GAYLORD COMMUNITY SCHOOLS PROJECT SF3.8
BID PACKAGE NO. 4
BOARD OFFICE / EARLY CHILDHOOD CENTER
GENERATOR & ATS INSTALLATION PROJECT

615 S. ELM AVE., GAYLORD, MI 49735

WORK DESCRIPTION

WORK OF THE CONTRACT INCLUDES INSTALLATION OF A PREPACKAGED GENERATOR SET AND AUTOMATIC TRANSFER SWITCH (ATS) PREVIOUSLY PURCHASED BY THE OWNER.

CODE DATA

APPLICABLE CODES:
- 2021 MICHIGAN BUILDING CODE
- 2021 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
- 2021 MICHIGAN PLUMBING CODE
- 2023 MICHIGAN ELECTRIC CODE AND (NEC BY REFERENCE)
- 2012 LIFE SAFETY CODE

BUILDING USE GROUP:
- EXISTING B/E/S2 (MIXED OCCUPANCIES – NON-SEPARATED & SEPARATED)

CONSTRUCTION TYPE:
- 2021 MBC TYPE IIB
- NFPA TYPE II(000)

BUILDING AREA:
- TOTAL BUILDING AREA: 45,900 sf
- B/E USE: 33,010 sf
- S2 USE: 12,890 sf

OCCUPANT LOAD (PER 2021 MBC 1004.1.2):
- B/E USE AREAS: 750
- S2 USE AREA: 42

BID ALTERNATES

BID ALTERNATE NO 1: REPLACE EXISTING ELECTRICAL PANELS

INCLUDES REMOVAL AND REPLACEMENT OF EXISTING MAIN DISTRIBUTION PANEL "MDP", INSTALLED AT A NEW LOCATION, WITH FEEDERS FROM "MDP" AS NEEDED TO RECONNECT TO EXISTING "MD" LOADS; AND REMOVAL AND REPLACEMENT OF EXISTING SUB-PANEL "DPA" WITH NEW SUB-PANEL "DPA" INSTALLED AT THE SAME LOCATION AND RECONNECTING EXISITIGN FEEDERS TO EXISTING "DPA" LOADS.

BID ALTERNATE NO. 2: NEW GAS SERVICE HEADER

INCLUDES REMOVAL OF EXISTING BOECC BUILDING 3" NATURAL GAS SERVICE HEADER (LOCATED NEAR THE BOILER ROOM) AND REPLACEMENT WITH A 6" NATURAL GAS SERVICE HEADER INTHE SAME LOCATION AND CONNECTING TO THE EXISTING 3" NATURAL GAS MAIN SERVING EXISTING LOADS WITHIN THE EXISTING BOILER ROOM. PROVIDE A NEW 5" NATURAL GAS FEEDER PIPE TAPPED OFF NEW/UPGRADED 6" GAS HEADER ROUTED ACROSS ROOF, DOWN EXTERIOR WALL, AND UNDERGROUND TO NEW GENERATOR.

SHEET INDEX

ANTHONY P. ESSON
ARCHITECT
PO BOX 479 GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

DRAWING TITLE
TITLE SHEET
PROJECT INFORMATION

PROJECT TITLE
GAYLORD COMMUNITY SCHOOLS PROJECT SF3.8 - 2024 SINKING FUND PROJECTS
BOECC GENERATOR & ATS INSTALLATION PROJECT
615 S.ELM AVE., GAYLORD, MI 49735

PROJECT NO.
284-20H.6

DATE
APRIL 18, 2025

SHEET
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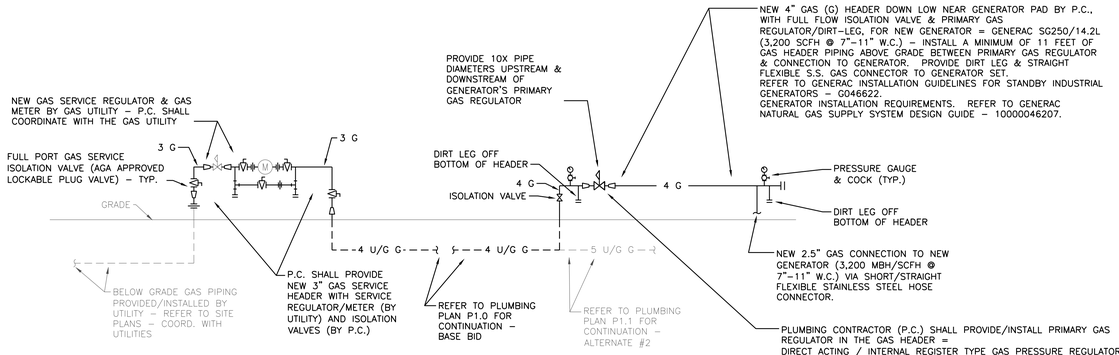


NOTES:
1. P.C. SHALL COORDINATE INSTALLATION OF NEW GAS SERVICE, OR MODIFICATIONS/ADDITIONS TO EXISTING GAS SERVICE, WITH THE UTILITY PRIOR TO ROUGH-IN (DTE GAS CO. - CONTACT ZACH KERFOOT AT 231-932-2847 / ZACHARY.KERFOOT@DTEENERGY.COM). OWNER SHALL PAY FOR ANY DIRECT GAS UTILITY SERVICE CHARGES FOR NEW REGULATOR/METER IF REQUIRED.
2. PROVIDE DIRT LEGS AND ISOLATION VALVES AT ALL EQUIPMENT CONNECTIONS.

NATURAL GAS SERVICE HEADER DETAIL - FOR BASE BID NEW/DEDICATED GAS SERVICE FOR NEW GENERATOR

NO SCALE

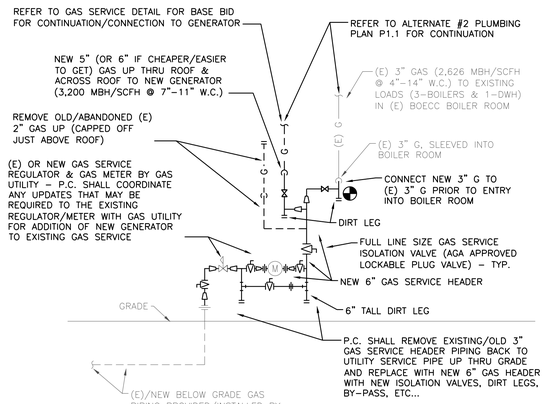
DESIGNER NOTE:
THIS DETAIL IS FOR A NEW UTILITY FED NATURAL GAS SERVICE FOR A GENERATOR AT GCS BOECC

GAS LOAD SCHEDULE - BASE BID FOR NEW/DEDICATED GAS SERVICE

UNIT I.D.	EQUIPMENT TYPE	AGA INPUT BTU/HR	MAX INPUT PRESSURE (IN W.C.)	MIN INPUT PRESSURE (IN W.C.)	REMARKS
NEW G-1	NEW NAT. GAS GENERATOR	3,200,000	11	7	
	SUB-TOTAL NEW LOAD	3,200,000	11	7	

3,200 SCFH @ 14" W.C. (P.C. PROVIDED PRIMARY REGULATOR LOCATED AT NEW GENERATOR WILL REDUCE 14" W.C. DOWN TO 11" W.C.)

NOTES:
1. CONTRACTOR SHALL COORDINATE A NEW/DEDICATED NATURAL GAS SERVICE FROM UTILITY FOR NEW GENERATOR (DTE GAS - CONTACT ZACH KERFOOT AT 231-932-2847 / ZACHARY.KERFOOT@DTEENERGY.COM). OWNER SHALL PAY FOR ANY DIRECT UTILITY COSTS FOR NEW GAS SERVICE REGULATOR/METER DIRECTLY TO THE GAS UTILITY.
2. NOTE THAT THE OWNER WILL PAY ANY DIRECT UTILITY COSTS FOR THE NEW GAS SERVICE REGULATOR & SERVICE METER DIRECTLY TO THE UTILITY. CONTRACTOR RESPONSIBLE FOR ALL OTHER PIPING, ISOLATION VALVES, ETC...



DESIGNER NOTE:
THIS DETAIL IS STANDARD FOR A UTILITY FED NATURAL GAS SERVICE

NOTES:
1. P.C. SHALL COORDINATE INSTALLATION OF NEW GAS SERVICE, OR MODIFICATIONS/ADDITIONS TO EXISTING GAS SERVICE, WITH THE UTILITY PRIOR TO ROUGH-IN (DTE GAS CO. - CONTACT ZACH KERFOOT AT 231-932-2847 / ZACHARY.KERFOOT@DTEENERGY.COM). OWNER SHALL PAY FOR ANY DIRECT GAS UTILITY SERVICE CHARGES FOR NEW REGULATOR/METER IF REQUIRED.
2. PROVIDE DIRT LEGS AND ISOLATION VALVES AT ALL EQUIPMENT CONNECTIONS.

NATURAL GAS SERVICE HEADER DETAIL - FOR ALTERNATE #2 TO ADD GENERATOR LOAD ONTO REVISED/EXISTING GCS-BOECC GAS SERVICE

NO SCALE

GAS LOAD SCHEDULE (EXISTING & NEW) - FOR ALTERNATE #2 TO ADD GENERATOR LOAD ONTO REVISED/EXISTING GCS-BOECC GAS SERVICE

UNIT I.D.	EQUIPMENT TYPE	AGA INPUT BTU/HR	MAX INPUT PRESSURE (IN W.C.)	MIN INPUT PRESSURE (IN W.C.)	REMARKS
(E) B-1	EXISTING (E) BOILER	850,000	14	5	
(E) B-2	EXISTING (E) BOILER	850,000	14	5	
(E) B-3	EXISTING (E) BOILER	850,000	14	5	
(E) DWH	EXISTING (E) WATER HEATER	76,000	14	5	
	SUB-TOTAL EXISTING (E) LOAD	2,626,000	14	5	
NEW G-1	NEW GENERATOR	3,200,000	11	7	
	SUB-TOTAL NEW LOAD	3,200,000	11	7	
	TOTAL NEW + EXISTING (E) LOAD	5,826,000	11	7	

5,826,000 BTU/HR / 1,000 = 5,826 SCFH @ 14" W.C.
(P.C. PROVIDED PRIMARY GAS REGULATOR LOCATED AT NEW GENERATOR WILL REDUCE 14" W.C. DOWN TO 11" W.C.)

NOTES:
1. CONTRACTOR SHALL COORDINATE THE GAS SERVICE UPGRADES (NEW SERVICE REGULATOR AND/OR NEW SERVICE METER) THAT ARE REQUIRED TO THE EXISTING GAS SERVICE IN ORDER TO ADD THE NEW GENERATOR GAS LOAD ONTO THE BOECC BUILDING'S GAS SERVICE WITH THE NATURAL GAS UTILITY (DTE GAS - CONTACT ZACH KERFOOT AT 231-932-2847 / ZACHARY.KERFOOT@DTEENERGY.COM).
2. NOTE THAT THE OWNER WILL PAY ANY DIRECT UTILITY COSTS FOR A NEW GAS SERVICE REGULATOR AND/OR A NEW GAS METER DIRECTLY TO THE UTILITY. CONTRACTOR RESPONSIBLE FOR ALL OTHER PIPING, ISOLATION VALVES, ETC...

GCS BOARD OF EDUCATION OFFICES & EARLY CHILDHOOD CENTER BUILDING (BOECC) GENERATOR & ATS INSTALLATION PROJECT -
ALTERNATE BID ITEMS:

ALTERNATE #2 (ADDER) - IN LIEU OF THE BASE-BID'S ENTIRELY NEW NATURAL GAS SERVICE (DEDICATED FOR THE GENERATOR), THIS ALTERNATE #2 ADDER IS TO PROVIDE A GAS SERVICE OPTION FOR THE NEW GENERATOR THAT INVOLVES REPLACING/UPGRADING THE BOECC BUILDING'S EXISTING NATURAL GAS SERVICE:
STATE THE COST OF MATERIALS & LABOR REQUIRED TO ADD THE FOLLOWING WORK TO THE SCOPE OF THE PROJECT:
REMOVAL OF THE EXISTING BOECC BUILDING'S 3-INCH GAS SERVICE HEADER (LOCATED NEAR THE BOILER ROOM) WITH A NEW 6-INCH NATURAL GAS SERVICE HEADER IN THE SAME LOCATION. RECONNECT TO EXISTING 3-INCH GAS MAIN SERVING EXISTING GAS LOADS WITHIN EXISTING BOILER ROOM. PROVIDE NEW 5-INCH GAS FEEDER PIPE, TAPPED OFF NEW/UPGRADED 6-INCH GAS HEADER, ROUTED ACROSS ROOF, DOWN EXTERIOR WALL, AND UNDER/GROUND TO NEW GENERATOR. REFER TO ALTERNATE #2 GAS LOAD SCHEDULE. REFER TO ALTERNATE #2 GAS SERVICE HEADER DETAIL. REFER TO PLUMBING PLAN P1.1.

GENERAL PLUMBING DEMOLITION NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. THE EXTENT OF DEMOLITION WORK SHALL BE AS REQUIRED BY THE NEW WORK.
2. THE PLUMBING CONTRACTOR (P.C.) SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING SYSTEMS/EQUIPMENT PRIOR TO ISSUING HIS BID. ALL EXISTING PIPE SIZES AND ROUTINGS/LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.
3. ALL PLUMBING ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING, BUT NOT LIMITED TO, HANGERS, SUPPORTS, CONTROLS, ETC. REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF OFF SITE. CAP ALL OPEN ENDED PIPING AND DUCTWORK.
4. ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED, BY THE OWNER OR OWNER'S REPRESENTATIVE, AT LEAST (7) DAYS IN ADVANCE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING OPERATION.
5. WHERE DEMOLITION OF EXISTING SERVICES ARE REQUIRED TO ACCOMMODATE THE PROJECT PHASING/SCHEDULING, AND SERVICES ARE TO BE INTERRUPTED IN AREAS THAT ARE REMAINING OCCUPIED, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES AND/OR CONNECTIONS TO THE OCCUPIED AREAS TO MAINTAIN ITS PRESENT OPERATION. IF SYSTEM SHUT DOWNS ARE REQUIRED, THE CONTRACTOR SHALL SCHEDULE WORK TO BE PERFORMED AT UNOCCUPIED HOURS.
6. ALL ITEMS TO BE REMOVED AND/OR RELOCATED SHALL BE REMOVED AND/OR RELOCATED TOGETHER WITH ALL RELATED ITEMS AS REQUIRED BY THE NEW WORK TO BE PERFORMED.
7. COORDINATE ALL REMOVAL AND/OR RELOCATION WITH THE EXTENT OF THE NEW WORK AND WITH ALL OTHER TRADES INVOLVED.

GENERAL PLUMBING NEW WORK NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL SCOPE OF WORK. PLUMBING CONTRACTOR (P.C.) SHALL PROVIDE PLUMBING SYSTEMS AND RELATED EQUIPMENT COMPLETE AND INCLUDE ALL NECESSARY OFFSETS, FITTINGS, AND OTHER COMPONENTS REQUIRED DUE TO INTERFERENCES, SPACE CONSTRAINTS, ETC.
2. PLUMBING SYSTEMS SHALL BE INSTALLED PER MICHIGAN PLUMBING CODE, INTERNATIONAL FUEL GAS CODE, MICHIGAN MECHANICAL CODE, AND APPLICABLE BUILDING CODES (E.G. MICHIGAN BUILDING CODES, NFPA CODES, ETC.).
3. COORDINATE THE INSTALLATION OF PLUMBING WORK WITH ALL OTHER TRADES. CONTRACTOR SHALL VERIFY ALL MECHANICAL, PLUMBING AND ELECTRICAL CLEARANCES PRIOR TO FABRICATION OF ANY NEW WORK. PIPING SHALL NOT BE LOCATED DIRECTLY OVER ELECTRICAL EQUIPMENT AND PANELS, OR INTERFERE WITH ELECTRICAL/MECHANICAL EQUIPMENT CLEARANCE SPACES.
4. PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL, HANGERS, ETC., FOR THE PROPER INSTALLATION OF ALL MECHANICAL AND PLUMBING SYSTEMS. PIPING SHALL NOT BE SUPPORTED FROM/BY EQUIPMENT OR EQUIPMENT CONNECTIONS.
5. COORDINATE ALL FLOOR, WALL, AND ROOF PENETRATIONS, EQUIPMENT PADS, ETC. WITH ARCHITECTURAL/STRUCTURAL TRADES PRIOR TO ROUGH-IN. UNLESS NOTED OTHERWISE, EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL CURBS/PADS, CUTTING, CORING, PATCHING ASSOCIATED WITH THEIR WORK. CURBS/PADS, CUTTING, CORING, PATCHING WORK SHALL BE PERFORMED BY A QUALIFIED SUB-CONTRACTOR AND MATCH EXISTING OR NEW FINISHES.

PLUMBING ABBREVIATION LIST

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
		NOM	NOMINAL
BTU	BRITISH THERMAL UNIT		
BTUH	BRITISH THERMAL UNITS PER HOUR	OD	OUTSIDE DIAMETER
		ORD	OVERFLOW ROOF DRAIN
CAP	CAPACITY		
CFH	CUBIC FEET PER HOUR	P.C.	PLUMBING CONTRACTOR
CONT	CONTINUATION OR CONTINUED	PD	PRESSURE DROP
CONTR	CONTRACTOR	PRI	PRIOR TO ROUGH-IN
COORD	COORDINATE	PRV	PRESSURE REDUCING VALVE
		PSIA	POUNDS PER SQUARE INCH (ABSOLUTE)
DEG	DEGREES	PSIG	POUNDS PER SQUARE INCH (GAUGE)
DN	DOWN		
		(R)	RELOCATED
(E)	EXISTING	RC	RAIN CONDUCTOR
E.C.	ELECTRICAL CONTRACTOR	RD	ROOF DRAIN
ELEC	ELECTRICAL	RDC	ROOF DRAIN CONDUCTOR
ELEV	ELEVATION		
		SAN	SANITARY WASTE
(F)	FUTURE	SCFH	STANDARD CUBIC FEET PER HOUR
FLA	FULL LOAD AMPS	SD	STORM DRAIN
FLR	FLOOR	SqFt	SQUARE FOOT/SQUARE FEET
FPM	FEET PER MINUTE	ST	STORM WATER
FT	FEET		
		TYP	TYPICAL
G	GAS (NATURAL GAS)		
		U/G	UNDERGROUND (BELOW GRADE)
HR	HOUR	UL	UNDERWRITERS LABORATORY
HTG	HEATING	UON	UNLESS OTHERWISE NOTED
ID	INSIDE DIAMETER	V	VENT
I.E.	INVERT ELEVATION	VS	VENT STACK
IN	INCHES	VTR	VENT THRU ROOF
INL	INLET		
		" W.C.	INCHES WATER COLUMN
KW	KILOWATT	WG	WATER GAUGE
KVA	KILOVOLT AMPS		
MAX	MAXIMUM		
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR		
M.C.	MECHANICAL CONTRACTOR		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MH	MANHOLE		
MIN	MINIMUM		
MISC	MISCELLANEOUS		
MMBH	MILLION BRITISH THERMAL UNITS PER HOUR		

PLUMBING SYMBOL LIST

SYMBOL	DESCRIPTION
	PIPE ELBOW UP
	PIPE ELBOW DOWN
	DIRECTION OF FLOW
	UNION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	FLEXIBLE CONNECTION (PIPE)
	PIPE CAP OR PLUG
	ISOLATION VALVE
	BALL VALVE
	PLUG VALVE
	PRESSURE REGULATING VALVE
	PRESSURE GAUGE AND COCK
G	GAS PIPING (NATURAL GAS OR PROPANE)
U/G	UNDER GROUND PIPING
CW	DOMESTIC COLD WATER PIPING
SAN	SANITARY WASTE PIPING
ST	STORM SEWER PIPING
RC	RAIN CONDUCTOR PIPING

METHODS OF NOTATION

1 CONSTRUCTION KEYED NOTE NUMBER

1 DEMOLITION KEYED NOTE NUMBER

EXISTING SYSTEM COMPONENT TO BE REMOVED

NEW SYSTEM COMPONENT

EXISTING SYSTEM COMPONENT TO REMAIN

POINT OF NEW CONNECTION

PLUMBING DRAWING INDEX

JLK Engineering Project Number: AEA 2401-01

JLK ENGINEERING
Mechanical | Electrical | Plumbing
5766 Catawaba Ct. | Gaylord, MI 49735 | P 989.448.4631
www.jlkengineering.com

ANTHONY P. ESSON ARCHITECT
PO BOX 479
GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

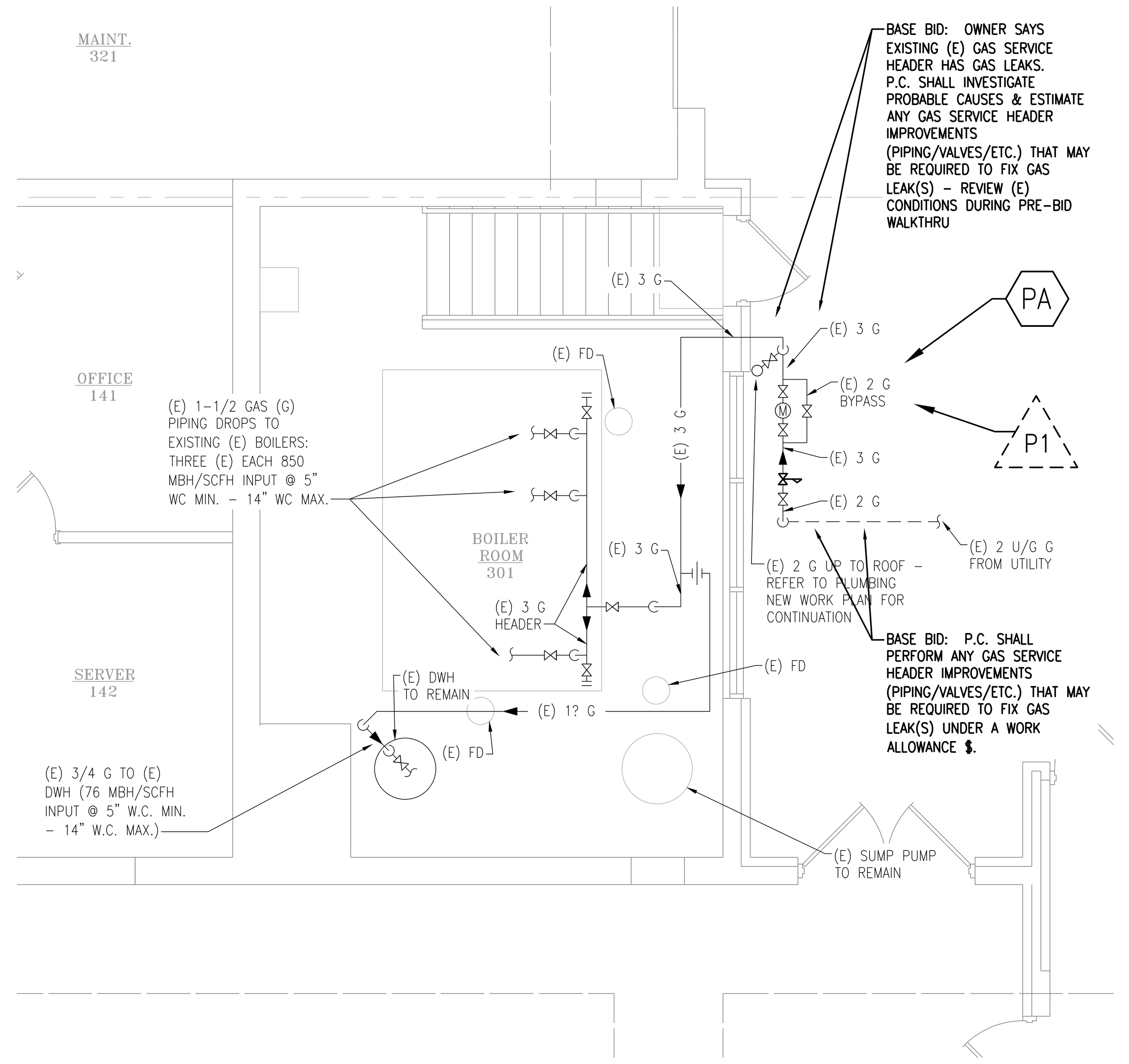
DRAWING TITLE: PLUMBING TITLE SHEET & DETAILS - GAS SERVICE WORK

PROJECT TITLE: GAYLORD COMMUNITY SCHOOLS PROJECT SF3.8 - 2024 SINKING FUND PROJECTS
BOECC GENERATOR & ATS INSTALLATION PROJECT
615 S. ELM AVE., GAYLORD, MI 49735

PROJECT NO.: 284-20H.6

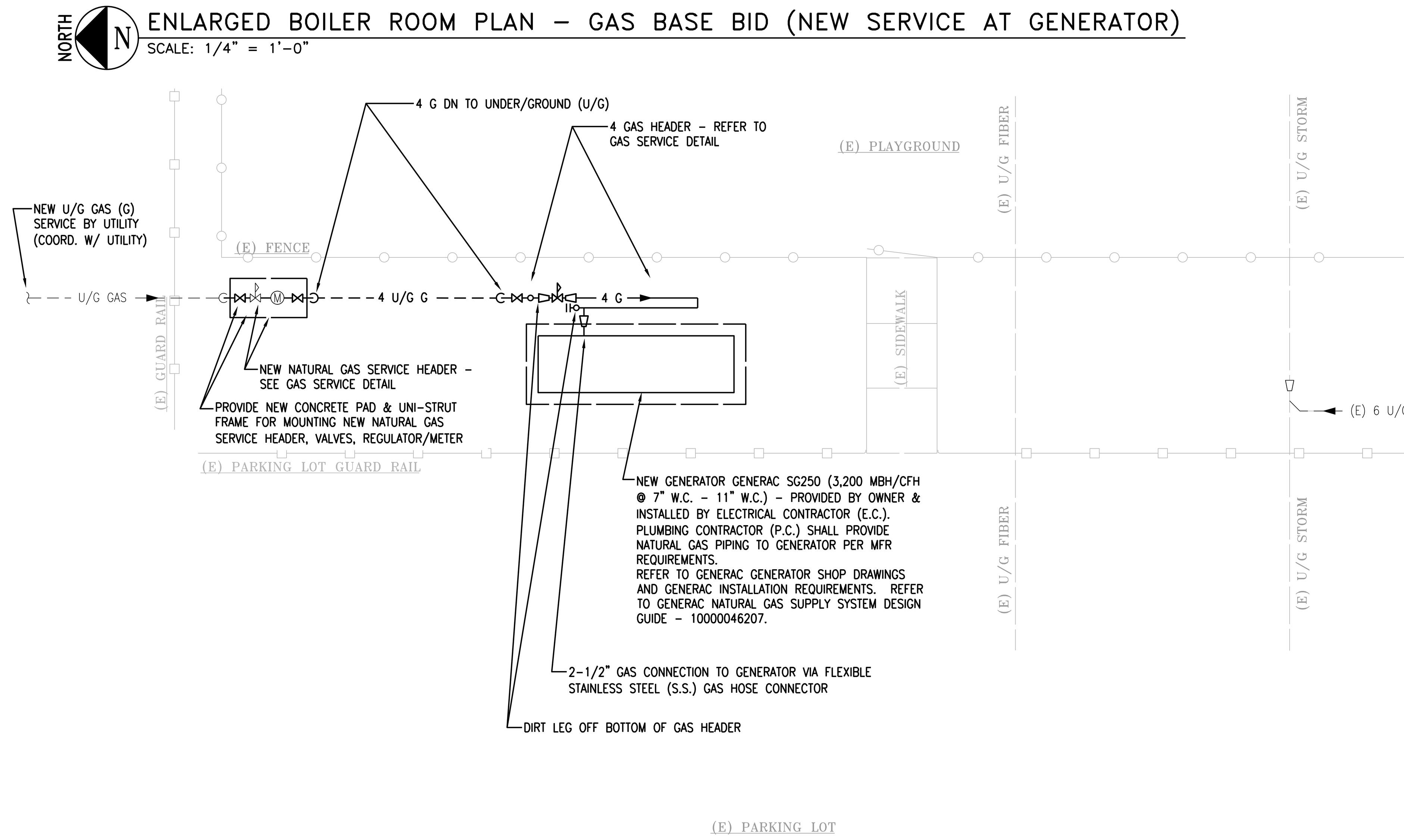
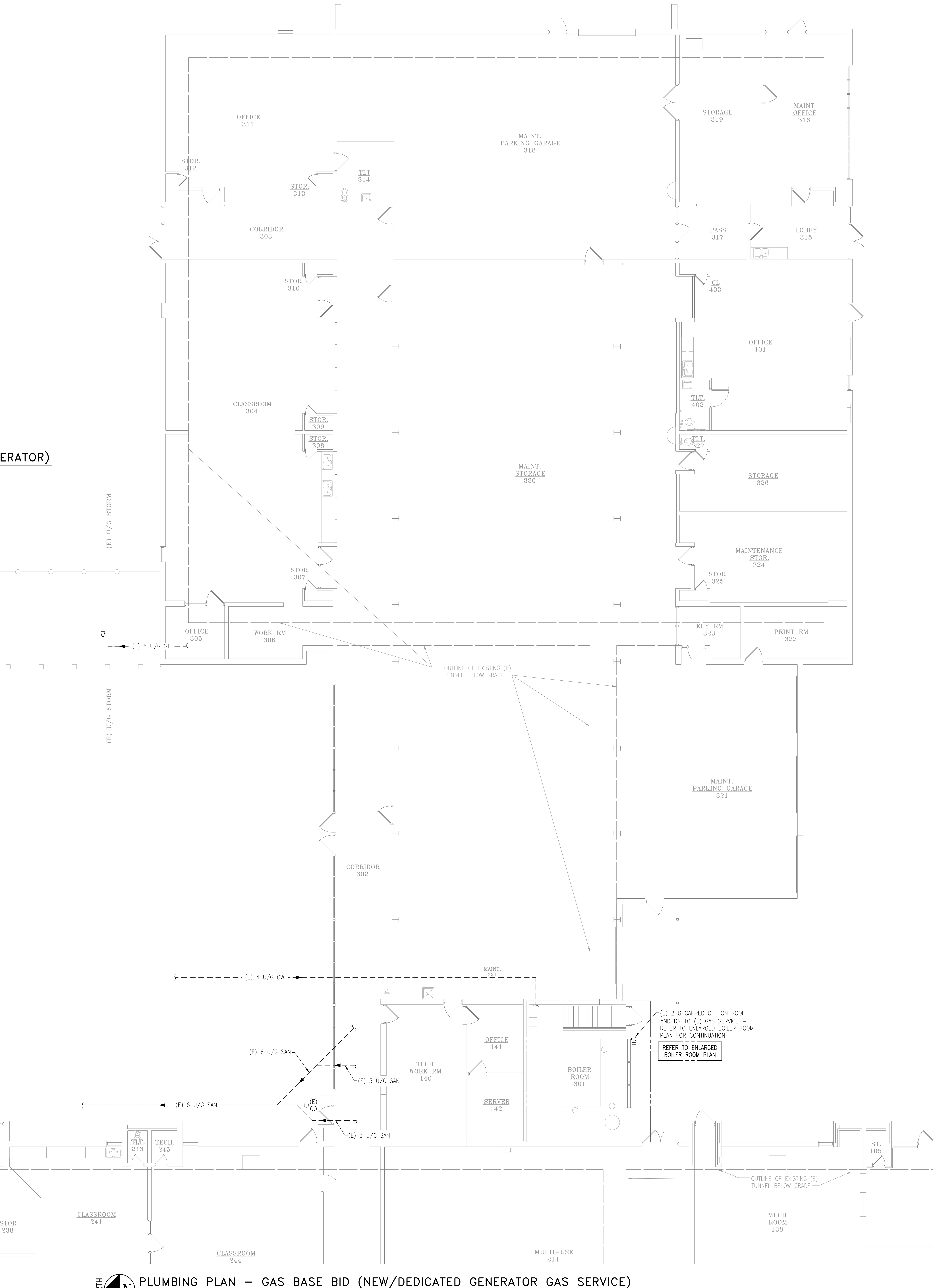
DATE: APRIL 18, 2025

SHEET: P0.1



NORTH N **ENLARGED BOILER ROOM PLAN – GAS BASE BID (NEW SERVICE AT GENERATOR)**

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

NORTH N **PLUMBING PLAN – GAS BASE BID (NEW/DEDICATED GENERATOR GAS SERVICE)**

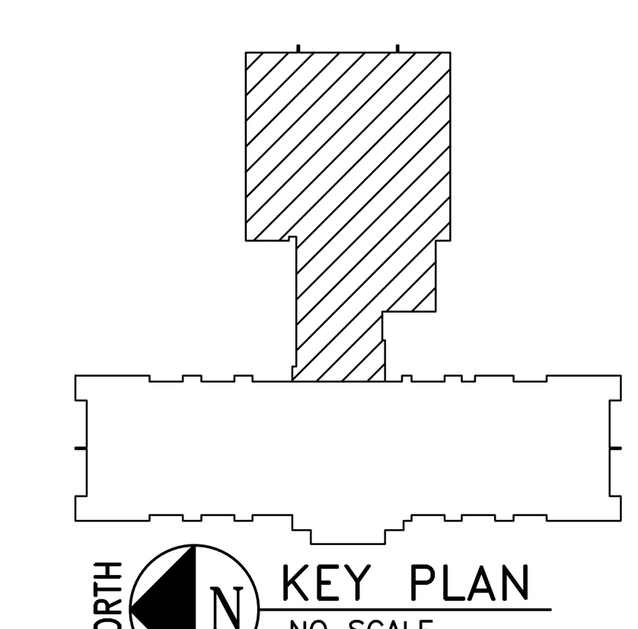
SCALE: 1/8" = 1'-0"

KEYED PLUMBING DEMOLITION NOTES:

P1 — PLUMBING CONTRACTOR (P.C.) SHALL INVESTIGATE PROBABLE CAUSES OF GAS LEAKS WITHIN EXISTING (E) GAS SERVICE HEADER AT GCS BOECC BUILDING (615 S. ELM, GAYLORD, MI 49735) USING SOAP SOLUTION AND/OR GAS SNIFTER DEVICE AS NEEDED TO DETERMINE LEAK CAUSES AND ALSO DETERMINE POTENTIAL SOLUTIONS (E.G. NEW VALVES?, NEW REGULATOR/METER?, ETC...), & SHALL COORDINATE ANY IMPROVEMENTS WITH GAS UTILITY, & SHALL ESTIMATE COSTS TO IMPLEMENT SUCH SOLUTIONS.

KEYED PLUMBING CONSTRUCTION NOTES:

PA — PLUMBING CONTRACTOR (P.C.) SHALL COORDINATE ANY IMPROVEMENTS TO REPAIR/REPLACE EXISTING GAS SERVICE WITH GAS UTILITY, & SHALL PROVIDE ESTIMATE OF COST TO REPAIR/REPLACE LEAK CAUSES (E.G. NEW VALVES?, NEW REGULATOR/METER?, ETC...) & THEN IMPLEMENT SUCH SOLUTIONS USING A WORK ALLOWANCE ($10,000).
NOTE THAT ANY GAS UTILITY REGULATOR/METER COSTS SHALL BE PAID BY OWNER DIRECTLY TO UTLITY.



NORTH N **KEY PLAN**

NO SCALE

JLK ENGINEERING
Mechanical | Electrical | Plumbing
5766 Catawaba Ct. | Gaylord, MI 49735 | P 989.448.4631
www.jlkengineering.com

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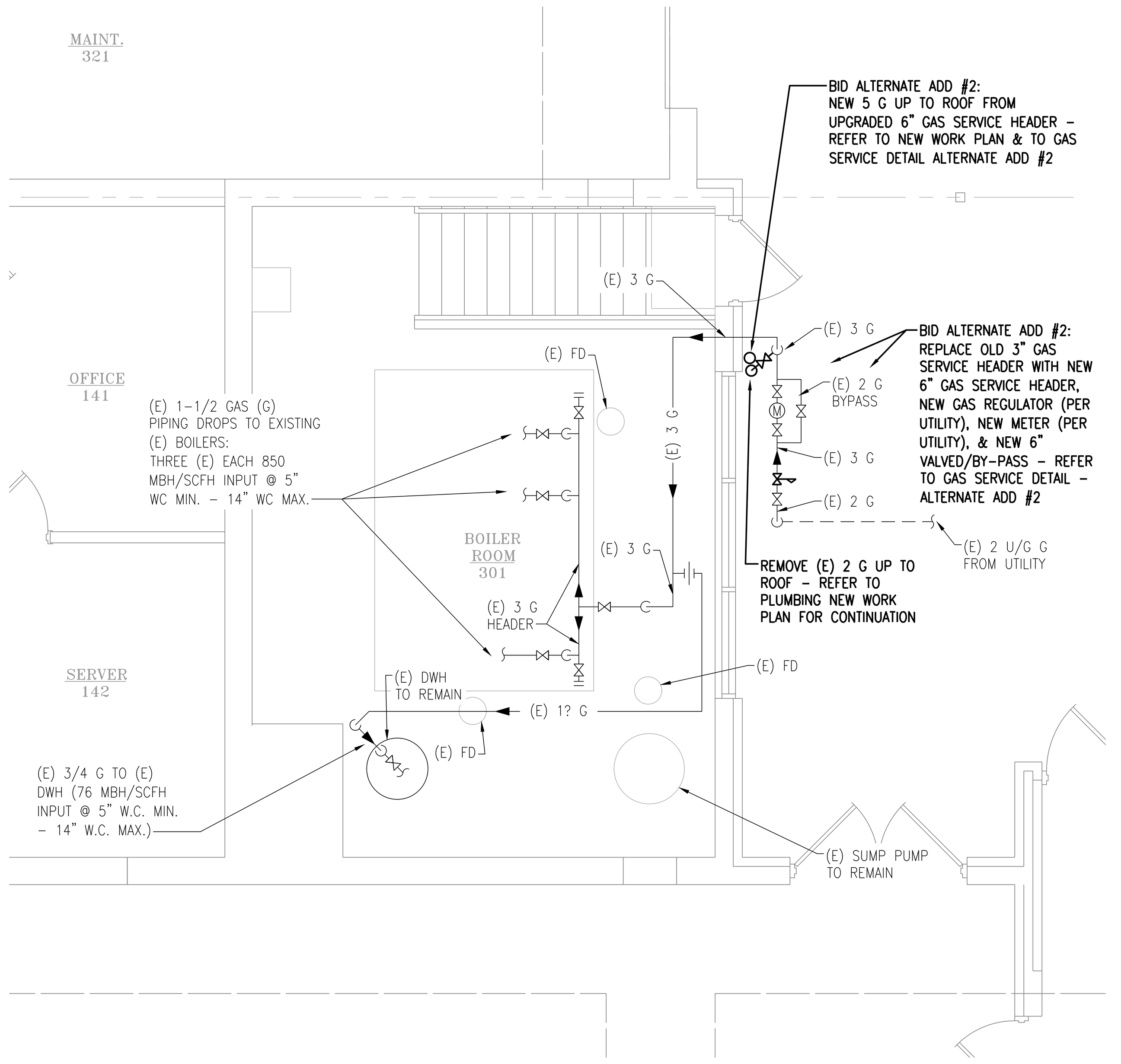
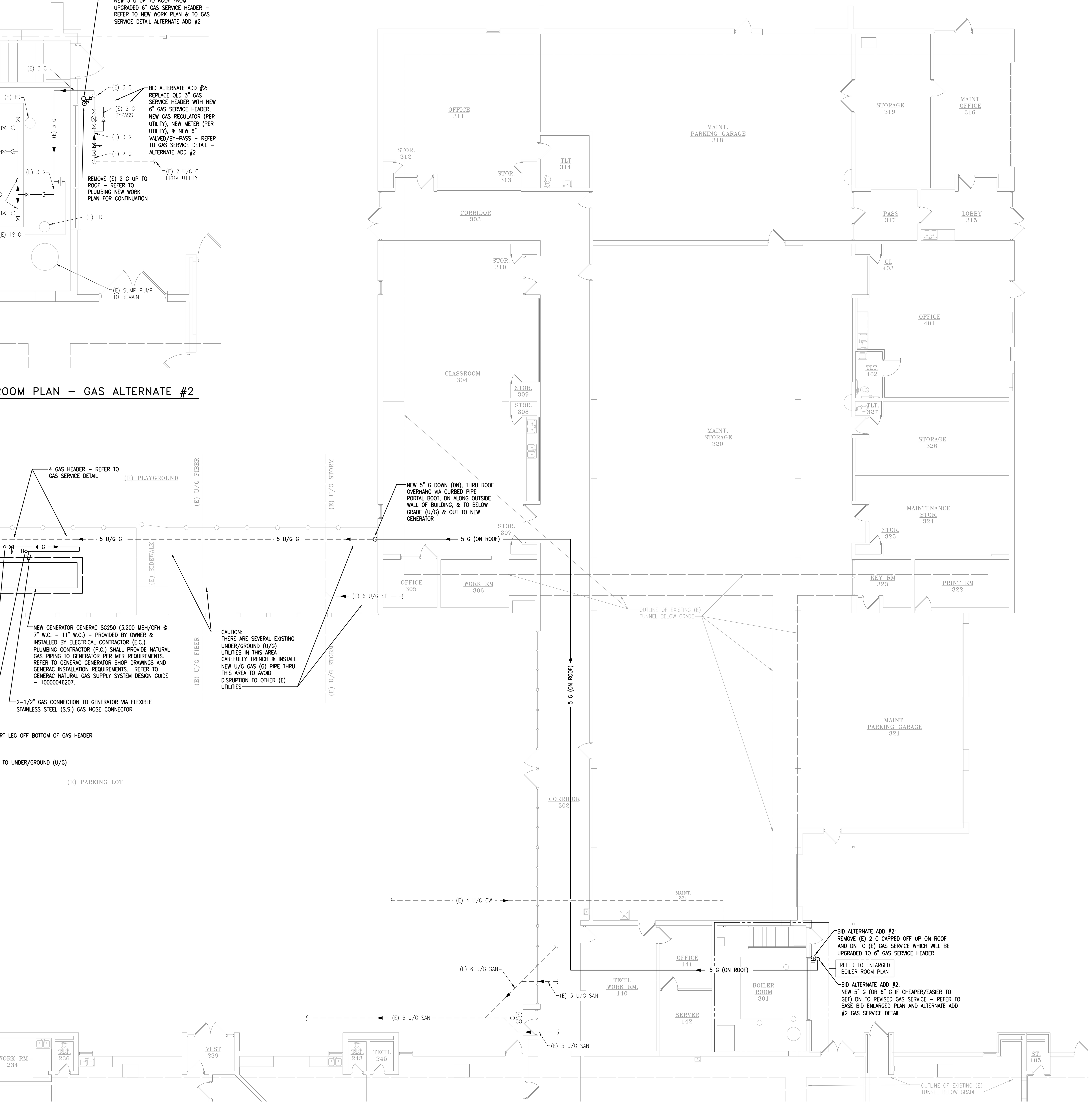
AEA 2401–01

ANTHONY P. ESSON
ARCHITECT
PO BOX 479 GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

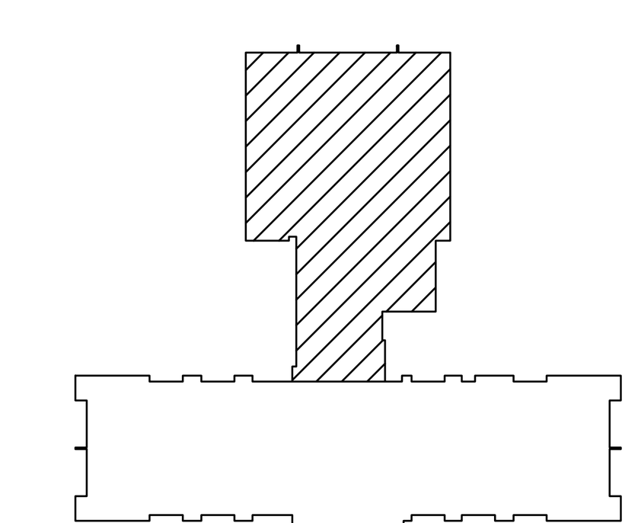
SHEET	DATE	PROJECT NO.	PROJECT TITLE	DRAWING TITLE
P1.0	APRIL 18, 2025	284-20H.6	GAYLORD COMMUNITY SCHOOLS PROJECT SF3.8 - 2024 SINKING FUND PROJECTS BOECC GENERATOR & ATS INSTALLATION PROJECT 615 S. ELM AVE., GAYLORD, MI 49735	PLUMBING PLAN - GAS BASE BID (NEW GAS SERVICE)



ENLARGED BOILER ROOM PLAN – GAS ALTERNATE #2
SCALE: 1/4" = 1'-0"



PLUMBING PLAN – GAS ALTERNATE #2 (UPGRADE EXISTING GAS SERVICE)
SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

JLK Engineering Project Number: AEA 2401-01

JLK ENGINEERING
Mechanical | Electrical | Plumbing
5766 Catawba Ct. | Gaylord, MI 49735 | P 989.448.4631
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ANTHONY P. ESSON
ARCHITECT
PO BOX 479 GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

DRAWING TITLE
PLUMBING PLAN - GAS ALTERNATE #2 (UPGRADE EXISTING GAS SERVICE)

PROJECT TITLE
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615 S. ELM AVE., GAYLORD, MI 49735

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DATE APRIL 18, 2025

SHEET P1.1

ELECTRICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPS	M.C.	MECHANICAL CONTRACTOR
AFF	ABOVE FINISHED FLOOR	MCA	MINIMUM CIRCUIT AMPS
AFG	ABOVE FINISHED GRADE	MCB	MAIN CIRCUIT BREAKER
AIC	AMPS INTERRUPTING CAPACITY	MDP	MAIN DISTRIBUTION PANEL
BKR	BREAKER	MFS	MAX FUSE SIZE
C	CONDUIT	MLO	MAIN LUGS ONLY
CB	CIRCUIT BREAKER	MTD	MOUNTED
CKT	CIRCUIT	MTR	MOTOR
COORD	COORDINATE	N.E.C.	NATIONAL ELECTRIC CODE
DISC	DISCONNECT	NF	NON-FUSIBLE
DP	DISTRIBUTION PANEL	NIC	NOT IN CONTRACT
DWG	DRAWING	NTS	NOT TO SCALE
(E)	EXISTING	P-A	PANEL "A"
E.C.	ELECTRICAL CONTRACTOR	P.C.	PLUMBING CONTRACTOR
EMT	ELECTRICAL METALLIC TUBING	PRI	PRIOR TO ROUGH-IN
(F)	FUTURE	(R)	RELOCATED
F.A.	FIRE ALARM SUBCONTRACTOR	RECEPT	RECEPTACLE
FLA	FULL LOAD AMPS	RP	RECEPTACLE PANEL
FU	FUSE	SD	SMOKE DETECTOR
GFI	GROUND FAULT INTERRUPTER	SPEC	SPECIFICATION
GRD	GROUND	SW	SWITCH
GRS	GALVANIZED RIGID STEEL	SWBD	SWITCHBOARD
HOA	HAND-OFF-AUTO	SWGR	SWITCHGEAR
HP	HORSEPOWER	TELECOM	TELECOMMUNICATIONS
HZ	HERTZ	TYP	TYPICAL
JB	JUNCTION BOX	UON	UNLESS OTHERWISE NOTED
KVA	KILO VOLT-AMPERES	U/G	UNDERGROUND (BELOW GRADE)
KW	KILOWATT	V	VOLTS
KWH	KILOWATT-HOURS	W	WATTS
LP	LIGHTING PANEL	WP	WEATHERPROOF
		XFMR	TRANSFORMER

GENERAL ELECTRICAL DEMOLITION NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. THE EXTENT OF DEMOLITION WORK SHALL BE AS REQUIRED BY THE NEW WORK.
2. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING SYSTEMS/EQUIPMENT PRIOR TO ISSUING HIS BID. ALL EXISTING PANEL/WIRE/LIGHT SIZES AND ROUTINGS SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED.
3. ALL ELECTRICAL ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING, BUT NOT LIMITED TO, WIRES, CONDUITS, SUPPORTS, FIXTURES, ETC. REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF OFF SITE.
4. ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED, BY THE OWNER OR OWNER'S REPRESENTATIVE, AT LEAST (7) DAYS IN ADVANCE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING OPERATION.
5. WHERE DEMOLITION OF EXISTING SERVICES ARE REQUIRED TO ACCOMMODATE THE PROJECT PHASING/SCHEDULING, AND SERVICES ARE TO BE INTERRUPTED IN AREAS THAT ARE REMAINING OCCUPIED, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES/CONNECTIONS TO THE OCCUPIED AREAS TO MAINTAIN ITS PRESENT OPERATION. IF SYSTEM SHUT DOWNS ARE REQUIRED, THE CONTRACTOR SHALL SCHEDULE WORK TO BE PERFORMED AT UNOCCUPIED HOURS.
6. ALL ITEMS TO BE REMOVED AND/OR RELOCATED SHALL BE REMOVED AND/OR RELOCATED TOGETHER WITH ALL RELATED ITEMS AS REQUIRED BY THE NEW WORK TO BE PERFORMED.
7. CONTRACTOR SHALL COORDINATE ALL REMOVAL AND/OR RELOCATION WITH THE EXTENT OF THE NEW WORK AND WITH ALL OTHER TRADES INVOLVED.

GENERAL ELECTRICAL POWER NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS (I.E. CONDUIT, WIRE, PULL BOXES, ETC.) REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.
2. ALL ELECTRICAL SYSTEMS SHALL BE PROVIDED/INSTALLED TO MEET APPLICABLE BUILDING CODES: MICHIGAN BUILDING CODE, MICHIGAN ELECTRICAL CODE, N.E.C., LIFE SAFETY CODE NFPA 101, MICHIGAN ENERGY CODE, ETC.
3. VERIFY REQUIREMENTS OF ALL MECHANICAL/PLUMBING/ARCHITECTURAL EQUIPMENT WITH SHOP DRAWING SUBMITTALS PRIOR TO INSTALLATION. NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN SHOP DRAWINGS AND PLANS.
4. COORDINATE THE INSTALLATION OF ALL ELECTRICAL WORK WITH ALL OTHER TRADES. CONTRACTOR SHALL VERIFY ALL MECHANICAL AND ELECTRICAL CLEARANCES PRIOR TO FABRICATION OF ANY NEW WORK. ELECTRICAL EQUIPMENT, WIRING, ETC. SHALL NOT INTERFERE WITH MECHANICAL EQUIPMENT CLEARANCE SPACES.
5. ALL CIRCUITS FOR POWER, LIGHTING, ETC. SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. ALL CIRCUITS SHALL BE CONCEALED IN WALLS, INCLUDING (E) WALLS. SURFACE MOUNTED RACEWAY SHALL NOT BE USED, UNLESS NOTED OTHERWISE, OR UNLESS ABSOLUTELY NECESSARY. APPROVAL FROM ARCHITECT/ENGINEER MUST BE OBTAINED PRIOR TO USING SURFACE MOUNTED RACEWAY.
6. UNLESS OTHERWISE NOTED, EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL NEW PENETRATIONS THROUGH ALL WALLS WITH FIRE CAULK IN ACCORDANCE WITH CURRENT BUILDING CODE REQUIREMENTS.

ELECTRICAL SYMBOL LIST

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	SWITCH
	AUTOMATIC OR MANUAL TRANSFER SWITCH
	NODE
	GROUND
E G	ENGINE GENERATOR
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
A-3	CIRCUIT HOMERUN TO PANEL "A" CIRCUIT #3
	LIGHTING PANEL (LP = <240V)
	DISTRIBUTION PANEL
T	TRANSFORMER
M	UTILITY METER
CT	UTILITY CT CABINET
GRA	GENERATOR REMOTE ANNUNCIATOR PANEL
ARA	ATS REMOTE ANNUNCIATOR PANEL

SYMBOL	DESCRIPTION
	SINGLE PHASE MOTOR
	THREE PHASE MOTOR
	COMBINATION MOTOR STARTER WITH DISCONNECT SWITCH
VSD	VARIABLE SPEED DRIVE COMBINATION MOTOR STARTER WITH DISCONNECT SWITCH
	NON-FUSABLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
SM	HORSE POWER RATED SWITCH
J	JUNCTION BOX
	HARD WIRE POWER CONNECTION
	GROUND ROD
	CONDUIT UP
	CONDUIT DOWN
	DUPLEX RECEPTACLE
48"	DUPLEX RECEPTACLE MOUNTED AT 48" ABOVE FLOOR (UNLESS NOTED OTHERWISE) – SIMILAR FOR ISOLATED GROUND, EMERGENCY AND GFI RECEPTACLES
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE MOUNTED 6" ABOVE COUNTERTOP OR AS REQUIRED TO ACCOMMODATE COUNTERS – REFER TO ARCHITECTURAL ELEVATIONS
	DUPLEX RECEPTACLE – GROUND FAULT INTERRUPTER
	DUPLEX RECEPTACLE – GROUND FAULT INTERRUPTER – MOUNTED 6" ABOVE COUNTERTOP OR AS REQUIRED TO ACCOMMODATE COUNTERS – REFER TO ARCHITECTURAL ELEVATIONS
WP	DUPLEX RECEPTACLE – GROUND FAULT INTERRUPTER – WEATHERPROOF COVER
DF	DUPLEX RECEPTACLE – GROUND FAULT INTERRUPTER – DEAD-FRONT COVER
	SPECIAL RECEPTACLE – NEMA CONFIGURATION AS NOTED

BRANCH CIRCUIT WIRE SIZE/LENGTH SCHEDULE

MAX BRANCH CIRCUIT (AMPS)	MAX CIRCUIT LENGTH (FEET) TO LAST CONNECTION IN THE CIRCUIT						
	50	75	100	125	150	< 300	
15	#10	#10	#10	#10	#8	#4	
20	#10	#10	#10	#8	#6	#4	
30	#8	#8	#6	#6	#4	#2	

NOTES:
1. REFER TO SPECIFICATIONS FOR WIRE TYPE.
2. SCHEDULE IS BASED UPON A MAX 3% VOLTAGE DROP ON 208-240V/1ø CIRCUITS.
3. FOR LENGTHS BETWEEN TABLED VALUES – USE LONGER LENGTH.

BRANCH CIRCUIT WIRE SIZE/LENGTH SCHEDULE

MAX BRANCH CIRCUIT (AMPS)	MAX CIRCUIT LENGTH (FEET) TO LAST CONNECTION IN THE CIRCUIT						
	50	75	100	125	150	300	
15	#12	#10	#10	#8	#6	#4	
20	#10	#10	#8	#6	#6	#3	
30	#8	#8	#6	#4	#4	#1	

NOTES:
1. REFER TO SPECIFICATIONS FOR WIRE TYPE.
2. SCHEDULE IS BASED UPON A MAX 3% VOLTAGE DROP ON 115-120V/1ø CIRCUITS.
3. FOR LENGTHS BETWEEN TABLED VALUES – USE LONGER LENGTH.

STANDARD MOUNTING HEIGHTS

CONVENIENCE AND SPECIAL PURPOSE RECEPTACLE OUTLETS, TELE/DATA AND COMMUNICATIONS OUTLETS, NOT OTHERWISE SPECIFIED:
- 18" AFF TO THE MIDDLE OF BOX
- 16" AFF TO BOTTOM OF BOX IN CMU WALLS

LIGHT SWITCHES, MOTOR CONTROL DEVICES, AND FIRE ALARM PULL STATIONS, NOT OTHERWISE SPECIFIED:
- 48" AFF TO THE MIDDLE OF BOX
- 48" AFF TO THE TOP OF BOX IN CMU WALLS

T-STATS, TEMP. SENSORS, CO2 SENSORS, NOT OTHERWISE SPECIFIED:
- 48" AFF TO THE MIDDLE OF BOX
- 48" AFF TO THE TOP OF BOX IN CMU WALLS

GFI RECEPTACLES IN TOILET ROOMS AND JANITOR CLOSETS, NOT OTHERWISE SPECIFIED:
- 48" AFF TO TOP OF BOX.

LIGHTING AND RECEPTACLE BRANCH CIRCUIT PANELBOARDS AND LIGHTING CONTROLLERS:
- 6'-6" AFF TO TOP OF ENCLOSURE.

METHODS OF NOTATION

1	CONSTRUCTION KEYED NOTE NUMBER
1	DEMOLITION KEYED NOTE NUMBER
	EXISTING SYSTEM COMPONENT TO BE REMOVED
	NEW SYSTEM COMPONENT
	EXISTING SYSTEM COMPONENT TO REMAIN
	POINT OF NEW CONNECTION
A-3	CIRCUIT HOMERUN (BACK TO PANEL "A" – REFER TO PANEL SCHEDULE)

GCS BOARD OF EDUCATION OFFICES & EARLY CHILDHOOD CENTER BUILDING (BOECC) GENERATOR & ATS INSTALLATION PROJECT –
ALTERNATE BID ITEMS:

ALTERNATE #1 (ADDER) – ADDITION OF REPLACING EXISTING MAIN DISTRIBUTION PANEL "MD" AND EXISTING SUB-PANEL "DPA":
STATE THE COST OF MATERIALS & LABOR REQUIRED TO ADD THE FOLLOWING WORK TO THE SCOPE OF THE PROJECT:
REMOVAL & REPLACEMENT OF THE EXISTING MAIN DISTRIBUTION PANEL "MD" WITH A NEW MAIN DISTRIBUTION PANEL "MDP", INSTALLED AT A NEW LOCATION, WITH NEW FEEDERS FROM NEW "MDP" AS NEEDED TO RECONNECT TO THE EXISTING "MD" LOADS. REFER TO 1-LINE DIAGRAM.
REMOVAL & REPLACEMENT OF THE EXISTING SUB-PANEL "DPA" WITH A NEW SUB-PANEL "DPA", INSTALLED AT THE SAME LOCATION, AND RECONNECTING EXISTING FEEDERS TO EXISTING "DPA" LOADS. REFER TO 1-LINE DIAGRAM.

ELECTRICAL DRAWING INDEX

JLK ENGINEERING
Mechanical | Electrical | Plumbing
5766 Catawaba Ct. | Gaylord, MI 49735 | P 989.448.4631
www.jlkengineering.com

JLK Engineering Project Number:
AEA 2401-01

ANTHONY P. ESSON
ARCHITECT
PO BOX 479
GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

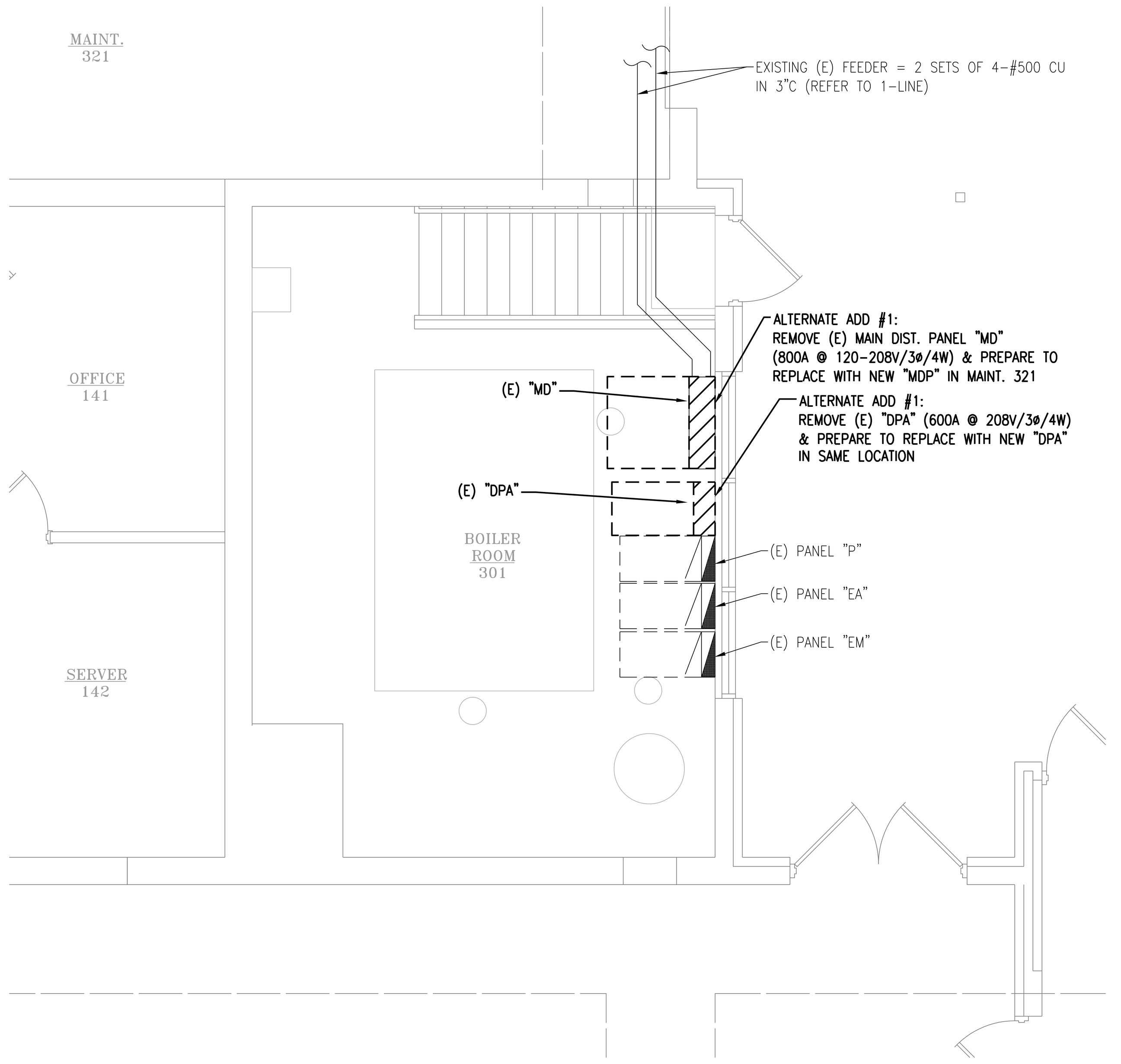
DRAWING TITLE
ELECTRICAL TITLE SHEET & DETAILS

PROJECT TITLE
GAYLORD COMMUNITY SCHOOLS PROJECT SF3.8 - 2024 SINKING FUND PROJECTS
BOECC GENERATOR & ATS INSTALLATION PROJECT
615 S. ELM AVE., GAYLORD, MI 49735

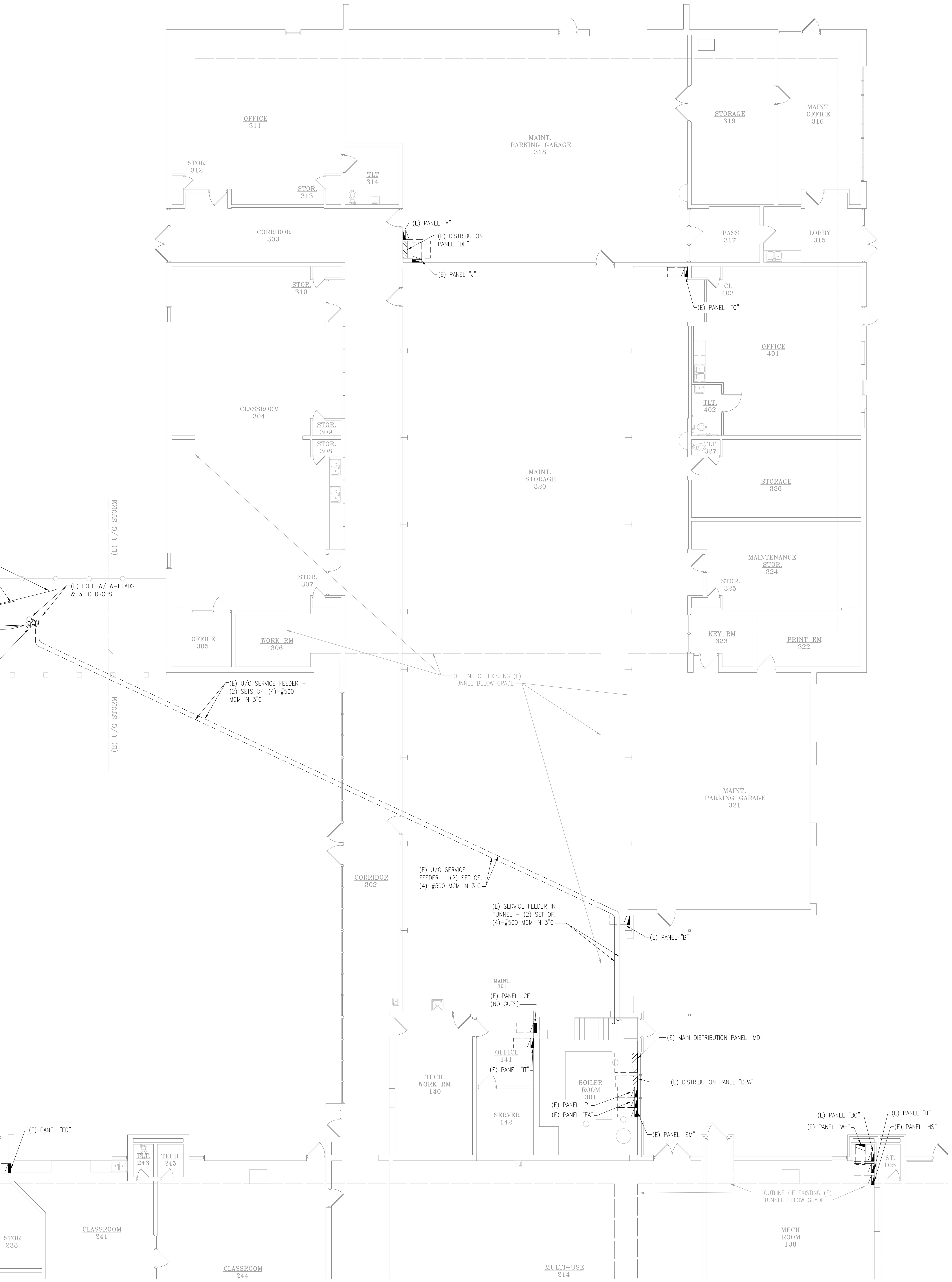
PROJECT NO.
284-20H.6

DATE
APRIL 18, 2025

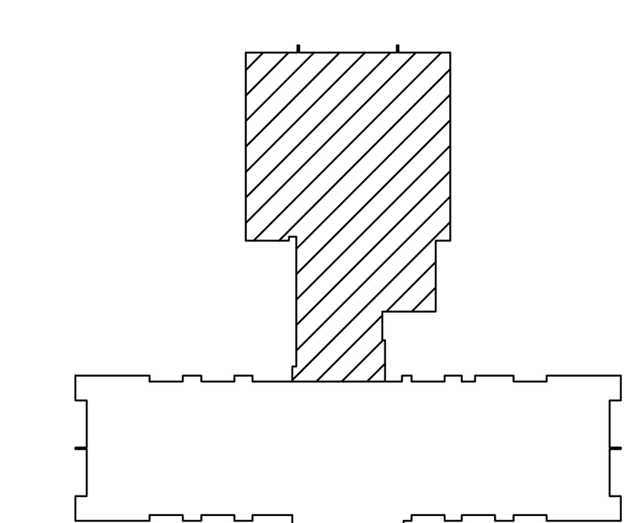
SHEET
E0.1



NORTH
ENLARGED BOILER ROOM DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



NORTH
ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



NORTH
KEY PLAN
NO SCALE

JLK ENGINEERING
Mechanical | Electrical | Plumbing
5766 Calawba Ct. | Gaylord, MI 49735 | P 989.448.4631
www.jlkengineering.com

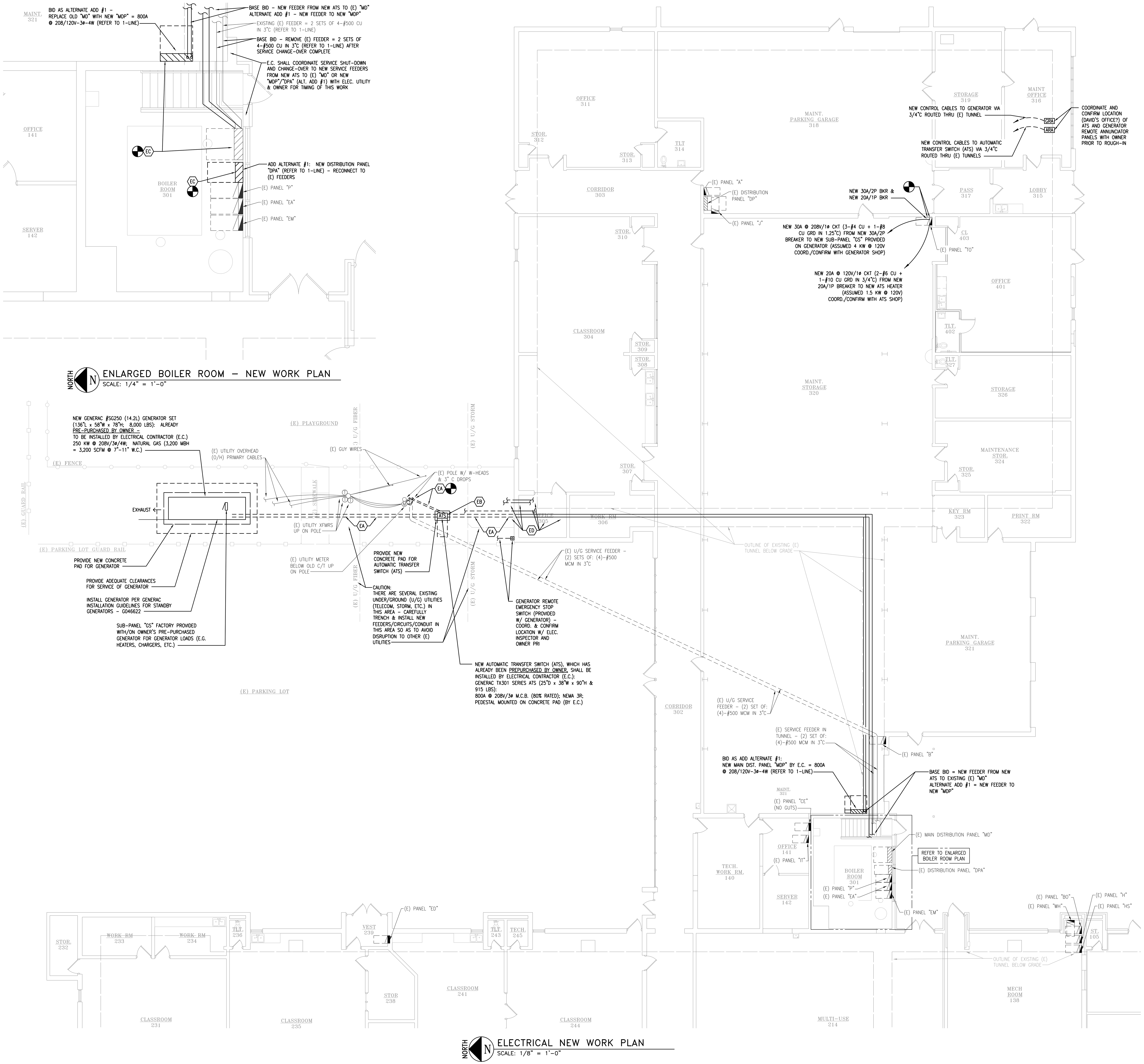
JLK Engineering Project Number:
AEA 2401-01

ANTHONY P. ESSON ARCHITECT
PO BOX 479 GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

DRAWING TITLE
ELECTRICAL DEMOLITION PLANS

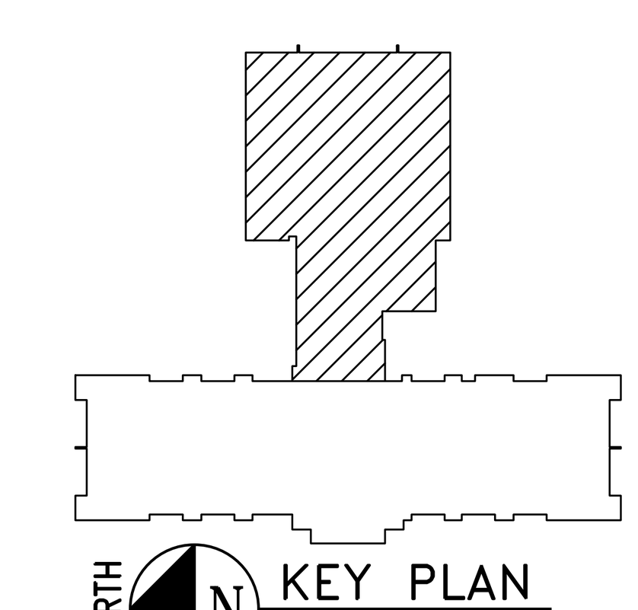
PROJECT TITLE
GAYLORD COMMUNITY SCHOOLS PROJECT SF3.8 - 2024 SINKING FUND PROJECTS
BOECC GENERATOR & ATS INSTALLATION PROJECT
615 S. ELM AVE., GAYLORD, MI 49735

PROJECT NO.	DATE	SHEET
284-20H.6	APRIL 18, 2025	E1.1



KEYED ELECTRICAL POWER CONSTRUCTION NOTES:

- EA — NEW UNDERGROUND (U/G) FEEDERS TO/FROM NEW GENERATOR AND NEW ATS. SEE 1-LINE DIAGRAM.
- EB — AUTOMATIC TRANSFER SWITCH (ATS) - E.C. SHALL INSTALL OWNER'S PRE-PURCHASED ATS. REFER TO 1-LINE DIAGRAM.
- EC — ALTERNATE ADD #1: E.C. SHALL BID REPLACING MAIN DIST. PANEL "MD" (WITH NEW "MDP" IN NEW LOCATION) & SUB-PANEL "DPA" (WITH NEW "DPA" IN SAME LOCATION) AS ALTERNATE ADD #1.
- ED — ROUTE ALL CONDUITS (FEEDERS, CIRCUITS, CONTROLS, ETC.) TO/FROM THE GENERATOR & ATS VIA THE TUNNEL SYSTEM & NOT SURFACE MOUNTED DOWN EXTERIOR WALL OF BUILDING



KEY PLAN
NO SCALE

JLK ENGINEERING
Mechanical | Electrical | Plumbing
5766 Catawaba Ct. | Gaylord, MI 49735 | P 989.448.4631
www.jlkengineering.com
JLK Engineering Project Number: AEA 2401-01
ANTHONY P. ESSON ARCHITECT
PO BOX 479 GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

DRAWING TITLE
ELECTRICAL NEW WORK PLAN

PROJECT TITLE
GAYLORD COMMUNITY SCHOOLS PROJECT SF3.8 - 2024 SINKING FUND PROJECTS
BOECC GENERATOR & ATS INSTALLATION PROJECT
615 S. ELM AVE., GAYLORD, MI 49735

PROJECT NO. 284-20H.6

DATE APRIL 18, 2025

SHEET E2.1

GENERATOR SET:
250 KW CLASS, 120/208V-3P-4W, NATURAL GAS
GENERAC SG250 (14.2L ENGINE)
NOTE THAT THIS GENERATOR SET HAS BEEN PRE-PURCHASED BY OWNER AND SHALL BE INSTALLED/WIRED BY THE ELECTRICAL CONTRACTOR (E.C.) -
REFER TO GENERAC INSTALLATION GUIDELINES FOR STANDBY INDUSTRIAL GENERATORS - G046622.

800 AMP/3P MAIN CIRCUIT BREAKER (80% RATED) - PROVIDED W/GENERATOR SET

GENERATOR SUB-PANEL "GS" (PROVIDED WITH/ON GEN SET) FOR POWERING GEN SET FEATURES: ENGINE COOLANT HEATER, BATTERY CHARGER, ALTERNATOR HEATER, ENCLOSURE HEATER, ETC...TOTAL CONNECTED LOAD ASSUMED = 4.5 KW / 208V = 22 AMPS

PROVIDE CONCRETE PAD (4,000 PSI MIN.) WITH ADEQUATE STEEL REINFORCING & FOUNDATION FOR NEW GENERATOR SET (8,000 LBS)

FINISHED GRADE

#1/0 CU GRD TO PAD'S STEEL REINFORCEMENT BARS

#1/0 CU GRD TO GROUND MAT

EXOTHERMIC WELD CONNECTION (TYP)

TWO (2)-10' LONG 3/4" GROUND ROD (TYP)

NEW CIRCUIT FOR GENERATOR SUB-PANEL "GS": (3)-#4 + (1)-#8 GRD IN 1.25"C FROM 30A/2P BREAKER IN EXISTING PANELBOARD "TO" LOCATED IN BOECC MAINT. STORAGE 320

E.C. SHALL PROVIDE ALL LOW VOLTAGE CONTROL & COMMUNICATIONS CIRCUITS TO/FROM THE GENERATOR SET AND THE ATS, & REMOTE E-STOP SWITCH, & THE GENERATOR ANNUNCIATOR PANEL, ETC...AS REQUIRED. COORD. REQUIREMENTS W/ OWNER' PRE-PURCHASED GENERATOR & ATS SHOP DRAWING SUBMITTALS (INCLUDED IN SPECIFICATION MANUAL FOR REFERENCE)

SPARE 1" CONDUIT (C) TO BOECC BOILER ROOM 301 VIA TUNNEL FOR FUTURE USE

REMOTE GENERATOR ANNUNCIATOR PANEL (GRA). COORD. LOCATION W/ OWNER PRI - MAINT. OFFICE 316?)

REMOTE GENERATOR EMERGENCY STOP (WITHIN SITE OF GENERATOR) - COORD. LOCATION W/ AHJ & OWNER PRI

GRA

E-STOP

FINISHED GRADE

(E) WOOD UTILITY POLES W/ (E) ELEC. UTILITY TRANSFORMERS, ISOLATORS, WEATHERHEADS, ETC...

(E) 800 AMP @ 208-120V/3Ø/4W ELECTRICAL SERVICE

ELECTRICAL CONTRACTOR (E.C.) SHALL COORDINATE & CONFIRM ANY UTILITY IMPROVEMENTS WITH THE EXISTING ELECTRICAL UTILITY (CONSUMERS ENERGY ACCOUNT #1000001628522 FOR GAYLORD COMMUNITY SCHOOLS @ 615 S. ELM AVE, GAYLORD, MI 49735 - OWNER'S REPRESENTATIVE IS MR. DAVID PARSELL @ 989-705-3019) AS TO IF/WHEN THE UTILITY WANTS TO UPGRADE THEIR EXISTING TRANSFORMER &/OR METER - IF SO, OWNER SHALL PAY FOR ANY UTILITY CHARGES FOR NEW TRANSFORMER OR METER DIRECTLY TO UTILITY

ANNUAL MAX DEMAND PER EMAIL FROM CONSUMERS ELECTRIC UTILITY ON 12/6/2023: 66 KW @ 208V/3Ø = 183 AMPS

E.C. SHALL PROVIDE NEW SERVICE FEEDERS VIA NEW CONDUITS/WEATHER-HEADS AS REQUIRED FOR NEW SERVICE FEEDER TO NEW ATS

NEW #1/0 CU SERVICE GRD FROM NEW SERVICE RATED ATS GROUND BUS TO NEW GRD MAT = THREE (3)-10' LONG 3/4"ø GROUND RODS & REINFORCEMENT IN PAD

AUTOMATIC TRANSFER SWITCH (ATS)

AUTOMATIC TRANSFER SWITCH (PRE-PURCHASED BY OWNER & TO BE INSTALLED BY ELECTRICAL CONTRACTOR) = GENERAC TX301 SERIES: 800 AMP @ 3-POLE/4-WIRE 208V; SERVICE ENTRANCE RATED (W/ 800A MCB); OPEN-DELAYED/PROGRAMMED TRANSFER (3-POSITION); MECHANICALLY HELD AUTO TRANSFER & MICROPROCESSOR CONTROLLER; NEMA 3R CABINET, WITH BOTTOM CABLE ENTRY, TO BE FLOOR MOUNTED ON CONCRETE PAD BY E.C.

800A/3P MCB

#1/0 CU GRD TO BUILDINGS (E) WATER SERVICE & (E) BUILDING STEEL STRUCTURE & ALSO TO MD/MDP'S GROUND BUS

(E) "TO"

NEW 20A/1P BKR IN (E) PANEL "TO" AND NEW CKT FOR NEW ATS HEATER

ARA

AUTO TRANSFER SWITCH'S REMOTE ANNUNCIATOR PANEL (ARA). COORD. LOCATION W/ OWNER PRI - MAINT. OFFICE 316?)

FINISHED GRADE

E.C. SHALL PROVIDE ALL 120V POWER & CONTROL & COMMUNICATIONS CIRCUITS TO/FROM THE GENERATOR SET AND THE ATS, & THE ATS ANNUNCIATOR PANEL (ANA), ETC...AS REQUIRED. COORD. REQUIREMENTS W/ OWNER' PRE-PURCHASED GENERATOR & ATS SHOP DRAWING SUBMITTALS (INCLUDED IN SPECIFICATION MANUAL FOR REFERENCE)

2 SETS OF: (4)-#400 CU + (1)-#1/0 CU GRD IN 4"C

NEW FEEDER FROM ELEC SERVICE WEATHERHEADS TO ATS = 2 SETS OF: (4)-#500 MCM IN 4"C - GRS ABOVE GRADE & RIGID PVC (BELOW GRADE FROM ELECTRICAL SERVICE HEADS TO NEW ATS)

LEAVE EXISTING (E) SERVICE FEEDERS (2 SETS OF 4-#500 IN 3"C) ACTIVE DURING NEW GEN/ATS ROUGH-IN. AFTER NEW FEEDERS FOR NEW GEN SET/ATS ARE COMPLETE, REMOVE (E)/OLD SERVICE FEEDERS TO "MD"

BID AS ALTERNATE ADD #1: NEW SERVICE FEEDER - TWO (2) SETS OF: (4)-#500 CU + (1)-#1/0 CU GRD IN 4"C (BELOW GRADE FROM NEW ATS, THRU EXISTING TUNNEL BELOW BOECC FLOOR, & UP TO NEW "MDP" LOCATED IN BOECC - MAINT. GARAGE 321

BASE BID - NEW SERVICE FEEDER - TWO (2) SETS OF: (4)-#500 CU + (1)-#1/0 CU GRD IN 4"C (BELOW GRADE FROM NEW ATS, THRU EXISTING TUNNEL BELOW BOECC FLOOR, & TO EXISTING (E) "MD" LOCATED IN BOILER ROOM 301

BASE BID - REMOVE (E)/OLD SERVICE FEEDER AFTER NEW SERVICE FEEDER FROM NEW ATS TO (E) "MD" IS COMPLETE

NOTE - BID AS ALTERNATE ADD #1: REMOVAL AND REPLACEMENT OF (E) MAIN DIST. PANEL "MD" WITH NEW "MDP" (SQUARE D "I-LINE" TYPE HCP/HCR - 86"HX44"WX9.5"D): 800A @ 208/120V-3Ø-4W WITH 800A/3P MCB; SERVICE ENTRANCE RATED (65 KAIC - COORD./CONFIRM WITH UTILITY); POWER LOGIC METER; NEUTRAL BUS, GRD BUS, & ADDNL ISO. GRD BUS; SURFACE MTD NEMA 1 ENCLOSURE; WITH THE FOLLOWING BREAKERS TO REFEED OLD/EXISTING "MD" BREAKERS:
1 - 50A/2P BKR
1 - 600A/3P BKR
2 - 350A/3P BKRS
3 - 200A/3P BKRS
1 - 100A/3P SPACE
IN ORDER TO REDUCE SHUT-DOWN/CHANGE-OVER, E.C. SHALL PRE-RUN NEW FEEDERS FROM NEW "MDP" TO EXISTING SUB-PANELBOARDS (LIST PANELS HERE). AFTER NEW "MDP" IS IN PLACE, DISCONNECT/REMOVE OLD FEEDERS AND REMOVE OLD "MD".

NEW FEEDER THRU (E) TUNNEL BELOW BOECC BUILDING

NEW MAIN DISTRIBUTION PANEL "MDP"
800 AMP MCB @ 120/208V-3Ø-4W, SE RATED, SQ D I-LINE
(IN BOECC MAINT. GARAGE 321)

ANNUAL MAX DEMAND FROM ELECTRIC UTILITY ON 12/6/2023: 66 KW = 183 AMPS

(E) MAIN DISTRIBUTION PANEL "MD"
800 AMP @ 120/208V-3Ø-4W
MAIN LUG ONLY (MLO)
GE TYPE "GCB-STYLE 2"
IN BOECC BOILER ROOM 301

(E) SERVICE FEEDER - TWO (2) SETS OF: (3)-#500 MCM + (1)-#500 MCM (NEUTRAL) IN 3"C (U/G FROM EXISTING UTILITY POLE DROPS AND THRU TUNNEL TO EXISTING "MD" IN BOILER ROOM 301)

PW

POWER LOGIC POWER METER (V, AMPS, MAX DEMAND, ETC.)

PT

CT

800A/3P MCB

(E) 800A/3P MAIN LUG ONLY (MLO)

(E) 800A MAIN BUSES

EA

(E) 2P + SN-60A FUSED SW

NEW FEEDER: (3)-#6 CU + (1)-#10 CU GRD IN 1"C

(E) FEEDER: (3)-#6 IN 1"C

(E) PANEL "E" IN BOILER ROOM 301

50A/2P

600A/3P

NEW FEEDER: (4)-#3/0 CU + (1)-#6 CU GRD IN 2.5"C

(E) PANEL "B" IN MAINT 321

(E) FEEDER: (4)-#3/0 IN 2"C

(E) 200A/3P

200A/3P

NEW FEEDER: (4)-#4/0 CU + (2)-#4 CU GRD IN 2.5"C

(E) FEEDER: (4)-#4/0 + (2)-#4 GRD IN 2-1/2"C

(E) PANEL "BO" 200 AMP, MLO 120/208V-3Ø-4W SQUARE D "NQOD" TYPE IN MECH ROOM 138

(E)100A/3P

(E) #4 CU GRD

(E) CU GRD

(E) GROUND & ISOLATED GRD BUS

(E) GROUND FOR (E) PANEL GRD BUS AND (E) ISOLATED GRD BUS TO (E) GRD MAT AND AND TO THE (E) CW SERVICE PIPING WITH #4/0 CU GRD IN 3/4"C

(E) FEEDER: (4)-#7 + (2)-#6 GRD IN 3"C

(E) PANEL "B1" 225 AMP, MLO 120/208V-3Ø-4W SQUARE D "NQOD" TYPE IN STORAGE 132

(E) #6 CU GRD

(E) GROUND & ISOLATED GRD BUS

(E) 200A/3P

(E) FEEDER: (3) SETS - #3/0 TO OLD SUB-BUSS

NEW FEEDER: (4)-#350 CU + (1)-#1 CU GRD IN 3.5"C

(E) PANEL "DPA" 600 AMP 120/208V-3Ø-4W MAIN LUG ONLY GE TYPE "NAB-STYLE 2A" IN BOILER ROOM 301

BID AS ALTERNATE ADD #1: REMOVAL AND REPLACEMENT OF (E) "DPA" WITH NEW "DPA" PANELBOARD: NEW SQUARE D I-LINE TYPE HCP-SU (26"W); 600A @ 208/120V-3Ø-4W MAIN LUG ONLY (MLO); 65 KAIC; NEMA 1 SURFACE MOUNT; WITH THE FOLLOWING BREAKERS TO MATCH EXISTING DPA BREAKERS:
(5) - 100A/3P BKRS
(2) - 60A/3P BKRS
(1) - 30A/3P SPARE BKR
(1) - 100A/3P SPACE
DISCONNECT EXISTING FEEDERS/CIRCUITS FROM OLD BREAKERS & RECONNECT TO NEW BREAKERS IN NEW PANEL - PROVIDE NEW CIRCUITING AS REQUIRED FOR EXISTING CIRCUITS THAT ARE TOO SHORT FOR REUSE/RECONNECTION (E.C. SHALL FIELD VERIFY & CONFIRM PRIOR TO ROUGH-IN)

(E) 600A/3P

(E) 600A/3P MLO

(E) 30A/3P SPARE

(E) 60A/3P

(E) FEEDER: (3)-#6 IN 1"C

(E) PANEL "EA" IN BOILER ROOM 301

(E) PANEL "P" IN BOILER ROOM 301

(E) PANEL "WH" 100 AMP, MLO 120/208V-3Ø-4W SQUARE D "NQOD" TYPE IN MECH ROOM 138

(E) 100A/3P

(E) FEEDER: (4)-#2 IN 1-1/2"C

(E) #6 CU GRD

(E) GRD BUS

(E) GRD TO (E) CW SERVICE

(E) FEEDER: (2)-#1 + (1)-#1 (NEUTRAL) IN 1-1/2"C

(E) PANEL "D" IN STOR 215

(E) FEEDER: (3)-#1 IN 2"C

(E) PANEL "EC" IN ADA TLT 212

(E) PANEL "EB" IN MULTI-USE 214

(E) FEEDER: (3)-#2 RHW IN 1-1/4"C

(E) PANEL "EX" IN ???

(E) GROUND FOR (E) PANEL GRD BUS TO (E) GRD ROD (3/4ø-10'LONG) AND TO THE (E) CW SERVICE PIPING WITH #6 CU GRD (THRU TUNNEL)

EXISTING (1)-#3/0 NEUTRAL FROM "DPA"S NEUTRAL BUS

(E) FEEDER: (3)-#3/0 RHW + GRD IN 2"C

(E) PANEL "T" 225 AMP, MLO 120/208V-3Ø-4W SQUARE D "NQOD" TYPE IN OFFICE 141

(E) FEEDER: (4)-#2 IN 1-1/2"C

(E) #6 CU GRD

(E) GROUND & ISOLATED GRD BUS

(E) GRD TO (E) CW SERVICE

(E) GROUND FOR (E) PANEL GRD BUS TO (E) GRD ROD (3/4ø-10'LONG) AND TO THE (E) CW SERVICE PIPING WITH #6 CU GRD (THRU TUNNEL)

(E) 350A/3P

(E) FEEDER: (4)-#350 MCM IN 3"C

(E) DISTRIBUTION PANEL "DP" 400A (FUSIBLE) IN MAINT PARK 318

(E) PANEL "A" IN MAINT PARK 318

(E) PANEL "J" IN MAINT PARK 318

(E) PANEL "TO" IN MAINT STOR 320

NEW SUB-PANEL "GS" IN/ON GENERATOR

NEW 30A/2P BKR

NEW 20A/1P BKR

(E) PANEL "C" IN CORRIDOR 217

(E) PANEL "ED" IN VEST 239

(E) PANEL "EE" IN VEST 224

(E) FEEDER: (3)-#3/0 RHW IN 2"C

NEW J-BOX IN BOILER ROOM 301 TO TIE INTO (E) FEEDER FOR (E) PANEL "C" BEFORE IT LEAVES BOILER ROOM 301 INTO TUNNEL

20A @ 120V CKT FROM NEW 20A/1P BKR TO NEW ATS HEATER (ASSUMED 1.5 KW @ 120V - COORD/CONFIRM W/ ATS SHOP)

NEW FEEDER: (4)-#400 CU + (1)-#3 CU GRD IN 3"C

(5)-#6 CU IN 1"C

250 kA/PHASE & 125 kA/MODE

TVSS

SPD = ASCO #520-120YP25ATCL10

60A/3P

200A/3P

NEW FEEDER: (4)-#3/0 CU + (1)-#6 CU GRD IN 2-1/2"C

100A/3P SPACE

350A/3P

NEW FEEDER: (4)-#400 CU + (2)-#3 CU GRD IN 3-1/2"C

#1/0 CU GRD

#3 CU GRD TO EXISTING (E) ISO. GRD. PANEL "H"

#4 CU GRD TO EXISTING (E) ISO. GRD. PANEL "BO"

#6 CU GRD TO (E) IT GROUND BUS BAR IN SERVER 142

ISOLATED GROUND (I.G.) BUS

GROUND BUS

#1/0 CU GRD TO CW SERVICE PIPE IN BOILER ROOM 301

#1/0 CU GRD TO BUILDING STEEL STRUCTURE COLUMN

(E) #1 CU GRD WIRE FROM (E) "MD"s NEUTRAL BUSS

(E) "MD"s GROUND BOLT TO SIDE OF TUB

(E) #1 CU GRD WIRE FROM (E) CW SERVICE PIPE

(E) 300A/3P

(E) 60A SUB-BUSS (NOT IN USE)

(E) 125A/3P SPARE

(E) 200A/3P SPARE

(E) PANEL "H" 400 AMP, MLO 120/208V-3Ø-4W SQUARE D "NQOD" TYPE IN MECH ROOM 138

(E) FEEDER: (4)-#400 MCM + (2)-#3 GRD IN 3-1/2"C

(E) #3 CU GRD

(E) 100A/3P

(E) GROUND & ISOLATED GRD BUS

(E) GROUND FOR (E) PANEL GRD BUS AND (E) ISOLATED GRD BUS TO (E) GRD MAT AND AND TO THE (E) CW SERVICE PIPING WITH #1/0 CU GRD IN 1"C

(E) PANEL "HS" 100 AMP, MLO 120/208V-3Ø-4W SQUARE D "NQOD" TYPE IN MECH ROOM 138

(E) FEEDER: (4)-#2 + (1)-#6 GRD IN 2"C

(E) #6 CU GRD

(E) GROUND & ISOLATED GRD BUS

ELECTRICAL 1-LINE KEYED NOTES:

EA IF OWNER ACCEPTS ALTERNATE ADD #1, REMOVE (E) FEEDERS BACK TO OLD "MD" (WHICH IS BEING REMOVED/REPLACED WITH NEW "MDP") AFTER NEW "MDP" & NEW FEEDERS ARE IN PLACE

ELECTRICAL ONE- LINE DIAGRAM (GCS-BOECC BUILDING)

24" THICKENED EDGE AROUND THE PERIMETER

CAST HOLES IN CONCRETE PAD WHERE SHOWN ON APPROVED GENERATOR SHOP DRAWING SUBMITTAL FOR BOTH HIGH VOLTAGE & LOW VOLTAGE CONDUIT SLEEVES UP INTO GENERATOR CONNECTIONS

AS REQ'D FOR 12" AROUND GENERATOR

12" CLARENCE FOR NEW PAD AROUND UNIT

AS REQ'D FOR 12" PAD AROUND GENERATOR BASE

CONCRETE MIX SHALL BE 4,000 PSI MINIMUM; AIR ENTRAINED; NO FLY ASH, POZZOLANS OR SLAGS; TYPE 1L CEMENT; MDOT 2NS SAND FINE AGGREGATE; MDOT 6AA LIMESTONE COARSE AGREGATE

OUTDOOR PAD MOUNTED EMERGENCY STANDBY GENERATOR (GENERAC SG250) APPROX. 136" LONG X 57" WIDE X 78" HIGH APPROX. WEIGHT: 8,000 LBS

12"

(2) #4 BARS FULL PERIM.

FINISHED GRADE

GENERATOR'S GROUND LUG

6" THICK PAD

18"

12" 12"

3" COVER

6" THICK SLAB WITH 6x6xW2.9/W2.9 WIRE WOVEN MESH FABRIC

12" MIN. CLASS II COMPACTED SAND PAD

#1/0 CU GRD WIRE FROM GENERATOR GRD LUG & PAD RE-BAR TO GROUND MAT AS REQUIRED BY NEC

EXOTHERMIC WELD CONNECTION (TYP.)

TWO (2)-10' LONG X 3/4" DIA. GROUND RODS (TYP.)

GENERATOR PAD & GROUNDING DETAIL

NO SCALE

JLK ENGINEERING
Mechanical | Electrical | Plumbing
5766 Catawaba Ct. | Gaylord, MI 49735 | P 989.448.4631
www.jlkengineering.com

JLK Engineering Project Number: AEA 2401-01

ANTHONY P. ESSON ARCHITECT
PO BOX 479
GAYLORD, MICHIGAN
TELEPHONE: (989) 732-0585

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BOECC GENERATOR & ATS INSTALLATION PROJECT
615 S. ELM AVE., GAYLORD, MI 49735

PROJECT NO.: 284-20H.6

DATE: APRIL 18, 2025

SHEET: E3.1