CONC CONCRETE
PTD PAINTED
HM HOLLOW METAL
MTL METAL
ST STEEL
PEMB PRE–ENGINEERED MANUFACTURED BUILDING
FAC FACTORY FINISH

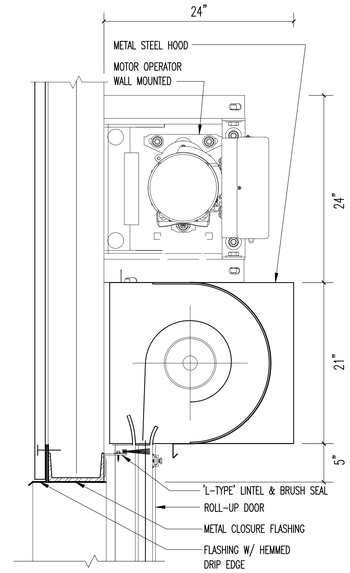


DOOR AND FRAME TYPES
NTS
1 / A–601

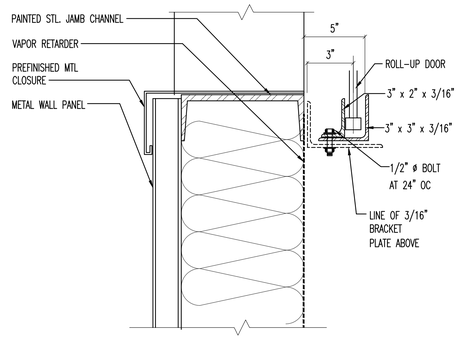


COILING DOOR ELEVATION
1/4"=1'–0"
2 / A–601

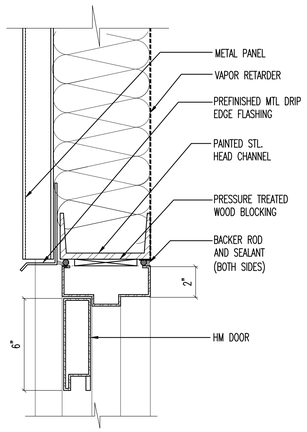
COILING DOOR SECTION
1/4"=1'–0"
3 / A–601

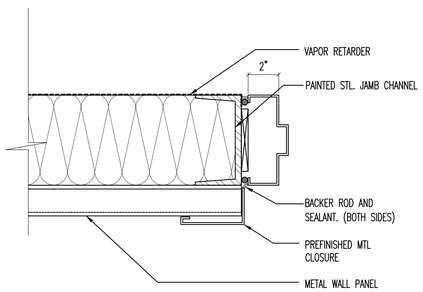


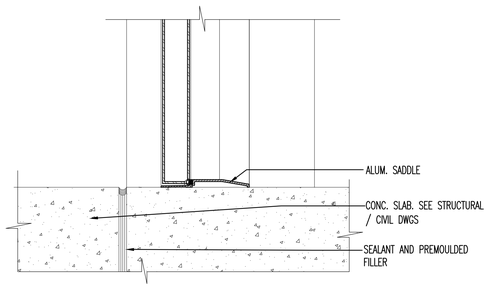
COILING DOOR HEAD DETAIL
1 1/2"=1'–0"
4 / A–601



COILING DOOR GUIDE DETAIL
3"=1'–0"
5 / A–601







DOOR HEAD, JAMB AND THRESHOLD DETAILS
3"=1'–0"
6 / A–601

SCALE: 3" = 1'–0"
SCALE: 1–1/2" = 1'–0"
SCALE: 1/4" = 1'–0"

FSB FEDERAL DESIGN GROUP JV
MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

STATE OF NEW YORK · ANTHONY F. FEDERICO · LICENSED PROFESSIONAL ENGINEER · NO. 099096

OHIO NATIONAL GUARD · SINCE 1793

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
B	B-2 (75%) SUBMISSION	12/17/2021
B	B-1 (60%) SUBMISSION	03/04/2021
A	A-2 (35%) REPORT	12/01/2020
△	DESCRIPTION	DATE

PROJECT INFORMATION:
DESIGNED BY: RKF
DRAWN BY: CN/KZ
REVIEWED BY: RKF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **DOOR AND ROOM FINISH SCHEDULE AND DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: A-601

BID DOCUMENTS

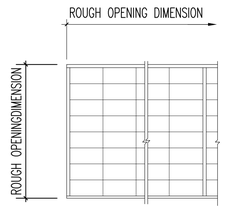
DWG NAME: C:\USERS\FLO897\04\DMS7714\507101521-A-601.DWG SAVE DATE: 11/10/2022 6:23 PM BY: OU94692 PLOT DATE: 11/16/2022 9:35 AM

SANDWICH PANEL SCHEDULE

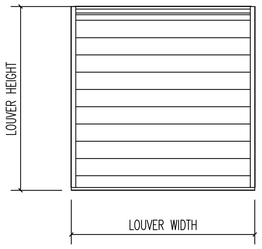
PANEL TYPE	SIZE WIDTH	SIZE HEIGHT	STYLE	MATERIAL	HEAD	JAMB	SILL	REMARKS
A	6'-0"	4'-0"	FIXED	ALUM	H1	J1	S1	TRANSLUCENT, STRUCTURAL SANDWICH PANEL
B	8'-0"	4'-0"	FIXED	ALUM	H1	J1	S1	TRANSLUCENT, STRUCTURAL SANDWICH PANEL
C	22'-0"	4'-0"	FIXED	ALUM	H1	J1	S1	TRANSLUCENT, STRUCTURAL SANDWICH PANEL

LOUVER SCHEDULE

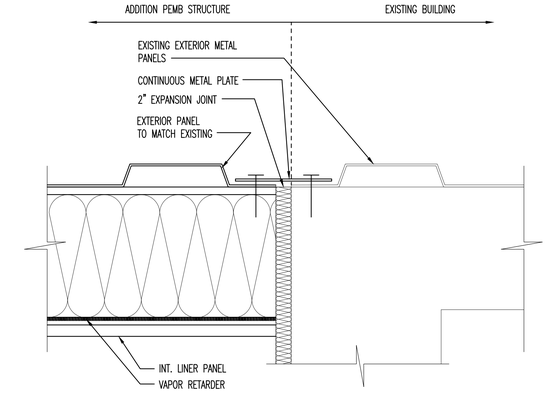
LOUVER TYPE	SIZE WIDTH	SIZE HEIGHT	SIZE DEPTH	STYLE	MATERIAL	HEAD	JAMB	SILL	REMARKS
1	5'-0"	3'-0"	6"	OPERABLE	ALUMINUM	H2	J2	S2	SINGLE BLADE OPERABLE LOUVER
1	5'-0"	3'-0"	6"	OPERABLE	ALUMINUM	H2	J2	S2	SINGLE BLADE OPERABLE LOUVER



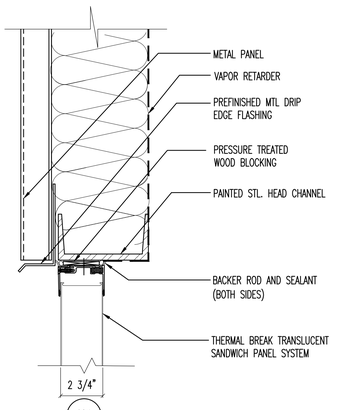
TRANSLUCENT PANEL ELEVATION 1 / A-602
NTS



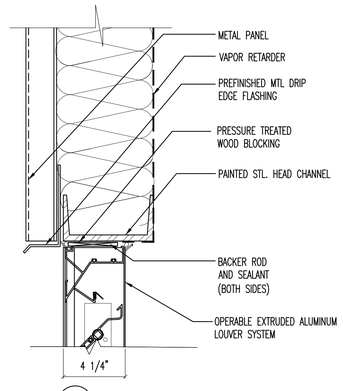
LOUVER ELEVATION 4 / A-602
NTS



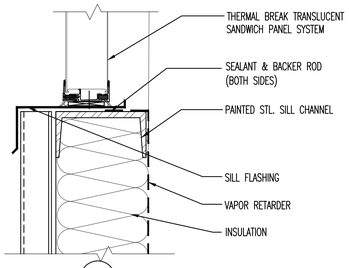
PEMB STRUCTURE ADDITION ATTACHMENT TO EXISTING BUILDING 8 / A-602
3"=1'-0"



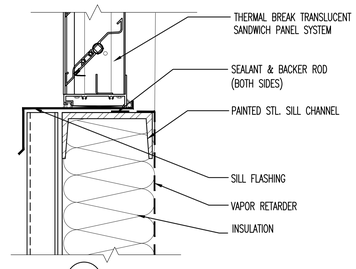
TRANSLUCENT PANEL HEAD DETAIL 2 / A-602
3"=1'-0"



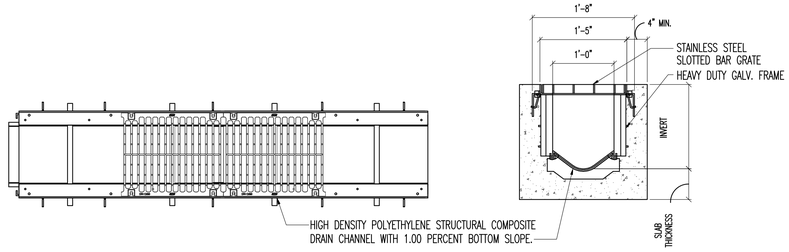
LOUVER HEAD DETAIL 5 / A-602
3"=1'-0"



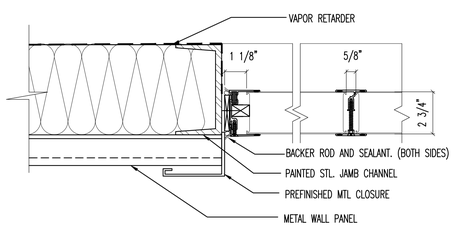
TRANSLUCENT PANEL SILL DETAIL 2A / A-602
3"=1'-0"



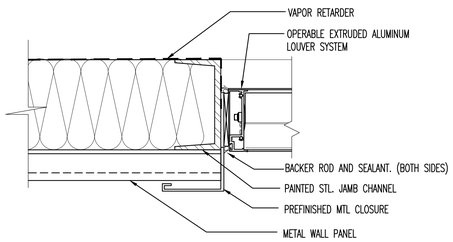
LOUVER SILL DETAIL 6 / A-602
3"=1'-0"



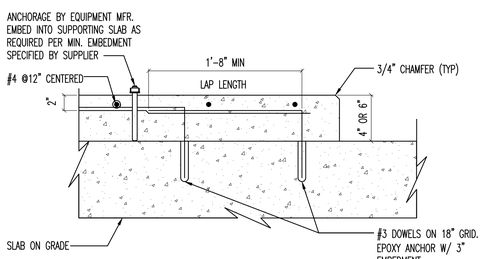
UTILITY TRENCH DETAIL ABI#5 9 / A-602
3"=1'-0"



TRANSLUCENT PANEL JAMB DETAIL 3 / A-602
3"=1'-0"



LOUVER JAMB DETAIL 7 / A-602
3"=1'-0"



HOUSE KEEPING PAD DETAIL 10 / A-602
1-1/2"=1'-0"

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

FSB FEDERAL DESIGN GROUP JV
MM MOTT MACDONALD
111 Wood Ave South
Iselin, NJ 08830-4112
973.379.3400 | mottmac.com

THE STATE OF NEW YORK ANTHONY F. PEDICINI LICENSED PROFESSIONAL ENGINEER NO. 099906

OHIO NATIONAL GUARD SINCE 1791

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022
B	B-2 (75%) SUBMISSION	12/17/2021
B	B-1 (60%) SUBMISSION	03/04/2021
A	A-2 (35%) REPORT	12/01/2020
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKF
DRAWN BY: CN/KZ
REVIEWED BY: RKF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **WINDOW AND LOUVER SCHEDULES AND DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: A-602

BID DOCUMENTS

DWG NAME: C:\USERS\FLO897\04\DMS7714\9507101521-A-602.DWG SAVE DATE: 11/12/2022 2:56 PM BY: FLO89704 PLOT DATE: 11/16/2022 9:28 AM

GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH THE OHIO MECHANICAL CODE, AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT SITE TO VERIFY ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
3. THE CONTRACTOR SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, ETC. FOR A COMPLETE OPERABLE INSTALLATION. ALL MATERIALS SHALL BE NEW, SPECIFICATION GRADE, AND U.L. LISTED PRODUCTS, UNLESS NOTED OTHERWISE.
4. COORDINATE ALL WORK AND SCHEDULES WITH OWNER, CONTRACTING OFFICER, AND OTHER CONTRACTORS AND APPROPRIATE UTILITY COMPANIES.
5. PRIOR TO BIDDING, ALL CONTRACTORS, SUB-CONTRACTORS, VENDORS, AND SUPPLIERS ARE DIRECTED TO READ SPECIFICATION SECTIONS REGARDING PROJECT SUBMITTALS.
6. ALL ELECTRICAL INSTALLATION PROVIDED UNDER MECHANICAL SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO: PACKAGED MOTOR STARTER PANELS, PACKAGED OR CUSTOM CONTROL PANELS, DISCONNECT SWITCHES, CONTROL WIRING, POWER WIRING, NAMEPLATES, RACEWAYS, ETC. SHALL BE IN ACCORDANCE WITH APPLICABLE ELECTRICAL SPECIFICATION SECTIONS.
7. PROVIDE PROPER SEALS AND FIRE STOPPING AT ALL WALL, FLOOR AND CEILING PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS FOR WALLS, FLOORS, AND CEILINGS.
8. PROVIDE BALANCING DAMPERS AT ALL BRANCH TAKE-OFFS IN ALL SUPPLY AIR, RETURN AIR, AND EXHAUST AIR SYSTEMS AND WHERE REQUIRED TO FACILITATE PROPER BALANCING OF AIR SYSTEMS.
9. REFER TO HVAC SEQUENCES OF OPERATION (DRAWINGS AND/OR SPECIFICATIONS). PROVIDE ALL EQUIPMENT, MATERIALS, ETC., AS REQUIRED TO ACHIEVE THOSE SEQUENCES.
10. MAKE EQUIPMENT SELECTIONS AND PROVIDE INSTALLATIONS WHICH ARE EQUAL TO OR LESS THAN THE NOISE LEVELS NOTED ON THE PLANS.
11. MAINTAIN "AS-BUILT" RECORDS OF ALL INSTALLED ITEMS AND PROVIDE TO CONTRACTING OFFICER AT PROJECT COMPLETION.

NOTE:
THESE NOTES ARE GENERAL IN NATURE, SPECIFIC MEANS, METHODS AND MATERIALS ARE DETAILED IN THE SPECIFICATIONS AND CONTRACTOR IS DIRECTED TO THOROUGHLY REVIEW THE FULL SPECIFICATION. CONTRACT SPECIFICATIONS SHALL GOVERN IN CASE OF CONFLICT.

SYMBOLS LEGEND

EQUIPMENT SYMBOLS

- AD — AIR DEVICE
- B — BOILER
- EF — EXHAUST FAN
- ET — EXPANSION TANK
- HV — HEAT AND VENTILATION UNIT
- L — LOUVER
- MAU — MAKE-UP AIR UNIT
- P — PUMP – HVAC
- WH — WATER HEATER

GENERAL SYMBOLS

- INSERT INDICATES SECTION NUMBER / INSERT INDICATES DRAWING NUMBER
- INSERT INDICATES PLAN OR DETAIL NUMBER / INSERT INDICATES DRAWING NUMBER
- INDICATES CONNECTION POINT BETWEEN NEW AND EXISTING FACILITIES
- INDICATES TERMINATION POINT BETWEEN EXISTING AND DEMOLITION FACILITIES
- SQUARE FEET
- SQUARE INCHES
- FLOW ARROW
- LEADER ARROWHEAD
- BREAK LINE (SINGLE LINE)
- CENTERLINE
- ø DIAMETER

DUCTWORK LEGEND

- SUPPLY AIR
- RETURN OR EXHAUST AIR
- DUCTWORK DEMOLITION
- A.D. / A.D. — ACCESS DOOR IN SIDE OR BOTTOM OF DUCT
- FLEXIBLE CONNECTION
- V.D. — VOLUME DAMPER
- FAN
- SUPPLY AIR DIFFUSER
- RETURN AIR GRILL
- EXHAUST AIR CEILING DEVICE
- ABOVE 8" – SQUARE ELBOWS W/TURNING VANES 8" AND BELOW – RADIUS ELBOWS
- DUCT ELBOW UP
- DUCT ELBOW DN
- T — THERMOSTAT

PIPING LEGEND

PIPING SYMBOLS

- HWS — HEATING HOT WATER SUPPLY
- HWR — HEATING HOT WATER RETURN
- DOMESTIC COLD WATER

PIPING ACCESSORY SYMBOLS

- RISER
- DROP
- SHUT OFF VALVE IN PIPE RISER
- SHUT OFF VALVE IN PIPE DROP
- ANGLE SHUT OFF VALVE
- SHUT OFF VALVE
- BUTTERFLY VALVE
- TRIPLE DUTY VALVE
- BALL VALVE
- GLOBE VALVE
- CHECK VALVE
- GATE VALVE
- 2 WAY CONTROL VALVE
- 3 WAY CONTROL VALVE
- 2 WAY SOLENOID VALVE
- 3 WAY SOLENOID VALVE
- STRAINER
- STRAINER WITH BLOW OFF VALVE
- PRESSURE REDUCING VALVE
- PLUG COCK
- NEEDLE VALVE
- PRESSURE GAUGE W/ SNUBBER AND NEEDLE VALVE
- PRESSURE GAUGE W/ SIPHON AND NEEDLE VALVE
- CAPPED PRESSURE GAUGE TAP W/ NEEDLE VALVE
- BACK FLOW PREVENTOR ASSEMBLY
- REDUCER OR INCREASER, CONCENTRIC
- BALANCING VALVE
- PUMP
- UNION OR FLANGED CONNECTION (DIELECTRIC AS REQUIRED)
- ANCHOR
- PLUG, CAP OR BLIND FLANGE
- P/T — PRESSURE/TEMPERATURE TEST STATION
- T — THERMOMETER WELL
- P.G. — PRESSURE GAUGE TAPPING
- THERMOMETER
- PRESSURE OR VACUUM GAUGE
- A.S.M.E. RELIEF OR SAFETY VALVE
- INDICATES PIPE PITCHING DOWNWARD IN DIRECTION OF ARROW
- V — VACUUM BREAKER
- A — AUTOMATIC AIR VENT W/ SHUTOFF VALVE AND CAP
- M — 1/2" MANUAL AIR VENT
- FLEXIBLE PIPING CONNECTOR
- FLOW CONTROL DEVICE
- FM — FLOW METER (GAL)
- D — DRAIN VALVE W/ CAPPED HOSE END
- STOP CHECK VALVE
- PIPE BRANCH CONNECTION OFF BOTTOM OF PIPE
- LOCK SHIELD SHUTOFF VALVE

ABBREVIATIONS

(E)	EXISTING	HTG	HEATING
(N)	NEW	HV	HEATING & VENTILATING UNIT
AD	ACCESS DOOR	H.V.A.C.	HEATING, VENTILATING AND COOLING
AFF	ABOVE FINISHED FLOOR	IN	INCHES
AHU	AIR HANDLING UNIT	INT	INITIAL
AI	ANALOG INPUT	KW	KILOWATT
AMB	AMBIENT	LAT	LEAVING AIR TEMPERATURE
AO	ANALOG OUTPUT	LB	POUND
AP	ACCESS PANEL	LD	LINEAR DIFFUSER
APD	AIR PRESSURE DROP	LDB	LEAVING DRY BULB TEMPERATURE
APPROX.	APPROXIMATE	LF	LINEAR FOOT
ARCH	ARCHITECTURAL	LOC	LOCATION
AS	AIR SEPARATOR	LRA	LOCKED ROTOR AMPS
ATC	AUTOMATIC TEMPERATURE CONTROL	LTH	LENGTH
AUTO	AUTOMATIC	LVG	LEAVING
AVG	AVERAGE	LWB	LEAVING WET BULB TEMPERATURE
B	BOILER	LWT	LEAVING WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM	MAX	MAXIMUM
B.F.	BELOW FLOOR	MBH	1000 BTU PER HOUR
BFP	BACK FLOW PREVENTOR OR BOILER FEED PUMP	MC	MECHANICAL CONTRACTOR
BHP	BRAKE HORSEPOWER OR BOILER HORSEPOWER	MECH	MECHANICAL
BI	BINARY INPUT	MER	MECHANICAL EQUIPMENT ROOM
BLD	BUILDING	MFR	MANUFACTURER
BO	BINARY OUTPUT	MIN	MINIMUM OR MINUTE
BOD	BOTTOM OF DUCT OR BASIS OF DESIGN	MOCP	MAXIMUM OVER-CURRENT PROTECTION
BOP	BOTTOM OF PIPE	MOD	MOTOR OPERATED DAMPER
BOT	BOTTOM	MODU	MODULATING
BTU	BRITISH THERMAL UNIT	MXB	MIXING BOX
BTUH	BTU PER HOUR	N	NEW
CAP	CAPACITY	NC	NORMALLY CLOSED
CEIL.	CEILING	NIC	NOT IN CONTRACT
C.F.	CUBIC FEET	NO	NORMALLY OPEN OR NUMBER
CFH	CUBIC FEET PER HOUR	NTS	NOT TO SCALE
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
C.I.	CAST IRON	OAH	OUTSIDE AIR ENTHALPY
CL	COOLING	OAI	OUTSIDE AIR INTAKE
COL	COLUMN	OAT	OUTSIDE AIR TEMPERATURE
CONN	CONNECTION	OC	ON CENTER
CONT	CONTINUATION	OED	OPEN ENDED DUCT
D	DROP	OEM	ORIGINAL EQUIPMENT MANUFACTURER
DB	DRY BULB	O.H.	OPPOSITE HAND
DCS	DISCONNECT SWITCH	OPER	OPERATING
DDC	DIRECT DIGITAL CONTROL	OPNG	OPENING
DEFL	DEFLECTION	P	PUMP
DET	DETAIL	PD	PRESSURE DROP
DIA	DIAMETER	PLN	PLENUM
DISC	DISCONNECT	POS	POSITION
DISCH	DISCHARGE	PRESS	PRESSURE
DI	DIGITAL INPUT	PRV	PRESSURE REDUCING VALVE
DN	DOWN	PSI	POUNDS PER SQUARE INCH
DO	DIGITAL OUTPUT	PSIA	POUNDS PER SQUARE INCH- ABSOLUTE
DR	DRAIN	PSIG	POUNDS PER SQUARE INCH- GAUGE
DWG	DRAWING	QUAN	QUANTITY
EA	EXHAUST AIR OR EACH	R	RISE
EAT	ENTERING AIR TEMPERATURE	RA	RETURN OR RELIEF AIR
EDB	ENTERING DRY BULB TEMPERATURE	RAH	RETURN AIR ENTHALPY
EF	EXHAUST FAN	RAT	RETURN AIR TEMPERATURE
EFF	EFFICIENCY	REQ	REQUIRED
EG	EXHAUST GRILLE	RET	RETURN
ELEC	ELECTRIC	REV	REVISION
ELEV	ELEVATION	RG	RETURN GRILLE
EM	EQUIPMENT MANUFACTURER	RLA	RUN LOAD AMPS
EMER	EMERGENCY	RPM	REVOLUTIONS PER MINUTE
ENT	ENTERING	RV	RELIEF VALVE
ER	EXHAUST REGISTER	SA	SUPPLY AIR
ERU	ENERGY RECOVERY UNIT	SD	SMOKE DAMPER OR DETECTOR
ESP	EXTERNAL STATIC PRESSURE	SEC	SECOND
ET	EXPANSION TANK	SEER	EFFICIENCY RATING
EWB	ENTERING WET BULB TEMPERATURE	SENS	SENSIBLE
EWT	ENTERING WATER TEMPERATURE	S.F.	SQUARE FEET
EXH	EXHAUST	SP	STATIC PRESSURE IN WG
EXIST	EXISTING	S/S	STAINLESS STEEL
EXT	EXTERNAL	SRV	SAFETY RELIEF VALVE
F	FILTER	ST	SOUND ATTENUATOR
FA	FACE AREA	STBY	STANDBY
FA	FROM ABOVE	SUP	SUPPLY
FAS	FIRE ALARM SYSTEM	TOD	TOP OF DUCT
FB	FROM BELOW	TOP	TOP OF PIPE
FC	FLEXIBLE CONNECTION	TOT	TOTAL
FIN	FINAL	TSP	TOTAL STATIC PRESSURE
FLA	FULL LOAD AMPS	TTS	TIGHT TO STRUCTURE
FLEX	FLEXIBLE	TYP	TYPICAL
FLR	FLOOR	UNO	UNLESS NOTED OTHERWISE
FLTR	FILTER	U.R.S.	UNDERSIDE OF ROOF STRUCTURE
FM	FLOW METERING DEVICE	VD	VOLUME DAMPER
FOB	FLAT ON BOTTOM	VEL	VELOCITY
FOT	FLAT ON TOP	VFD	VARIABLE FREQUENCY DRIVE
FPM	FEET PER MINUTE	VIB	VIBRATION
FPS	FEET PER SECOND	W/	WITH
FT	FLASH TANK OR FOOT OR FEET	W/O	WITHOUT
FUT	FUTURE	WB	WET BULB
GPH	GALLONS PER HOUR	WG	WATER GAUGE
GPM	GALLONS PER MINUTE	WMS	WIRE MESH SCREEN
GR	GRILLE	WPD	WATER PRESSURE DROP
HG	MERCURY	X.H.	EXTRA HEAVY
HP	HORSEPOWER		

FSB FEDERAL DESIGN GROUP JV

PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, GIRARD, OH 44420
PHONE: 330-545-9595
WWW.PCSENGINEERING.NET
PHONE: 215-572-0400
FAX: 215-572-0800

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

OHIO NATIONAL GUARD — SINCE 1stAD

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

△	DESCRIPTION	DATE

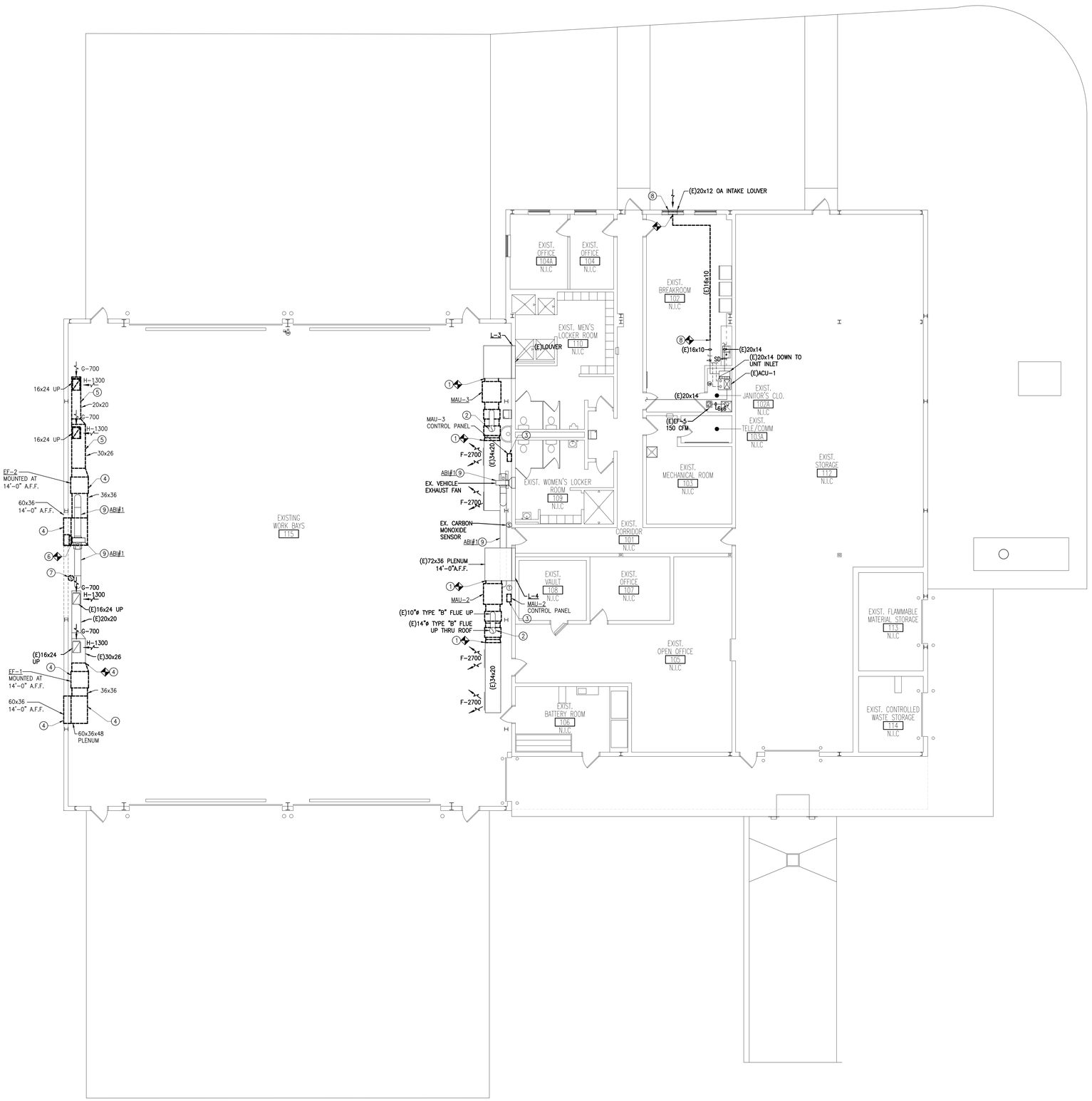
PROJECT INFORMATION:

DESIGNED BY: S.T.P.
DRAWN BY: R.C.D.S.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: **COVER SHEET**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: M001

BID DOCUMENTS

DEMOLITION SHEET NOTES:

1. THE EXISTING MAKE UP AIR UNIT IS TO BE REMOVED. THE EXISTING INSULATED PLENUM AND ASSOCIATED DUCTWORK ARE TO REMAIN.
2. THE EXISTING FLUE IS TO BE DISCONNECTED WITH THE REMOVAL OF THE MAKE-UP AIR UNIT. THE VERTICAL RISERS AND ROOF PENETRATION ARE TO REMAIN FOR RECONNECTION TO THE NEW MAKE-UP AIR UNIT DURING THE NEW WORK PHASE.
3. REMOVE THE EXISTING MAKE-UP AIR CONTROL PANEL AND ASSOCIATED WIRING.
4. THE EXISTING EXHAUST FAN AND ASSOCIATED PLENUM AND LOUVER ARE TO BE REMOVED, AND THE WALL SHALL BE PATCHED TO MATCH EXISTING. SEE ARCHITECTURAL PLANS FOR WALL PATCHING DETAIL.
5. THE EXISTING EXHAUST DUCTWORK IS TO BE REMOVED IN ITS ENTIRETY.
6. THE EXISTING VEHICLE EXHAUST FAN IS TO DISCONNECTED FROM THE EXISTING LOUVER, AND THE LOUVER IS TO BE REMOVED AND THE WALL PATCHED TO MATCH EXISTING. THE EXHAUST FAN IS TO BE ROTATED TO A VERTICAL DISCHARGE POSITION AND PREPPED FOR RECONNECTION DURING THE NEW WORK PHASE.
7. THE EXISTING CARBON MONOXIDE SENSOR IS TO BE REMOVED AND SET ASIDE FOR RELOCATION DURING THE NEW WORK PHASE.
8. THE EXISTING INTAKE LOUVER TO REMAIN. THE ASSOCIATED DUCTWORK ARE TO BE REMOVED BACK TO POINT OF TERMINATION.
9. ABI#1 THE EXISTING VEHICLE EXHAUST SYSTEM IS TO BE REMOVED IN ITS ENTIRETY. SEE NEW WORK PLANS FOR REPLACEMENT SYSTEM.



1 M101 FLOOR PLAN – DEMOLITION
SCALE: 1/8" = 1'-0"

8 6 4 2 0 8 16
SCALE 1/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV

PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, OHIO 44035
PHONE: 216-272-6800
WWW.PCSENGINEERING.NET
FAX: 215-272-6800

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299
REGISTERED

OHIO NATIONAL GUARD SINCE 1state

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co.,

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	S.T.P.
DRAWN BY:	R.C.D.S.
REVIEWED BY:	S.T.P.
PROJECT MANAGER:	BN

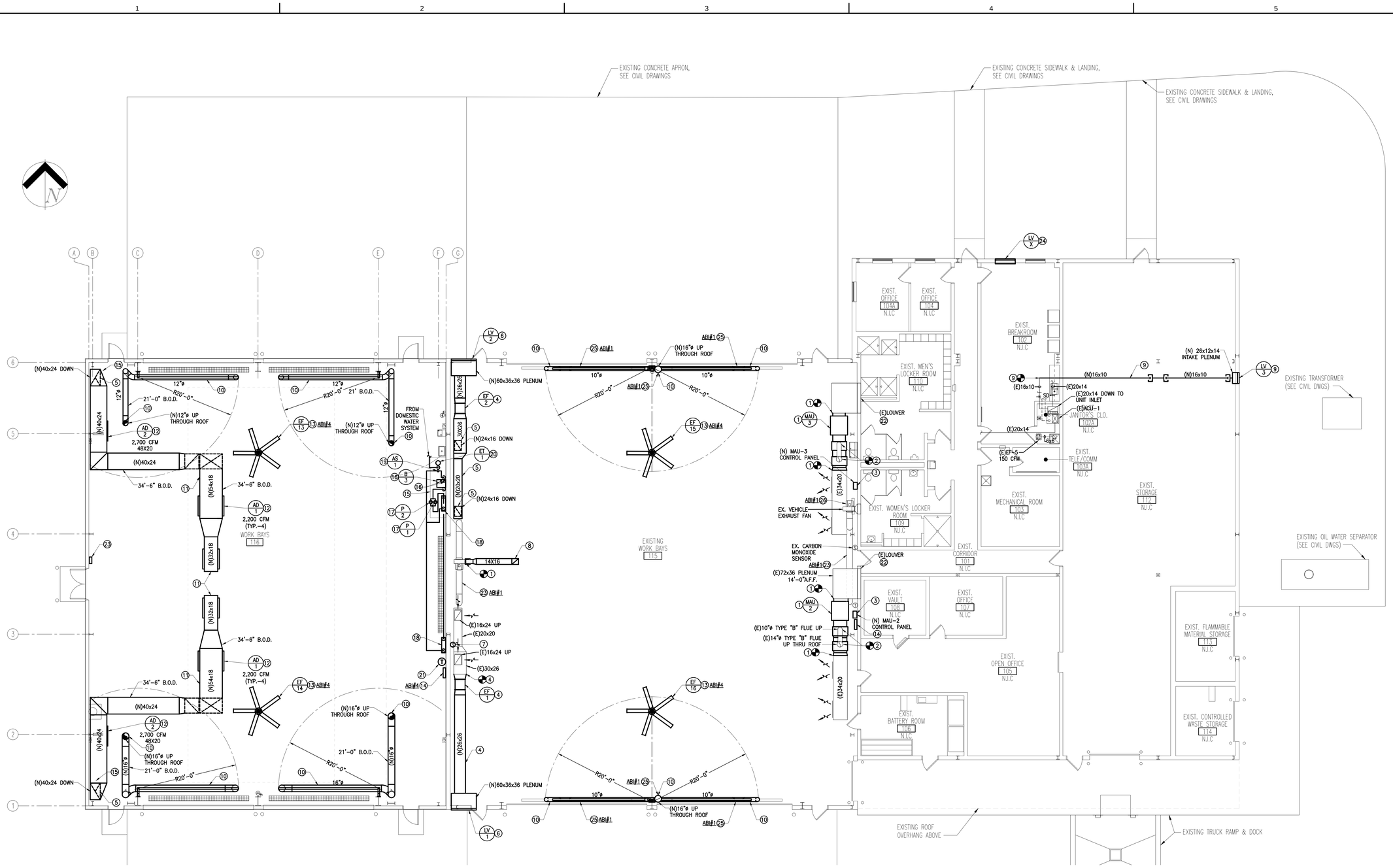
PROJECT NUMBER: 507101521

SHEET TITLE: **FLOOR PLAN - DEMOLITION**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: M101

BID DOCUMENTS



FLOOR PLAN – NEW WORK

1 / M102 SCALE: 1/8" = 1'-0"

SCALE 1/8" = 1'-0"

NEW WORK SHEET NOTES:

1. A NEW MAKE UP AIR UNIT IN THE LOCATION SHOWN. CONNECT TO THE EXISTING OUTSIDE AIR PLENUM AND SUPPLY DUCTWORK IN THE LOCATION SHOWN. A NEW 7 DAY THERMOSTAT SHALL BE PROVIDED AND INTERLOCKED TO BOTH MAKE UP AIR UNITS THAT SERVE WORK BAYS 115.
2. THE EXISTING VERTICAL RISERS OF THE FLUE ARE TO BE RECONNECTED WITH THE INSTALLATION OF THE MAKE-UP AIR UNIT.
3. NEW MAKE-UP AIR CONTROL PANEL AND ASSOCIATED WIRING IN THE LOCATION SHOWN.
4. NEW EXHAUST FAN AND ASSOCIATED DISCHARGE DUCTWORK IN THE LOCATION SHOWN.
5. NEW EXHAUST AIR DUCTWORK IN THE LOCATION SHOWN. DUCT DROPS SHALL TERMINATE 16" AFF. SEE DETAIL FOR INSTALLATION.
6. NEW EXHAUST AIR LOUVER AND ASSOCIATED PLENUM IN THE LOCATION SHOWN. NEW LOUVER AND PLENUM SHALL CONNECT TO THE NEW EXHAUST FAN AS SHOWN.
7. RELOCATE EXISTING CARBON MONOXIDE SENSOR TO THE NEW LOCATION SHOWN.
8. CONTRACTOR IS TO ROTATE THE EXISTING VEHICLE EXHAUST FAN TO A VERTICAL DISCHARGE POSITION, AND PROVIDE NEW EXHAUST DUCTWORK UP THROUGH THE ROOF AS SHOWN. EXHAUST DUCTWORK SHALL TERMINATE IN A GOOSENECK. SEE DETAIL FOR INSTALLATION.
9. NEW INTAKE LOUVER, PLENUM, AND ASSOCIATED DUCTWORK IN THE LOCATION SHOWN. DUCT SHALL OFFSET AS NECESSARY TO GO AROUND ANY BEAMS OR OBSTRUCTIONS IN THE STORAGE AREA. SEE DETAIL FOR LOUVER INSTALLATION. NEW OUTDOOR AIR DUCT IS TO BE EXTERNALLY INSULATED PER THE SPECIFICATIONS.
10. NEW RADIAL ARM EXHAUST SYSTEM IN THE LOCATION SHOWN. THE EXHAUST DUCT SHALL RISE TO AN EXHAUST FAN ON THE ROOF ABOVE. SEE PLAN M104 FOR ROOF MOUNTED EQUIPMENT.
11. NEW SUPPLY AIR DUCTWORK SHALL BE HUNG FROM THE STRUCTURE IN THE LOCATION SHOWN.
12. NEW SUPPLY AND RETURN AIR GRILLS SHALL BE INSTALLED ON THE VERTICAL FACE OF THE NEW DUCTWORK IN THE LOCATIONS SHOWN.
13. ABI#4 NEW HIGH BAY CEILING FAN SHALL BE INSTALLED IN THE LOCATION SHOWN.
14. ABI#4 NEW HIGH BAY CEILING FAN CONTROL PANEL AND ASSOCIATED CONTROL WIRING IN THE LOCATION SHOWN.
15. NEW 6" HOUSEKEEPING PAD IN THE LOCATION SHOWN.
16. NEW CONDENSING BOILER AND ASSOCIATED FLUE/INTAKE PIPING IN THE LOCATION SHOWN. FLUE AND INTAKE PIPING SHALL RISE UP THROUGH THE ROOF. SEE DETAIL FOR INSTALLATION.
17. NEW INLINE PUMP IN THE LOCATION SHOWN. SEE DETAILS FOR INSTALLATION.
18. RADIANT FLOOR MANIFOLD IN THE LOCATION SHOWN. SEE PLAN M103 FOR COMPLETE RADIANT FLOOR LAYOUT AND DETAILS.
19. NEW AIR SEPARATOR IN THE LOCATION SHOWN. SEE DETAIL FOR INSTALLATION.
20. NEW EXPANSION TANK IN THE LOCATION SHOWN. SEE DETAIL FOR INSTALLATION.
21. NEW 7 DAY THERMOSTAT IN THE LOCATION SHOWN. NEW THERMOSTAT SHALL BE INTERLOCKED WITH BOTH ROOF MOUNTED ERV'S AND SHALL CONTROL BOTH UNITS AT THE SAME TIME.
22. EXISTING LOUVER TO REMAIN. CONTRACTOR IS TO INTERLOCK OPERATION OF MOTOR OPERATED DAMPER WITH NEW UNITS.
23. ABI#1 THE EXISTING WORKBAY 115 VEHICLE EXHAUST SYSTEM IS TO BE REMOVED AND A NEW RADIAL ARM EXHAUST SYSTEM SHALL BE INSTALLED.
24. BLANK OFF EXISTING LOUVER. SEE DETAIL.
25. ABI#1 NEW RADIAL ARM EXHAUST SYSTEM IN EXISTING BAY 115 AS SHOWN. THE EXHAUST DUCT SHALL RISE TO AN EXHAUST FAN ON THE ROOF ABOVE. SEE PLAN M104 FOR ROOF MOUNTED EQUIPMENT.

FSB FEDERAL DESIGN GROUP JV

31 PARK AVENUE, ORCHARD PARK, NY 14075
WWW.PCSENGINEERING.NET
PHONE 716-667-8900
FAX 215-572-6800

PCS ENGINEERING
Preferred Construction Services, Inc.

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co.,

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

PROJECT INFORMATION:

DESIGNED BY: S.T.P.

DRAWN BY: R.C.D.S.

REVIEWED BY: S.T.P.

PROJECT MANAGER: BN

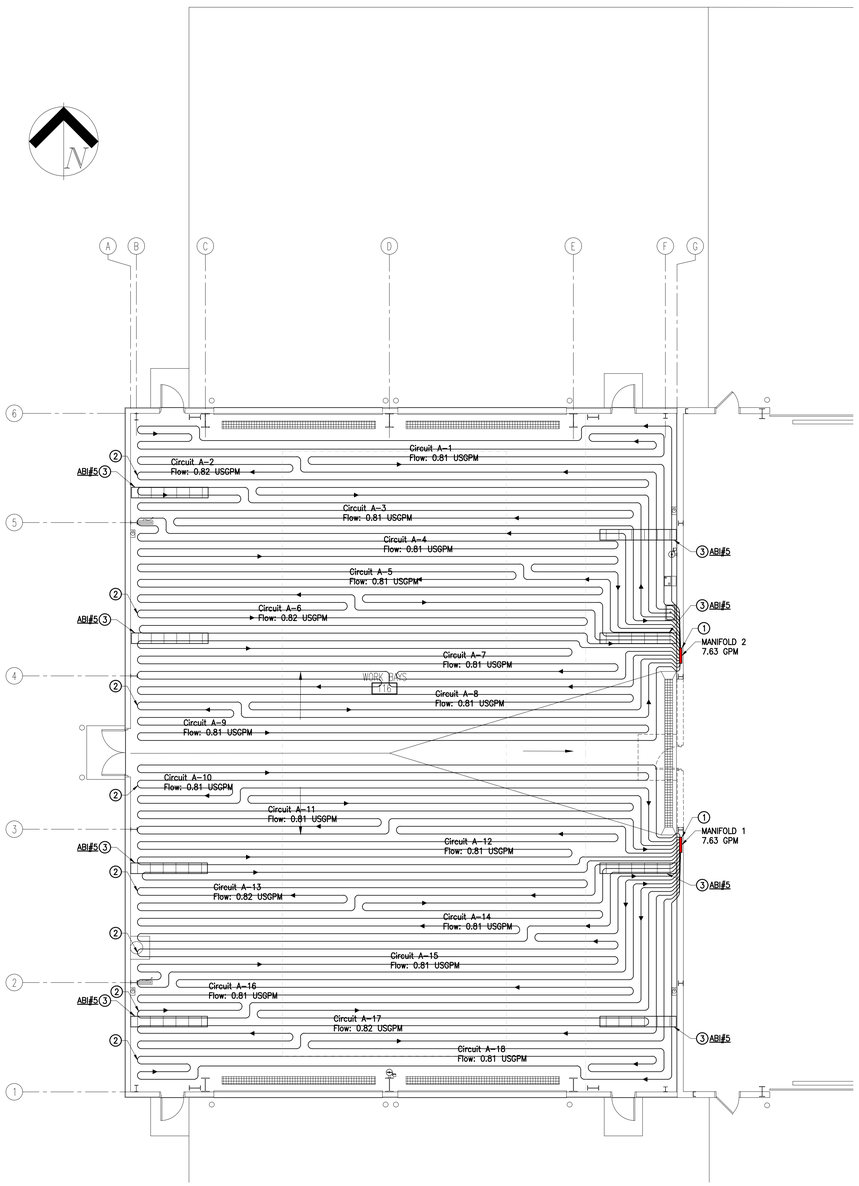
PROJECT NUMBER: 507101521

SHEET TITLE: FLOOR PLAN - NEW WORK

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: M102

BID DOCUMENTS



1 M103 PARTIAL FLOOR PLAN – NEW WORK

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

8 6 4 2 0 8 16

SCALE 1/8" = 1'-0"

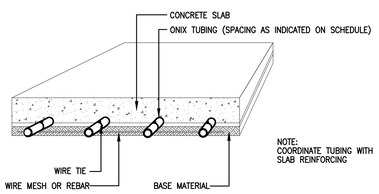
NEW WORK SHEET NOTES:

1. NEW RADIANT FLOOR MANIFOLD IN THE LOCATION SHOWN. SEE PLAN M102 FOR HOT WATER HEATING PIPING.
2. NEW RADIANT HEAT LOOPS EMBEDDED INTO THE SLAB IN THE LOCATIONS SHOWN. SEE DETAILS AND SCHEDULES ON THIS SHEET FOR MORE INFORMATION ABOUT THE RADIANT FLOOR SYSTEM.
3. ABI#5 THE RADIANT HEAT LOOP PIPING WILL NEED TO BE REVISED TO AVOID CONFLICT IF THE INCLUSION OF FLOOR UTILITY TRENCHES IS APPROVED.

MANIFOLDS							
NAME	MANIFOLD TYPE	# CIRCUITS	TUBING SIZE	SUPPLY TEMP (°F)	TOTAL FLOW (USGPM)	HEAD LOSS (FT WATER)	TOTAL LOAD (BTU/HR)
MANIFOLD 1	STAINLESS STEEL, 1¼" WITH FLOW METER, BALANCING/ISOLATION, AND BALL VALVES	9	5/8"	108	7.63	6.1	76,015
MANIFOLD 2	STAINLESS STEEL, 1¼" WITH FLOW METER, BALANCING/ISOLATION, AND BALL VALVES	9	5/8"	108	7.63	6.0	76,014

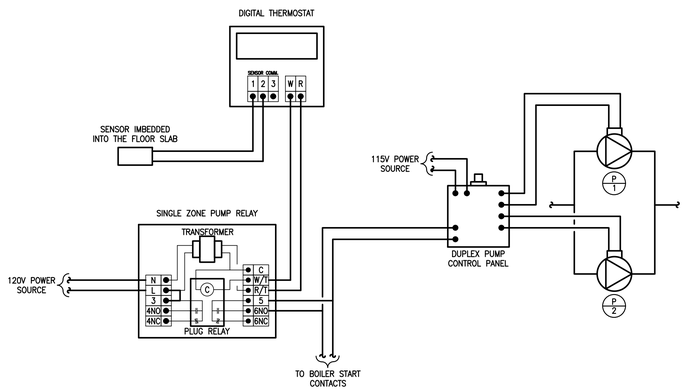
ZONES			
NAME	AREA (FT²)	# CIRCUITS	TOTAL LOAD (BTU/HR)
ZONE 101	6,442	18	152,029

CIRCUIT INFORMATION						
NUMBER	LENGTH (FT)	TUBE SIZE	MANIFOLD	FLOW (USGPM)	HEAD LOSS (FT WATER)	TOTAL LOAD (BTU/HR)
A-1	338	5/8"	MANIFOLD 2	0.85	4.0	8,464
A-2	337	5/8"	MANIFOLD 2	0.85	4.0	8,483
A-3	333	5/8"	MANIFOLD 2	0.85	4.0	8,427
A-4	331	5/8"	MANIFOLD 2	0.85	3.9	8,442
A-5	328	5/8"	MANIFOLD 2	0.84	3.9	8,390
A-6	330	5/8"	MANIFOLD 2	0.85	4.0	8,498
A-7	326	5/8"	MANIFOLD 2	0.84	3.9	8,414
A-8	327	5/8"	MANIFOLD 2	0.85	3.9	8,442
A-9	330	5/8"	MANIFOLD 2	0.85	3.9	8,456
A-10	328	5/8"	MANIFOLD 1	0.85	3.9	8,441
A-11	327	5/8"	MANIFOLD 1	0.85	3.9	8,442
A-12	326	5/8"	MANIFOLD 1	0.84	3.9	8,415
A-13	330	5/8"	MANIFOLD 1	0.85	4.0	8,484
A-14	330	5/8"	MANIFOLD 1	0.85	3.9	8,421
A-15	332	5/8"	MANIFOLD 1	0.85	3.9	8,442
A-16	334	5/8"	MANIFOLD 1	0.85	4.0	8,424
A-17	338	5/8"	MANIFOLD 1	0.85	4.1	8,481
A-18	339	5/8"	MANIFOLD 1	0.85	4.0	8,464



3 M103 RADIANT HEAT SLAB ON GRADE PIPING DETAIL

NO SCALE



SEQUENCE OF OPERATIONS:

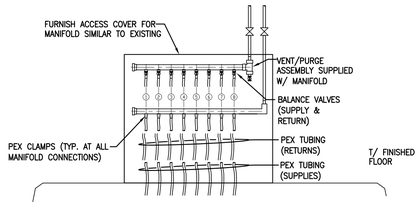
ON A CALL FOR HEAT, THE UPONOR THERMOSTAT SENDS A SIGNAL TO THE UPONOR ZONE PUMP RELAY. THE RELAY WILL THEN ENERGIZE.

UPON ENERGIZING, THE CONTROLLER SHALL SEND A SIGNAL TO THE BOILER AND PUMP TO START. THE DUPLEX PUMP CONTROL SHALL INDEX LEAD/LAG PUMP TO EQUAL RUN TIME. ON A PUMP FAILURE, THE LEAD PUMP WILL INDEX AUTOMATICALLY AND INDICATE AN ALARM.

ONCE THE THERMOSTAT SENSES THE HEATING CONDITION SATISFIED, THE OPPOSITE SHALL OCCUR.

2 M103 RADIANT FLOOR CONTROL SCHEMATIC

NO SCALE



4 M103 RADIANT HEAT MANIFOLD DETAIL

NO SCALE

FSB FEDERAL DESIGN GROUP JV
PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, ORWELL, OH 44076
WWW.PCSENGINEERING.NET
PHONE 216-577-6000
FAX 215-572-6800

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

OHIO NATIONAL GUARD SINCE 1791

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022
		S.T.P.
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	J.S.J.
DRAWN BY:	J.S.J.
REVIEWED BY:	S.T.P.
PROJECT MANAGER:	BN

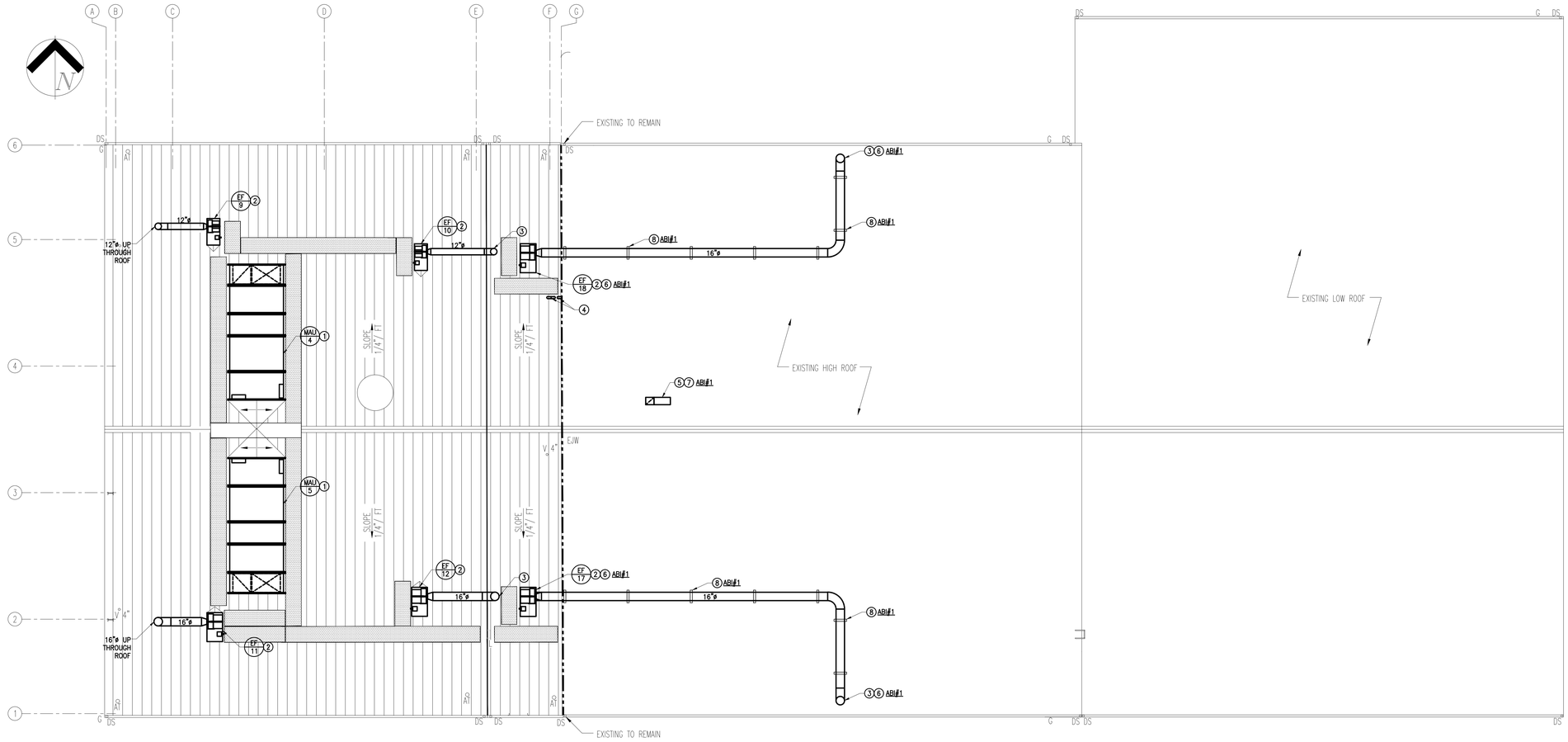
PROJECT NUMBER: 507101521

SHEET TITLE: **FLOOR PLAN - RADIANT HEAT NEW WORK**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: M103

BID DOCUMENTS



1 / M104 ROOF PLAN – NEW WORK

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

8 6 4 2 0 8 16

SCALE 1/8" = 1'-0"

NEW WORK SHEET NOTES:

1. NEW ROOF MOUNTED MAKE UP AIR UNIT WITH ENERGY RECOVERY IN THE LOCATION SHOWN. SEE DETAIL FOR INSTALLATION.
2. NEW ROOF MOUNTED UTILITY SET FAN IN THE LOCATION SHOWN. SEE DETAIL FOR INSTALLATION.
3. NEW EXHAUST DUCTWORK IS TO RISE THROUGH THE LOWER ROOF AND RUN UP THE SIDE OF THE BUILDING, THEN ACROSS THE UPPER ROOF TO THE EXHAUST FAN AS SHOWN.
4. NEW 4" COMBUSTION AIR INTAKE AND FLUE FOR BOILER UP THROUGH ROOF IN THE LOCATION SHOWN. SEE DETAIL FOR TERMINATION.
5. NEW 14"X16" GOOSENECK UP FROM THE EXISTING VEHICLE EXHAUST SYSTEM. SEE GOOSENECK DETAIL FOR INSTALLATION.
6. ABI#1 NEW VEHICLE EXHAUST FAN AND ASSOCIATED DUCTWORK IN THE LOCATION SHOWN.
7. ABI#1 NEW EXHAUST DUCTWORK AND GOOSENECK SHALL NOT BE INSTALLED IF ABI#1 IS INCLUDED IN THE PROJECT.
8. ABI#1 NEW ROOF MOUNTED DUCT SUPPORTS IN THE LOCATIONS SHOWN TO SUPPORT NEW ROOF MOUNTED EXHAUST DUCTWORK.

FSB FEDERAL DESIGN GROUP IV

PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, ORELAND, PA 19075
WWW.PCSENGINEERING.NET
PHONE 215-572-6800
FAX 215-572-6800

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co.,

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022
		S.T.P.
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	J.S.J.
DRAWN BY:	J.S.J.
REVIEWED BY:	S.T.P.
PROJECT MANAGER:	BN

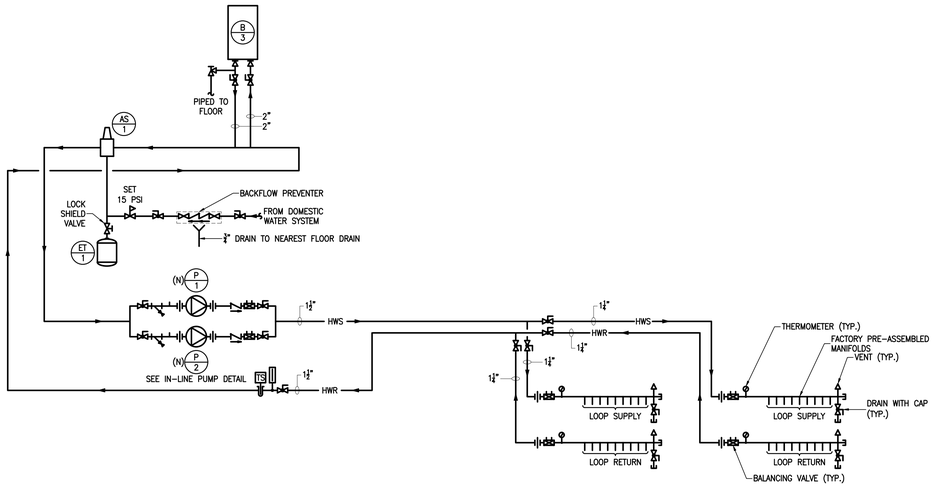
PROJECT NUMBER: 507101521

SHEET TITLE: **ROOF PLAN - NEW WORK**

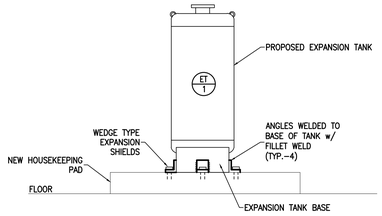
ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: M104

BID DOCUMENTS

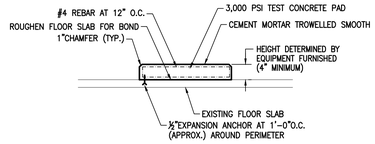


1 M501 HEATING HOT WATER FLOW DIAGRAM – NEW WORK
NO SCALE



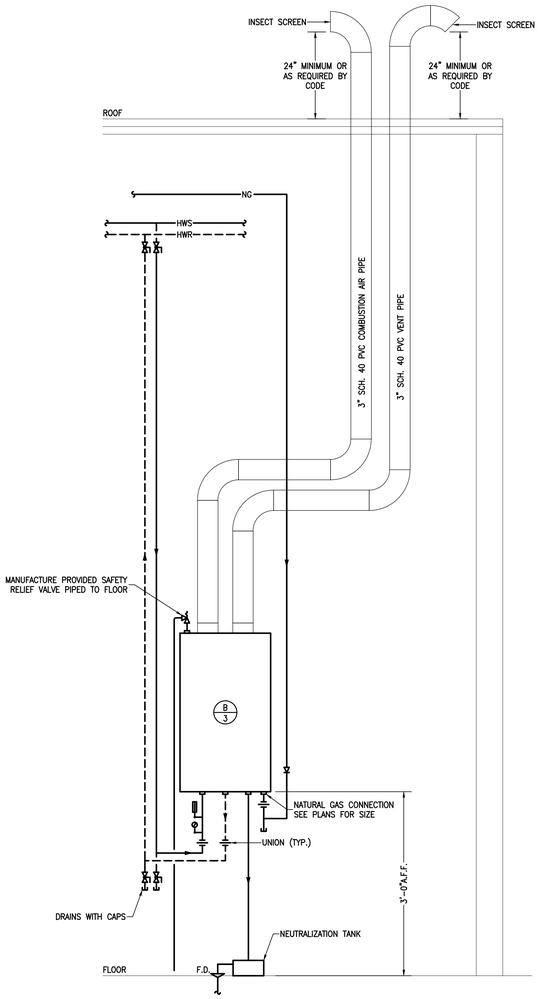
EXPANSION TANK DETAIL
VERTICAL TANK MOUNTING
2 M501 NO SCALE

NOTE:
COORDINATE SIZE AND LOCATION OF EQUIPMENT PAD WITH HVAC, ELECTRIC AND PLUMBING DRAWINGS.

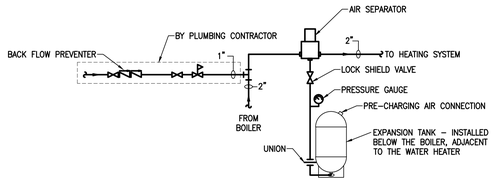


– FOUNDATION DETAIL –

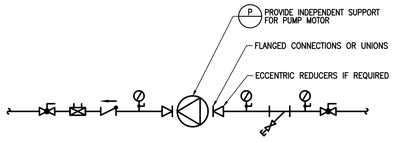
3 M501 EQUIPMENT PAD – ON SLAB
NO SCALE



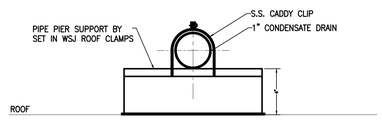
7 M501 BOILER DETAIL – WALL MOUNTED CONDENSING BOILER PIPING (INTERNAL BOILER PUMP)
NO SCALE



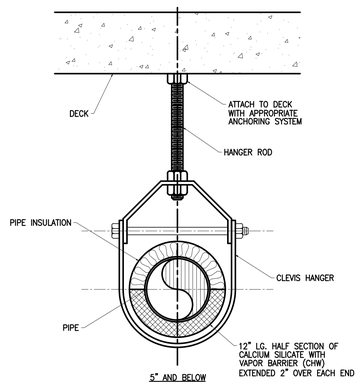
4 M501 EXPANSION TANK PIPING
NO SCALE



5 M501 IN-LINE PUMP PIPING DETAIL
NO SCALE

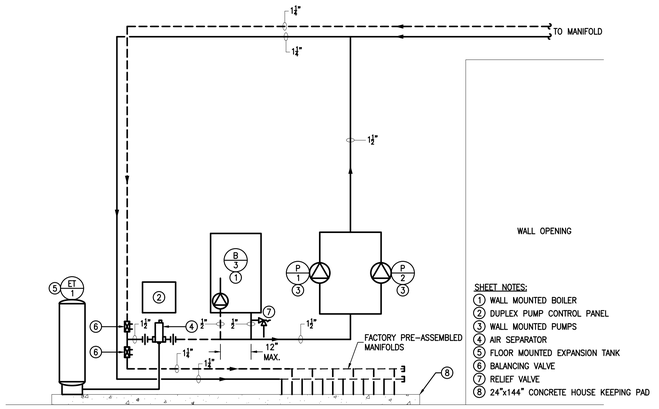


6 M501 PIPE SUPPORT – ROOF MOUNTED CADDY CLIP
NO SCALE



MAXIMUM PIPE/TUBING SUPPORT SPACING										
NOM. SIZE IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5
PIPE FT.	7	7	7	9	10	11	12	14	16
ROD SIZE IN.	3/8	3/8	3/8	3/8	3/8	1/2	1/2	5/8	3/4

8 M501 PIPE HANGER DETAIL – 5" AND BELOW
NO SCALE



9 M501 BOILER ELEVATION DETAIL
SCALE: 1/2" = 1'-0"

FSB FEDERAL DESIGN GROUP IV
31 PARK AVENUE, ORCHARD PARK, NY 14075
WWW.PCSENGINEERING.NET
PHONE 716-667-4000
FAX 215-572-6800
PCS ENGINEERING
Preferred Construction Services, Inc.

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

OHIO NATIONAL GUARD SINCE 1174

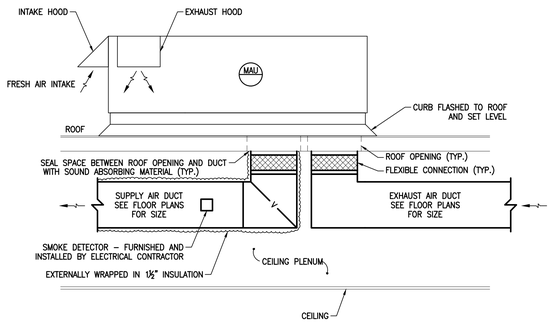
CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co.,

REVISION HISTORY:

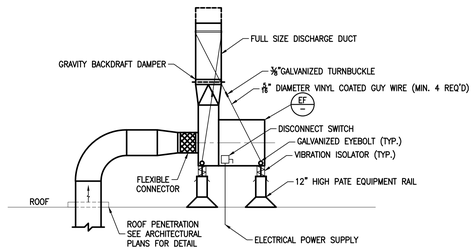
	DESCRIPTION	DATE
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

PROJECT INFORMATION:
DESIGNED BY: S.T.P.
DRAWN BY: J.S.J.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: FLOW DIAGRAMS AND DETAILS
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: M501

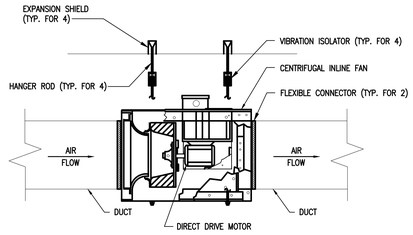
BID DOCUMENTS



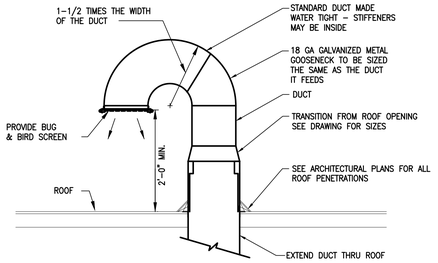
1 M502 MAKE UP AIR UNIT WITH ENERGY RECOVERY INSTALLATION DETAIL
NO SCALE



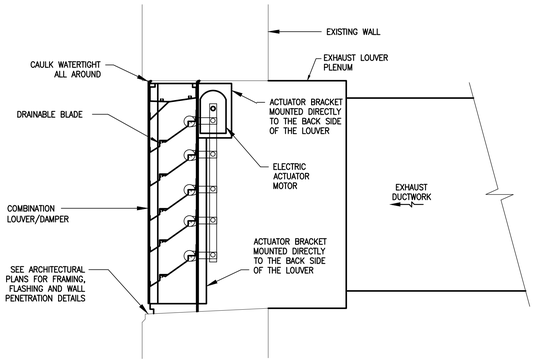
2 M502 EXHAUST FAN – ROOF MOUNTED UTILITY FAN
NO SCALE



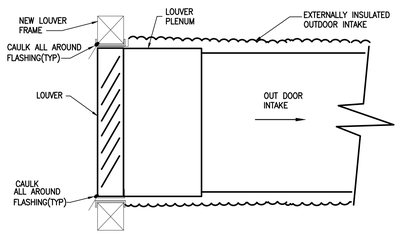
3 M502 EXHAUST FAN DETAIL – INLINE FAN
NO SCALE



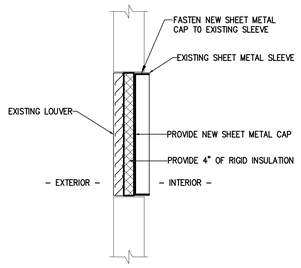
4 M502 EXHAUST GOOSENECK DETAIL
NO SCALE



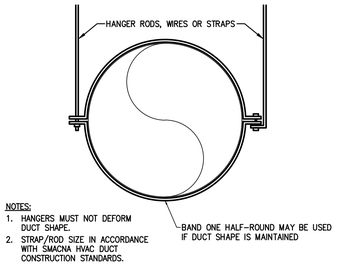
5 M502 COMBINATION LOUVER/DAMPER DETAIL
NO SCALE



6 M502 LOUVER DETAIL
NO SCALE

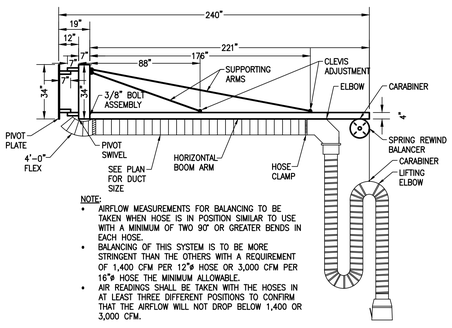


7 M502 LOUVER CAPPING DETAIL
NO SCALE



NOTES:
1. HANGERS MUST NOT DEFORM DUCT SHAPE.
2. STRAP/ROD SIZE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

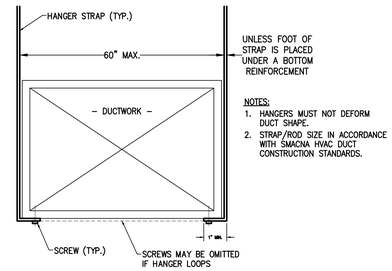
8 M502 ROUND DUCT HANGER DETAIL
NO SCALE



NOTE:
- AIRFLOW MEASUREMENTS FOR BALANCING TO BE TAKEN WHEN HOSE IS IN POSITION SIMILAR TO USE WITH A MINIMUM OF TWO 90° OR GREATER BENDS IN EACH HOSE.
- BALANCING OF THIS SYSTEM IS TO BE MORE STRINGENT THAN THE OTHERS WITH A REQUIREMENT OF 1,400 CFM PER 12"ø HOSE OR 3,000 CFM PER 16"ø HOSE THE MINIMUM ALLOWABLE.
- AIR READINGS SHALL BE TAKEN WITH THE HOSES IN AT LEAST THREE DIFFERENT POSITIONS TO CONFIRM THAT THE AIRFLOW WILL NOT DROP BELOW 1,400 OR 3,000 CFM.

DESCRIPTION	DIMENSION (IN)
BACK OF PIVOT PLATE TO FRONT OF PIVOT SWIVEL	19
BACK OF PIVOT PLATE TO BACK OF PIVOT SWIVEL	12
WIDTH OF PIVOT SWIVEL	7
LENGTH OF TAB FROM PIVOT SWIVEL PLATE	7
LENGTH OF TAB FROM BACK PIVOT PLATE	7
HEIGHT OF BACK PIVOT PLATE	34
HEIGHT OF PIVOT SWIVEL	34
FRONT OF PIVOT SWIVEL TO SUPPORT ARM 1	88
FRONT OF PIVOT SWIVEL TO SUPPORT ARM 2	176
LENGTH OF HORIZONTAL BOOM ARM	221
BACK OF PIVOT PLATE TO END OF BOOM ARM	240
HEIGHT OF BOOM ARM	4
DIAMETER OF DUCTWORK	12"–16"
WEIGHT	305 LBS

9 M502 VEHICLE EXHAUST PIVOT ARM DETAIL
NO SCALE



NOTES:
1. HANGERS MUST NOT DEFORM DUCT SHAPE.
2. STRAP/ROD SIZE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

10 M502 RECTANGULAR DUCT STRAP HANGER DETAIL
NO SCALE

VEHICLE EXHAUST SYSTEM

PROVIDE VEHICLE EXHAUST ARMS AND ACCESSORIES AS SHOWN ON THESE PLANS AND DETAILS.

HOSES ARE TO BE SILICON/KEVALR COMPOSITE FABRIC TO OPERATE RELIABLY WITHIN A TEMPERATURE RANGE OF –65°F TO 700°F. HOSES SHALL INCLUDE A CORROSION RESISTANT HELIX FOR SHAPE AND STRENGTH AND BE FLAME RESISTANT.

TAILPIPE ADAPTER PER HOSE SHALL BE A METALLIC CONE WITH 12" DIAMETER MOUTH. A CONNECTION ASSEMBLY SHALL INCLUDE A DIRECT CLAMPING DEVICE FOR SECURE ATTACHMENT ON VEHICLE.

THE SERPENTINE HOSE ASSEMBLY SHALL BE SUSPENDED FROM A PIVOT BOOM. THE PIVOT SHALL PERMIT SIDE–TO–SIDE ROTATION OF THE BOOM IN EXCESS OF 180°. A 12" OR 16" x4' LENGTH OF FLEXIBLE DUCT SHALL BE PROVIDED BY VENDOR TO CONNECT TO SPIRAL DUCT SYSTEM. THE PIVOT BOOM ARM ASSEMBLY SHALL INCLUDE A SUPPORT FOR THE RETRACTION BALANCER. THE BALANCER SHALL SUPPORT THE EXHAUST HOSE ASSEMBLY AND ATTACH TO THE END OF THE PIVOT BOOM. WEIGHT OF ARM ASSEMBLY TO BE 305 LBS.

FSB FEDERAL DESIGN GROUP JV
PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, ORCHARD PARK, NY 14127
WWW.PCSENGINEERING.NET
PHONE: 716-667-4000
FAX: 716-667-4080
COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No. 057299

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co.,

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

PROJECT INFORMATION:

DESIGNED BY: S.T.P.
DRAWN BY: J.S.J.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: **DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: M502

BID DOCUMENTS

MAKE-UP AIR UNIT WITH ENERGY RECOVERY

SYMBOL (MAU)

UNIT NO.	LOCATION	CFM		AIR TEMPERATURE °F								POWER	EXHAUST FAN ARRAY					SUPPLY AIR FAN					SCC RATE	REMARKS
		SUPPLY	EXHAUST	SUMMER				WINTER					HP	QTY.	RPM	*POWER ARRAY		HP	QTY.	RPM	*POWER ARRAY			
				OA	SA	RA	EA	OA	SA	RA	EA					MCA	MOCP				MCA	MOCP		
4	WORK BAY 116	8,800	8,800	–	–	–	–	–	3 / 1.9	45.7 / 31.8	70 / 52.9	27.3 / 27.3	208/3/60	4.62	2	2340	38.25A	50.0	5.10	2	2416	38.25A	50.0	100LAIC FUSED	①②③④⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯
5	WORK BAY 116	8,800	8,800	–	–	–	–	–	3 / 1.9	45.7 / 31.8	70 / 52.9	27.3 / 27.3	208/3/60											①②③④⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯

① UL-1995 LISTED
② MERV 8 OUTDOOR AIR FILTER
③ MERV 8 EXHAUST AIR FILTER
④ PITCHED ROOF CURB
⑤ MOTORIZED LOW LEAKAGE SUPPLY DAMPERS
⑥ MOTORIZED LOW LEAKAGE EXHAUST DAMPERS
⑦ OUTDOOR AIR INTAKE TEMP SENSOR
⑧ RETURN AIR INTAKE TEMP SENSOR
⑨ OUTDOOR AIR DISCHARGE TEMP SENSOR
⑩ DIGITAL EXHAUST AIR FAN AMP SENSOR
⑪ DIGITAL OUTDOOR AIR FAN AMP SENSOR
⑫ DOUBLE WALL CONSTRUCTION WITH 24 GA. GALVANIZED
⑬ HINGED ACCESS DOORS
⑭ COORDINATE w/ BAS CONTRACTOR FOR DDC CONTROLLER PROTOCOL
⑮ SEMI-CUSTOM ROOF MOUNTED AIR HANDLING UNIT
⑯ PROVIDE SINGLE POINT POWER FOR EACH FAN ARRAY.
* SHOWN FOR REFERENCE

MAKE-UP AIR UNIT (INDOOR)

SYMBOL (MAU)

NO.	AREA SERVED	FAN SECTION				HEATING				ELECTRICAL			WEIGHT	REMARKS
		CFM	O.A. CFM	TOTAL S.P.	FAN HP	FUEL	MBH	ENTERING AIR	LEAVING AIR	VOLTAGE	*FLA	*MOCP		
2	WORK BAY 115	5,400	5,400	0.64	3	NATURAL GAS	500	50	119.4	208/3/60	10.6	20	1,047 LBS.	①②③④
3	WORK BAY 115	5,400	5,400	0.64	3	NATURAL GAS	500	50	119.4	208/3/60	10.6	20	1,047 LBS.	①②③④

① PROVIDE THERMOSTAT
② DIRTY FILTER PRESSURE SWITCH
③ DEAD-FRONT NON-FUSIBLE DISCONNECT SWITCH
④ REMOTE MONITORING PANEL
* SHOWN FOR REFERENCE

BOILER SCHEDULE

SYMBOL (B)

UNIT NO.	LOCATION	MANUFACTURER	NO. OF SECTIONS	MODEL NO.	PRESSURE PSIG		FUEL	IGNITION	MIN. GAS PRESS. PSIG	CAPACITY			GPM	E.W.T.	L.W.T.	SHIPPING WEIGHT LBS.	*ELECTRICAL		REMARKS
					DESIGN	OPERATING				INPUT MBH	OUTPUT						VOLTAGE	FLA	
											MBH	HP							
3	WORK BAY 116	LOCHINVAR	N/A	WHB285N	30	15	NATURAL GAS	ELECTRIC	3.0	285	264	–	27	100°F	120°F	184	120/1/60	–	①②③④⑤⑥⑦

① EXTERNAL MANUAL RESET HIGH LIMIT AND LOW WATER CUT OFF CONTROLS
② OUTDOOR AIR SENSOR
③ MANUFACTURER TO PROVIDE BOILER PUMP
④ PROVIDE WALL MOUNTING BRACKET
⑤ PROVIDE FLOW SWITCH
⑥ M9 STANDARD CONSTRUCTION
⑦ PROVIDE CONDENSATE NEUTRALIZATION KIT
* SHOWN FOR REFERENCE

PUMPS

SYMBOL (P)

UNIT NO.	CIRCUIT	PUMP							MOTOR			OPER. WEIGHT LBS.	REMARKS
		GPM	HD. FT.	EFF. %	TEMP. RANGE °F	IMPELLER SIZE	CONN. SIZE – IN.		RPM	HP	ELECTRIC		
							SUCTION	DISCH.					
1	RADIANT HEAT	16	10	48	–	–	–	–	2700	1/16	120/1/60	16	①②③④
2	RADIANT HEAT	16	10	48	–	–	–	–	2700	1/16	120/1/60	16	①②③④

① PROVIDE BALANCED PORT TRIPLE DUTY VALVES
② PROVIDE SUCTION DIFFUSERS
③ BALANCE PUMP FOR CONNECTED LOAD
④ ECM MOTOR

EXPANSION TANK SCHEDULE

SYMBOL (ET)

REF. NO.	LOCATION	SIZE (IN)		TANK VOLUME GALLONS	ASTM RELIEF VALVE SET PSIG	ACCEPTANCE VOLUME	REMARKS
		LENGTH	DIA.				
1	WORK BAY 116	37-9/16	10	10	125	10	①
–	–	–	–	–	–	–	–

① ASME RATED

AIR SEPARATOR SCHEDULE

SYMBOL (AS)

REF. NO.	LOCATION	SIZE	REMARKS
1	WORK BAY 116	2" NPT	–
–	–	–	–

EXHAUST FAN SCHEDULE

SYMBOL (EF)

SYMBOL	AREA SERVED	TYPE	CLASS	FAN SECTION					MOTOR				OPERAT'G WEIGHT LBS.	REMARKS
				CFM	S.P. IN. WG.	RPM	TIP SP. FPM	SONES @ 0.125"	HP	RPM	ELECT.	FLA		
1	WORK BAY 115	INLINE	1	5,400	0.539	1,750	9,163	20	1½	1,725	208/3/60	6.6	132	①②③④
2	WORK BAY 115	INLINE	1	5,400	0.539	1,750	9,163	20	1½	1,725	208/3/60	6.6	132	①②③④
9	WORK BAY 116	WHEEL	1	1,400	4	2,552	10,439	78	2	1,725	208/3/60	7.5	279	⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱
10	WORK BAY 116	WHEEL	1	1,400	4	2,552	10,439	78	2	1,725	208/3/60	7.5	279	⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱
11	WORK BAY 116	WHEEL	1	3,000	5	2,456	12,298	83	5	1,725	208/3/60	16.7	685	⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱
12	WORK BAY 116	WHEEL	1	3,000	5	2,456	12,298	83	5	1,725	208/3/60	16.7	685	⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱
13	WORK BAY 116	CEILING	1	30,300	–	106	–	–	¼	140	208/3/60	5.0	98	㉑⑲⑳㉑㉒㉓㉔㉕㉖㉗㉘㉙㉚
14	WORK BAY 116	CEILING	1	30,300	–	106	–	–	¼	140	208/3/60	5.0	98	㉑⑲⑳㉑㉒㉓㉔㉕㉖㉗㉘㉙㉚
15	WORK BAY 115	CEILING	1	30,300	–	106	–	–	¼	140	208/3/60	5.0	98	㉑⑲⑳㉑㉒㉓㉔㉕㉖㉗㉘㉙㉚
16	WORK BAY 116	CEILING	1	30,300	–	106	–	–	¼	140	208/3/60	5.0	98	㉑⑲⑳㉑㉒㉓㉔㉕㉖㉗㉘㉙㉚
17	WORK BAY 115	WHEEL	1	3,400	6	1,302	8,905	79	5	1,725	208/3/60	7.6	700	⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱
18	WORK BAY 115	WHEEL	1	3,400	6	1,302	8,905	79	5	1,725	208/3/60	7.6	700	⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱

① MOTOR WITH THERMAL OVERLOAD
② NEMA 1 TOGGLE SWITCH
③ ALUMINUM WHEEL MATERIAL
④ ISOLATORS, SPRING, HANGING
⑤ MOTOR WITH CLASS F OR GREATER INSULATION
⑥ ISOLATION BASE
⑦ ARRANGEMENT-1 WITH UB DISCHARGE POSITION
⑧ HIGH TEMP OPTION
⑨ MOTOR SLIDE BASE
⑩ BOLTED ACCESS DOOR
⑪ SLIP FIT INLET CONNECTION
⑫ PUNCHED OUTLET CONNECTION
⑬ STEEL MOTOR COVER
⑭ STEEL BELTGUARD-TE
⑮ STEEL SHAFTGUARD-TE
⑯ HEAT SLINGER WITH GUARD
⑰ HIGH TEMP SHAFT SEAL
⑱ HIGH TEMP ALUMINUM COATING, FAN AND ATTACHED ACCESSORIES
⑲ STEEL TRUSS MOUNTING KIT – 044 COLOR
⑳ 2FT DROP LENGH – 044 COLOR
㉑ EXTRUDED ALUMINUM AIRFOIL, MILL FINISH
㉒ ALUMINUM WINGLET HI-PRO POLYESTER FINISH, 044 COLOR
㉓ HUB PLATE AND IMPELLER HUB, HI-PRO POLYESTER FINISH, 044 COLOR
㉔ POWER WIRING PIGTAIL, 3FT OF FLEXIBLE POWER CORD
㉕ PLUG AND PLAY NETWORK COMMUNICATION PIGTAIL TERMINATED WITH SHIELDED CAT-5E SPLITTER.
㉖ 150FT OF SHILEDED TWISTED PAIR CAT-5e CONTROL CABLE
㉗ FIRE ALARM WIRING PIGTAIL, 4FT FROM UNIT w/ CRIMP CONNECTOR
㉘ LOW VOLTAGE FIRE ALARM RELAY
㉙ BRAIDED GALVANIZED STEEL SAFETY CABLE AND GRIPPLE HARDWARE
㉚ IP50 VFD
㉛ MANUFACTURER TO PROVIDE CENTRAL CONTROL PANEL

AIR DEVICE SCHEDULE

SYMBOL (AD)

SYMBOL	DESCRIPTION	CFM	SIZE – INCHES		P.D. IN. W.C.	NC LEVEL	ACCESS.	FINISH	REMARKS
			NECK	PANEL					
1	DRUM DIFFUSER	2,200	–	15X48	0.04	20	–	WHITE POWDER COAT	–
2	GRILL	2,700	–	20X48	0.025	20	–	WHITE POWDER COAT	–

LOUVER SCHEDULE

SYMBOL (L)

UNIT NO.	LOCATION	SIZE	CFM	FRAME	SERVICE	REMARKS
1	WORK BAY 115	60X36	5,400	4"	EXHAUST	①②
–	–	–	–	–	–	–

① PROVIDE ACTUATOR
② ALUMINUM BIRD SCREEN

FSB FEDERAL DESIGN GROUP JV
PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, ORCHARD PARK, NY 14075
WWW.PCSENGINEERING.NET
PHONE: 215-572-6800 FAX: 215-572-6800
COMMONWEALTH OF PENNSYLVANIA PROFESSIONAL STEPHEN T. PEEL ENGINEER No.057299

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co.,

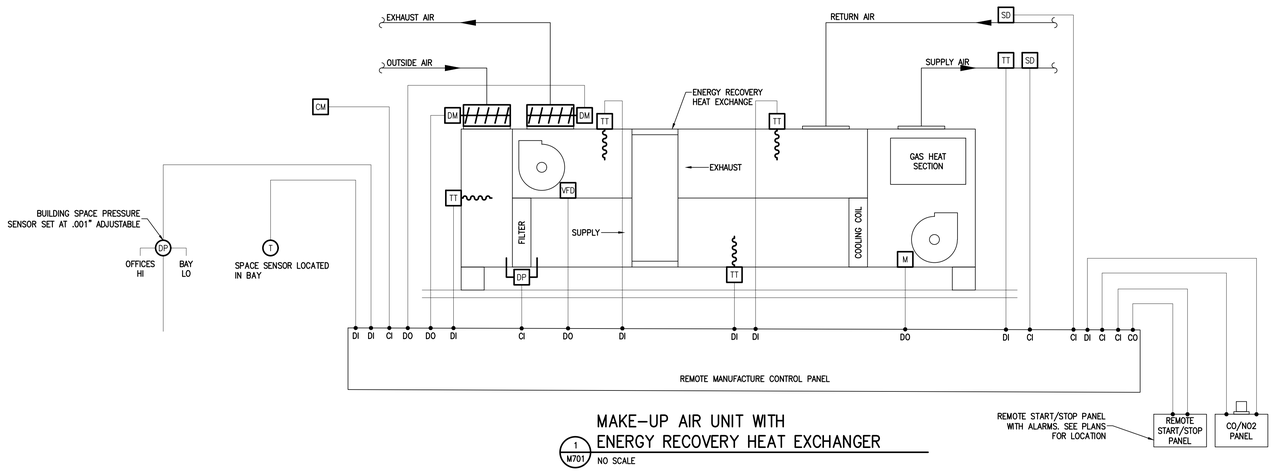
REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

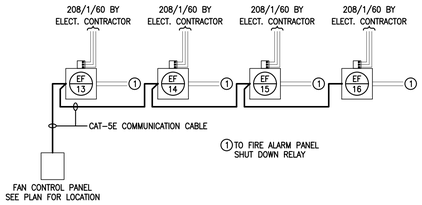
DESIGNED BY: S.T.P.
DRAWN BY: J.S.J.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: SCHEDULES
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: M601

BID DOCUMENTS



1 M701 MAKE–UP AIR UNIT WITH ENERGY RECOVERY HEAT EXCHANGER

NO SCALE



2 M701 AIR CIRCULATOR FAN CONTROL DIAGRAM

NO SCALE

MAKE UP AIR UNIT WITH ENERGY RECOVERY SEQUENCE OF OPERATION

WHEN THE FACILITY IS IN THE OCCUPIED MODE THE MAKE–UP AIR UNITS WILL BE SET UP TO OPERATE IN A SERIES OF STAGES. THE STAGES SHALL INDEX SUPPLY AIR FLOW QUANTITIES TO MATCH THE OPERATIONAL EXHAUST AIR FLOW RATES FROM TAILPIPE EXHAUST. THE MAU GENERAL EXHAUST RATE WILL BE INDEXED BASED ON BUILDING DIFFERENTIAL PRESSURE TO MAINTAIN A DIFFERENTIAL SET POINT OF .001" WC. ADJUSTABLE.

WHEN THE FACILITY IS UNOCCUPIED AND ALL EXHAUST SYSTEMS ARE OFF THE H&V UNITS WILL BE OFF.

WHEN THE FACILITY IS OCCUPIED AND NO SUPPLEMENTAL EXHAUST IS RUNNING THE UNITS WILL RUN TO DELIVER THE MINIMUM VENTILATION AIR OF .75 CFM / SQ. FT. OR 4,750 CFM REQUIRED BY CODE. THE 4750 CFM IS 54% OF THE RATED CAPACITY OF ONE MAU AND THE MINIMUM AIR FLOW FOR THIS EQUIPMENT. THE GAS HEATING SECTION WILL MODULATE TO MAINTAIN SPACE TEMPERATURE AT SET–POINT.

THE MAU EXHAUST FANS SHALL INDEX SPEED TO MAINTAIN A NEGATIVE SPACE PRESSURE RELATIVE TO THE ADJOINING AREA TO PREVENT MIGRATION OF SERVICE GARAGE FUMES.

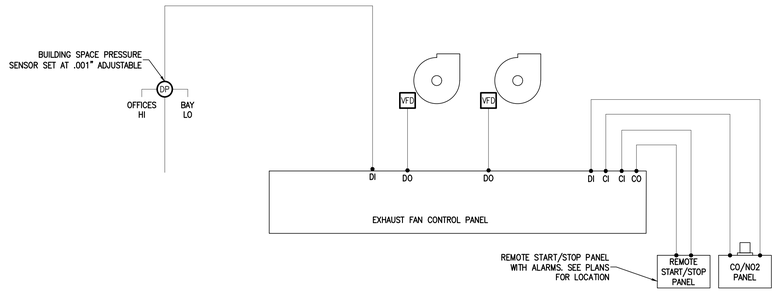
WHEN THE TAIL PIPE EXHAUST SYSTEM IS STARTED THE MAKE–UP AIR UNITS SHALL AUTOMATICALLY INCREASE DELIVERED AIRFLOW TO MAKE–UP FOR THE ADDED TAILPIPE EXHAUST RATE. WHEN THE TAIL PIPE EXHAUST SYSTEM IS TURNED OFF THE REVERSE SHALL OCCUR.

THE SERVICE BAY SHALL HAVE A COMBINATION CARBON MONOXIDE / NITROGEN DIOXIDE SENSORS AND ALARMS. THESE DEVICES WILL BE INTERFACED TO AUTOMATICALLY START THE FAN SYSTEM EXHAUST PURGE MODE OF OPERATION.

ON A RISE OF CARBON MONOXIDE / NITROGEN DIOXIDE THE MAKE–UP AIR UNITS AND GENERAL EXHAUST FANS SHALL BE INDEXED INTO AN EMERGENCY PURGE MODE. ON A FALL IN CARBON MONOXIDE / NITROGEN DIOXIDE LEVELS BELOW SET POINT THE SYSTEM SHALL RETURN TO NORMAL OPERATION.

THE SYSTEM WILL BE DESIGNED WITH A MANUAL PURGE SWITCH. WHEN ACTIVATED THE MAKE–UP AIR UNITS AND MAU EXHAUST FANS WILL INDEX TO MAXIMUM SUPPLY AND EXHAUST RATES FOR A PERIOD OF 15 MINUTES.

WHEN A UNIT MOUNTED SMOKE DETECTOR GOES INTO ALARM, THE MAU SHALL BE SHUT DOWN AND AN ALARM SIGNAL SENT TO THE FIRE ALARM PANEL. ADDITIONALLY IF THE BUILDING FIRE ALARM SYSTEM GOES INTO ALARM THE FIRE ALARM SYSTEM SHALL SHUTDOWN THE SUPPLY AND EXHAUSTS FANS.



ABI#1 EXISTING BAY 115
3 M701 EXHAUST FAN CONTROL SCHEMATIC

NO SCALE

ABI#1 EXHAUST FAN SEQUENCE OF OPERATION

WHEN THE FACILITY IS OCCUPIED AND NO SUPPLEMENTAL EXHAUST IS RUNNING THE EXHAUST FANS SHALL OPERATE BASED ON BUILDING DIFFERENTIAL PRESSURE TO MAINTAIN A DIFFERENTIAL SET POINT OF .001" WC. ADJUSTABLE.

WHEN THE FACILITY IS UNOCCUPIED AND ALL EXHAUST SYSTEMS ARE OFF.

WHEN THE TAIL PIPE EXHAUST SYSTEM IS STARTED THE EXHAUST FANS SHALL AUTOMATICALLY DECREASE DELIVERED AIRFLOW TO ADJUST FOR THE ADDED TAILPIPE EXHAUST RATE. WHEN THE TAIL PIPE EXHAUST SYSTEM IS TURNED OFF THE REVERSE SHALL OCCUR.

THE SERVICE BAY SHALL HAVE A COMBINATION CARBON MONOXIDE / NITROGEN DIOXIDE SENSORS AND ALARMS. THESE DEVICES WILL BE INTERFACED TO AUTOMATICALLY START THE FAN SYSTEM EXHAUST PURGE MODE OF OPERATION.

ON A RISE OF CARBON MONOXIDE / NITROGEN DIOXIDE THE EXHAUST FANS SHALL BE INDEXED INTO AN EMERGENCY PURGE MODE. ON A FALL IN CARBON MONOXIDE / NITROGEN DIOXIDE LEVELS BELOW SET POINT THE SYSTEM SHALL RETURN TO NORMAL OPERATION.

THE SYSTEM WILL BE DESIGNED WITH A MANUAL PURGE SWITCH. WHEN ACTIVATED THE MAKE–UP AIR UNITS AND EXHAUST FANS WILL INDEX TO MAXIMUM SUPPLY AND EXHAUST RATES FOR A PERIOD OF 15 MINUTES.

ATC LEGEND

PE	PE–SWITCH	R	RELAY	V	CONTROL VALVE	HT	HUMIDITY TRANSMITTER
VT	VOLTAGE TRANSFORMER	DM	DAMPER MOTOR	DPT	DIFFERENTIAL PRESSURE TRANS.	FS	FLOW SWITCH
CT	CURRENT TRANSFORMER	R	PILOT LIGHT	CO2	CARBON DIOXIDE SENSOR	AHUC	AIR HANDLING UNIT CONTROLLER
SD	SMOKE DETECTOR	FZ STAT	FREEZESTAT	TT	DUCT TEMPERATURE SENSOR	CC	COMMUNICATION CABLE
EP	EP–SWITCH		3–POSITION SELECTOR SWITCH	SP TT	STATIC PRESSURE TRANSMITTER	MDM	56 MODEM
S	TEMPERATURE SENSOR	DP	AIR DIFFERENTIAL SWITCH	VFD	VARIABLE FREQUENCY DRIVE		
P	PRESSURE SENSOR	SS	RELAY				

AO– ANALOG OUTPUT
AI– ANALOG INPUT
CI– CONTACT INPUT
CO– CONTACT OUTPUT

FSB FEDERAL DESIGN GROUP JV
31 PARK AVENUE, ORCHARD PARK, NY 14075
WWW.PCSENGINEERING.NET
PHONE 716-662-0040
FAX 215-572-6800
PCS ENGINEERING
Preferred Construction Services, Inc.

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co.,

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022
△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: S.T.P.
DRAWN BY: J.S.J.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: **CONTROL DIAGRAMS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: M701

BID DOCUMENTS

GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH THE OHIO MECHANICAL CODE, AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT SITE TO VERIFY ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
3. THE CONTRACTOR SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, ETC. FOR A COMPLETE OPERABLE INSTALLATION. ALL MATERIALS SHALL BE NEW, SPECIFICATION GRADE, AND U.L. LISTED PRODUCTS, UNLESS NOTED OTHERWISE.
4. COORDINATE ALL WORK AND SCHEDULES WITH OWNER, CONTRACTING OFFICER, AND OTHER CONTRACTORS AND APPROPRIATE UTILITY COMPANIES.
5. PRIOR TO BIDDING, ALL CONTRACTORS, SUB-CONTRACTORS, VENDORS, AND SUPPLIERS ARE DIRECTED TO READ SPECIFICATION SECTIONS REGARDING PROJECT SUBMITTALS.
6. ALL ELECTRICAL INSTALLATION PROVIDED UNDER MECHANICAL SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO: PACKAGED MOTOR STARTER PANELS, PACKAGED OR CUSTOM CONTROL PANELS, DISCONNECT SWITCHES, CONTROL WIRING, POWER WIRING, NAMEPLATES, RACEWAYS, ETC. SHALL BE IN ACCORDANCE WITH APPLICABLE ELECTRICAL SPECIFICATION SECTIONS.
7. PROVIDE PROPER SEALS AND FIRE STOPPING AT ALL WALL, FLOOR AND CEILING PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS FOR WALLS, FLOORS, AND CEILINGS.
8. PROVIDE BALANCING DAMPERS AT ALL BRANCH TAKE-OFFS IN ALL SUPPLY AIR, RETURN AIR, AND EXHAUST AIR SYSTEMS AND WHERE REQUIRED TO FACILITATE PROPER BALANCING OF AIR SYSTEMS.
9. REFER TO HVAC SEQUENCES OF OPERATION (DRAWINGS AND/OR SPECIFICATIONS). PROVIDE ALL EQUIPMENT, MATERIALS, ETC., AS REQUIRED TO ACHIEVE THOSE SEQUENCES.
10. MAKE EQUIPMENT SELECTIONS AND PROVIDE INSTALLATIONS WHICH ARE EQUAL TO OR LESS THAN THE NOISE LEVELS NOTED ON THE PLANS.
11. MAINTAIN "AS-BUILT" RECORDS OF ALL INSTALLED ITEMS AND PROVIDE TO CONTRACTING OFFICER AT PROJECT COMPLETION.

NOTE:
THESE NOTES ARE GENERAL IN NATURE, SPECIFIC MEANS, METHODS AND MATERIALS ARE DETAILED IN THE SPECIFICATIONS AND CONTRACTOR IS DIRECTED TO THOROUGHLY REVIEW THE FULL SPECIFICATION. CONTRACT SPECIFICATIONS SHALL GOVERN IN CASE OF CONFLICT.

SYMBOLS LEGEND

EQUIPMENT SYMBOLS

- B — BOILER
- ET — EXPANSION TANK
- MAU — MAKE-UP AIR UNIT
- P — PLUMBING FIXTURE
- WH — WATER HEATER

GENERAL SYMBOLS

- INSERT INDICATES SECTION NUMBER / INSERT INDICATES DRAWING NUMBER
- INSERT INDICATES PLAN OR DETAIL NUMBER / INSERT INDICATES DRAWING NUMBER
- INDICATES CONNECTION POINT BETWEEN NEW AND EXISTING FACILITIES
- INDICATES TERMINATION POINT BETWEEN EXISTING AND DEMOLITION FACILITIES
- SQUARE FEET
- SQUARE INCHES
- FLOW ARROW
- LEADER ARROWHEAD
- BREAK LINE (SINGLE LINE)
- CENTERLINE
- DIAMETER

PIPING LEGEND

PIPING SYMBOLS

- HWS — HEATING HOT WATER SUPPLY
- HWR — HEATING HOT WATER RETURN
- DOMESTIC COLD WATER

PIPING ACCESSORY SYMBOLS

- RISER
- DROP
- SHUT OFF VALVE IN PIPE RISER
- SHUT OFF VALVE IN PIPE DROP
- ANGLE SHUT OFF VALVE
- SHUT OFF VALVE
- BUTTERFLY VALVE
- TRIPLE DUTY VALVE
- BALL VALVE
- GLOBE VALVE
- CHECK VALVE
- GATE VALVE
- 2 WAY CONTROL VALVE
- 3 WAY CONTROL VALVE
- 2 WAY SOLENOID VALVE
- 3 WAY SOLENOID VALVE
- STRAINER
- STRAINER WITH BLOW OFF VALVE
- PRESSURE REDUCING VALVE
- PLUG COCK
- NEEDLE VALVE
- PRESSURE GAUGE W/ SNUBBER AND NEEDLE VALVE
- PRESSURE GAUGE W/ SIPHON AND NEEDLE VALVE
- CAPPED PRESSURE GAUGE TAP W/ NEEDLE VALVE
- BACK FLOW PREVENTOR ASSEMBLY
- REDUCER OR INCREASER, CONCENTRIC
- BALANCING VALVE
- PUMP
- UNION OR FLANGED CONNECTION (DIELECTRIC AS REQUIRED)
- ANCHOR
- PLUG, CAP OR BLIND FLANGE
- P/T — PRESSURE/TEMPERATURE TEST STATION
- T — THERMOMETER WELL
- P.G. — PRESSURE GAUGE TAPPING
- THERMOMETER
- PRESSURE OR VACUUM GAUGE
- A.S.M.E. RELIEF OR SAFETY VALVE
- INDICATES PIPE PITCHING DOWNWARD IN DIRECTION OF ARROW
- V — VACUUM BREAKER
- A — AUTOMATIC AIR VENT W/ SHUTOFF VALVE AND CAP
- M — 1/2" MANUAL AIR VENT
- FLEXIBLE PIPING CONNECTOR
- FLOW CONTROL DEVICE
- FM — FLOW METER (GAL)
- D — DRAIN VALVE W/ CAPPED HOSE END
- STOP CHECK VALVE
- PIPE BRANCH CONNECTION OFF BOTTOM OF PIPE
- T — LOCK SHIELD SHUTOFF VALVE

ABBREVIATIONS

(E)	EXISTING	HTG	HEATING
(N)	NEW	HV	HEATING & VENTILATING UNIT
AD	ACCESS DOOR	H.V.A.C.	HEATING, VENTILATING AND COOLING
AFF	ABOVE FINISHED FLOOR	IN	INCHES
AHU	AIR HANDLING UNIT	INT	INITIAL
AI	ANALOG INPUT	KW	KILOWATT
AMB	AMBIENT	LAT	LEAVING AIR TEMPERATURE
AO	ANALOG OUTPUT	LB	POUND
AP	ACCESS PANEL	LD	LINEAR DIFFUSER
APD	AIR PRESSURE DROP	LDB	LEAVING DRY BULB TEMPERATURE
APPROX.	APPROXIMATE	LF	LINEAR FOOT
ARCH	ARCHITECTURAL	LOC	LOCATION
AS	AIR SEPARATOR	LRA	LOCKED ROTOR AMPS
ATC	AUTOMATIC TEMPERATURE CONTROL	LTH	LENGTH
AUTO	AUTOMATIC	LVG	LEAVING
AVG	AVERAGE	LWB	LEAVING WET BULB TEMPERATURE
B	BOILER	LWT	LEAVING WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM	MAX	MAXIMUM
B.F.	BELOW FLOOR	MBH	1000 BTU PER HOUR
BFP	BACK FLOW PREVENTOR OR BOILER FEED PUMP	MC	MECHANICAL CONTRACTOR
BHP	BRAKE HORSEPOWER OR BOILER HORSEPOWER	MECH	MECHANICAL
BI	BINARY INPUT	MER	MECHANICAL EQUIPMENT ROOM
BLD	BUILDING	MFR	MANUFACTURER
BO	BINARY OUTPUT	MIN	MINIMUM OR MINUTE
BOD	BOTTOM OF DUCT OR BASIS OF DESIGN	MOCP	MAXIMUM OVER-CURRENT PROTECTION
BOP	BOTTOM OF PIPE	MOD	MOTOR OPERATED DAMPER
BOT	BOTTOM	MODU	MODULATING
BTU	BRITISH THERMAL UNIT	MXB	MIXING BOX
BTUH	BTU PER HOUR	N	NEW
CAP	CAPACITY	NC	NORMALLY CLOSED
CEIL.	CEILING	NIC	NOT IN CONTRACT
C.F.	CUBIC FEET	NO	NORMALLY OPEN OR NUMBER
CFH	CUBIC FEET PER HOUR	NTS	NOT TO SCALE
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
C.I.	CAST IRON	OAH	OUTSIDE AIR ENTHALPY
CL	COOLING	OAI	OUTSIDE AIR INTAKE
COL	COLUMN	OAT	OUTSIDE AIR TEMPERATURE
CONN	CONNECTION	OC	ON CENTER
CONT	CONTINUATION	OED	OPEN ENDED DUCT
D	DROP	OEM	ORIGINAL EQUIPMENT MANUFACTURER
DB	DRY BULB	O.H.	OPPOSITE HAND
DCS	DISCONNECT SWITCH	OPER	OPERATING
DDC	DIRECT DIGITAL CONTROL	OPNG	OPENING
DEFL	DEFLECTION	P	PUMP
DET	DETAIL	PD	PRESSURE DROP
DIA	DIAMETER	PLN	PLENUM
DISC	DISCONNECT	POS	POSITION
DISCH	DISCHARGE	PRESS	PRESSURE
DI	DIGITAL INPUT	PRV	PRESSURE REDUCING VALVE
DN	DOWN	PSI	POUNDS PER SQUARE INCH
DO	DIGITAL OUTPUT	PSIA	POUNDS PER SQUARE INCH- ABSOLUTE
DR	DRAIN	PSIG	POUNDS PER SQUARE INCH- GAUGE
DWG	DRAWING	QUAN	QUANTITY
EA	EXHAUST AIR OR EACH	R	RISE
EAT	ENTERING AIR TEMPERATURE	RA	RETURN OR RELIEF AIR
EDB	ENTERING DRY BULB TEMPERATURE	RAH	RETURN AIR ENTHALPY
EF	EXHAUST FAN	RAT	RETURN AIR TEMPERATURE
EFF	EFFICIENCY	REQ	REQUIRED
EG	EXHAUST GRILLE	RET	RETURN
ELEC	ELECTRIC	REV	REVISION
ELEV	ELEVATION	RG	RETURN GRILLE
EM	EQUIPMENT MANUFACTURER	RLA	RUN LOAD AMPS
EMER	EMERGENCY	RPM	REVOLUTIONS PER MINUTE
ENT	ENTERING	RV	RELIEF VALVE
ER	EXHAUST REGISTER	SA	SUPPLY AIR
ERU	ENERGY RECOVERY UNIT	SD	SMOKE DAMPER OR DETECTOR
ESP	EXTERNAL STATIC PRESSURE	SEC	SECOND
ET	EXPANSION TANK	SEER	EFFICIENCY RATING
EWB	ENTERING WET BULB TEMPERATURE	SENS	SENSIBLE
EWT	ENTERING WATER TEMPERATURE	S.F.	SQUARE FEET
EXH	EXHAUST	SP	STATIC PRESSURE IN WG
EXIST	EXISTING	S/S	STAINLESS STEEL
EXT	EXTERNAL	SRV	SAFETY RELIEF VALVE
F	FILTER	ST	SOUND ATTENUATOR
FA	FACE AREA	STBY	STANDBY
FA	FROM ABOVE	SUP	SUPPLY
FAS	FIRE ALARM SYSTEM	TOD	TOP OF DUCT
FB	FROM BELOW	TOP	TOP OF PIPE
FC	FLEXIBLE CONNECTION	TOT	TOTAL
FIN	FINAL	TSP	TOTAL STATIC PRESSURE
FLA	FULL LOAD AMPS	TTS	TIGHT TO STRUCTURE
FLEX	FLEXIBLE	TYP	TYPICAL
FLR	FLOOR	UNO	UNLESS NOTED OTHERWISE
FLTR	FILTER	U.R.S.	UNDERSIDE OF ROOF STRUCTURE
FM	FLOW METERING DEVICE	VD	VOLUME DAMPER
FOB	FLAT ON BOTTOM	VEL	VELOCITY
FOT	FLAT ON TOP	VFD	VARIABLE FREQUENCY DRIVE
FPM	FEET PER MINUTE	VIB	VIBRATION
FPS	FEET PER SECOND	W/	WITH
FT	FLASH TANK OR FOOT OR FEET	W/O	WITHOUT
FUT	FUTURE	WB	WET BULB
GPH	GALLONS PER HOUR	WG	WATER GAUGE
GPM	GALLONS PER MINUTE	WMS	WIRE MESH SCREEN
GR	GRILLE	WPD	WATER PRESSURE DROP
HG	MERCURY	X.H.	EXTRA HEAVY
HP	HORSEPOWER		

FSB FEDERAL DESIGN GROUP JV

PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, BEDFORD, OH 44146
PHONE 216-292-0080
FAX 215-572-6800
WWW.PCSENGINEERING.NET

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

OHIO NATIONAL GUARD SINCE 1798

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

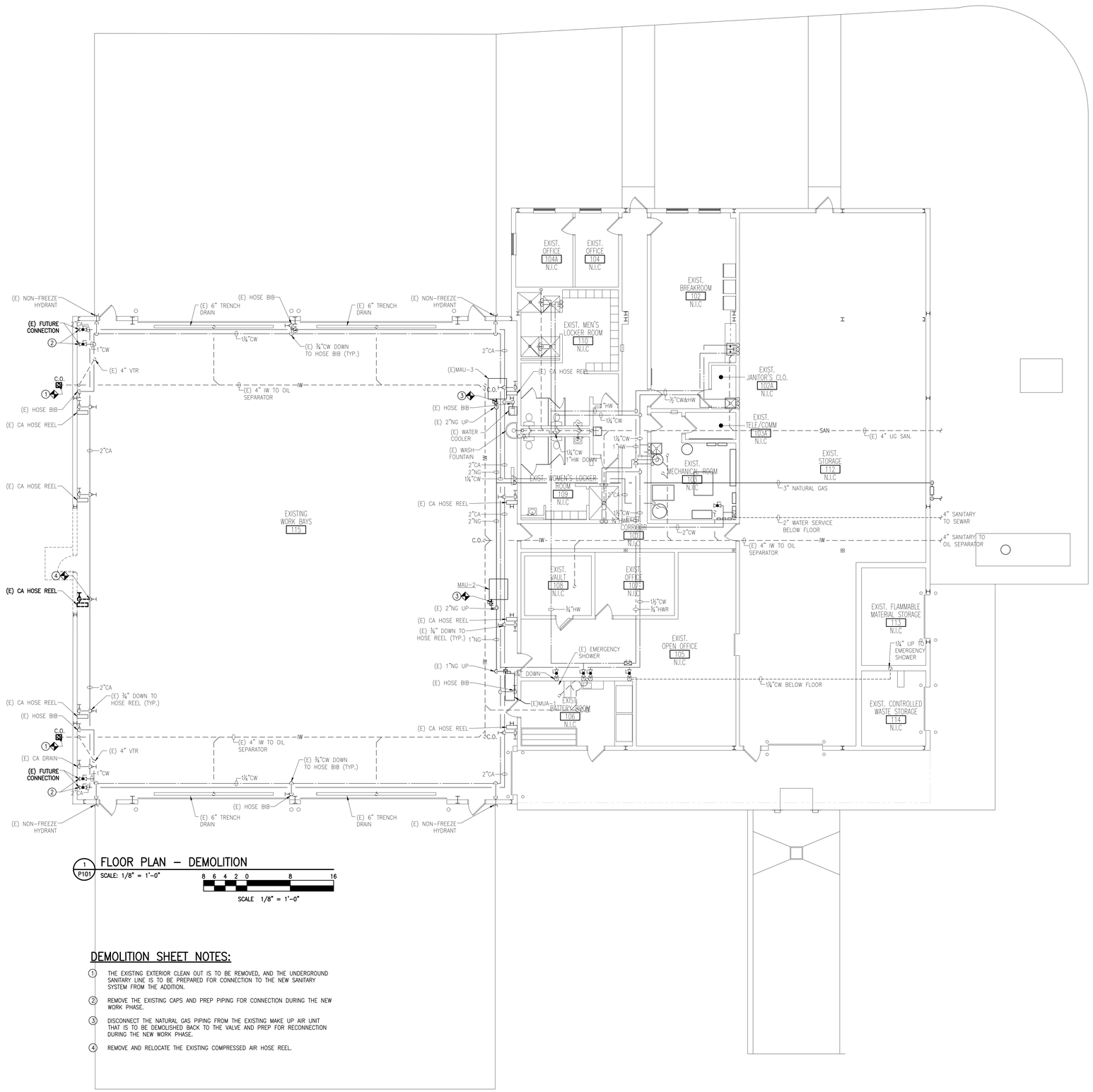
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: S.T.P.
DRAWN BY: R.C.D.S.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: **COVER SHEET**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: P001

BID DOCUMENTS



1 P101 FLOOR PLAN – DEMOLITION

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

8 6 4 2 0 8 16

SCALE 1/8" = 1'-0"

DEMOLITION SHEET NOTES:

1. THE EXISTING EXTERIOR CLEAN OUT IS TO BE REMOVED, AND THE UNDERGROUND SANITARY LINE IS TO BE PREPARED FOR CONNECTION TO THE NEW SANITARY SYSTEM FROM THE ADDITION.
2. REMOVE THE EXISTING CAPS AND PREP PIPING FOR CONNECTION DURING THE NEW WORK PHASE.
3. DISCONNECT THE NATURAL GAS PIPING FROM THE EXISTING MAKE UP AIR UNIT THAT IS TO BE DEMOLISHED BACK TO THE VALVE AND PREP FOR RECONNECTION DURING THE NEW WORK PHASE.
4. REMOVE AND RELOCATE THE EXISTING COMPRESSED AIR HOSE REEL.

FSB FEDERAL DESIGN GROUP IV

PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE
ORCHARD PARK, NY 14075
WWW.PCSENGINEERING.NET
PHONE 716-662-6040
FAX 215-572-6800

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

OHIO NATIONAL GUARD SINCE 1791

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co.,

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

PROJECT INFORMATION:

DESIGNED BY: S.T.P.

DRAWN BY: R.C.D.S.

REVIEWED BY: S.T.P.

PROJECT MANAGER: BN

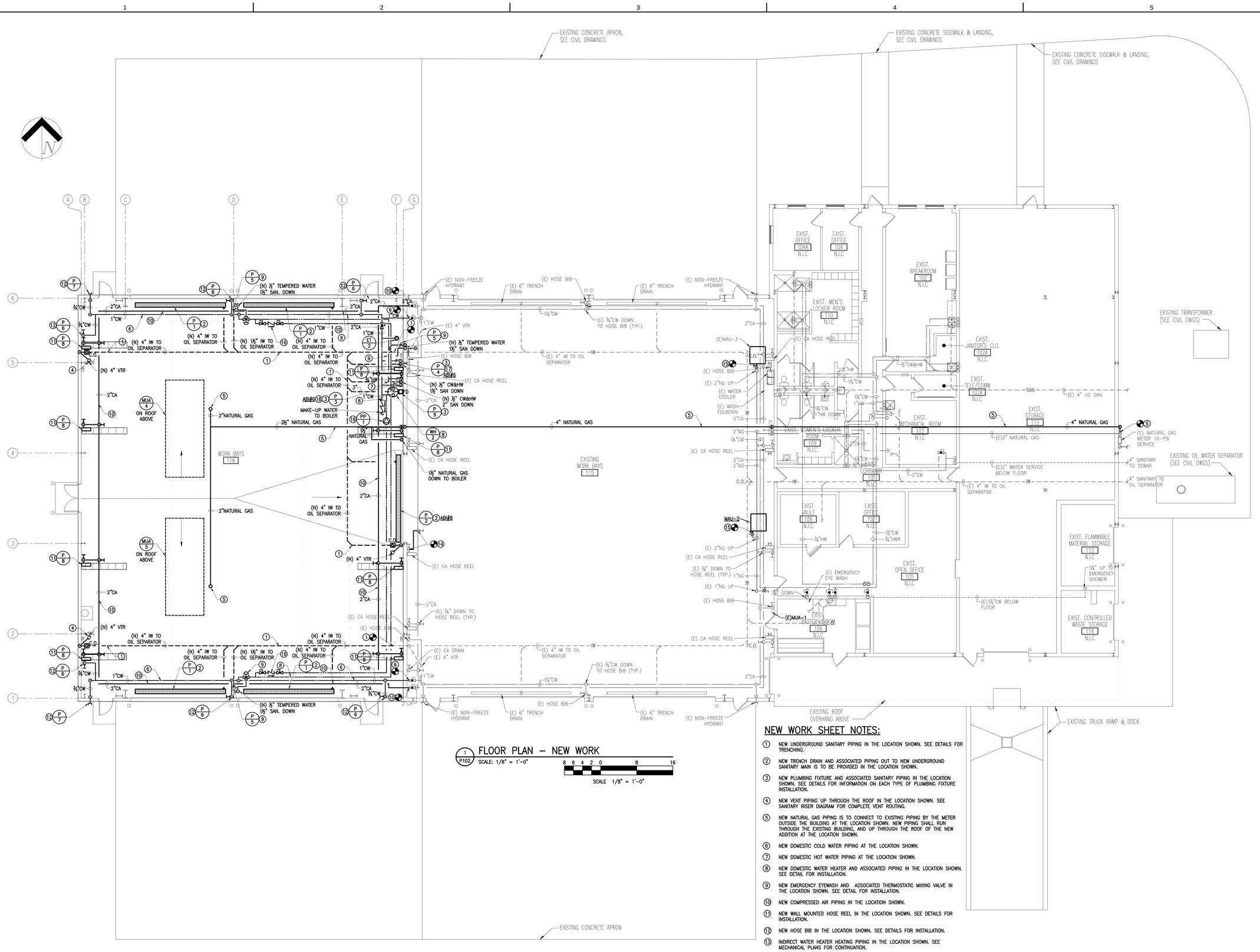
PROJECT NUMBER: 507101521

SHEET TITLE: **FLOOR PLAN - DEMOLITION**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: P101

BID DOCUMENTS



1 FLOOR PLAN – NEW WORK
P102 SCALE: 1/8" = 1'-0"

8 6 4 2 0 8 16

SCALE 1/8" = 1'-0"

NEW WORK SHEET NOTES:

1. NEW UNDERGROUND SANITARY PIPING IN THE LOCATION SHOWN. SEE DETAILS FOR TRENCHING.
2. NEW TRENCH DRAIN AND ASSOCIATED PIPING OUT TO NEW UNDERGROUND SANITARY MAIN IS TO BE PROVIDED IN THE LOCATION SHOWN.
3. NEW PLUMBING FIXTURE AND ASSOCIATED SANITARY PIPING IN THE LOCATION SHOWN. SEE DETAILS FOR INFORMATION ON EACH TYPE OF PLUMBING FIXTURE INSTALLATION.
4. NEW VENT PIPING UP THROUGH THE ROOF IN THE LOCATION SHOWN. SEE SANITARY RISER DIAGRAM FOR COMPLETE VENT ROUTING.
5. NEW NATURAL GAS PIPING IS TO CONNECT TO EXISTING PIPING BY THE METER OUTSIDE THE BUILDING AT THE LOCATION SHOWN. NEW PIPING SHALL RUN THROUGH THE EXISTING BUILDING, AND UP THROUGH THE ROOF OF THE NEW ADDITION AT THE LOCATION SHOWN.
6. NEW DOMESTIC COLD WATER PIPING AT THE LOCATION SHOWN.
7. NEW DOMESTIC HOT WATER PIPING AT THE LOCATION SHOWN.
8. NEW DOMESTIC WATER HEATER AND ASSOCIATED PIPING IN THE LOCATION SHOWN. SEE DETAIL FOR INSTALLATION.
9. NEW EMERGENCY EYEWASH AND ASSOCIATED THERMOSTATIC MIXING VALVE IN THE LOCATION SHOWN. SEE DETAIL FOR INSTALLATION.
10. NEW COMPRESSED AIR PIPING IN THE LOCATION SHOWN.
11. NEW WALL MOUNTED HOSE REEL IN THE LOCATION SHOWN. SEE DETAILS FOR INSTALLATION.
12. NEW HOSE BIB IN THE LOCATION SHOWN. SEE DETAILS FOR INSTALLATION.
13. INDIRECT WATER HEATER HEATING PIPING IN THE LOCATION SHOWN. SEE MECHANICAL PLANS FOR CONTINUATION.
14. RELOCATE THE EXISTING HOSE REEL AND ASSOCIATED PIPING TO THE LOCATION SHOWN TO FACILITATE THE INSTALLATION OF THE NEW WALL OPENING.
15. CONNECT THE NEW MAKE UP AIR UNIT TO THE EXISTING NATURAL GAS PIPING IN THE LOCATION SHOWN.
16. NEW DOMESTIC HOT WATER RETURN PUMP AND ASSOCIATED PIPING IN THE LOCATION SHOWN. SEE DETAILS FOR INSTALLATION.
17. ABU#6 THE WATER COOLER SHALL BE INSTALLED IF ABU#6 IS USED ON THE PROJECT.
18. ABU#6 THE HAND SINK CAN BE UPGRADED TO A WASH BASIN IF ABU#6 IS USED ON THE PROJECT.

FSB FEDERAL DESIGN GROUP JV

PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, ORWELL, OH 44076
WWW.PCSENGINEERING.NET
PHONE: 440-437-6080
FAX: 215-572-6800

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: S.T.P.

DRAWN BY: R.C.D.S.

REVIEWED BY: S.T.P.

PROJECT MANAGER: BN

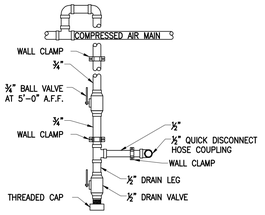
PROJECT NUMBER: 507101521

SHEET TITLE: **FLOOR PLAN - NEW WORK**

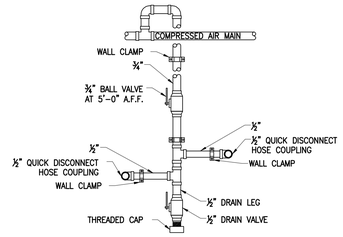
ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: P102

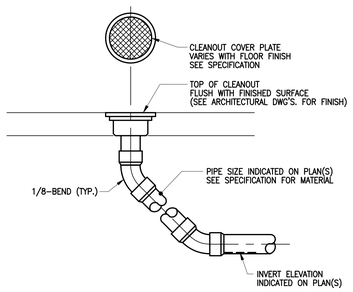
BID DOCUMENTS



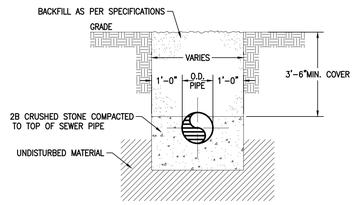
1 P501 SINGLE CONNECTION AIR DROP DETAIL
NO SCALE



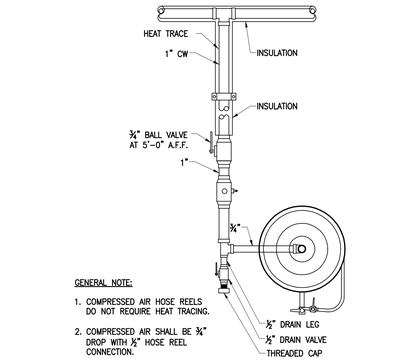
2 P501 DOUBLE CONNECTION AIR DROP DETAIL
NO SCALE



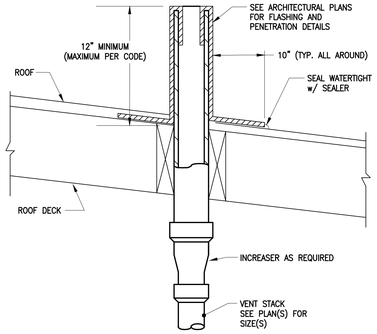
3 P501 END OF LINE CLEANOUT DETAIL
NO SCALE



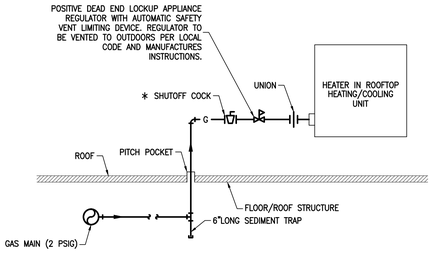
4 P501 TRENCH DETAIL – SINGLE PIPE
NO SCALE



5 P501 HOSE REEL DETAIL
NO SCALE

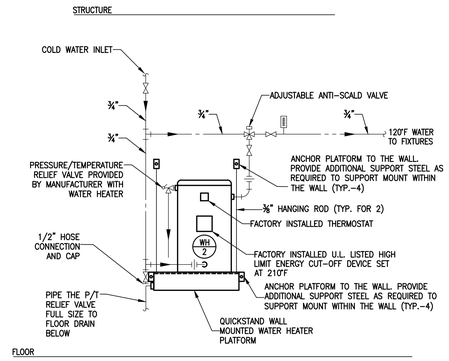


6 P501 VENT THROUGH SLOPED ROOF DETAIL
NO SCALE

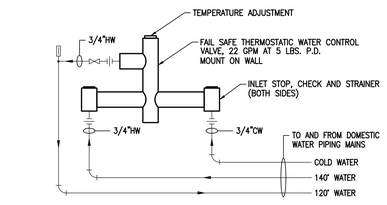


*NOTE:
SHUTOFF COCK SHALL NOT BE INSTALLED IN CEILING CAVITY SPACE WHERE SPACE IS USED AS A RETURN AIR PLENUM.

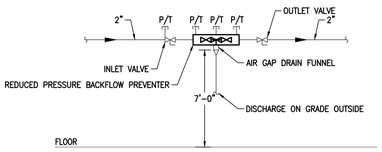
7 P501 GAS CONNECTION DETAIL – ROOF PENETRATION
NO SCALE



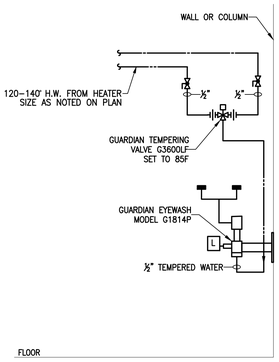
8 P501 WALL MOUNTED ELECTRIC WATER HEATER
NO SCALE



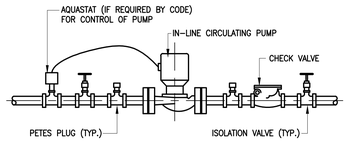
9 P501 THERMOSTATIC WATER CONTROL VALVE SCHEMATIC
NO SCALE



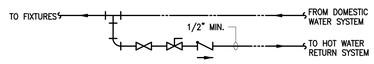
10 P501 DOMESTIC WATER DETAIL – BACKFLOW PREVENTER
NO SCALE



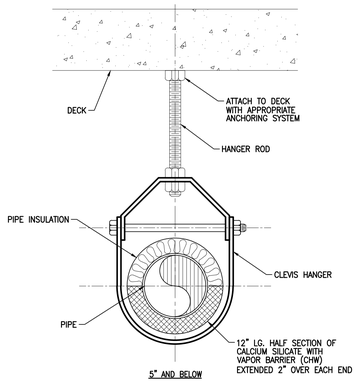
EMERGENCY EYE WASH AND THERMOSTATIC MIXING VALVE
11 P501 NO SCALE



12 P501 DOMESTIC HOT WATER RECIRC. PUMP
NO SCALE

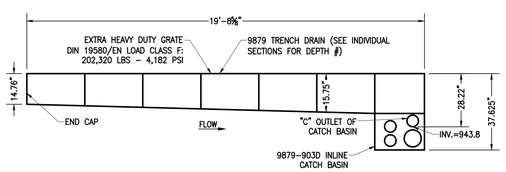


13 P501 HOT WATER RETURN PIPING DETAIL
NO SCALE



MAXIMUM PIPE/TUBING SUPPORT SPACING									
NOM. SIZE IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5
PIPE FT.	7	7	7	9	10	11	12	14	16
ROD SIZE IN.	3/8	3/8	3/8	3/8	3/8	1/2	1/2	5/8	3/4

14 P501 PIPE HANGER DETAIL
NO SCALE



15 P501 TRENCH DRAIN DETAIL
NO SCALE

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP JV
PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, OREGON, OH 43616
WWW.PCSENGINEERING.NET
PHONE 419-691-8585
FAX 215-572-6800

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

OHIO NATIONAL GUARD SINCE 1791

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co.,

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

PROJECT INFORMATION:

DESIGNED BY: S.T.P.
DRAWN BY: J.S.J.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: **DETAILS**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: P501

PLUMBING FIXTURE SCHEDULE

SYMBOL (P / –)

UNIT NO.	DESCRIPTION	DESCRIPTION	ADDITIONAL ACCESSORIES DESCRIPTION	REMARKS
1	TRENCH DRAIN	LONGITUDINAL SLOT DUCTILE IRON GRATE	– –	②
2	TRENCH DRAIN	EXTRA HEAVY DUTY CLASS E BAR GRATE	– –	②
3	WALL MOUNTED WASH SINK	WRISTBLADE FAUCET WITH GOOSENECK SPOUT	STRAINER, TAILPIECE 1 1/2" P-TRAP	②
4	WATER COOLER BOTTLE FILLER	CONCEALED SUPPORT CARRIER	– –	②
5	WALL MOUNTED EMERGENCY EYE WASH	THERMOSTATIC MIXING VALVE	– –	②
6	HOSE BIB	– –	– –	②
7	1/4 TURN NON FREEZE HYDRANT	– –	– –	②
8	HOSE REEL	– –	– –	②
9	FLOOR DRAIN	– –	– –	③

① PROVIDE COLD & HOT WATER SUPPLY VALVES, AND TRAPS
② CONTRACTOR IS TO PROVIDE BASIS OF DESIGN PLUMBING FIXTURES PER THE FIXTURE SCHEDULE OR APPROVED EQUAL
③ QUAD CLOSE TRAP SEAL

WATER HEATER SCHEDULE

SYMBOL (WH)

UNIT NO.	LOCATION	STORAGE TANK DIMENSIONS HEIGHT	DIA.	CAPACITY GAL.	W.P. PSIG	LINING	HEATING SECTION DOMESTIC WATER GPH	°F ENT.	°F LVG.	KW	FLA	ELECTRIC	SHIPPING WEIGHT LBS.	REMARKS
2	WORK BAY 116	22.25	21.75	20	–	GLASS	10	50	140	2	9.6	208/3/60	73	①②
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

① TOP INLET AND OUTLET OPENING
② CSA CERTIFIED AND AMSE RATED

EXPANSION TANK SCHEDULE

SYMBOL (ET)

REF. NO.	LOCATION	MODEL NO.	SIZE (IN) LENGTH	DIA.	TANK VOLUME GALLONS	ASTM RELIEF VALVE SET PSIG	ACCEPTANCE VOLUME	REMARKS
2	WORK BAYS 116	PT-5	12 5/8	8	2	75	0.9	①
–	–	–	–	–	–	–	–	–

① AMSE RATED

PLUMBING PUMP SCHEDULE

SYMBOL (PP)

UNIT NO.	CIRCUIT	LOCATION	PUMP GPM	HD. FT.	EFF. %	TEMP. RANGE °F	IMPELLER SIZE	CONN. SIZE – IN. SUCTION	DISCH.	MOTOR RPM	HP	ELECTRIC	OPER. WEIGHT LBS.	REMARKS
1	HOT WATER RETURN	WORK BAYS 116	.5	17.98	–	50-120	–	3/4	3/4	3250	2/5	120/60/1	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

PLUMBING ROUGHING SCHEDULE

SYMBOL (P / –)

SYMBOL	DESCRIPTION	PIPE SIZE – INCHES WATER SUPPLY COLD	HOT	WASTE	TRAP TYPE	REMARKS
1	TRENCH DRAIN	–	–	4"	–	–
2	TRENCH DRAIN	–	–	2"	–	–
3	WALL MOUNTED WASH SINK	½"	½"	2"	P	SEE NOTES 1 AND 2
4	WATER COOLER/BOTTLE FILLER	½"	–	1¼"	P	–
5	EMERGENCY EYE WASH	½"	½"	2"	P	SEE NOTES 1 AND 2
6	HOSE BIB	¾"	–	–	–	–
7	NON-FREEZE WALL HYDRANT	¾"	–	–	–	–
8	HOSE REEL	–	–	–	–	3/4" COMPRESSED AIR
9	FLOOR DRAIN	–	–	3"	P	–

NOTES:
1. SET BASIN INLET 19" A.F.F. FOR HANDICAP USE.
2. CHECK – DUAL HANDICAPPED UNITS HAVE (2) ½" SUPPLIES AND (2) 1¼" DRAINS.
3. FLUSH VALVE HANDLES AT WATER CLOSETS IN HANDICAPPED ACCESSIBLE STALLS SHALL BE MOUNTED ON THE WIDE SIDE.

FSB FEDERAL DESIGN GROUP JV
PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE, ORANGE, CT 06525
WWW.PCSENGINEERING.NET
PHONE: 203-272-6800
FAX: 203-272-6800
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

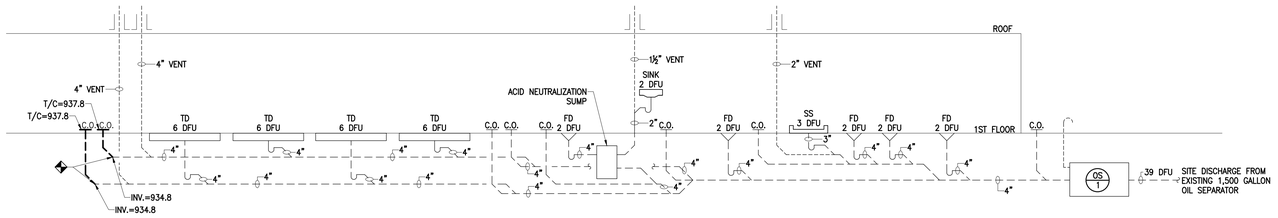
REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022
△	DESCRIPTION	DATE

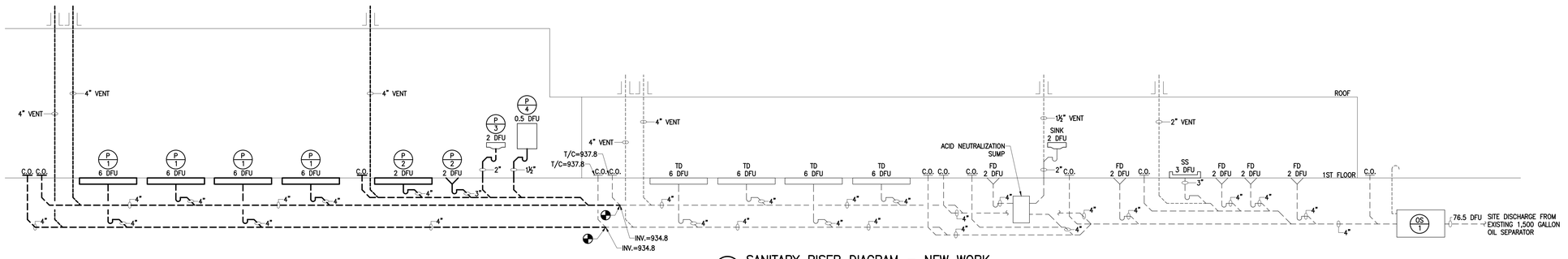
PROJECT INFORMATION:

DESIGNED BY: S.T.P.
DRAWN BY: J.S.J.
REVIEWED BY: S.T.P.
PROJECT MANAGER: BN
PROJECT NUMBER: 507101521
SHEET TITLE: **SCHEDULES**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: P601

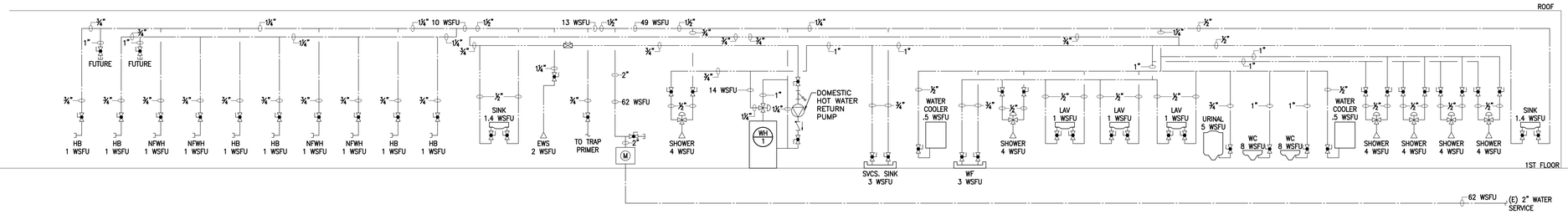
BID DOCUMENTS



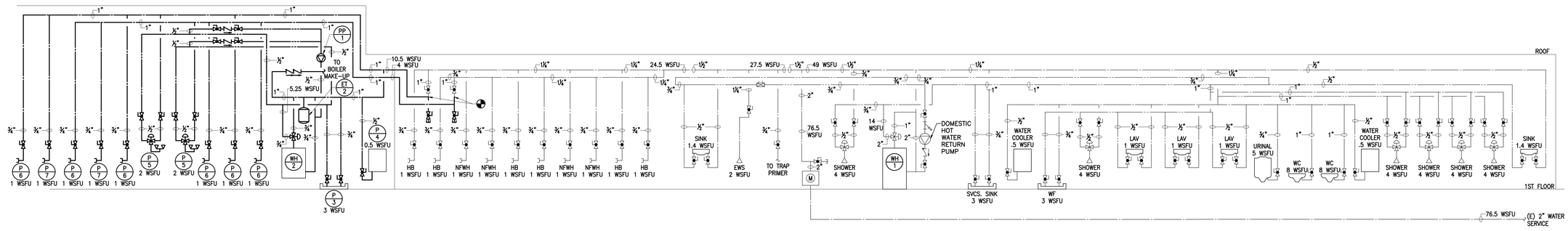
1 P602 SANITARY RISER DIAGRAM – EXISTING CONDITIONS
NO SCALE



2 P602 SANITARY RISER DIAGRAM – NEW WORK
NO SCALE



3 P602 DOMESTIC WATER RISER DIAGRAM – EXISTING CONDITIONS
NO SCALE



4 P602 DOMESTIC WATER RISER DIAGRAM – NEW WORK
NO SCALE

FSB FEDERAL DESIGN GROUP JV
PCS ENGINEERING
Preferred Construction Services, Inc.
31 PARK AVENUE
ORCHARD PARK, NY 14075
WWW.PCSENGINEERING.NET
PHONE: 716-667-0880
FAX: 215-572-6800

COMMONWEALTH OF PENNSYLVANIA
PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299
PENNSYLVANIA

OHIO NATIONAL GUARD SINCE 1791

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co.,

REVISION HISTORY:

A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: S.T.P.

DRAWN BY: J.S.J.

REVIEWED BY: S.T.P.

PROJECT MANAGER: BN

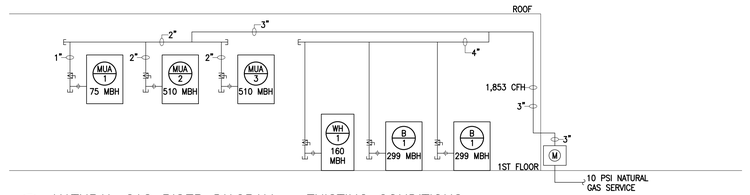
PROJECT NUMBER: 507101521

SHEET TITLE: **RISER DIAGRAMS**

ISSUE DATE: NOVEMBER 9, 2022

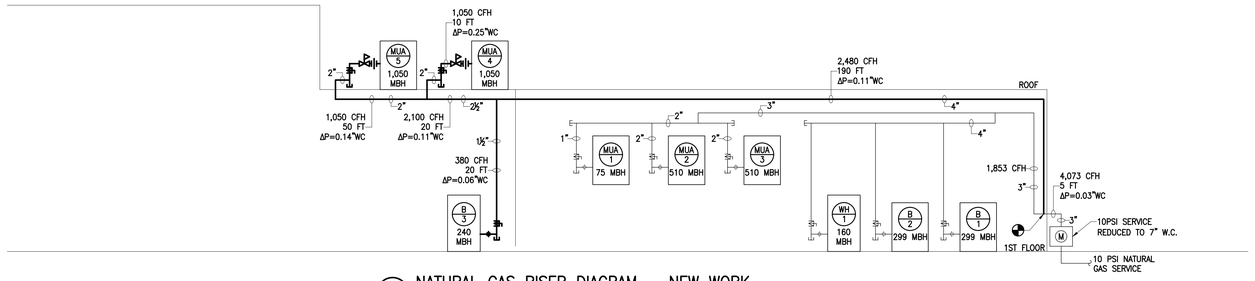
SHEET NUMBER: P602

BID DOCUMENTS



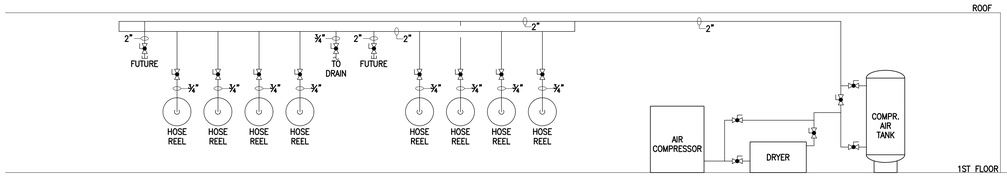
1 P603 NATURAL GAS RISER DIAGRAM – EXISTING CONDITIONS

NO SCALE



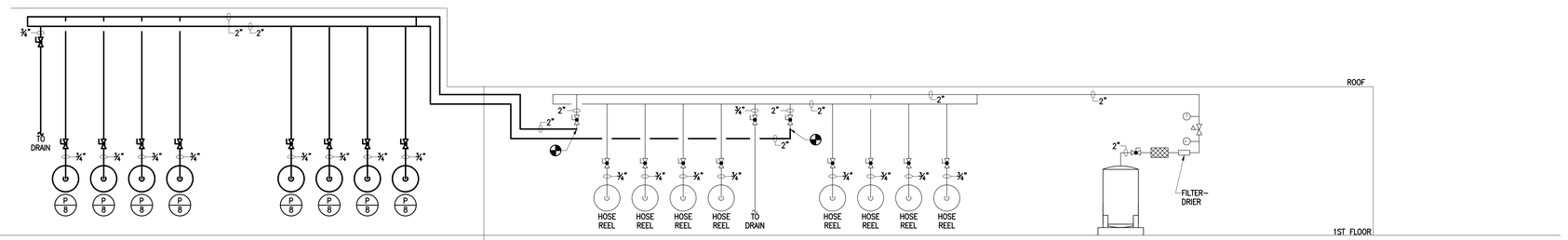
2 P603 NATURAL GAS RISER DIAGRAM – NEW WORK

NO SCALE



3 P603 COMPRESSED AIR RISER DIAGRAM – EXISTING CONDITIONS

NO SCALE



4 P603 COMPRESSED AIR RISER DIAGRAM – NEW WORK

NO SCALE

BID DOCUMENTS

FSB FEDERAL DESIGN GROUP IV

31 PARK AVENUE
GIRARD, OH 44420
WWW.PCSENGINEERING.NET
PHONE 330-545-9660
FAX 215-572-6800

PCS ENGINEERING
Preferred Construction Services, Inc.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
STEPHEN T. PEEL
ENGINEER
No.057299

OHIO NATIONAL GUARD SINCE 1791

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co.,

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2 (35%) REPORT	12/01/2020
B	B-1 (60%) SUBMISSION	03/04/2021
B	B-2 (95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/09/2022

PROJECT INFORMATION:

DESIGNED BY: S.T.P.

DRAWN BY: J.S.J.

REVIEWED BY: S.T.P.

PROJECT MANAGER: BN

PROJECT NUMBER: 507101521

SHEET TITLE: **RISER DIAGRAMS**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: P603

GENERAL ELECTRICAL NOTES

1. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL GOVERNING LOCAL CODES, LAWS REGULATIONS AND UFC CODES.
2. ALL ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND /OR REQUIRED FOR THE FULL INTEGRITY OF THE CONTRACT SHALL BE FURNISHED, INSTALLED AND CONNECTED BY THE CONTRACTOR.
3. CONTRACTOR SHALL PROVIDE THE NECESSARY MATERIALS, LABOR AND ATTENDANCE FOR THE OPERATION OF TEMPORARY LIGHT AND CONSTRUCTION POWER AS REQUIRED DURING WORKING HOURS FOR THE DEMOLITION PERIOD.
4. CONTRACTOR SHALL ARRANGE FOR THE SAFE DE-ENERGIZATION OF ALL ELECTRICAL EQUIPMENT TO BE REMOVED. CONTRACTOR SHALL COORDINATE ALL POWER SHUTDOWNS WITH THE CONTRACTING OFFICER. NOTIFY CONTRACTING OFFICER, IN WRITING, 7 DAYS PRIOR TO ANY POWER SHUTDOWNS.
5. ALL EQUIPMENT/DEVICES PROVIDED IN THIS CONTRACT SHALL BE NEW AND OF FIRST QUALITY AND SHALL BEAR THE APPROPRIATE UL OR CSA APPROVED LABELS.
6. ALL CONDUIT RUNS IN THIS CONTRACT ARE DIAGRAMMATIC. LOCATION OF EQUIPMENT AND RUNS MAY VARY DUE TO PHYSICAL CONDITIONS. THE WORK SHALL INCLUDE ALL REQUIRED OUTLET AND JUNCTION BOXES TO COMPLETE THE CONDUIT INSTALLATION. CONTRACTOR SHALL INSTALL EQUIPMENT AND CONDUITS IN A MANNER TO MINIMIZE ANY INTERFERENCE WITH OTHER CONTRACTS OR TRADES.
7. UNLESS OTHERWISE NOTED, PULL AND JUNCTION BOXES WHERE INDICATED ON DRAWINGS, SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVIDED WHERE REQUIRED BY APPLICABLE CODE PROVISIONS OR FIELD CONDITIONS.
8. MINIMUM SIZE OF RACEWAY FOR POWER CIRCUITS SHALL BE 3/4" RGS CONDUIT, UNLESS OTHERWISE NOTED.
9. MINIMUM WIRE SIZE FOR POWER CIRCUITS SHALL BE #12 AWG, COPPER, 600V INSULATION TYPE THWN/THHN, UNLESS OTHERWISE NOTED.
10. THE EXPOSED NONCURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT AND RACEWAYS SHALL BE GROUNDED. THE CONTRACTOR SHALL ENSURE CONTINUITY OF THE GROUNDING CIRCUIT THROUGH THIS GROUNDING CONDUCTOR FROM THE SUPPLYING PANELBOARD GROUNDING BUS TO THE LOAD GROUND TERMINAL. THE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
11. CONTRACTOR SHALL COORDINATE ALL WORK WITH EXISTING EQUIPMENT IN THE FIELD.
12. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN EACH NEW CONDUIT.
13. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE THAT THE REQUIRED GROUNDING AND BONDING CONNECTIONS TO BUILDING STEEL ARE MADE BEFORE THE STEEL IS COVERED.
14. ALL CONDUITS SHALL BE DE-BURRED AND PROVIDED WITH BUSHINGS TO PREVENT CABLE DAMAGE. CONDUIT FITTINGS SHALL HAVE INSULATED THROATS.
15. SEE THE SPECIFICATIONS FOR GUIDELINES FOR THE INSTALLATION OF ELECTRICAL DEVICES, EQUIPMENT, CONDUIT, BOXES, ETC.
16. PROVIDE DISCONNECTS FOR ALL MOTORS AND EQUIPMENT INDICATED ON THE MOTOR AND MECHANICAL EQUIPMENT SCHEDULES.
17. PROVIDE A ROOF MOUNTED LIGHTNING PROTECTION SYSTEM AND ASSOCIATED GROUNDING IN ACCORDANCE WITH UL96a CERTIFICATION.
18. CONTRACTOR SHALL MAINTAIN CONTINUOUS SERVICE ON FEEDERS SERVING THE AREAS AFFECTED DURING THE ENTIRE PERIOD THE AREA IS UNDER CONSTRUCTION. NO OUTAGES WILL BE PERMITTED IN THESE AREAS DUE TO THE CONSTRUCTION PHASE EXCEPT WITH WRITTEN PERMISSION OF THE CONTRACTING OFFICER. ALL WORK REQUIRING TEMPORARY SHUTDOWN SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE GOVERNMENT.ANY APPROVAL FOR SHUTDOWNS SHOULD BE OBTAINED FROM THE GOVERNMENT IN WRITING 7 (SEVEN) BUSINESS DAYS IN ADVANCE.
19. ARCHITECTURAL FEATURES AS WELL AS MECHANICAL EQUIPMENT SHOWN ON ELECTRICAL DRAWINGS ARE FOR BACKGROUND INFORMATION ONLY. REFER TO MECHANICAL DRAWINGS FOR ACCURATE MECHANICAL EQUIPMENT LOCATIONS.
20. PROVIDE TYPED PANELBOARD DIRECTORIES TO REFLECT NEW AND EXISTING CIRCUITING IN ALL PANELBOARDS AFFECTED BY THIS ALTERATION.

DEMOLITION GENERAL NOTES

1. PRIOR TO START OF DEMOLITION, INSPECT AREAS WHICH WORK WILL BE PERFORMED. NOTE EXISTING CONDITIONS OF STRUCTURE SURFACES, EQUIPMENT, OR SURROUNDING PROPERTY THAT COULD BE MISCONSTRUED AS DAMAGE RESULTING FROM SELECTIVE DEMOLITION WORK.
2. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND REPORT ANY AND ALL DISCREPANCIES TO THE CONTRACTING OFFICER.
3. ALL WORK PERFORMED SHALL BE IN COMPLIANCE WITH THE REGULATIONS AND GUIDELINES SET FORTH BY ALL AGENCIES HAVING JURISDICTION OVER THE WORK.
4. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
5. DEMOLITION AND REMOVAL WORK SHALL BE EXECUTED WITH CARE AND PERFORMED BY COMPETENT EXPERIENCED WORKMEN FOR THE REMOVAL WORK. THE WORK SHALL BE CARRIED OUT THROUGH TO COMPLETION WITH DUE REGARD TO THE SAFETY OF ALL PERSONS ON SITE.
6. UNLESS NOTED OTHERWISE ALL DEMOLISHED COMPONENTS BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE JOB SITE IN A TIMELY FASHION. ALL EQUIPMENT MARKED BY THE CONTRACTING OFFICER TO REMAIN SHALL BE CAREFULLY REMOVED BY THE CONTRACTOR AND STORED AS DIRECTED.
7. THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL EXISTING ITEMS TO REMAIN AND SHALL REPAIR AND/OR REPLACE ANY ITEM OR CONSTRUCTION DAMAGED DURING THE COURSE OF WORK AT NO ADDITIONAL COST TO THE GOVERNMENT.
8. ALL DEMOLITION ACTIVITIES, CUTTING AND PATCHING REQUIRED IN CONNECTION WITH THE WORK SHALL BE PERFORMED BY MECHANICS OF THE SPECIFIC TRADE INVOLVED AND AS REQUIRED TO EXECUTE EACH LINE OF WORK. ALL PATCHING SHALL BE FINISHED TO MATCH ADJACENT SURFACES WITH NEW OR EXISTING TO REMAIN.
9. AFTER COMPLETION OF WORK, CLEAN UP ALL RESULTANT DEBRIS AND REMOVE FROM THE JOB SITE TO THE SATISFACTION OF THE CONTRACTING OFFICER.

ABBREVIATIONS

ABI	ADD BID ITEM
AFF	ABOVE FINISHED FLOOR
A, AMPS	AMPERES
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED-CIRCUIT TELEVISION
CKT	CIRCUIT
CO	CARBON MONOXIDE
DB/DL	LIGHT FIXTURE WITH DIMMING BALLAST AND DAYLIGHTING CONTROL
DB/DL/OC	LIGHT FIXTURE WITH DIMMING BALLAST AND BOTH DAYLIGHT AND OCCUPANCY SENSOR CONTROLLED
E	EXISTING TO REMAIN
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
G, GND	GROUND
GFI OR GFCI	GROUND FAULT CURRENT INTERRUPTER
JB	JUNCTION BOX
LPS	LIGHTNING PROTECTION SYSTEM
MAU	MAKE-UP AIR UNIT
MCB	MAIN CIRCUIT BREAKER
MDS	MAIN DISTRIBUTION SWITCHBOARD
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTG	MOUNTING
N	NEUTRAL (GROUNDED CIRCUIT CONDUCTOR)
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NEC	NATIONAL ELECTRIC CODE
OC	OCCUPANCY SENSOR CONTROLLED LIGHT FIXTURE
PA	PUBLIC ADDRESS
POC	POINT OF CONTACT
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
RGS	RIGID GALVANIZED STEEL
SEC	SECTION
TBD	TO BE DETERMINED
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VAC	AC VOLTAGE
VDC	DC VOLTAGE

SYMBOL	DESCRIPTION
———	3/4" RGS CONDUIT WITH 2#12 AND 1#12 GND, COPPER CONDUCTORS UON
— — —	#4/0 BARE COPPER GROUND WIRE
———	LPS COPPER WIRE ROPE
	HOMERUN AS DESIGNATED ON DRAWING
	PANELBOARD
J	JUNCTION BOX
	120 VOLT, DUPLEX RECEPTACLE (SURFACE MOUNTED)
	120 VOLT, QUAD RECEPTACLE (SURFACE MOUNTED)
	208 VOLT, SINGLE PHASE RECEPTACLE
	208 VOLT, 3-PHASE RECEPTACLE
	DATA OUTLET SERVICE DROP
	HIGH BAY LED FIXTURE
	OUTDOOR WALL MOUNTED FIXTURE (LED)
	EXIT SIGN FIXTURE (ARROW INDICATES DIRECTION)
	EMERGENCY LIGHTING UNIT
	START/STOP COMBINATION STARTER
C	CARBON MONOXIDE SENSOR
1	KEY NOTES
1	CONDUIT AND WIRE DESIGNATOR
	LIGHTNING PROTECTION AIR TERMINAL
	GROUND ROD
CF	CEILING FAN
	30A DISCONNECT SWITCH
	60A DISCONNECT SWITCH
	30A DISCONNECT SWITCH, FUSED AS INDICATED
	200A DISCONNECT SWITCH
T	45KVA STEP-UP TRANSFORMER
	INDICATED EQUIPMENT TO BE DEMOLISHED
100A	CIRCUIT BREAKER WITH RATING
(3P)	3 POLE CIRCUIT BREAKER OR FUSED SWITCH
50A	FUSED SWITCH WITH RATING

FSB FEDERAL DESIGN GROUP JV

SAVIN ENGINEERS, P.C.
3 CAMPUS DRIVE
PLEASANTVILLE, NY 10570

STATE OF NEW YORK
DAVID E. FREDERICKS
086076
LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SINCE 1787

CJAG JMTC UTES Two Bay Addition
Ohio Army National Guard
Project No.: 390321
Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	RKC
DRAWN BY:	KWC
REVIEWED BY:	DF
PROJECT MANAGER:	BG

PROJECT NUMBER: 507101521

SHEET TITLE: **NOTES, SYMBOLS & ABBREVIATIONS**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: E-001

DWG NAME: C:\PWWORKING\HMMFED_FUELING\KCHEN-SAVIN\ENGINEERS.COM\DMS7715\507101521-E-001.DWG SAVE DATE: 10/24/2022 2:48 PM BY: KCHEN PLOT DATE: 11/4/2022 9:02 AM

DEMOLITION EXISTING FLOOR PLAN

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

8' 4' 0' 8' 16'

SCALE 1/8" = 1'-0"

NOTES:

1. FOR ADDITIONAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWING E-001.
2. FOR THE EXISTING EXHAUST FANS AND MAU UNITS, SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH THE HVAC CONTRACTOR AND CONTRACTING OFFICER.

KEY NOTES:

1. DISCONNECT AND REMOVE EXISTING LIGHT FIXTURE, JUNCTION BOX AND WIRE. TERMINATE WIRE IN NEW JUNCTION BOX IN EXISTING WORK BAY.
2. DISCONNECT AND REMOVE EXISTING RECEPTACLE, JUNCTION BOX AND WIRE. TERMINATE WIRE IN NEW JUNCTION BOX IN EXISTING WORK BAY.
3. DISCONNECT AND REMOVE EXISTING EXIT SIGN. TERMINATE WIRING SO AS TO ALLOW CONTINUATION OF EXISTING FEED-THRU CIRCUIT.
4. DISCONNECT AND REMOVE SENSOR DEVICE. COORDINATE WITH CONTRACTING OFFICER FOR FURTHER DIRECTION.
5. CONTRACTOR IS ADVISED, EXISTING EXHAUST FANS #1 & #2 ARE BEING REMOVED. DISCONNECT EXISTING POWER SUPPLY. EXISTING CIRCUIT TO REMAIN AND BE REUSED. COORDINATE WITH THE HVAC CONTROLS/EQUIPMENT INSTALLER FOR THE DISPOSITION OF THE EXHAUST FAN CONTROLS. RETAIN 120 VOLT CONTROL POWER FOR REUSE WITH NEW EQUIPMENT.
6. EXISTING MAU UNITS 3 & 4 ARE BEING REMOVED. DISCONNECT EXISTING POWER SUPPLY. EXISTING CIRCUIT TO REMAIN AND BE REUSED.
7. CONTRACTOR SHALL RELOCATE EXISTING CO DETECTOR. EXTEND WITH NEW CONDUIT AND WIRE AS NECESSARY. FOR BIDDING PURPOSES ASSUME 25 FEET OF 3/4"C WITH 4#14 AWG WIRES.
8. CONTRACTOR IS ADVISED, THE EXISTING VEHICLE EXHAUST UNIT IS BEING ROTATED. ASSUME A SIMPLE POWER DISCONNECT/RECONNECT SHALL BE REQUIRED. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
9. (ABI#1) VEHICLE EXHAUST SYSTEM. DISCONNECT EXISTING POWER SUPPLY. EXISTING CIRCUIT TO REMAIN AND BE REUSED. COORDINATE WITH THE HVAC CONTROLS/EQUIPMENT INSTALLER FOR THE DISPOSITION OF EXHAUST SYSTEM CONTROLS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION,

FSB FEDERAL DESIGN GROUP JV

SAVIN ENGINEERS, P.C.
3 CAMPUS DRIVE
PLEASANTVILLE, NY 10570

STATE OF NEW YORK
DAVID S. FREDERICK
086076
LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SINCE 1791

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKC

DRAWN BY: KWC

REVIEWED BY: DF

PROJECT MANAGER: BG

PROJECT NUMBER: 507101521

SHEET TITLE: **DEMOLITION PLAN**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: ED-101

BID DOCUMENTS

DWG NAME: C:\PWWORKING\HMMFED_FUELING\KCHEN-SAVIN\ENGINEERS.COM\DMS\7715\3507101521-ED-101.DWG SAVE DATE: 2/8/2022 9:55 AM BY: KCHEN PLOT DATE: 11/4/2022 9:17 AM

CONDUIT/WIRE LEGEND

1	3/4" C, 3#10 & 1#10 GND.
2	3/4" C, 3#12 & 1#12 GND.
3	2 1/2" C, 4#4/0 & 1#6 GND.
4	3/4" C, 2#12 & 1#12 GND.
5	1 1/4" C, 4#4 & 1#8 GND.
6	1 1/4" C, 4#2 & 1#8 GND.
7	1 1/4" C, 3#1 & 1#6 GND.
8	1" C, 4#6 & 1#10 GND.
9	3/4" C, 3#8 & 1#10 GND.
10	1 1/4" C, 3#2 & 1#8 GND.

KEY NOTES:

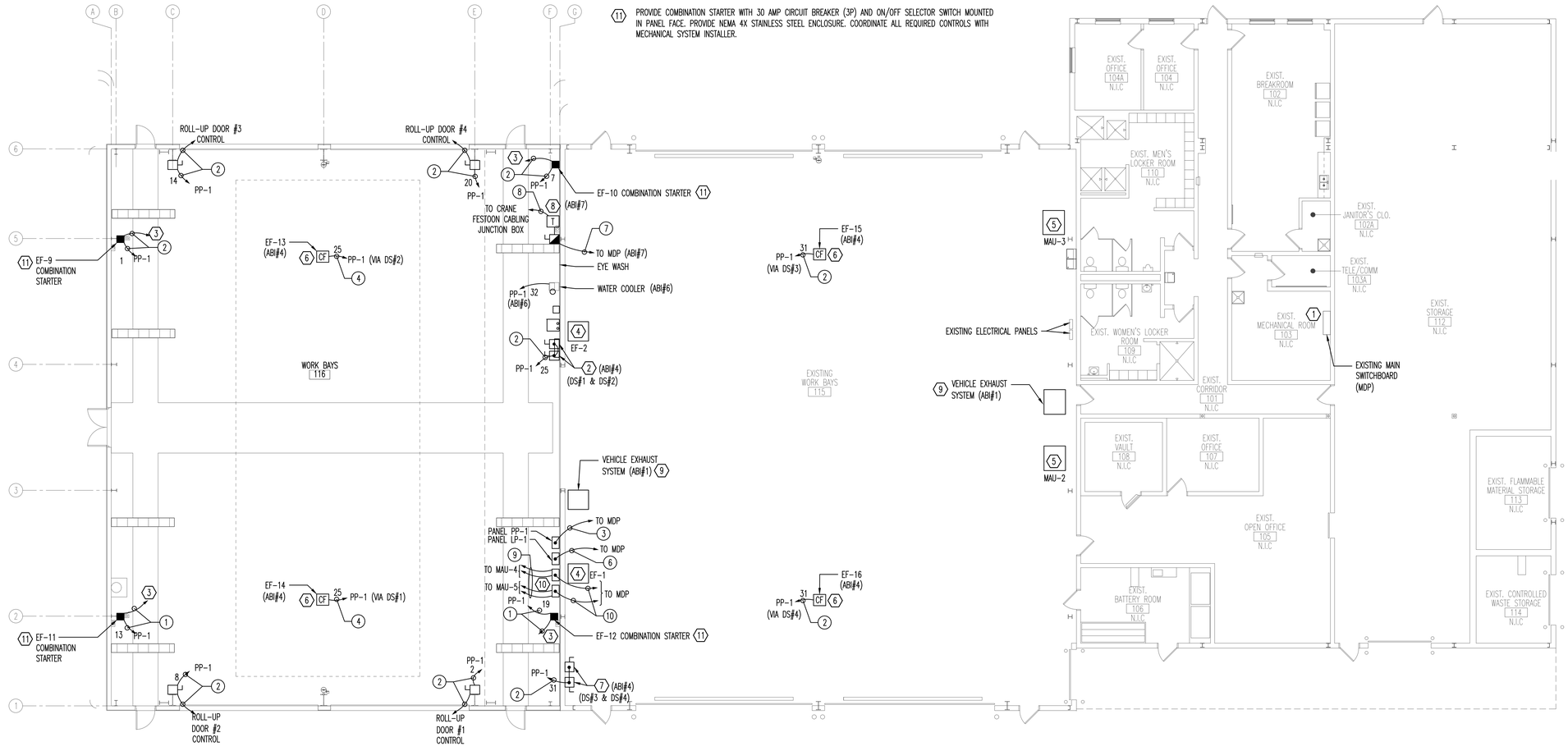
1. EXISTING 1200AMP (FUSED AT 1000AMP), 208Y/120 VOLT MAIN DISTRIBUTION FUSED SWITCHBOARD. MODIFY SWITCHBOARD AS REQUIRED FOR NEW POWER. SEE DRAWING E-105 FOR ADDITIONAL INFORMATION.
2. CEILING FAN DISCONNECT SWITCHES NO.1 & 2 FOR ON/OFF OPERATION (DS#1 & DS#2) (ABI#4).
3. TO ROOF MOUNTED EXHAUST FAN. PROVIDE AND INSTALL ROOF MOUNTED DISCONNECT IN NEMA 3R ENCLOSURE.
4. NEW EXHAUST FAN INSTALLATION. RECONNECT EXISTING CONDUIT AND WIRE (RE-USE EXISTING CIRCUIT).
5. NEW MAU UNIT INSTALLATION. RECONNECT EXISTING CONDUIT AND WIRE (RE-USE EXISTING CIRCUIT).
6. COORDINATE POWER AND CONTROL REQUIREMENTS WITH HVAC INSTALLER. EF FANS HAVE AN ASSOCIATED CONTROL PANEL. PROVIDE 120 VOLTS TO EACH PANEL (TWO TOTAL). ASSUME 100' OF 3/4"C, 2#12 AND 1#12 GND. FOR THIS TASK. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
7. CEILING FAN DISCONNECT SWITCHES NO. 3 & 4 FOR ON/OFF OPERATION (DS#3 & DS#4) (ABI#4).
8. (ABI#7) PROVIDE 200A DISCONNECT SWITCH. 45 KVA STEP-UP TRANSFORMER. 208 VOLT, 3-PHASE PRIMARY – 480 VOLT, 3-PHASE SECONDARY FOR NEW CRANE POWER. TRANSFORMER SHALL BE DESIGNED FOR STEP-UP CONFIGURATION.
9. (ABI#1) VEHICLE EXHAUST SYSTEM. RECONNECT EXISTING POWER/CIRCUIT TO NEW UNITS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
10. LOCATION OF SPLIT PANEL 4 & 5. SEE SINGLE LINE DIAGRAM ON DRAWING E-105 FOR ADDITION INFORMATION.
11. PROVIDE COMBINATION STARTER WITH 30 AMP CIRCUIT BREAKER (3P) AND ON/OFF SELECTOR SWITCH MOUNTED IN PANEL FACE. PROVIDE NEMA 4X STAINLESS STEEL ENCLOSURE. COORDINATE ALL REQUIRED CONTROLS WITH MECHANICAL SYSTEM INSTALLER.

ABI#2 – UPGRADE ELECTRICAL SERVICE

1. CONTRACTOR SHALL PROVIDE ADDITIONAL COST TO UPGRADE EXISTING SERVICE TO THE BUILDING.
2. THIS INCLUDES MODIFYING EXISTING SWITCHBOARD TO FULL CAPACITY RATING. REPLACE EXISTING 1000 AMP FUSES WITH NEW 1200 AMP FUSES.
3. DISCONNECT AND REMOVE EXISTING 300 KVA TRANSFORMER AND REPLACE WITH NEW 500 KVA UNIT. MATCH EXISTING VOLTAGE/PHASE CONFIGURATIONS.
4. PROVIDE AND INSTALL 4 SETS OF 3-1/2"C WITH 4-350 KCMIL CABLE CONDUIT AND WIRE FROM TRANSFORMER TO EXISTING SWITCHBOARD. RUN UNDERGROUND FROM TRANSFORMER TO BUILDING – EXPOSED TO SWITCHBOARD. IT SHOULD BE NOTED THAT THERE ARE 4-3 1/2" CONDUITS (3 USED AND 1 SPARE) THAT HOUSES THE EXISTING INCOMING SERVICE. THE POTENTIAL RE-USE OF THESE CONDUITS SHALL BE DETERMINED DURING CONSTRUCTION. HOWEVER, CONTRACTOR SHALL BID AS IF NEW CONDUIT IS REQUIRED.

NOTES:

1. FOR ADDITIONAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWING E-001.
2. SEE MECHANICAL DRAWINGS FOR LOCATION OF HVAC EQUIPMENT.
3. SEE DRAWING E-105 FOR SINGLE LINE DIAGRAM AND PANEL SCHEDULE.
4. SEE MECHANICAL DRAWINGS FOR COORDINATION WITH HVAC CONTROLS INSTALLER FOR ALL HVAC EQUIPMENT.
5. CONTRACTOR IS ADVISED THAT THE MECHANICAL SYSTEM INSTALLER IS PROVIDING FOR SIX NEW CONTROL PANELS. SOME CONTROL PANELS CAN REUSE EXISTING 120 VOLT POWER CIRCUITS. OTHER WILL REQUIRED NEW 120 VOLT POWER, REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS. HOWEVER, FOR BIDDING PURPOSES ASSUME THE INSTALLATION OF 500' OF 3/4" CONDUIT WITH 2#12 & 1#12 GROUND.



POWER PLAN

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

8' 4' 0' 8' 16'

SCALE 1/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV

SAVIN ENGINEERS, P.C.
3 CAMPUS DRIVE
PLEASANTVILLE, NY 10570

STATE OF NEW YORK
DAVID G. FREDERICK
086076
LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SEAL SINCE 1874

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKC

DRAWN BY: KWC

REVIEWED BY: DF

PROJECT MANAGER: BG

PROJECT NUMBER: 507101521

SHEET TITLE: **POWER PLAN**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: E-101

BID DOCUMENTS

DWG NAME: C:\PWWORKING\HMMFED_FUELING\KCHEN-SAVINENGINEERS.COM\DMS7715350\7101521-E-101.DWG SAVE DATE: 2/7/2022 4:50 PM BY: KCHEN PLOT DATE: 11/4/2022 9:03 AM

CONDUIT/WIRE LEGEND	
1	3/4" C, 3#10 & 1#10 GND.
2	3/4" C, 2#8 & 1#10 GND.
3	3/4" C, 2#12 & 1#12 GND.
4	3/4" C, 3#12 & 1#12 GND.

ABI#3 – LIGHTNING PROTECTION SYSTEM (LPS)

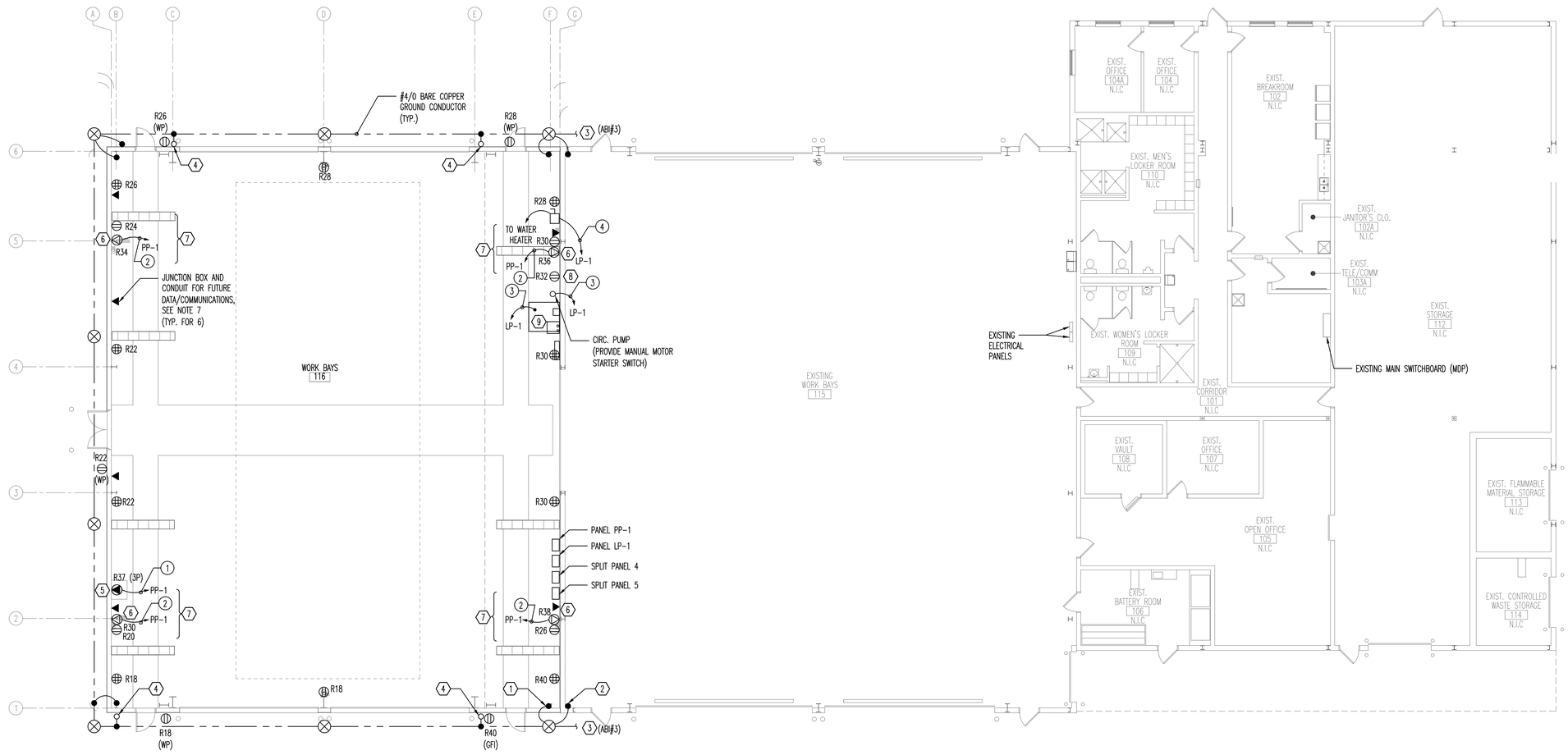
1. UNDER BASE-BID CONTRACTOR SHALL INSTALL LPS ON THE NEW STRUCTURE (AS SHOWN) AND CONNECT INTO EXISTING BUILDING STEEL AND EXISTING GROUND GRID.
2. ABI#3 COVERS A NEW LIGHTNING PROTECTION SYSTEM FOR THE REMAINDER OF THE EXISTING BUILDING. THIS WOULD INCLUDE COMPLETE SYSTEM ON ROOF AND NEW #4/0 BARE COPPER GROUND GRID INSTALLED AROUND THE EXISTING BUILDING AS WELL.
3. PROVIDE ALL NECESSARY AIR TERMINALS, WIRE ROPE, DOWN CONDUCTORS, GROUND RODS, ETC. TO OBTAIN THE UL98a CERTIFICATIONS (MASTER LABEL).

KEY NOTES:

1. EXOTHERMIC WELD TO BUILDING STEEL. (TYP. FOR 4 LOCATIONS).
2. EXOTHERMIC WELD TO EXISTING BUILDING STEEL.
3. CONTINUE GROUND LOOP TO EXISTING SYSTEM, VERIFY EXISTING GROUND LOOP IN THE FIELD (ABI#3).
4. BARE COPPER CABLE CONNECTION TO ROOF MOUNTED LIGHTNING PROTECTION SYSTEM.
5. PROVIDE 3 PHASE OUTLET COMPATIBLE WITH PLASMA CUTTER. COORDINATE WITH CONTRACTING OFFICER.
6. PROVIDE SINGLE PHASE OUTLET COMPATIBLE WITH FACILITY USED WELDERS. COORDINATE WITH CONTRACTING OFFICER.
7. MOUNT BOTH 120 VOLT AND 208 VOLT RECEPTACLES ON COLUMN SIMILAR TO BAY 115 RECEPTACLES.
8. RECEPTACLE FOR WATER COOLER.
9. SINGLE ZONE PUMP RELAY. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION (RADIANT HEAT SLAB SYSTEM).

NOTES:

1. FOR ADDITIONAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWING E-100.
2. SEE DRAWING E-105 FOR PANEL SCHEDULE.
3. SEE DRAWING E-103 ROOF PLAN FOR LIGHTNING PROTECTION SYSTEM.
4. ALL RECEPTACLES SHALL BE MOUNTED MINIMUM 24" ABOVE FINISHED FLOOR.
5. FOR ALL DATA OUTLETS CONTRACTOR SHALL RUN 3/4" CONDUIT FROM DATA OUTLET LOCATION TO EXISTING TELE/COMM ROOM 103A.
6. UNLESS NOTED OTHERWISE, ALL 120 VOLT DUPLEX OR QUAD RECEPTACLES ARE POWERED VIA LP-1. ALL CONDUIT SHALL BE 3/4"C, 2#12 & 1#12 GND.
7. PROVIDE BLANK JUNCTION BOX AND SPARE CONDUIT. SEE DRAWING E-105 FOR ADDITIONAL INFORMATION.
8. FOR EXACT LOCATION OF WATER HEATER, SEE MECHANICAL DRAWINGS.



RECEPTACLE, DATA & GROUNDING PLAN

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

8' 4' 0' 8' 16'
SCALE 1/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV

SAVIN ENGINEERS, P.C.
3 CAMPUS DRIVE
PLEASANTVILLE, NY 10570

STATE OF NEW YORK
KEVIN G. FREEBERG
086076
LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD
SINCE 1821

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKC
DRAWN BY: KWC
REVIEWED BY: DF
PROJECT MANAGER: BG
PROJECT NUMBER: 507101521
SHEET TITLE: **RECEPTACLE, DATA & GROUNDING PLAN**
ISSUE DATE: NOVEMBER 9, 2022
SHEET NUMBER: E-102

BID DOCUMENTS

DWG NAME: C:\PW\WORKING\HMMFED_FUELING\KOHEN-SAVINENGINEERS.COM\DMS\7715\507101521-E-102.DWG SAVE DATE: 2/8/2022 9:58 AM BY: KOHEN PLOT DATE: 11/4/2022 9:04 AM

ABI#3 – LIGHTNING PROTECTION SYSTEM (LPS)

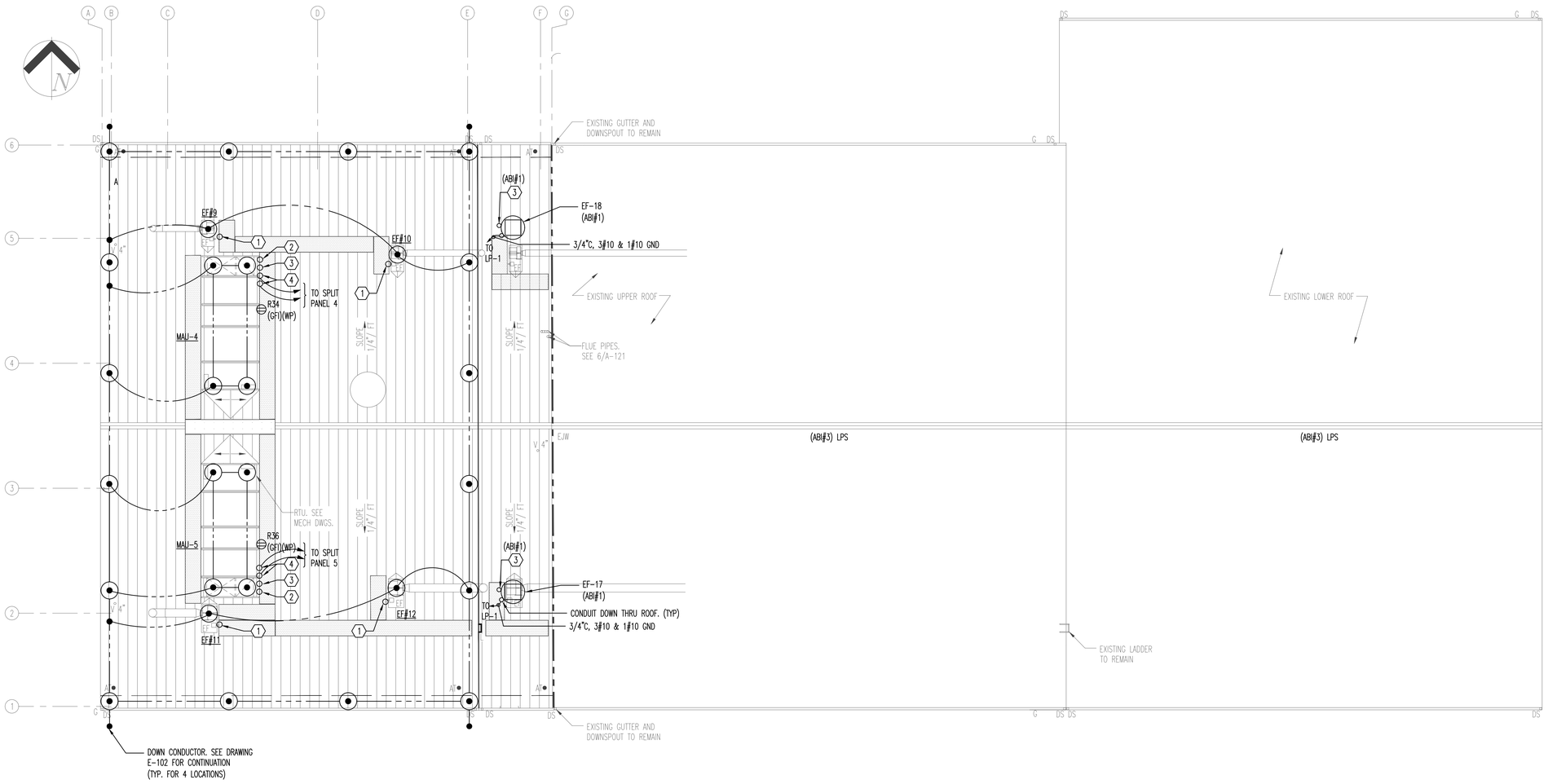
1. UNDER BASE-BID CONTRACTOR SHALL INSTALL LPS ON THE NEW STRUCTURE (AS SHOWN) AND CONNECT INTO EXISTING BUILDING STEEL AND EXISTING GROUND GRID.
2. ABI#3 COVERS A NEW LIGHTNING PROTECTION SYSTEM FOR THE REMAINDER OF THE EXISTING BUILDING. THIS WOULD INCLUDE COMPLETE SYSTEM ON ROOF AND NEW #4/0 BARE COPPER GROUND GRID INSTALLED AROUND THE EXISTING BUILDING AS WELL.
3. PROVIDE ALL NECESSARY AIR TERMINALS, WIRE ROPE, DOWN CONDUCTORS, GROUND RODS, ETC. TO OBTAIN THE UL98a CERTIFICATIONS (MASTER LABEL).

KEY NOTES:

1. POWER FROM PP-1 VIA ON/OFF STARTER. SEE E-101 FOR STARTER LOCATIONS.
2. 3/4" CONDUIT FOR FIRE ALARM CONNECTION IF REQUIRED. STUB AND CAP 6" ABOVE AND BELOW CEILING.
3. 1" CONDUIT FOR POTENTIAL CONTROLS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. 3/4" CONDUIT WITH 3#8 AWG AND 1#10 GND. SEE DRAWING E-105 FOR ADDITIONAL INFORMATION.

NOTES:

1. FOR ADDITIONAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWING E-001.
2. CONTRACTOR IS ADVISED, THE LIGHTNING PROTECTION SYSTEM SHOWN SHALL BE USED AS A GUIDE AND FOR BIDDING PURPOSES. CONTRACTOR SHALL HIRE A CERTIFIED LIGHTNING PROTECTION INSTALLATION SPECIALIST FOR INSTALLATION OF A NEW SYSTEM, INSTALLER SHALL PROVIDE ALL THAT IS REQUIRED (PER NFPA 780) AND SHALL OBTAIN UL96A CERTIFICATION (MASTER LABEL) UPON COMPLETION. ADDITIONALLY, INSTALLER SHALL PROVIDE FOR ALL NECESSARY BONDING FOR COMPLETE SYSTEM.
3. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. ALL CONDUIT ROOF PENETRATIONS SHALL BE SIMILAR TO PIPE PORTAL SYSTEMS BY PORTAL PLUS OR APPROVED EQUAL. SYSTEM SHALL ALLOW BOTH VERTICAL AND HORIZONTAL CONDUIT MOVEMENTS, PROVIDING MAINTENANCE FREE PERMANENT INSTALLATION.



POWER & LIGHTNING PROTECTION ROOF PLAN

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

8' 4' 0' 8' 16'
SCALE 1/8" = 1'-0"

FSB FEDERAL DESIGN GROUP JV

SAVIN ENGINEERS, P.C.
3 CAMPUS DRIVE
PLEASANTVILLE, NY 10570

STATE OF NEW YORK
DAVID G. FREDERICK
086076
LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SEAL SINCE 1/7/53

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(90%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	RKC
DRAWN BY:	KWC
REVIEWED BY:	DF
PROJECT MANAGER:	BG
PROJECT NUMBER:	507101521

SHEET TITLE:

POWER AND LIGHTNING PROTECTION PLAN

ISSUE DATE:

NOVEMBER 9, 2022

SHEET NUMBER:

E-103

BID DOCUMENTS

DWG NAME: C:\PWWORKING\HMMFED_FUELING\KCHEN-SAV\ENGINEERS.COM\DMS7715\507101521-E-103.DWG SAVE DATE: 2/8/2022 9:58 AM BY: KCHEN PLOT DATE: 11/4/2022 9:04 AM

LIGHTING FIXTURE NOTES:

1. SEE DRAWING E-105 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. TYPE A & B FIXTURES:
   - SUITABLE FOR HEAVY DUTY INDUSTRIAL APPLICATIONS WITH MOUNTING HEIGHTS RANGING FORM 15 TO 45 FEET.
   - BOROSILICATE PRISMATIC GLASS REFRACTOR. THE USE OF TEMPERED CLEAR GLASS, POLYCARBONATE OR ACRYLIC OPTICS ARE NOT PERMITTED.
   - NARROW FROSTED GLASS.
   - OPTICS SHALL BE IP65 RATED.
   - CAST ALUMINUM HOUSING – POLYESTER POWER PAINT–GRAY.
   - 3/4" PENDANT MOUNTED WITH 6 FOOT SAFETY CHAIN.
   - WIRELESS NETWORKING AND 0–10 VOLT DIMMING DRIVER.
   - LUMINAIRE SURGE PROTECTION – 10KV/5KV PER ANSI C82.77–5–2015.
   - 5 YEAR WARRANTY.

3. TYPE C FIXTURE:
   - HEAVY DUTY WALL PACK LED SUITABLE FOR EXTERIOR APPLICATIONS.
   - TYPE III MEDIUM DISTRIBUTION.
   - GRAY HOUSING.
   - 7 PIN NEMA PHOTOCONTROL RECEPTACLE WITH COMPATIBLE PHOTOCELL.
   - TAMPER RESISTANT HARDWARE.

4. TYPE D FIXTURE:
   - PREMIUM DIE–CAST ARCHITECTURAL EMERGENCY LIGHT, LED SUITABLE FOR EXTERIOR APPLICATIONS.
   - PHOTOCELL, NORMALLY ON WITH INTERNAL BATTERY.
   - BLACK TEXTURED.
   - LITHIUM IRON PHOSPHATE BATTERY WITH SELF–DIAGNOSTICS AND REMOTE TEST.
   - FIELD FIGURABLE OPTICAL DISTRIBUTION UL LISTED FOR COLD/WET LOCATIONS.

5. TYPE EM FIXTURE:
   - NEMA 4X, LED, INDUSTRIAL EMERGENCY UNIT.
   - IP66 RATED.
   - LITHIUM IRON PHOSPHATE BATTERY WITH SELF–DIAGNOSTICS AND REMOTE TEST.
   - SPOT DISTRIBUTION.
   - UL LISTED FOR COLD/WET LOCATIONS.
   - MINIMUM 90 MINUTES ILLUMINATION UPON LOSS OF AC POWER.

6. TYPE EX FIXTURE:
   - NEMA 4X, LED, INDUSTRIAL EXIT UNIT.
   - SUITABLE FOR WET AND HOSE DOWN APPLICATIONS.
   - UV–STABLE POLYCARBONATE COVER. STAINLESS STEEL HARDWARE.
   - MINIMUM 90 MINUTES ILLUMINATION UPON LOSS OF AC POWER.
   - NICKEL–CADMIUM BATTERY – SELF DIAGNOSTICS.
   - UL LISTED FOR COLE/WET LOCATIONS.

LIGHTING CONTROL NOTES:

1. INTERIOR FIXTURES (HIGH BAY) (BOTH TYPE A AND B) SHALL HAVE INTEGRAL 360° MOTION SENSORS WITH DAYLIGHT HARVESTING (DIMMABLE) PHOTO SENSOR WHICH SHALL TURN ALL LIGHTS ON OR OFF BASED ON MOVEMENT WITHIN THE BAY AREAS. ALL FIXTURES SHALL BE EQUIPPED WITH INTEGRAL TRANSMITTERS SO AS TO ALLOW ALL FIXTURES TO COME ON AND TURN OFF AT THE SAME TIME. SHUT OFF TIME SHALL BE SET AT 30 MINUTES.

2. EXTERIOR LIGHTING SHALL BE CONTROLLED ON AND OFF VIA AN EXTERIOR OR INTEGRAL MOUNTED PHOTOCELL ON EACH FIXTURE.

3. CONTRACTOR IS ADVISED, IT IS UNDERSTOOD THAT THERE ARE MULTIPLE CONFIGURATIONS OF LIGHTING CONTROLS THAT CAN BE USED FOR ENERGY EFFICIENCY AND CODE COMPLIANCE. ONE SUCH CONFIGURATION IS PROVIDED FOR IN THE ELECTRICAL BID DOCUMENTS. IF THE CONTRACTOR DETERMINES A DIFFERENT LIGHTING CONTROL APPROACH, AS LONG AS ENERGY CODE COMPLIANCE IS PROVIDED FOR, THIS WOULD BE ACCEPTABLE. CONTRACTOR SHALL PROVIDE FOR THIS IN HIS/HER BID.

NOTES:

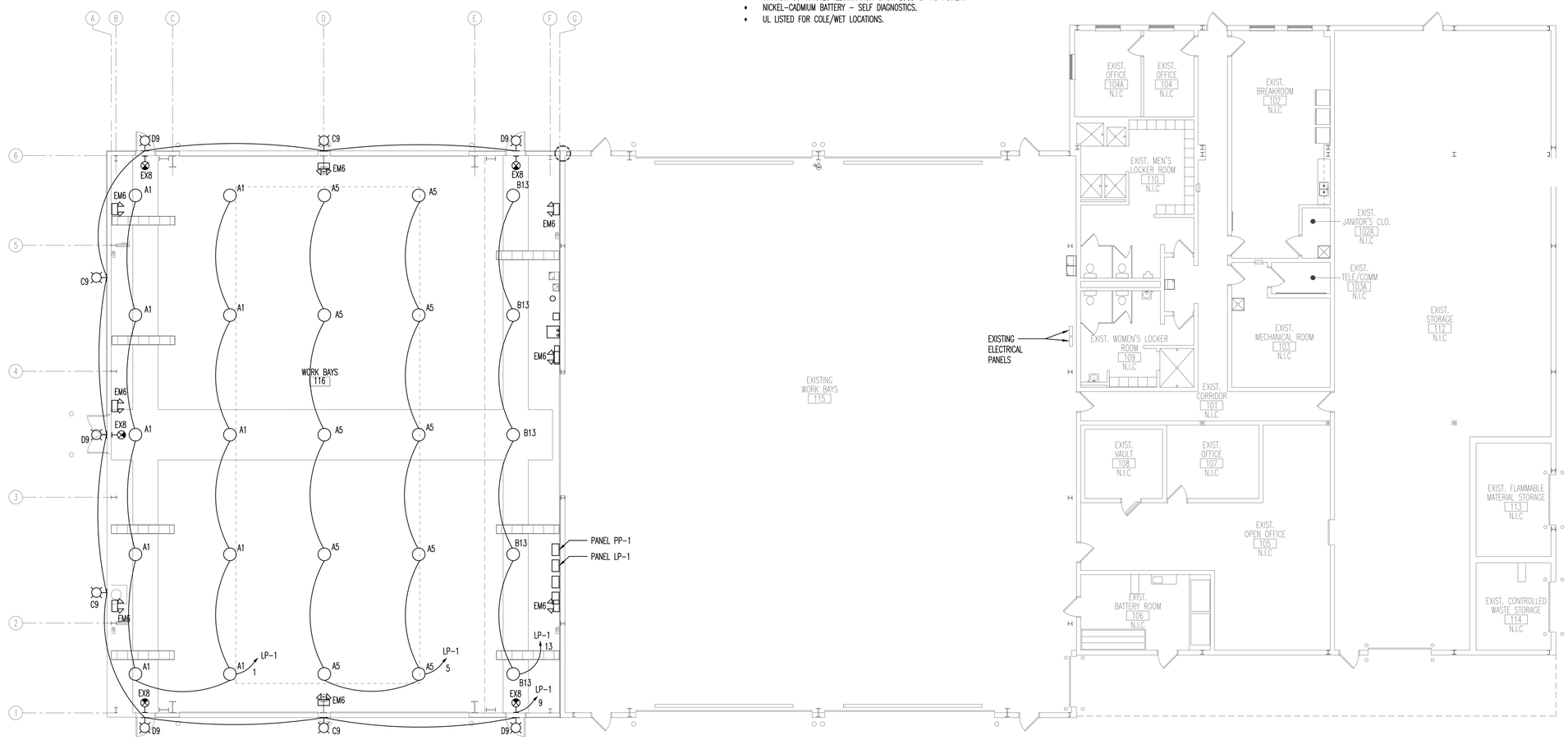
1. FOR ADDITIONAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWING E–001.

2. FOR PANEL AND FIXTURE SCHEDULES SEE DRAWING E–105.

3. UNLESS NOTED OTHERWISE, ALL LIGHTING CONDUIT AND WIRE SHALL BE 3/4"C, 2#12 & 1#12 GND.

4. CONDUIT RUN(S) NOT SHOWN FOR EMERGENCY AND EXIT LIGHTING.

5. MOUNT "A" TYPE FIXTURES 34.5' ABOVE FINISHED FLOOR. MOUNT "B" TYPE FIXTURE 20' ABOVE FINISHED FLOOR.



LIGHTING PLAN

SCALE: 1/8" = 1'–0"

8' 4' 0' 8' 16'

SCALE 1/8" = 1'–0"

FSB FEDERAL DESIGN GROUP JV

SAVIN ENGINEERS, P.C.
3 CAMPUS DRIVE
PLEASANTVILLE, NY 10570

STATE OF NEW YORK
GARY C. FREDERICKS
086076
LICENSED PROFESSIONAL ENGINEER

OHIO NATIONAL GUARD SEAL 17th SINCE

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: RKC

DRAWN BY: KWC

REVIEWED BY: DF

PROJECT MANAGER: BG

PROJECT NUMBER: 507101521

SHEET TITLE: **LIGHTING PLAN**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: E-104

BID DOCUMENTS

DWG NAME: C:\PW\WORKING\HMMFED_FUELING\KCHEN-SAVINENGINEERS.COM_DMS\7715350710\521-E-104.DWG SAVE DATE: 11/7/2022 12:55 PM BY: KCHEN PLOT DATE: 11/7/2022 1:00 PM

PANELBOARI LP-1 — **LOCATION: WORK BAY 116**

12 **NEMA RATING** — 3 **POLES** — **MOUNTING:** SURFACE

125 **AMP BUS RATING** — 100 **AMP MAIN BREAKER** — 10 **KA SHORT CIRCUIT RATING**

208Y/120 **VOLTS** — 3 **PHASE** — 4 **WIRE** — **ELECTRONIC GRADE :** NO

CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	PHASE B	PHASE C	BREAKER AMPS/ POLES	NOTES
1	LIGHTING	1.2			20/2	1
3			1.2			
5	LIGHTING			1.2	20/2	1
7		1.2				
9	EXTERIOR LIGHTING		0.8		20/2	
11				0.8		
13	LIGHTING	1.2			20/2	1
15			1.2			
17	SPARE				20/1	
19	EF-17 (ABI#1)	2.0			25/3	4
21			2.0			
23				2.0		
25	EF-18 (ABI#1)	2.0			25/3	4
27			2.0			
29				2.0		
31	SPACE					
33	SPACE					
35	SPACE					
37	SPACE					
39	SPACE					
41	SPACE					
	TOTAL PHASE KVA THIS SIDE	3.6	3.2	2		

CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	PHASE B	PHASE C	BREAKER AMPS/ POLES	NOTES
2	SPARE				20/1	
4	SPARE		0.3		20/1	
6	EMERGENCY LIGHTING			0.2	20/1	
8	EXIT SIGN LIGHTING	0.2			20/1	
10	SPARE				20/1	
12	SPARE				20/1	
14	SPARE				20/1	
16	RADIANT HEAT SLAB SYSTEM				20/1	
18	RECEPTACLE			0.5	20/1	2
20	RECEPTACLE	0.5			20/1	2
22	RECEPTACLE		0.5		20/1	2
24	RECEPTACLE			0.5	20/1	2
26	RECEPTACLE	0.5			20/1	2
28	RECEPTACLE		0.5		20/1	2
30	RECEPTACLE			0.5	20/1	2
32	RECEPTACLE (WATER COOLER)	0.5			20/1	2 & 3
34	ROOF RECEPTCALE		0.3		20/1	2
36	ROOF RECEPTCALE			0.3	20/1	2
38	RECEPTACLE	0.5			20/1	2
40	RECEPTACLE		0.5		20/1	2
42	SPARE				20/1	
	TOTAL PHASE KVA THIS SIDE	2.2	2.1	2		
	TOTAL KVA PER PHASE	5.8	5.3	4		
	TOTAL THREE PHASE KVA		15.1			

NOTES:
1. PROVIDE "SWITCHING" DUTY CIRCUIT BREAKERS.
2. PROVIDE GFI BREAKER.
3. ABI#6
4. ABI#1

NOTES CONT.:
5.
6.
7.
8.

PANELBOARD: PP-1 — **LOCATION: WORK BAY 116**

1 **NEMA RATING** — 3 **POLES** — **MOUNTING:** SURFACE

200 **AMP BUS RATING** — 200 **AMP MAIN BREAKER** — 10 **KA SHORT CIRCUIT RATING**

208Y|120 **VOLTS** — 3 **PHASE** — 4 **WIRE** — **ELECTRONIC GRADE :** NO

CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	PHASE B	PHASE C	BREAKER AMPS/ POLES	NOTES
1	EF-9	0.9			15/3	
3			0.9			
5				0.9		
7	EF-10	0.9			15/3	
9			0.9			
11				0.9		
13	EF-11	2.1			35/3	
15			2.1			
17				2.1		
19	EF-12	2.1			35/3	
21			2.1			
23				2.1		
25	EF-13 & 14	0.4			15/3	3
27			0.4			
29				0.4		
31	EF-15 & 16	0.4			15/3	3
33			0.4			
35				0.4		
37	PLAZMA CUTTER	1.3			30/3	1,2
39			1.3			
41				1.3		
	TOTAL PHASE KVA THIS SIDE	8.1	8.1	8.1		

CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	PHASE B	PHASE C	BREAKER AMPS/ POLES	NOTES
2	ROLL-UP DOOR 1	0.4			15/3	
4			0.4			
6				0.4		
8	ROLL-UP DOOR 2	0.4			15/3	
10			0.4			
12				0.4		
14	ROLL-UP DOOR 3	0.4			15/3	
16			0.4			
18				0.4		
20	ROLL-UP DOOR 4	0.4			15/3	
22			0.4			
24				0.4		
26	WELDING REC. # 1	2			40/2	
28			2			1,2
30	WELDING REC. # 2			2	40/2	
32		2				1,2
34	WELDING REC. # 3		2		40/2	
36				2		1,2
38	WELDING REC. # 4	2			40/2	
40			2			1,2
42	SPARE				20/1	
	TOTAL PHASE KVA THIS SIDE	7.6	7.6	5.6		
	TOTAL KVA PER PHASE	15.7	15.7	13.7		
	TOTAL THREE PHASE KVA		45.1			

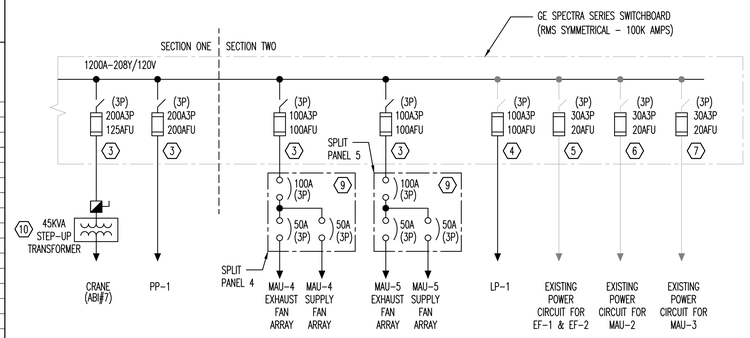
NOTES:
1. PROVIDE GFCI BREAKER.
2. COORDINATE EXACT BREAKER REQUIREMENTS WITH THE CONTRACTING OFFICER.
3. ABI#4
4.

NOTES CONT.:
5.
6.
7.
8.

LIGHTING FIXTURE SHEDULE- BASIC OF DESIGN - SEE SPECIFICATIONS

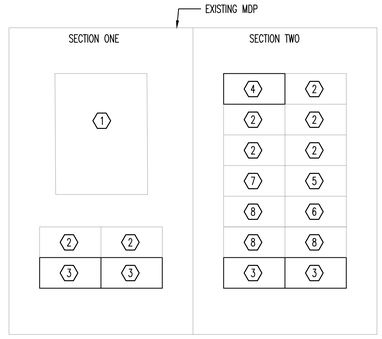
FIXTURE TYPE	VOLTS	MOUNTING	LED LUMEN-WATTS	COLOR TEMPERATURE	CRI	REMARKS
A	208	PENDANT	33499-288	4000	80	GRAY-INTEGRAL 360 DEGREE MOTION SENSOR- SAFETY CHAIN
B	208	PENDANT	17371-130	4000	80	GRAY-INTEGRAL 360 DEGREE MOTION SENSOR- SAFETY CHAIN
C	208	WALL	7059-71	3000	80	INDIVIDUAL PHOTOCELL CONTROLLED
D	120	WALL		N/A	N/A	INTEGRAL PHOTOCELL CONTROL
EM	120	WALL	10.6 WATTS	N/A	N/A	NEMA 4X - LED
EX	120	WALL	N/A	N/A	N/A	NEMA 4X -LED
—	—	—	—	—	—	PROGRAMMING *

* CONTRACTOR SHALL PROVIDE FOR ALL REQUIRED PROGRAMMING OF THE TYPE A AND B FIXTURES IN HIS/HER BID.



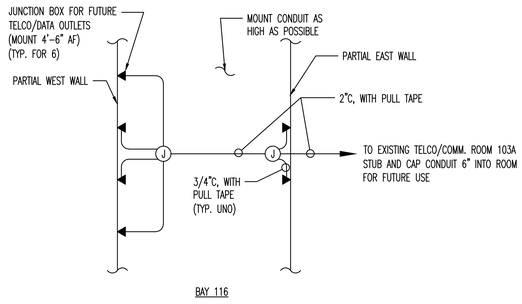
PARTIAL SINGLE LINE DIAGRAM

SCALE: N.T.S.



EXISTING MAIN DISTRIBUTION SWITCHBOARD

SCALE: N.T.S.



FUTURE TELCO/COMM CONDUIT DETAIL

SCALE: N.T.S.

NOTES:

1. FOR ADDITIONAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWING E–100.
2. CONTRACTOR IS ADVISED THAT INFORMATION SHOWN IN THE EXISTING DISTRIBUTION SWITCHBOARD WAS OBTAINED VIA A SITE VISIT IN OCTOBER OF 2021. ANY CHANGES MADE TO THE SWITCHBOARD AFTER THAT TIME SHALL NOTED DURING THE BID PROCESS.

KEY NOTES:

1. MAIN SWITCH (1000 AFU).
2. EXISTING CIRCUITS TO REMAIN.
3. EXISTING "SPACE" TO BE MODIFIED WITH NEW FUSED SWITCH FOR IN SIZES AND USE AS SHOWN.
4. EXISTING FUSED SWITCH TO BE REPURPOSED FOR USE AS SHOWN.
5. EXISTING FUSED SWITCH (EF–1 & EF–2). CHANGE FUSES TO 20A.
6. EXISTING FUSED SWITCH (MAU–2). CHANGE FUSES TO 20A.
7. EXISTING FUSED SWITCH (MAU–3). CHANGE FUSES TO 20A.
8. EXISTING SPARE FUSED SWITCHES TO REMAIN (NOT SHOWN ON SINGLE LINE DIAGRAM).
9. 100 AMP – 3 PHASE PANEL WITH ONE 100 AMP MAIN BREAKER AND TWO 50A DISTRIBUTION BREAKERS.
10. 45 KVA STEP–UP TRANSFORMER. 208 VOLT DELTA PRIMARY WITH 480 VOLT DELTA SECONDARY. TRANSFORMER SHALL BE SUITABLE FOR USE IN STEP–UP VOLTAGE APPLICATIONS (UL LISTED).

LEGEND

HEAVY LINE – NEW WORK.

LIGHT LINE – EXISTING CONDITIONS.

FSB FEDERAL DESIGN GROUP JV

SAVIN ENGINEERS, P.C.
3 CAMPUS DRIVE
PLEASANTVILLE, NY 10570

STATE OF NEW YORK — WAYNE G. FREDERICKS — LICENSED PROFESSIONAL ENGINEER — 086076

CJAG JMTC UTES Two Bay Addition

Ohio Army National Guard

Project No.: 390321

Braceville Twp., Trumbull Co., OH

REVISION HISTORY:

	DESCRIPTION	DATE
A	A-2(35%) REPORT	12/01/2020
B	B-1(60%) SUBMISSION	03/04/2021
C	B-2(95%) SUBMISSION	12/17/2021
D	BID DOCUMENTS	11/9/2022

PROJECT INFORMATION:

DESIGNED BY: RKC

DRAWN BY: KWC

REVIEWED BY: DF

PROJECT MANAGER: BG

PROJECT NUMBER: 507101521

SHEET TITLE: **PANEL SCHEDULE, SINGLE LINE DIAGRAM AND FIXTURE SCHEDULE**

ISSUE DATE: NOVEMBER 9, 2022

SHEET NUMBER: E-105

BID DOCUMENTS

DWG NAME: C:\PWWORKING\HMMFED_FUELING\KCHEN-SAVINENGINEERS.COM\DMS7715\507101521-E-105.DWG SAVE DATE: 11/4/2022 9:18 AM BY: KCHEN PLOT DATE: 11/7/2022 11:43 AM