

# CITY OF ABERDEEN DEPARTMENT OF PUBLIC WORKS

## 60 NORTH PARKE STREET, ABERDEEN, MARYLAND 21001

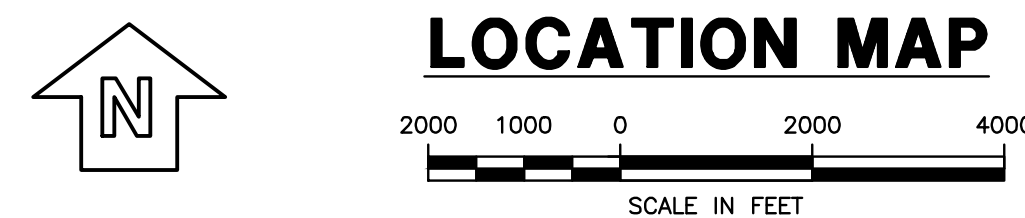
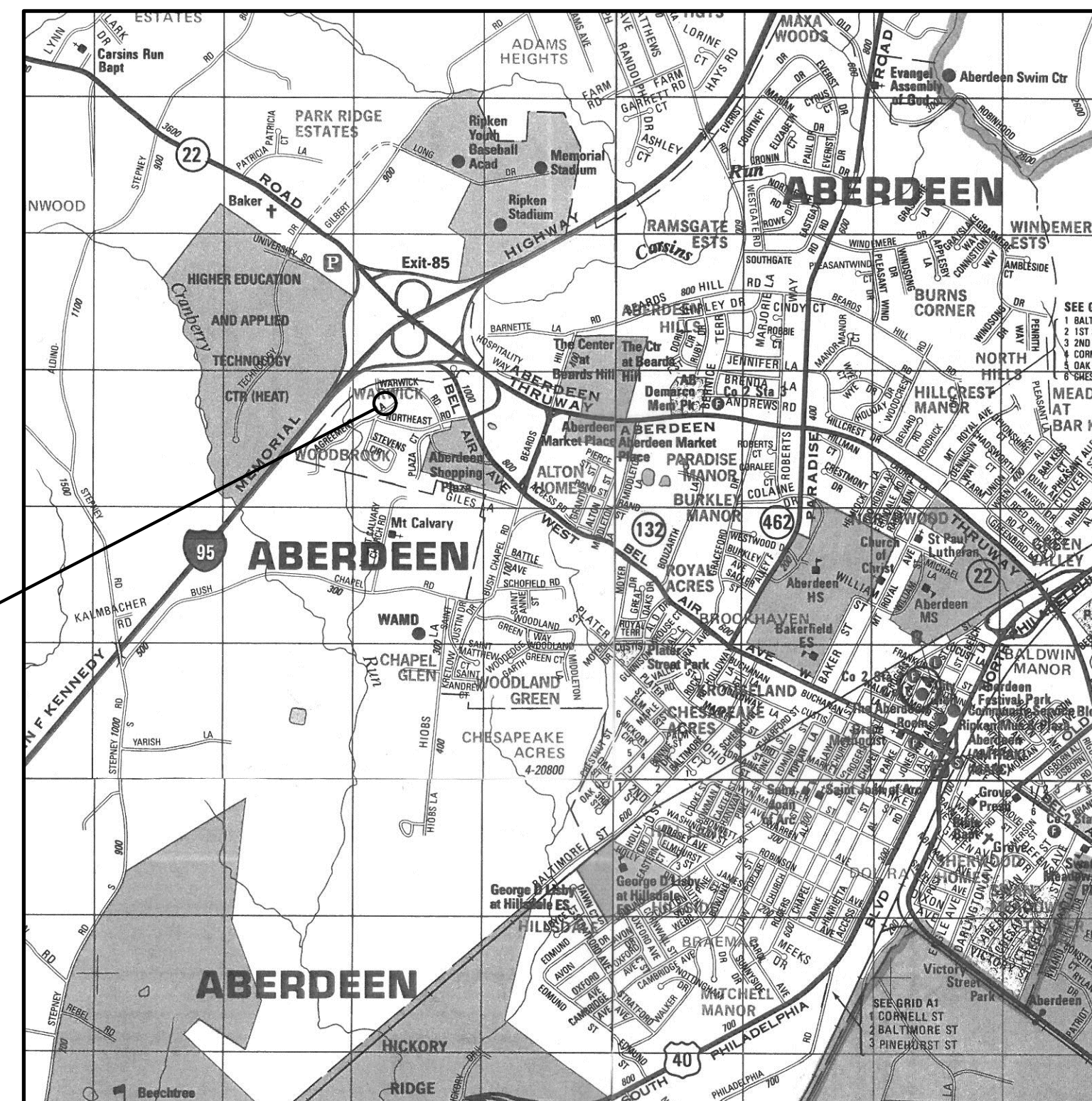
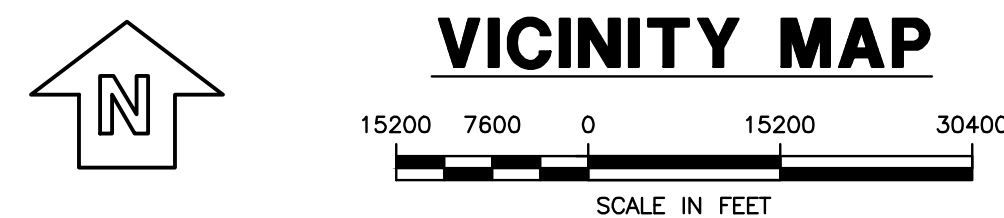
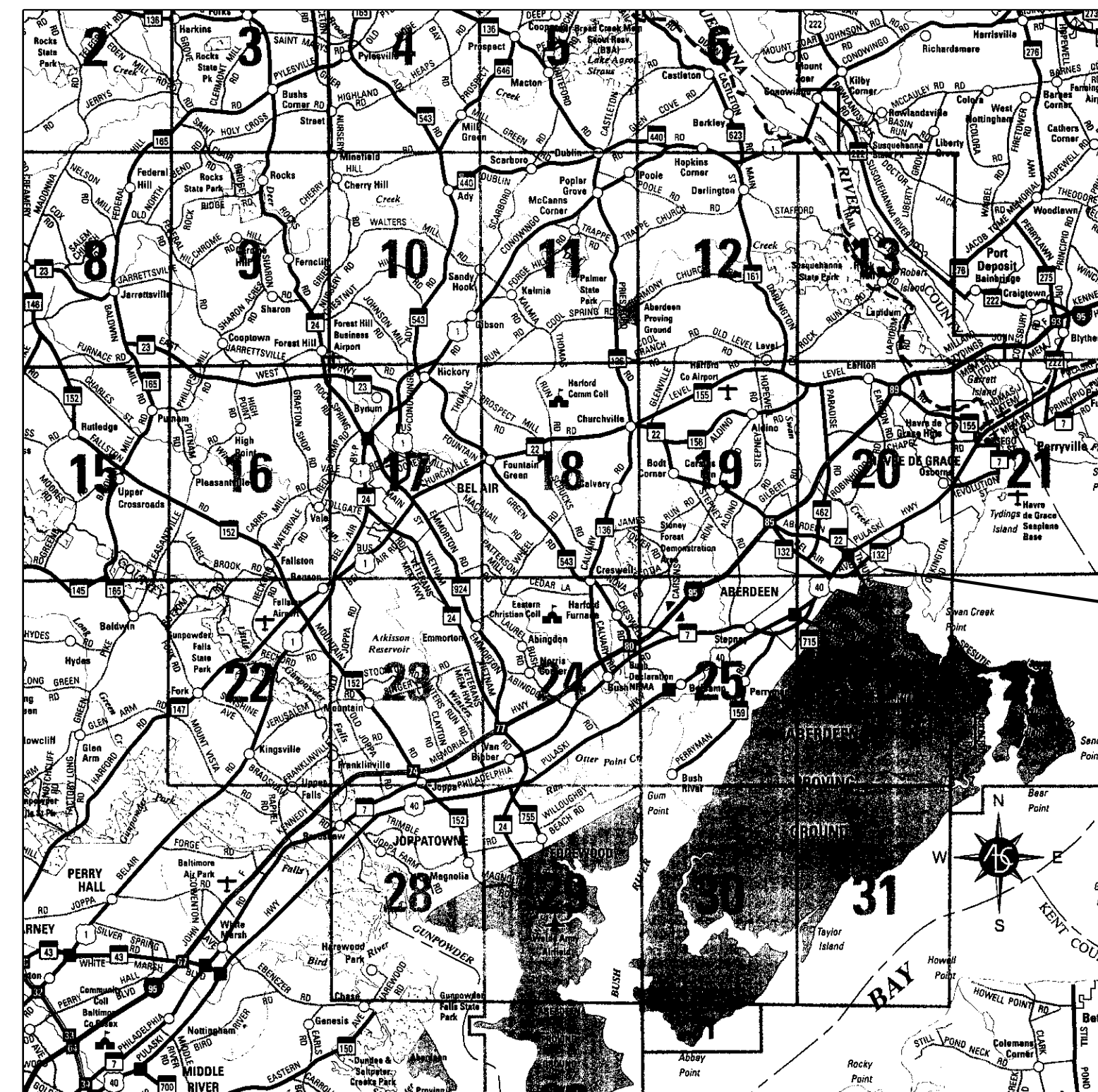


# NORTHEAST TANK ALTITUDE VALVE VAULT

## CONTRACT NO. 21-02

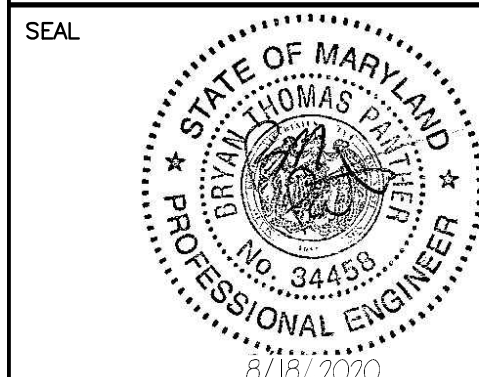
### GENERAL NOTES

- CONTRACTOR TO NOTIFY CITY OF ABERDEEN INSPECTOR A MINIMUM 3 DAYS PRIOR TO STARTING WORK. (PHONE 410-272-1600)
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN STRICT ACCORDANCE WITH THE STANDARDS OF THE HARFORD COUNTY SPECIFICATIONS & DETAILS AS AMENDED BY THE CITY OF ABERDEEN.
- THE CONTRACTING OFFICER / CONTRACTOR SHALL NOTIFY THE CITY OF ABERDEEN, AT LEAST THREE (3) DAYS PRIOR TO STARTING CONSTRUCTION, ALL REQUIRED INSPECTIONS, AND TESTING, PHONE (410) 272-1600 EXT. 224.
- CONSTRUCTION OF THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS AND DETAILS FOR WATER MAINS AND SANITARY SEWERS OF HARFORD COUNTY DEPARTMENT OF PUBLIC WORKS AND WITH THE CONTRACT PLANS AND SPECIFICATIONS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MARYLAND OCCUPATIONAL SAFETY LAWS. ALL MATERIALS USED ON THIS PROJECT SHALL BE LISTED IN THE APPROVED MATERIALS LIST AS IDENTIFIED IN THE RULES AND REGULATIONS OF THE DIVISION OF WATER AND SEWER AND AS AMENDED BY THE CITY OF ABERDEEN.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- ALL AREAS DISTURBED FROM THE CONTRACTOR'S CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED PRIOR TO START OF CONSTRUCTION. ROADSIDE DRAINAGE DITCHES, CULVERTS, AND UNDERDRAINS WHICH ARE DAMAGED OR DESTROYED BY CONSTRUCTION, SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED PRIOR TO THE START OF CONSTRUCTION. THE COST OF ANY RESTORATION SHALL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY (1-800-257-7777) 5 DAYS PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING SILT AND DEBRIS OUT OF THE SANITARY SEWER AND STORM DRAINAGE SYSTEM FOR THE DURATION OF THE CONTRACT.
- EXISTING UTILITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR AND THE COMPLETENESS OR ACCURACY OF THE SAME IS NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES BEFORE TRENCH EXCAVATION BEGINS. HE SHALL PROTECT SERVICE CONNECTIONS AND MAINTAIN THEIR UNINTERRUPTED SERVICE. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY. THE COST OF SUCH REPAIRS SHALL BE BORNE BY THE CONTRACTOR.
- ALL PIPE ELEVATIONS ARE TO INVERT OF PIPE, UNLESS OTHERWISE SPECIFIED.



PROJECT AREA

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34458, EXPIRATION DATE: 6/20/2021



NO	DESCRIPTION	DATE	BY	APP.
3	ISSUED FOR BIDDING PURPOSES	8/18/20	BOP	JLD
2	90% RESUBMISSION TO CLIENT (SPLIT CONTRACTS)	12/19/19	BDP	JLD
1	60% SUBMISSION TO CLIENT	7/26/18	BDP	JLD
REVISIONS				

DESIGNED	CADD	SCALE
J. DENNIS	SAM	AS SHOWN
CHECKED	APPROVED	APPROVED

**ARRG**  
108 West Airport Road  
Lititz, Pennsylvania 17543  
Tel 717.569.7021

CITY OF ABERDEEN DEPARTMENT OF PUBLIC WORKS  
ABERDEEN, MARYLAND  
  
NORTHEAST TANK  
ALTITUDE VALVE VAULT

TITLE SHEET

City of Aberdeen Department of Public Works Approval	
<i>Thomas D. Dennis</i> City Engineer	7/24/2020 Date
<i>Kyle Jorsta</i> Director	7/27/2020 Date
CONTRACT NO. 21-02	SHEET NO.
ARRO PROJECT NO. 05233.24B	G1
DATE AUGUST 2020	1 OF 5

# DRAWING INDEX

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<b>GENERAL</b>		
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<b>NORTHEAST TANK ALTITUDE VALVE VAULT</b>		
3	AV1	SITE PLAN
4	AV2	PLAN, SECTIONS AND DETAILS
<b>ELECTRICAL</b>		
5	E1	ELECTRICAL PLAN AND DETAILS

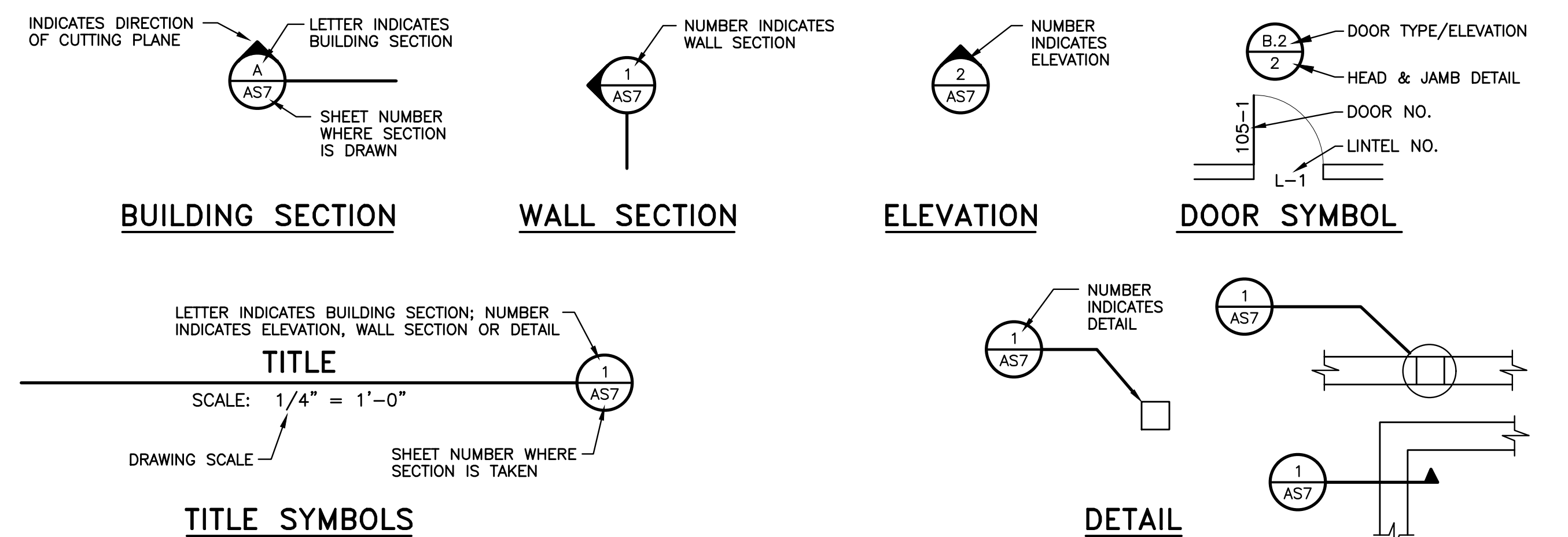
# ABBREVIATIONS

& AND	DIFF DIFFUSER	JT JOINT	REIN REINFORCING
@ AT	DICL DUCTILE IRON CEMENT LINED	LAB LABORATORY	REQD REQUIRED
AFF ABOVE FINISHED FLOOR	DIP DUCTILE IRON PIPE	LAV LAVATORY	RET RETURN
ACOUS ACOUSTICAL	DISCH DISCHARGE	LGTH LENGTH	REV REVISION
ATC ACOUSTICAL TILE CEILING	DN DOWN	LF LINEAR FEET	ROW, R/W RIGHT OF WAY
ADPTR ADAPTER	DR DRAIN	LIQ LIQUID	RWC RAIN WATER CONDUCTOR
ADDL ADDITIONAL	DWG DRAWING	LL LIVE LOAD	RWL RAIN WATER LEADER
AVR AIR & VACUUM RELEASE VALVE	DWL DOWEL	LG LONG	RD ROOF DRAIN
ALT ALTERNATE	EA EACH	LLH LONG LEG HORIZONTAL	RV ROOF VENT
AL ALUMINUM	EF EACH FACE	LLV LONG LEG VERTICAL	SA SUPPLY AIR
AB ANCHOR BOLT	EW EACH WAY	LVR LOUVER	SAN SANITARY
APPROX APPROXIMATE	EC ELECTRICAL CONTRACTOR	LPT LOW POINT	SCHED SCHEDULE
ARCH ARCHITECT	ELEC ELECTRICAL	LWL LOW WATER LEVEL	SECT SECTION
AVG AVERAGE	EWG ELECTRIC WATER COOLER	MAC MACADAM	SDWK SECTION
BL BASE LINE	EWH ELECTRIC WATER HEATER	MAINT MAINTENANCE	SSK SIDEWALK
BFP BACKFLOW PREVENTER	EL ELEVATION	MH MANHOLE	SWR SEWER
BFV BUTTERFLY VALVE	EMB, EMBED EMBEDMENT	MAN MANUAL	SHT SHEET
BPV BACK PRESSURE VALVE	EQUIP EQUIPMENT	MFR MANUFACTURER	SHR SHOWER
BSHG BUSHING	EQUIV EQUIVALENT	MAS MASONRY	SLPP SMOOTH LINED POLYETHYLENE PIPE
BSMT BASEMENT	EXH EXHAUST	MO MASONRY OPENING	SOL SOLUTION
BFF BELOW FINISHED FLOOR	EX, EXIST EXISTING	MATL MATERIAL	SPEC SPECIFICATION
BFO BELOW FINISHED GRADE	EG EXISTING GRADE	MAX MAXIMUM	SQ SQUARE
BLKG BLOCKING	EXP EXPANSION	MECH MECHANICAL	SS,SST,STN STL STAINLESS STEEL
BM BENCH MARK	EXP BT EXPANSION BOLT	MJ MECHANICAL JOINT	STD STANDARD
BO BLOW OFF	EXP JT EXPANSION JOINT	MET METAL	STA STATION
BOT BOTTOM	FE FIRE EXTINGUISHER	MIN MINIMUM	STL STEEL
BC BOTTOM OF CURB	FFE, FIN FL FINISHED FLOOR	MISC MISCELLANEOUS	STIR STIRRUP
BLDG BUILDING	FFE, FIN FL EL FINISHED FLOOR ELEVATION	MTD MOUNTED	STRUCT STRUCTURAL
CAP CAPACITY	FT FEET	MT METAL THRESHOLD	SUPNAT SUPERNATANT
CIP CAST IRON PIPE	FIG FIGURE	NC NORMALLY CLOSED	SYMM SYMMETRICAL
CISP CAST IRON SOIL PIPE	FIN FINISH	NoCl SODIUM HYPOCHLORITE	TEMP TEMPERATURE
CB CATCH BASIN	FG FINISHED GRADE	NoOH SODIUM HYDROXIDE	TBM TEMPORARY BENCH MARK
CLG CEILING	FHY FIRE HYDRANT	NO NORMALLY OPEN	THD THREADED
C/C CENTER TO CENTER	FLG FLANGE	NWL NORMAL WATER LEVEL	THK THICK
CL CENTERLINE	FLR FLOOR	NTS NOT TO SCALE	TRTD TREATED
CER CERAMIC	FD FLOOR DRAIN	OC ON CENTER	TC TOP OF CURB
CERT CERAMIC TILE	FLUOR FLUORESCENT	OPNG OPENING	T & B TOP AND BOTTOM
CFM CUBIC FEET PER MINUTE	FRP FIBERGLASS REINFORCED PLASTIC	OPP OPPOSITE	T/RIM TOP OF RIM
CHEM CHEMICAL	FTG FOOTING	OD OUTSIDE DIAMETER	TW TOP OF WALL
CJ CONTROL JOINT	FND FOUNDATION	PC PIECE	TYP TYPICAL
CLG CEILING	GALV GALVANIZED	PD PULSATION DAMPENER	UH UNIT HEATER
CPVC CHLORINATED POLYVINYL CHLORIDE	GA GAUGE	PTD PAINTED	UON UNLESS OTHERWISE NOTED
CKT CIRCUIT	GC GENERAL CONTRACTOR	PNL PANEL	UW UTILITY WATER
CO CLEANOUT	GV GATE VALVE	PE PLAIN END	VB VALVE BOX
CL CLEARANCE	GR GRADE	PL PLATE	V VENT
CL2 CHLORINE	GND GROUND	PLA PLACES	VTR VENT THRU ROOF
COL COLUMN	HB HOSE BIBB	PLAT PLATFORM	VERT VERTICAL
CONC CONCRETE	HM HOLLOW METAL	PT POINT	VIF VERIFY IN FIELD
CM CONCRETE MONUMENT	HCOMP HELICAL, CORRUGATED METAL PIPE	PVC POLYVINYL CHLORIDE	WH WALL HYDRANT (FROST PROOF)
CMU CONCRETE MASONRY UNIT	HP HORSEPOWER	POT W POTABLE WATER	WAS WASTE ACTIVATED SLUDGE
COND CONDENSER	HPT HIGH POINT	PSI POUNDS PER SQUARE INCH	WS WATER STOP
CND CONDUIT	HORIZ HORIZONTAL	PROP PROPOSED	WL WATER LEVEL
CONN CONNECTION	HVAC HEATING, VENTILATING, AIR CONDITIONING	PRESS PRESSURE	WW WATER VALVE
CONSTR CONSTRUCTION	HYD HYDRANT	PRV PRESSURE RELIEF VALLVE	WT WATER TIGHT
CONT CONTINUOUS	HW HOT WATER	PW PROCESS WATER	WWF WELDED WIRE FABRIC
CONTR JT CONTRACTION JOINT	HWL HIGH WATER LEVEL	PROJ PROJECTION	W/ WITH
CLJ CONTROL JOINT	ID INSIDE DIAMETER	RAD RADIUS	W/O WITHOUT
CMP CORRUGATED METAL PIPE	INSUL INSULATION	RAS RETURN ACTIVATED SLUDGE	WP WORK POINT
CNR CORNER	INTR INTERIOR	RED REDUCER	YD YARD
CPLG COUPLING	INV INVERT	REF REFERENCE	YH YARD HYDRANT
CW COLD WATER		RCP REINFORCED CONCRETE PIPE	
DEMO DEMOLITION			
DIA ,Ø DIAMETER			

# GENERAL NOTES

- WHETHER OR NOT CROSS REFERENCED, IN WHOLE OR IN PART, ALL DRAWINGS AND ALL SPECIFICATIONS FOR THE ENTIRE PROJECT SHALL BE EXAMINED BY ALL INDIVIDUAL BIDDERS AND CONTRACTORS, TO ASCERTAIN THE COMPLETE EXTENT OF THEIR WORK.
- CONTRACTOR SHALL REMOVE AND RELOCATE OR REPLACE EXISTING FACILITIES, WHETHER OR NOT SHOWN, NECESSARY TO INSTALL ITS WORK.
- WHETHER OR NOT SHOWN OR SPECIFIED IN DETAIL, ALL MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT SHALL BE STEADILY AND SECURELY SUPPORTED, IN A MANNER APPROVED BY THE MANUFACTURER AND ACCEPTABLE TO THE ENGINEER.
- IN THE EVENT OF CONFLICT OR INCONSISTENCY BETWEEN OR AMONG SPECIFIED OR DRAWN REQUIREMENTS, APPLICABLE REGULATIONS, OR MANUFACTURER RECOMMENDATIONS; THE MORE STRINGENT REQUIREMENT(S), AS DETERMINED BY THE ENGINEER, SHALL GOVERN.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES AND STRUCTURES BEFORE COMMENCING THE WORK. UTILITY COMPANIES SHOULD BE CONTACTED BEFORE WORK COMMENCES IN ORDER TO DETERMINE THEIR REQUIREMENTS.
- ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM (NAVD) '88.
- ALL ANGLES ON THE SURVEY BASE LINE ARE MEASURED IN A CLOCKWISE DIRECTION FROM THE REAR STATION TO THE FORWARD STATION, UNLESS INDICATED OTHERWISE.
- THE 2009 INTERNATIONAL BUILDING CODE HAS BEEN UTILIZED IN THE DESIGN OF THIS PROJECT.

# IDENTIFICATION SYMBOLS



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REVISIONS				

DESIGNED	CADD	SCALE
J. DENNIS	CAL	AS SHOWN
CHECKED	APPROVED	APPROVED

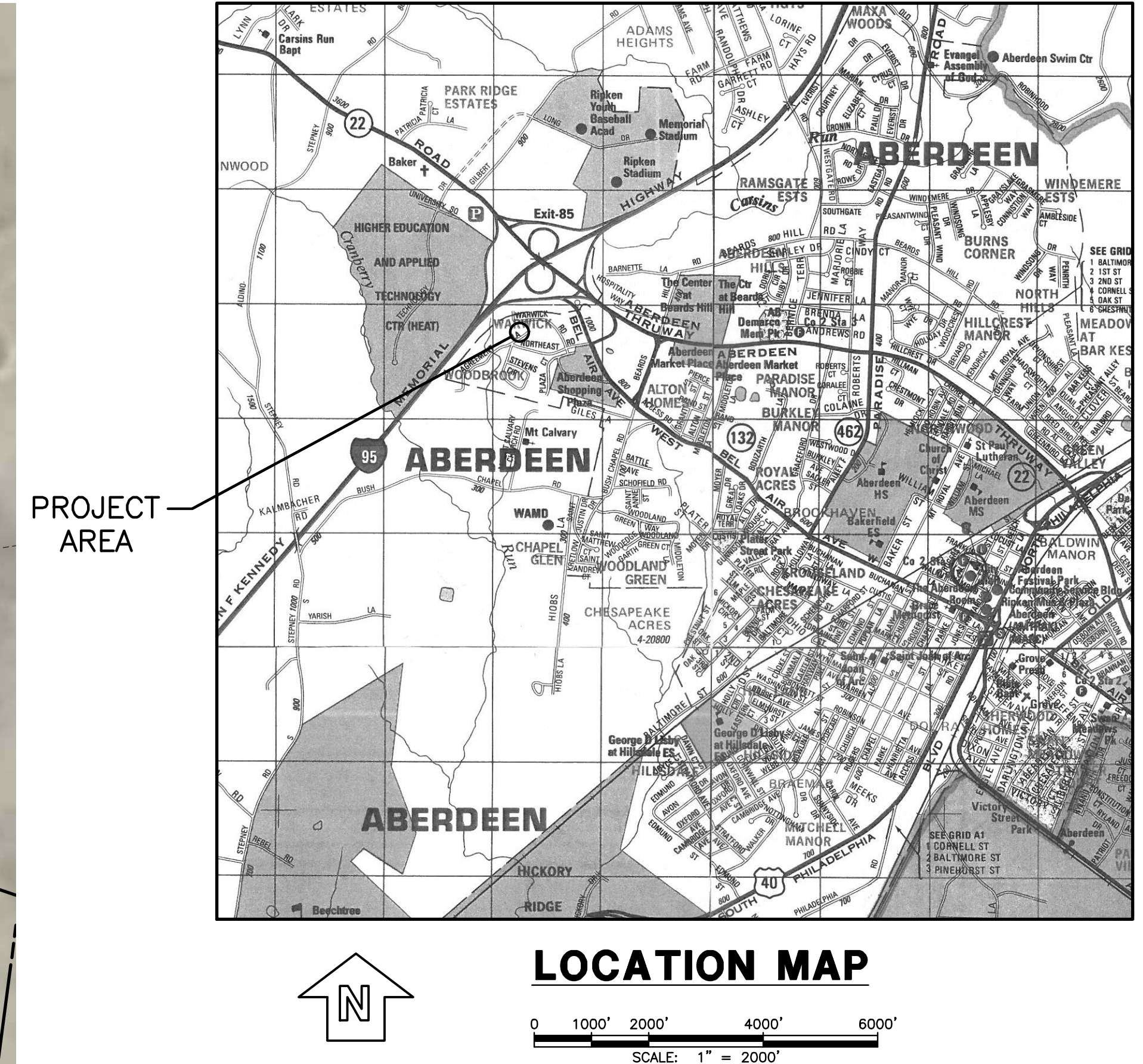
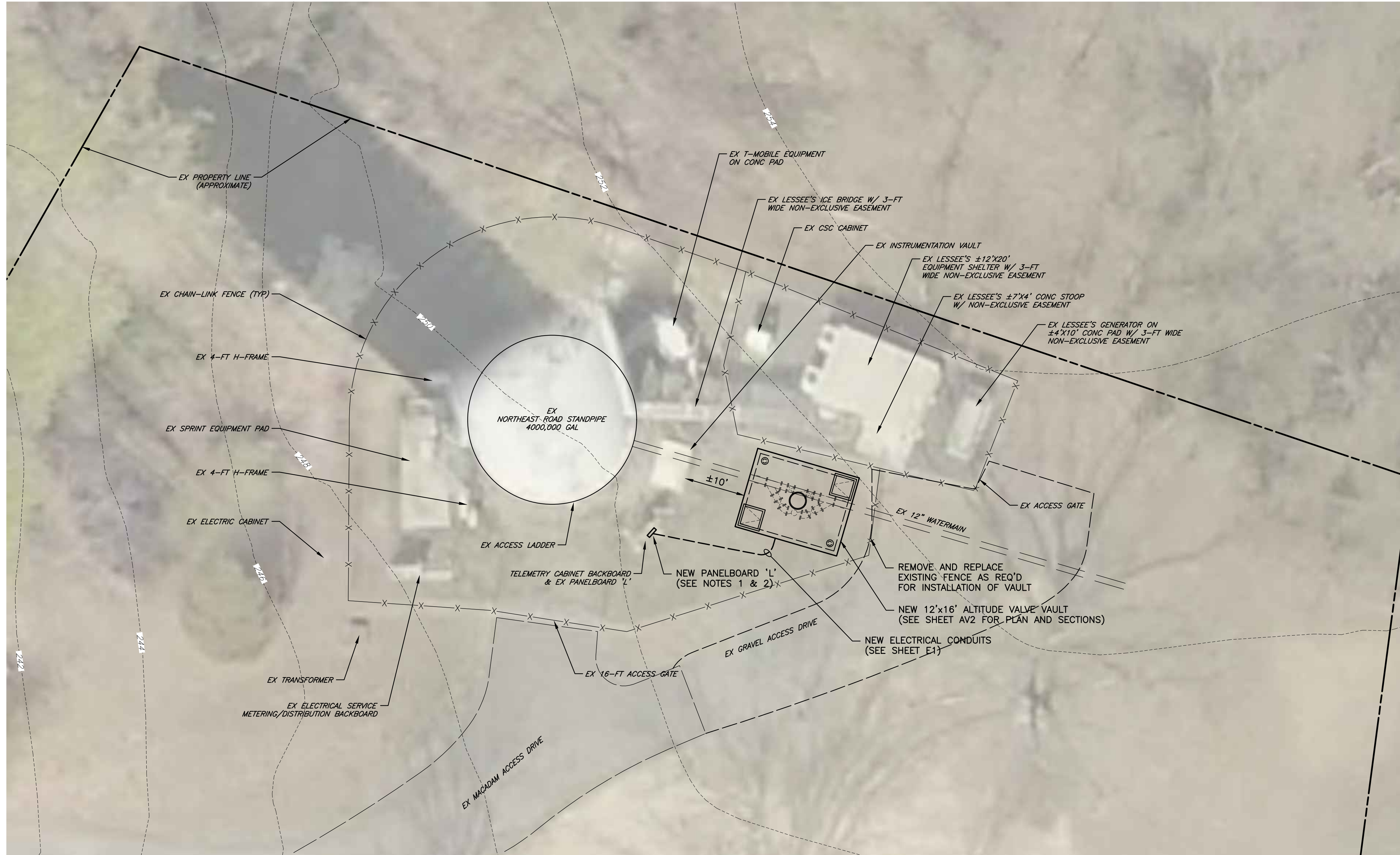


CITY OF ABERDEEN DEPARTMENT OF PUBLIC WORKS  
 ABERDEEN, MARYLAND  
 NORTHEAST TANK  
 ALTITUDE VALVE VAULT

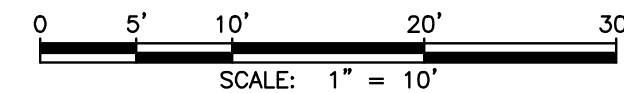
TITLE  
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CONTRACT NO.  
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 ARRO PROJECT NO.  
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SHEET NO.  
 G2  
 2 OF 5



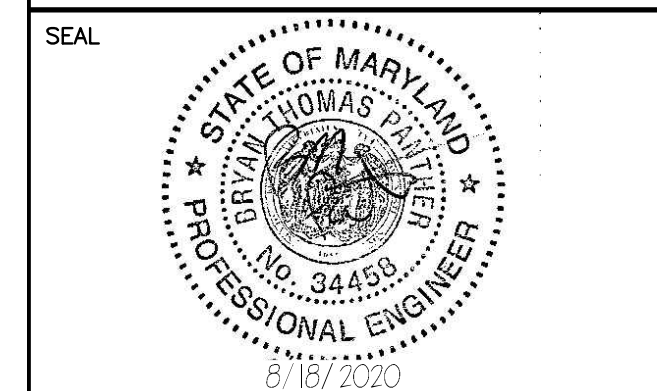
**NORTHEAST TANK SITE**



**NOTES:**

- EXISTING PANELBOARD 'L' TO BE REMOVED AND REPLACED WITH NEW 120/240V, 1Ø-3W, 30-SPACE, N3R PANELBOARD. EXISTING BRANCH CIRCUITS TO BE RECONNECTED TO NEW PANELBOARD BRANCH BREAKERS. EXTEND AND/OR RELOCATE EXISTING BRANCH CIRCUITS AS NECESSARY TO CONNECT INTO NEW PANELBOARD. EXISTING WP/GFI RECEPTACLE AND (2) PHOTOCONTROLS, PRESENTLY INSTALLED AT EXISTING PANELBOARD, SHALL BE REINSTALLED AND CONNECTED TO NEW PANELBOARD IN SIMILAR FASHION. SEE PANEL SCHEDULE ON DWG E1.
- PROVIDE SURGE PROTECTION DEVICE (SPD) ADJACENT TO PANELBOARD 'L', MOUNTED TO EXIST BACKBOARD. WIRE PER PANEL SCHEDULE ON DWG E1.

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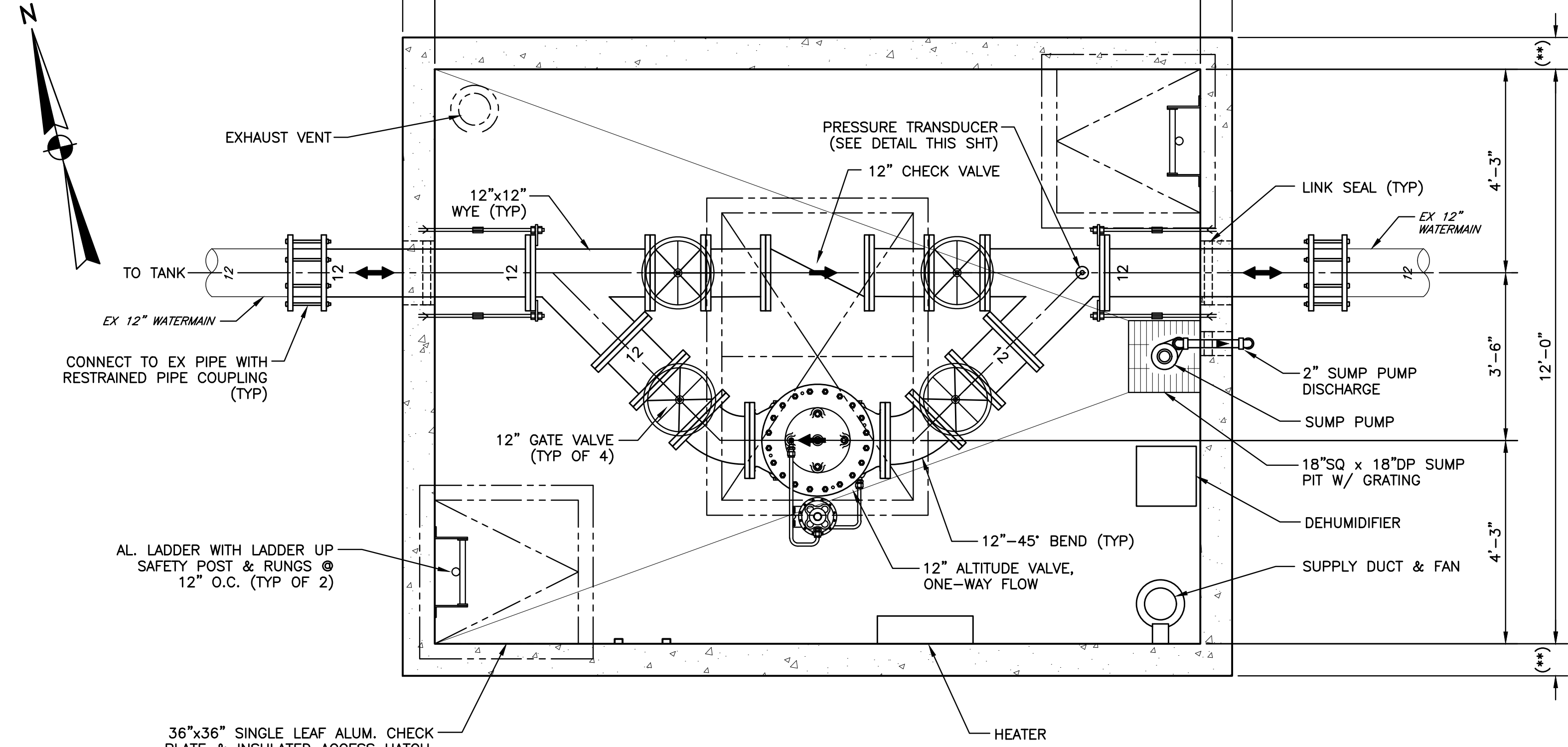
CITY OF ABERDEEN DEPARTMENT OF PUBLIC WORKS  
ABERDEEN, MARYLAND  
**NORTHEAST TANK  
ALTITUDE VALVE VAULT**

TITLE
SITE PLAN

CONTRACT NO.
21-02
ARRO PROJECT NO.
05233.24B
DATE
AUGUST 2020

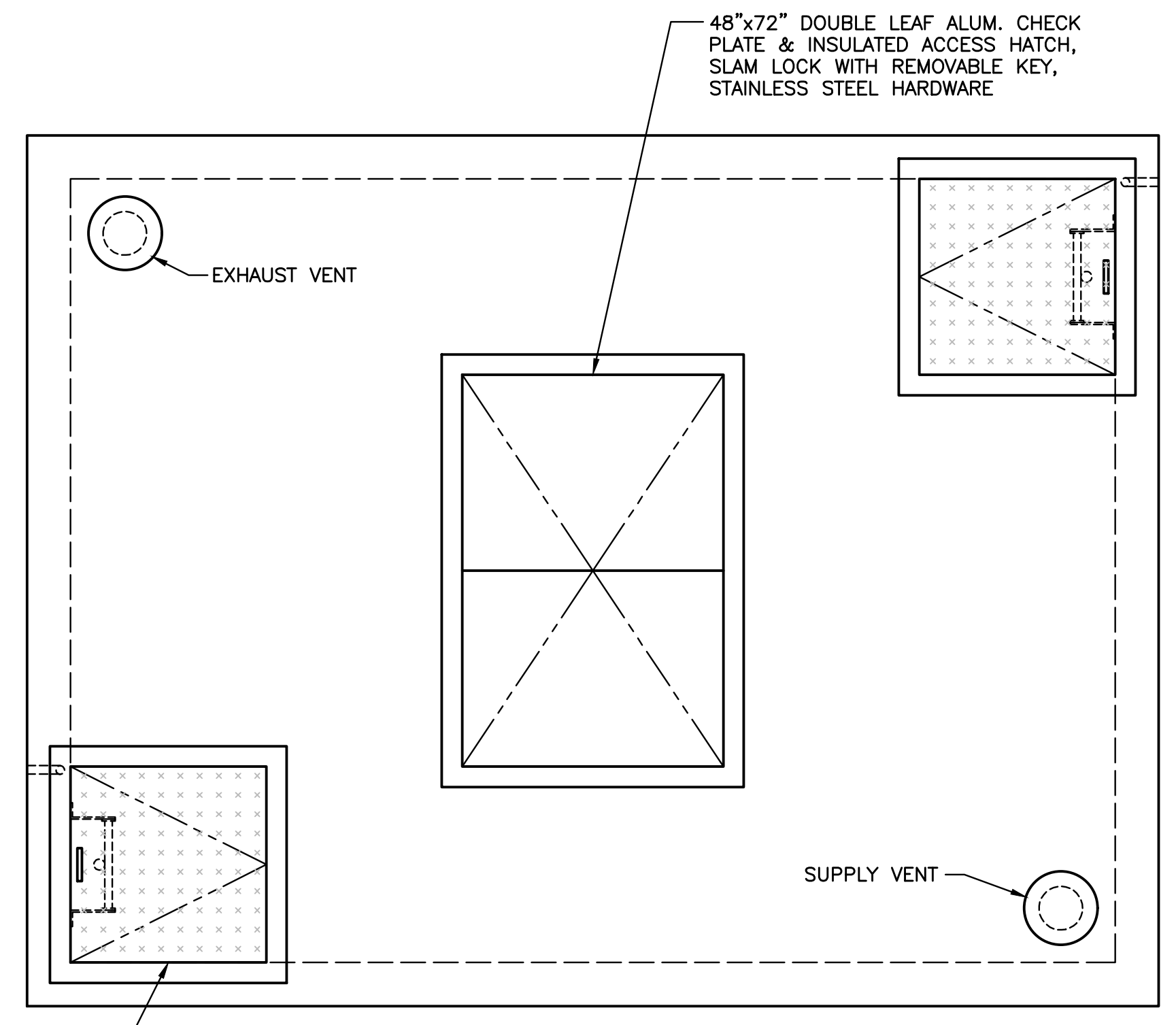
SHEET NO.
AV1
3 OF 5

(\*\*) PRECAST NOTE:  
ALL STEEL REINFORCING, WALLS, LID,  
BOTTOM THICKNESS AND ANTI-FLOATATION  
SLAB OF VAULT ARE TO BE DESIGNED BY  
VAULT MANUFACTURER.



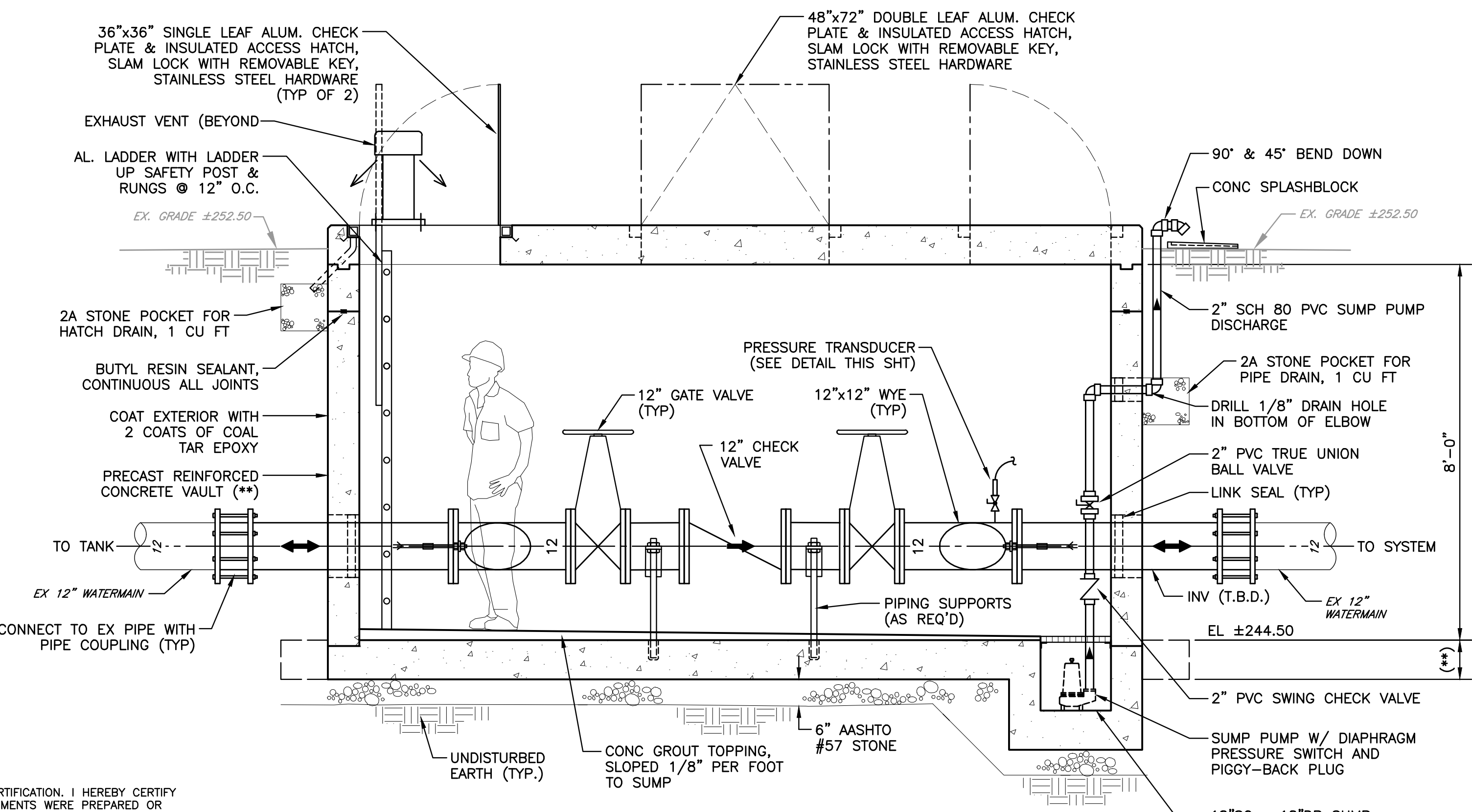
**VAULT PLAN**

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



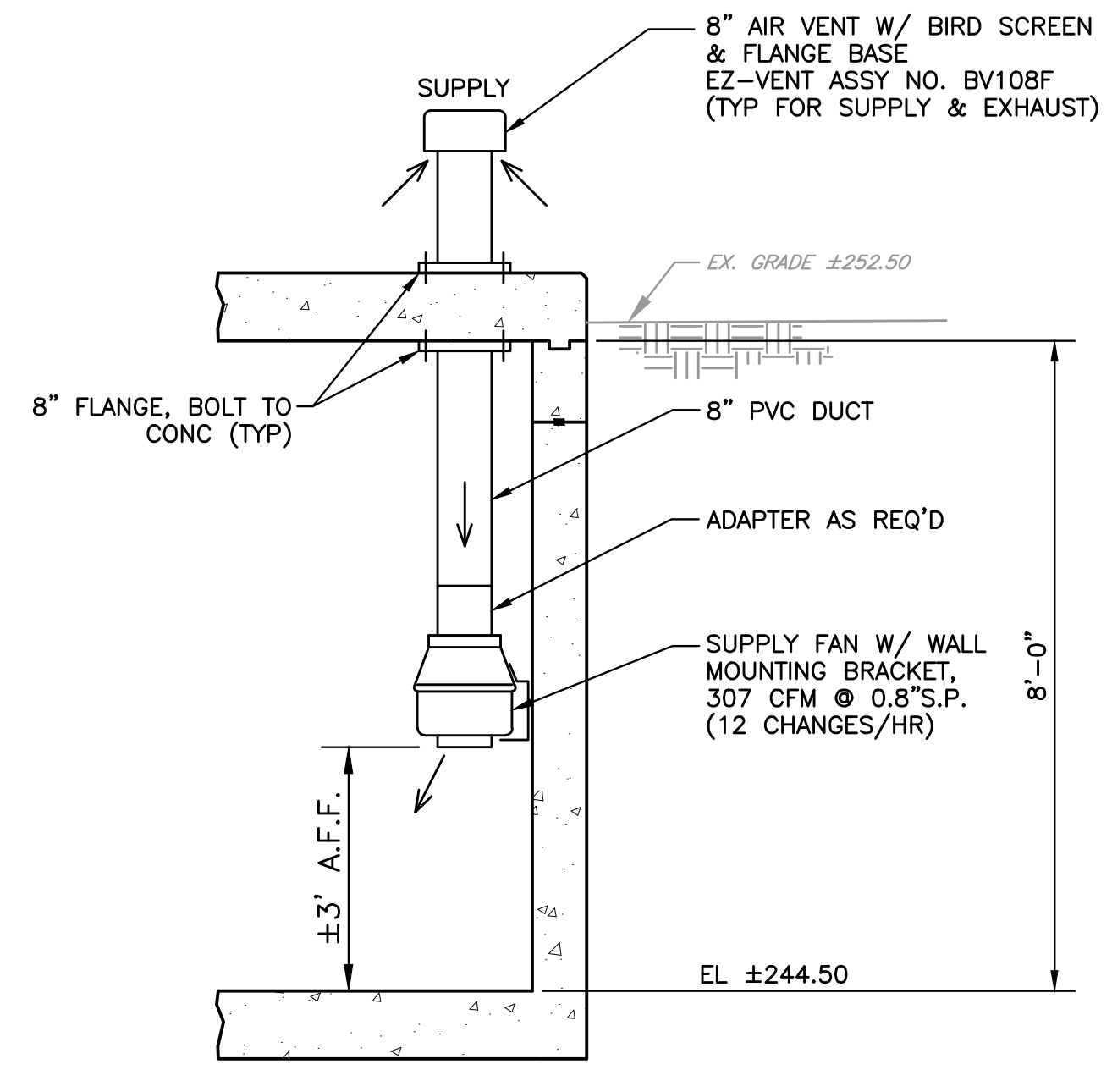
**TOP VIEW**

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



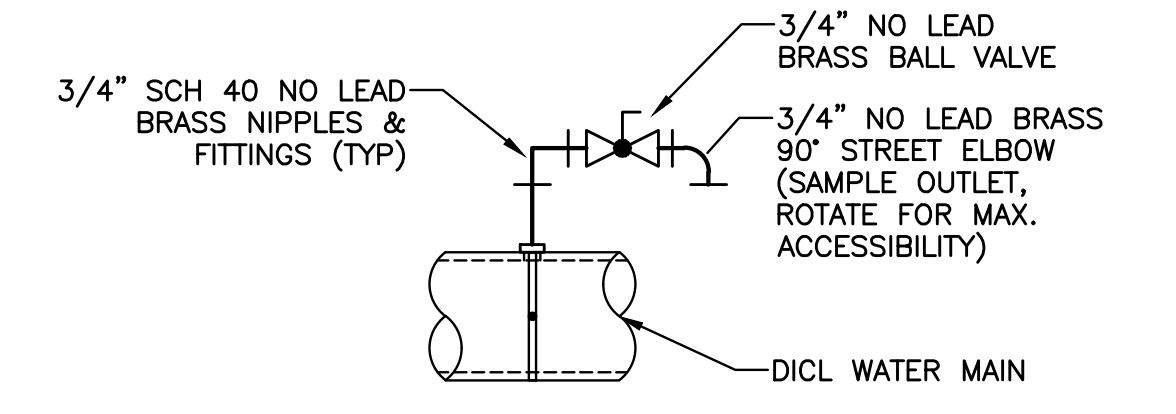
**VAULT SECTION**

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



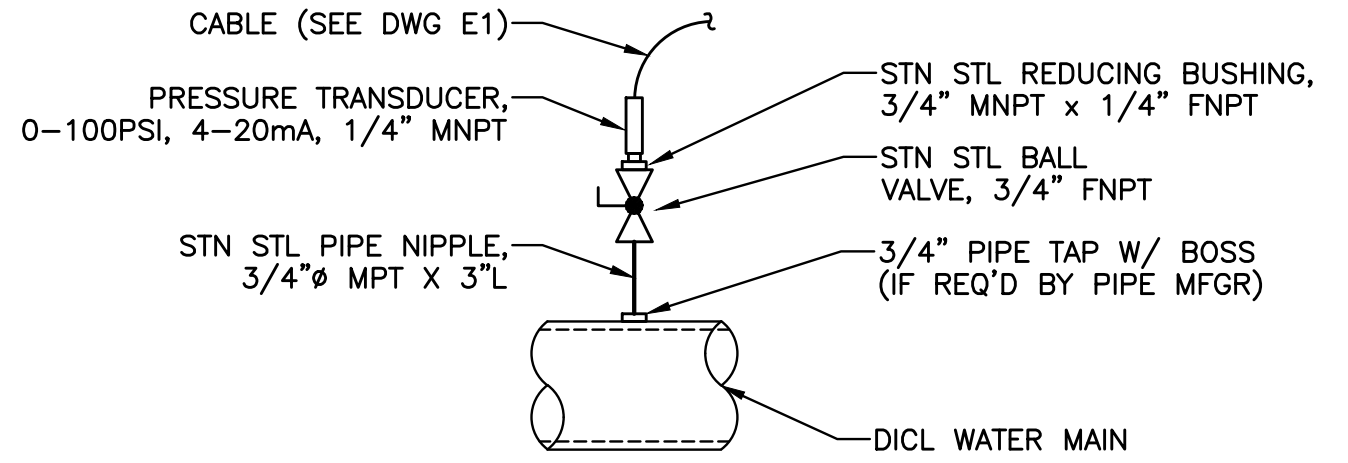
**SUPPLY VENT AND FAN DETAIL**

NO SCALE



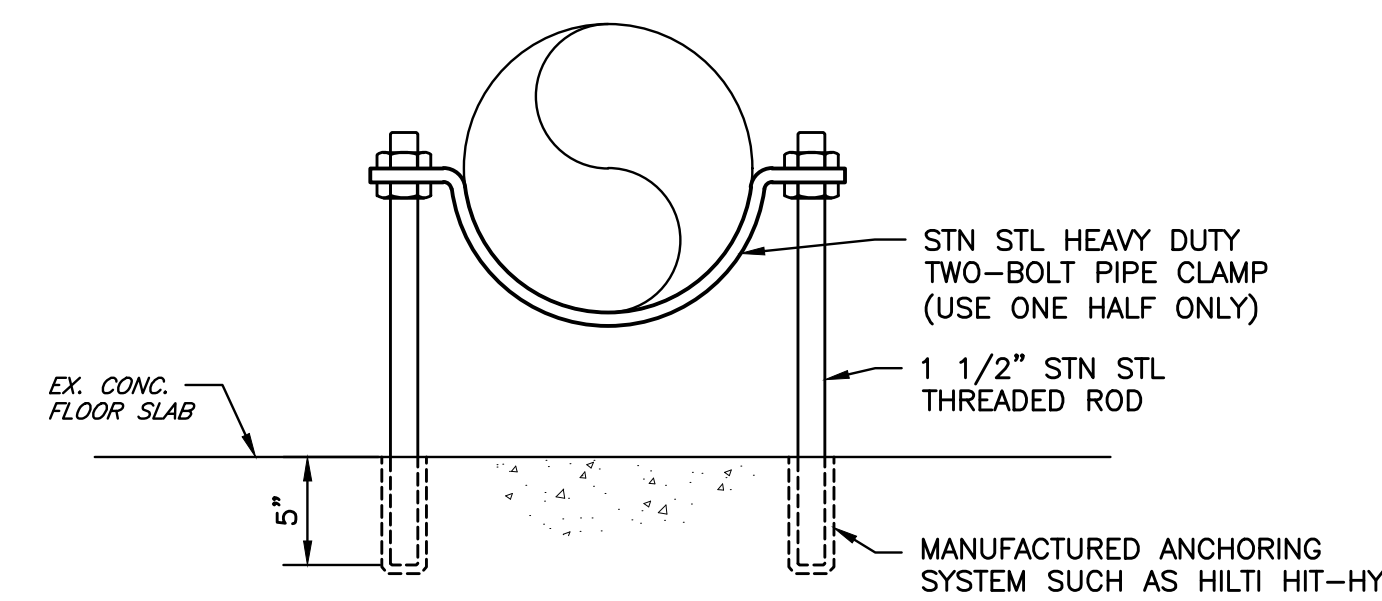
**SAMPLE TAP DETAIL**

NO SCALE



**PRESSURE TRANSDUCER DETAIL**

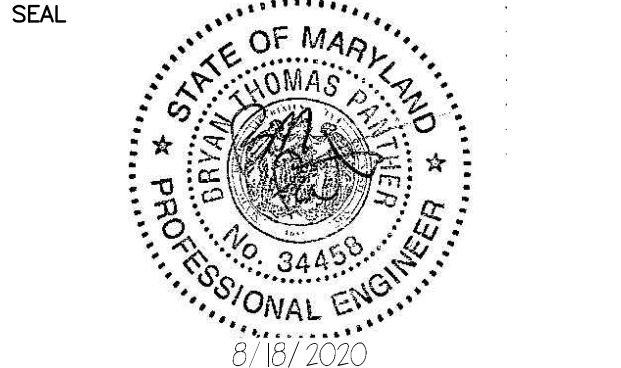
NO SCALE



**FLOOR PIPE SUPPORT DETAIL**

NO SCALE

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NO	REVISIONS			

DESIGNED: J. DENNIS  
CADD: SAM  
SCALE: AS SHOWN

CHECKED: APPROVED  
APPROVED: APPROVED

**ARRG**  
108 West Airport Road  
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ABERDEEN, MARYLAND

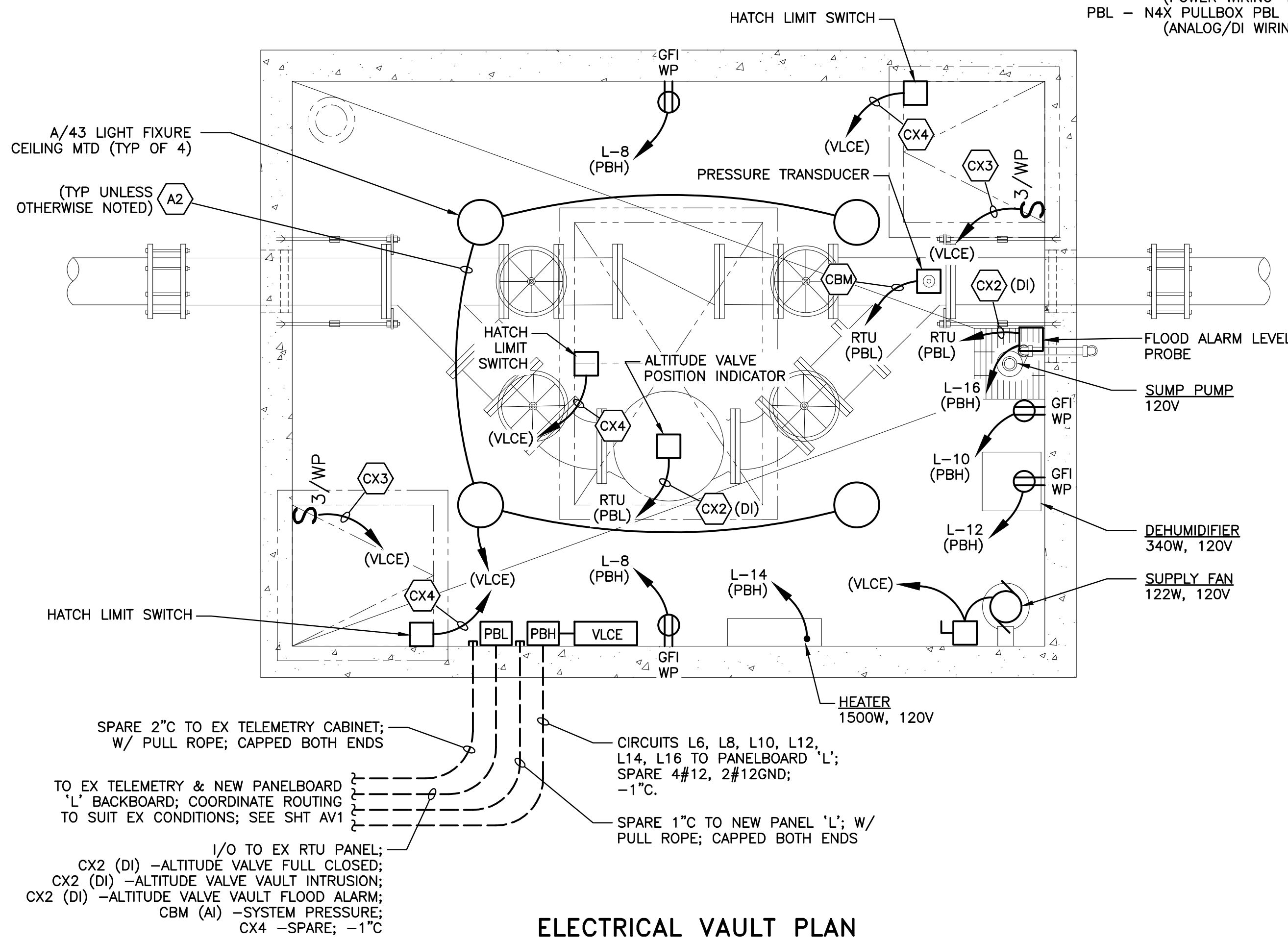
NORTHEAST TANK  
ALTITUDE VALVE VAULT

TITLE: PLAN, SECTION AND DETAILS

CONTRACT NO. 21-02	SHEET NO. AV2
ARRO PROJECT NO. 05233.24B	4 OF 5
DATE AUGUST 2020	

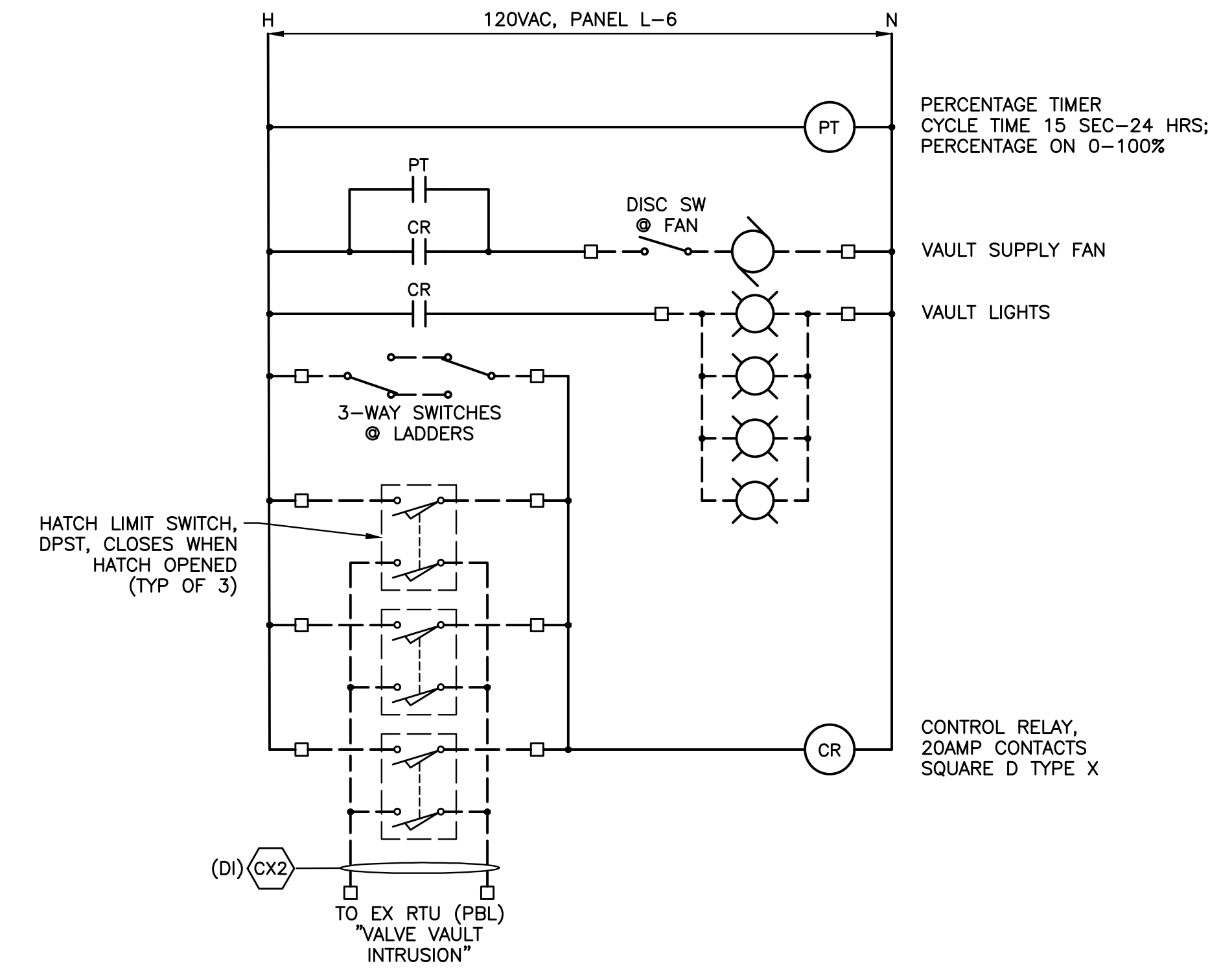
**LEGEND**

VLCE - VENTILATION/LIGHT CONTROL ENCLOSURE, N4X (SEE WIRING DIAGRAM)  
 PBH - N4X PULLBOX PBH W/ TERMINAL BLOCKS (POWER WIRING-120V)  
 PBL - N4X PULLBOX PBL W/ TERMINAL BLOCKS (ANALOG/DI WIRING-24VDC)



**ELECTRICAL VAULT PLAN**

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



**NOTES:**

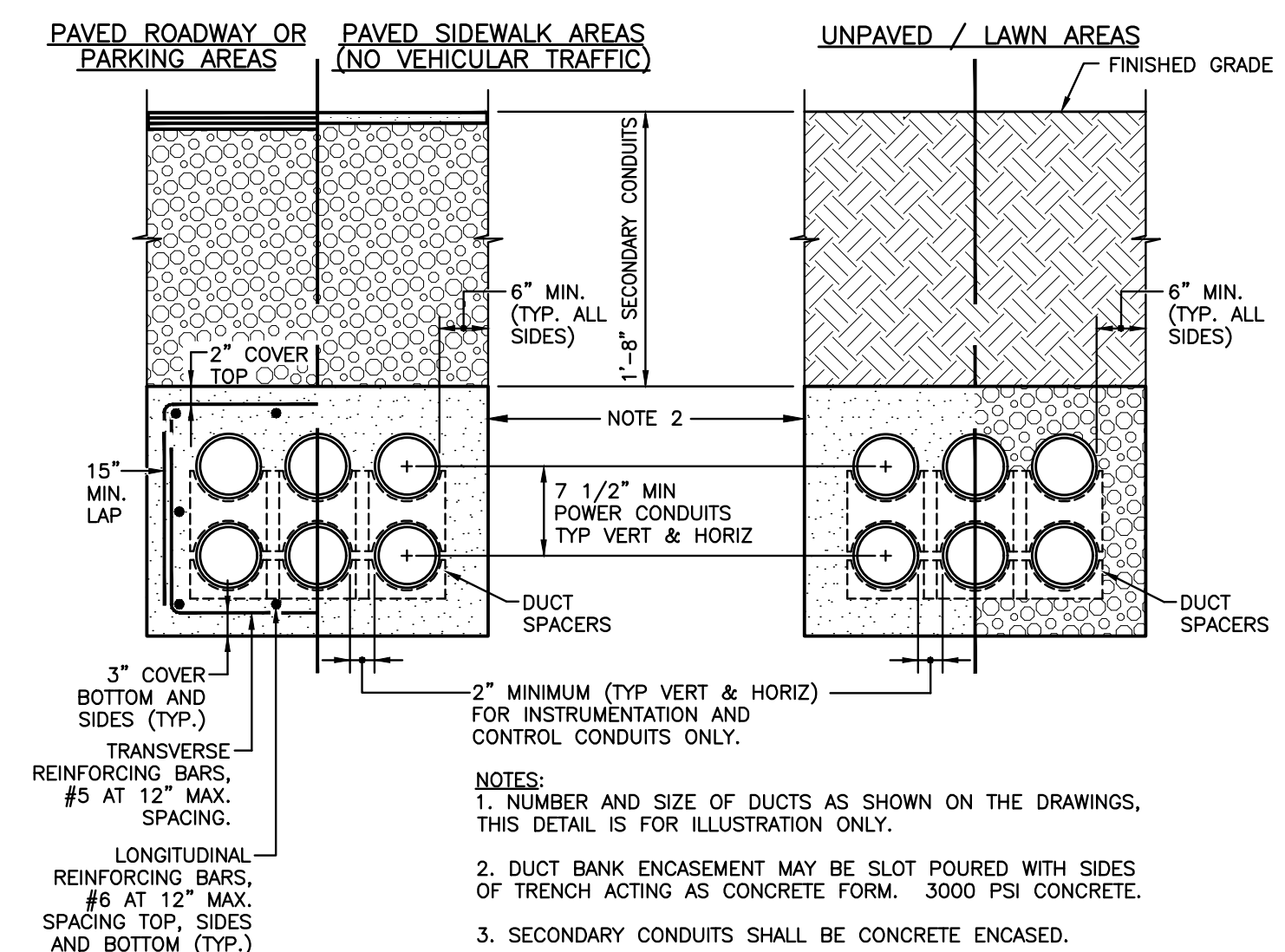
1. PERCENTAGE TIMER, CONTROL RELAY AND TERMINAL BLOCKS TO BE INSTALLED IN NEMA 4X HINGED COVER ENCLOSURE, WITH INNER MOUNTING PANEL, SIZE AS REQUIRED, MOUNTED WITHIN VALVE VAULT.
2. MOUNT ENCLOSURE ON 1" STN STEEL OR HEAVY-GAUGE NON-METALLIC CHANNEL TO KEEP ENCLOSURES AWAY FROM WALL.

**VENTILATION/LIGHT CONTROL ENCLOSURE (VLCE) WIRING DIAGRAM**

TYPE	VOLTS	DESCRIPTION	LAMPS
A/43	120V	ENCLOSED AND GASKETED LED ALUMINUM HOUSING, SEPARATE HINGED OPTICAL & ELECTRICAL COMPARTMENTS, GRAY POWDER POLYESTER PAINT FINISH, CORROSION RESISTANT, TRANSIENT VOLTAGE PROTECTION, TYPE V SQUARE OPTICS, SILICONE GASKET SEALS, CEILING MOUNT. HUBBELL INDUSTRIAL LIGHTING CAT.# KSL18LU-5K-SM-X-2-GR, OR EQUAL	4400 LUMENS 5000K

DESCRIPTION	WIRE NO. KEY	LOAD KVA	CIRCUIT BREAKERS TRIP No.	PHASE	LOAD KVA	CIRCUIT BREAKERS TRIP No.	PHASE	WIRE NO. KEY	DESCRIPTION	
SPD	A3	-	15	A	2	100	-	EX	MAIN CIRCUIT BREAKER	
EXIST-RECEPT	EX	EX	20	5	A	6	20	0.30	A2	VAULT VLCE
EXIST-VAULT LIGHT	EX	EX	20	7	B	8	20	0.36	A2	VAULT RECEPTACLES
EXIST-INST OUTLET	EX	EX	20	9	A	10	20	1.00	A2	VAULT SUMP PUMP
EXIST-LIGHT/RECEPT	EX	EX	20	11	B	12	20	0.40	A2	VAULT DEHUMIDIFIER
EXIST-FAA PHOTOCELL	EX	EX	20	13	A	14	20	1.50	A2	VAULT HEATER
EXIST-LIGHT/RECEPT	EX	EX	20	15	B	16	15	0.10	A2	VAULT FLOOD PROBE
EXIST-SCADA	EX	EX	20	17	A	18	20	-	-	SPARE
EXIST-FAA LIGHT/PHOTOCELL	EX	EX	20	19	B	20	20	-	-	SPARE
SPARE	-	-	15	21	A	22	20	-	-	SPARE
SPACE	-	-	-	23	B	24	-	-	-	SPARE
	-	-	-	25	A	26	-	-	-	
	-	-	-	27	B	28	-	-	-	
	-	-	-	29	A	30	-	-	-	

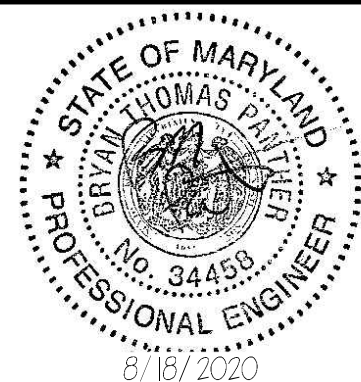
WIRE TAG	CONDUCTORS	CONDUIT
A2	2 #12, #12 GND	3/4"
A3	3 #12, #12 GND	3/4"
CONTROL & SIGNAL CONDUCTORS		
CX#	14 AWG CONTROL- # = QTY OF CONDUCTORS + #12 GND	3/4"(MIN)
SX#	SHIELDED TWISTED PAIR- # = NUMBER OF PAIRS	3/4"(MIN)
CBM	CABLE BY MANUFACTURER OF PRESSURE TRANSDUCER	3/4"(MIN)



**TYPICAL DUCT BANK DETAIL**

NO SCALE

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34458, EXPIRATION DATE: 6/20/2021



NO	DESCRIPTION	DATE	BY	APP.
2	ISSUED FOR BIDDING PURPOSES	8/18/20	BOP	JLD
1	90% RESUBMISSION TO CLIENT (SPLIT CONTRACTS)	12/19/19	BOP	JLD
NO	REVISIONS			

DESIGNED	CADD	SCALE
R. SWEITZER	DHT	AS SHOWN
CHECKED	APPROVED	APPROVED

**ARRG**  
 108 West Airport Road  
 Lititz, Pennsylvania 17543  
 Tel 717.569.7021

ABERDEEN, MARYLAND  
 NORTHEAST TANK  
 ALTITUDE VALVE VAULT

**ELECTRICAL PLAN AND DETAILS**

CONTRACT NO. 21-02
ARRO PROJECT NO. 05233.24B
DATE AUGUST 2020

E1