ADDITIONS AND RENOVATIONS TO

Washington County VA Sheriff's Office - C C Porter Animal Shelter

27252 Porter Lane, Abingdon, VA 24211

BID DOCUMENTS / CONSTRUCTION DOCUMENTS

COMMONWEALTH OF VIRGINIA — D. MICHAEL WEAVER — LIC. NO. 9031 — 04-16-2021 — ARCHITECT
ARCHITECTURE

COMMONWEALTH OF VIRGINIA — ALLAN J. LONG — Lic. No. 023840 — April 16 2021 — PROFESSIONAL ENGINEER
STRUCTURAL

COMMONWEALTH OF VIRGINIA — DERWIN EUGENE CARTMEL — Lic. No. 31491 — 4/16/21 — PROFESSIONAL ENGINEER
MECHANICAL

COMMONWEALTH OF VIRGINIA — JOE W. RIGGS — Lic. No. 22741 — 4-16-21 — PROFESSIONAL ENGINEER
ELECTRICAL

the LANE GROUP
engineering
architecture
environmental
310 W. Valley Street
Abingdon, VA 24210
276.206.8571 - office
Abingdon I Big Stone Gap I Galax
www.thelanegroupinc.com

GENERAL PROJECT INFORMATION

PROJECT DATA

PROJECT
ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY VIRGINIA SHERIFF'S OFFICE -
CC PORTER ANIMAL SHELTER
27252 PORTER LANE
ABINGDON, VA 24211

OWNER / DEVELOPER
WASHINGTON COUNTY, VIRGINIA

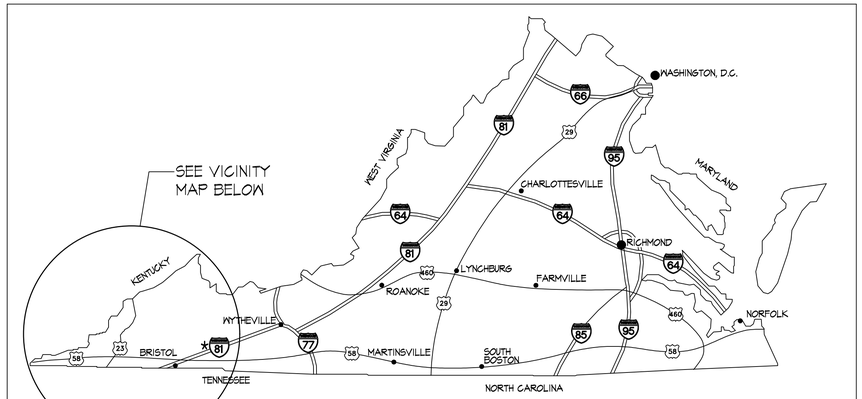
OWNER CONTACT PERSON: KEVIN HILL, GENERAL SERVICES MANAGER
TELEPHONE NO.: 276-525-1355

DESIGNERS OF RECORD

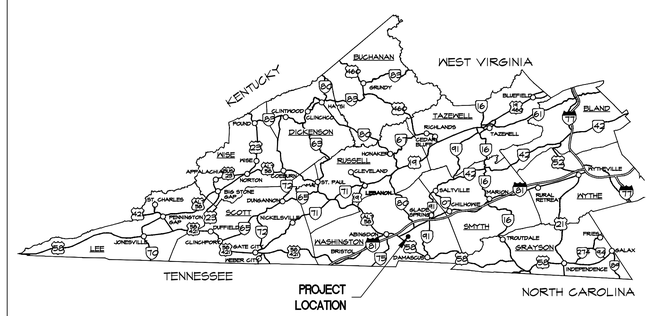
DISCIPLINE	NAME	LICENSE NO.	TELEPHONE NO:
ARCHITECT	D. MICHAEL WEAVER, AIA	VA. 009031	276-206-8571
LANDSCAPE	N.A.		
CIVIL ENGR.	MATTHEW LANE, P.E.	VA. ******	276-206-8571
STRUCTURAL	ALLAN J. LONG , P.E.	VA. 023840	276-783-3977
PLUMBING	DERWIN CARTMEL, P.E.	VA. 031491	423-926-5991
HVAC	DERWIN CARTMEL, P.E.	VA. 031491	423-926-5991
SPRINKLER	N.A.		
ELECTRICAL	JOE N. RIGGS, P.E.	VA. 022741	423-926-5991
FIRE ALARM	N. A.		

DRAWING INDEX

DRAWING INDEX



STATE MAP



VICINITY MAP

PROJECT
ADDITIONS AND RENOVATIONS

WASHINGTON COUNTY VA
SHERIFF'S OFFICE
CC PORTER ANIMAL SHELTER

27252 PORTER LANE
ABINGDON, VA 24211

TLG PROJECT NO. 2088

TITLE SHEET

DRAWING INDEX

LOCATION INFORMATION

T-100

Date 04-16-2021

ABBREVIATIONS

&	AND	KIT	Kitchen
@	At the Rate of	KW	Kilowatts
AB	Anchor Bolt		
ABV	Above	L	Length, Lintel
ADJ	Adjustable	LAM	Laminated
AFF	Above Finish Floor	LAV	Lavatory
AHU	Air Handling Unit	LBS	Pounds
ALT	Alternative, Alternate	LF	Linear Feet
ALUM	Aluminum	LKR	Locker
APPROX	Approximately	LT	Light
ARCH	Architect, Architectural		
ASPH	Asphalt	MAS	Masonry
AUTO	Automatic	MATL	Material
		MAX	Maximum
BD	Board	MECH	Mechanical
BG	Bumper Guard	MFG	Manufacturer
BLDG	Building	MIN	Minimum
BLKG	Blocking	MISC	Miscellaneous
BLW	Below	MO	Masonry Opening
BM	Beam	MRGWB	Moisture Resistant Gypsum Wallboard
BRK	Brick	MTD	Mounted
BTU	British Thermal Unit	MTL	Metal
BUR	Built-up Roofing	MTR	Motro
		MUL	Mullion
©	Built-up Roofing		
CFM	Cubic Feet Per Minute (Air Flow)	N	North
CG	Corner Guard	N/A	Not Applicable
A.I.P.	Cast-In-Place	NIC	Not in Contract
CJ	Control Joint	NO	Number
CL	Center Line	NOM	Nominal
CLG	Ceiling	NTS	Not to Scale
CLOS.	Closet		
CLR	Clear	OC	On Center
CMU	Concrete Masonry Unit	OPNG	Opening
CO	Cleanout		
COL	Column	P	Paint
CONC	Concrete	PC	Precast
CONT	Continuous	PH	Phase
CONTR	Contractor	PL	Plate
CORR	Corridor	PLAM	Plastic Laminate
CPT	Carpet	PLAS	Plaster
CS	Concrete Sealer, Concrete Stain	PP	Power Pole
CT	Ceramic Tile	PNL	Panel
CTB	Ceramic Tile Base	PROJ	Projection, Project
CTR	Center	PRT	Pre-cast Resilient Terrazzo Tile
CW	Cold Water	PSI	Pounds Per Square Inch
		PT	Porcelain Tile
DEMO	Demolish, Demolition	PWD	Plywood
DET	Detail		
DF	Drinking Fountain	QT	Quarry Tile
DIA	Diameter		
DIF	Determine in Field	R	Radius
DIFF	Diffuser	RA	Return Air
DISCH	Discharge	RB	Rubber Base, Resilient Base
DN	Down	RD	Roof Drain
DO	Ditto	REF	Reference
DR	Door	REFRIG	Refrigerator
DRN	Drain	REINF	Reinforced, Reinforcement
DS	Downspout	REQD	Required
DW	Dishwater	RET	Return
DWG	Drawing	RM	Room
DWR	Drawer	R.O.W.	Right of Way
		RO	Rough Opening
E	East	RPM	Revolution Per Minutes
EA	Each	RTU	Roof Top Unit
EF	Exhaust Fan		
EUH	Electric Unit Heater	S	South
EJ	Expansion Joint	SATC	Suspended Acoustical Tile Ceiling
EL	Elevation	SCH	Schedule
ELEC	Electric, Electrical	SD	Smoke Damper
ELEV	Elevator	SECT	Section
EMER	Emergency	SF	Square Foor (feet)
ENGR	Engineer	SHT	Sheet
EOS	Edge of Slab	SHT MTL	Sheet Metal
EP	Epoxy Paint	SIM	Similar
EQ	Equal	SPECS	Specifications
EQUIP	Equipment	SQ	Square
ETR	Existing to Remain	SS, S/S	Stainless Steel
EWC	Electric Water Cooler	STD	Standard
EXH	Exhaust	STL	Steel
EXIST	Existing	STOR	Storage
EXP	Exposed	STRUCT	Structure or Structural
EXT	Exterior	SUSP	Suspended
		SV	Sheet Vinyl
F	Fahrenheit		
FCU	Fan Coil Unit	T/	Top of
FD	Fire Damper / Floor Drain	T/CONC	Top of Concrete
FE	Fire Extinguisher	T/S	Top of Steel
FEC	Fire Extinguisher Cabinet	T/W	Top of Wall
FFE	Finish Floor Elevation	T&G	Tongue and Groove
FF&E	Finishes, Fixtures, & Equipment	TBD	To Be Determined
FHC	Fire Hose Cabinet	TEL	Telephone
FIN	Finish	TEMP	Temperature
FLUOR	Fluorescent	TH	Thermometer
FR	From	THK	Thick(ness)
FRGWB	Fire-Rated Gypsum Wallboard	THOLD	Threshold
FT	Feet	TLT	Toilet
FURR	Furring	TSTAT	Thermostat
FV	Field Verify	TV	Television
		TYP	Typical
GA	Gauge		
GAL	Gallon	UC	Undercut
GALV	Galvanized	UH	Unit Heater
GB	Gypsum Board	UL	Underwriters Laboratory
GHM	Galvanized Hollow Metal	UR	Urinal
GLB	Glazed Block		
GPM	Gallons Per Minute	V	Volts
GRV	Gravity Roof Ventilator	VA	Virginia
		VAV	Variable Air Volume
HC	Handicapped	VCT	Vinyl Composition Tile
HDWR	Hardware	VERT	Vertical
HDWD	Hardwood	VEST	Vestibule
HM	Hollow Metal	VHDA	Virginia Housing Development Authority
HOR	Horizontal	VIF	Verify in Field
HP	Horse Power / Heat Pump	VOL	Volume
HR	Handrail	VT	Virginia Tech (Go Hokies!)
HT	Height	VTR	Vent Thru Roof
HTG	Heating	VWC	Vinyl Wall Covering
HTR	Heater		
HVAC	Heating / Ventilating / Air Cond.	W	West, Width
HW	Hot Water	W/	With
HWD	Hardwood	W/O	Without
		WD	Wood
IN	Inches	WH	Water Heater
INCL	Included, Inclusive	WT	Weight
INS	Insulation	WTR	Water
INT	Interior	WWF	Welded Wire Fabric
JAN	Janitor		
JT	Joint		

MATERIALS & SYMBOLS

ACOUSTICAL TILE

BATT INSULATION

CARPET

CAST STONE

CERAMIC TILE

CMU

CONCRETE

EARTH

FACE BRICK

FOAM INSULATION

GLASS BLOCK

GRAVEL

MARBLE

STEEL

STONE

STRUCTURAL CLAY TILE

STRUCTURAL STEEL

PLYWOOD

RIGID INSULATION

TERRAZZO

WOOD FINISH

WOOD BLOCKING

WOOD ROUGH FRAMING

2 / A501 — DETAIL TAG

A / A201 — EXTERIOR ELEVATIONS

2 / A301 — SECTION "CUT" LINE

A / B / A401 — INTERIOR ELEVATIONS

2 / A402 — DETAIL (DRAWING IDENTIFICATION / SCALE)

INTERNATIONAL SYMBOL OF ACCESSIBILITY

NORTH — PROJECT NORTH

25 — DOOR TAG

A — WINDOW TAG

2 — PARTITION TYPE TAG

2 — ROOM SIGNAGE TAG

ELEVATION DESIGNATION

+20.00" — SPOT ELEVATION (distance above (+) or below (-) main floor level)

BREAK LINE

2 — REVISION TAG

ROOM NAME / 100 — ROOM IDENTIFICATION

DETAIL AREA

DISCIPLINE CODES

DESIGNATION	DRAWING TYPE
G	GENERAL INFORMATION
D	DEMOLITION (ARCH.) / DETAILS (CIVIL)
C	CIVIL / SITE
L	LANDSCAPE
S	STRUCTURE
A	ARCHITECTURE
I	INTERIORS
P	PLUMBING
M	MECHANICAL
E	ELECTRICAL

SHEET CODES / DESIGNATORS

DESIGNATION	DRAWING TYPE
0	GENERAL INFORMATION
1	PLANS
2	ELEVATIONS
3	SECTIONS
4	LARGE SCALE PLANS
5	DETAILS
6	SCHEDULES & DIAGRAMS
7	INTERIORS (F F & E)
8	DESIGNER DEFINED

MISC. PROJECT NOTES

THE INTENT OF THE CONTRACT DOCUMENTS IS TO INCLUDE ALL ITEMS REQUIRED FOR THE COMPLETION OF THE PROJECT. ALL WORK LISTED, SHOWN, OR IMPLIED IN THE CONSTRUCTION DOCUMENTS SHALL BE PROVIDED BY THE CONTRACTOR TO THE EXTENT IT IS REASONABLE TO INFER THE WORK AS NECESSARY TO PROVIDE THE INTENDED RESULT.

THE USE OF THE WORD "PROVIDED" IN CONNECTION WITH ANY ITEM SHOWN SHALL MEAN "FURNISHED, INSTALLED, AND CONNECTED", UNLESS OTHERWISE NOTED.

CONTRACTOR IS RESPONSIBLE FOR PROVIDING PERMITS, WORK, AND MATERIALS IN ACCORDANCE WITH ALL CODES, ORDINANCES, AND REGULATIONS APPLICABLE AT THE PROJECT LOCATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING CONTRACT DOCUMENTS, FIELD CONDITIONS, AND DIMENSIONS FOR ACCURACY AND CONFIRMING THAT ALL WORK IS BUILDABLE, AS INDICATED, BEFORE PROCEEDING WITH CONSTRUCTION.

DO NOT SCALE DRAWINGS! USE ONLY THE DIMENSIONS INDICATED ON THE DRAWINGS. IF DIMENSIONS ON THE DRAWINGS ARE AT VARIANCE WITH ACTUAL CONDITIONS, SUCH THAT WORK CANNOT PROCEED AS INDICATED, REQUEST CLARIFICATION FROM THE ARCHITECT BEFORE PROCEEDING WITH CONSTRUCTION AND / OR FABRICATION OF ANY ITEM SCHEDULED FOR INSTALLATION.

CONTRACTOR IS RESPONSIBLE FOR THE MEANS, METHODS, AND TECHNIQUES OF CONSTRUCTION, SAFETY PRECAUTIONS IN CONNECTION WITH THE WORK, AND FOR THE ACTS OR OMISSIONS OF SUBCONTRACTORS.

INSTALL ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDED SPECIFICATIONS.

UNLESS NOTED OTHERWISE, DIMENSIONS ARE FACE TO FACE OF WOOD STUDS AND FACE TO FACE OF MASONRY MATERIAL.

EXTERIOR DIMENSIONS ARE FACE TO FACE OF FINISHED MATERIAL (i.e., FACE OF CONCRETE, FACE OF MASONRY, ETC.).

ELEVATIONS AND LEVELS ARE SHOWN TO TOP OF FINISHED HARD SURFACES (i.e., TOP OF FINISHED CONCRETE SLAB, ETC.). THIN-SET FINISH MATERIALS, SUCH AS TILE, ARE IN ADDITION TO THE DIMENSION INDICATED.

ALL VERTICAL PIPING SHALL BE FURRED AND FINISHED TO MATCH ADJACENT WALLS. EXCEPTIONS ARE IN MECHANICAL / ELECTRICAL ROOM WHERE PIPING MAY REMAIN EXPOSED.

CEILING ACCESS PANELS SHALL BE PROVIDED IN OTHERWISE NON-ACCESSIBLE CEILINGS BELOW THE FOLLOWING MECHANICAL AND PLUMBING DEVICES:

A. VALVES
B. FLOW MEASURING DEVICES
C. MIXING BOXES
D. POWER OPERATED DAMPERS
E. ACCESS PANELS IN DUCTWORK
F. VOLUME AND BALANCING DEVICES
G. WATER FLOW SWITCHES
H. SPRINKLER SYSTEM DRAINS AND TEST CONNECTIONS
I. PRESSURE SWITCHES

CONTRACTOR SHALL CLEAN UP PROJECT SITE ON A DAILY BASIS. CONSTRUCTION DEBRIS SHALL BE STORED IN A DUMPSTER OR OTHER SUITABLE CONTAINER THAT WILL FACILITATE LEGAL DISPOSAL.

CODES & ORDINANCES

2015 - VIRGINIA CONSTRUCTION CODE - EFFECTIVE DATE SEPTEMBER 4, 2018.
(VIRGINIA UNIFORM STATEWIDE BUILDING CODE)
2015 - VIRGINIA EXISTING BUILDING CODE - EFFECTIVE DATE SEPTEMBER 4, 2018.
2015 - VIRGINIA ENERGY CONSERVATION CODE - EFFECTIVE DATE SEPTEMBER 4, 2018.
2015 - INTERNATIONAL PLUMBING CODE
2015 - INTERNATIONAL MECHANICAL CODE
2014 - NATIONAL ELECTRICAL CODE
2010 - ADA STANDARDS FOR ACCESSIBLE DESIGN - PUBLISHED DATE SEPTEMBER 15, 2010 / EFFECTIVE DATE MARCH 12, 2012.

OCCUPANCY CLASSIFICATION

(SECTION 304.1) BUSINESS GROUP "B"

TOTAL OCCUPANT LOAD

LESS THAN 50 PERSONS.

CONSTRUCTION CLASSIFICATION

(SECTION 602) TYPE V-B

FIRE PROTECTION

NO AUTOMATIC SPRINKLER SYSTEM IS REQUIRED.
NO FIRE ALARM AND DETECTION SYSTEM IS REQUIRED.

BUILDING HEIGHT & NUMBER OF STORIES

1 STORY, ACTUAL / 2 STORIES ALLOWED BY CODE. (TABLE 504.4)
9,000 SQ. FT. PER STORY ALLOWED BY CODE / 27,000 SQ. FT. PER BLDG. ALLOWED (TABLE 506.2)

PROJECT AREA

FIRST FLOOR: 1,334.17 SQ. FT. (EXISTING) + 2,489.04 S.F. (NEW) = 3,823.21 S.F.
/ 9,000 SQ. FT. ALLOWED BY CODE. (TABLE 506.2)

AREA INCREASE? NO

INTERIOR FINISHES

FLAME SPREAD RATING SHALL BE IN ACCORDANCE WITH ASTM E84 AND GROUPED IN THE FOLLOWING CLASSES:

CLASS A: FLAME SPREAD 0-25, SMOKE-DEVELOPED 0-450.
CLASS B: FLAME SPREAD 26-75, SMOKE-DEVELOPED 0-450.
CLASS C: FLAME SPREAD 76-200, SMOKE-DEVELOPED 0-450.

THE RATINGS FOR THIS GROUP "B" OCCUPANCY SHALL BE IN ACCORDANCE WITH THE "NON-SPRINKLERED" PORTION OF THE VIRGINIA CONSTRUCTION CODE, TABLE 803.5, INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY.

EXIT ENCLOSURES AND PASSAGEWAYS: A
CORRIDORS: B
ROOMS AND ENCLOSED SPACES: C

ENERGY CONSERVATION

PER THE VIRGINIA ENERGY CONSERVATION CODE, CHAPTER 3, SECTION 301, "CLIMATE ZONES", THE ENTIRE COMMONWEALTH OF VIRGINIA LIES WITHIN CLIMATE ZONE 4. THIS PROJECT SITE FALLS WITHIN SUB-ZONE "A" MOIST.

IN ACCORDANCE WITH THE VIRGINIA ENERGY CONSERVATION CODE, CHAPTER 5, TABLE 502.2, "BUILDING ENVELOPE REQUIREMENTS- OPAQUE ASSEMBLIES", THE FOLLOWING MINIMUM INSULATION REQUIREMENTS APPLY TO ZONE 4:

ATTIC AND OTHER ROOF INSULATION:	R-38
WALLS AND ABOVE GRADE INSULATION:	R-13 + R7.5 CONTINUOUS INSULATION
UNHEATED SLABS ON GRADE:	R-10 FOR 24" BELOW GRADE
SWINGING OPAQUE DOORS:	U-0.61
SWINGING ENTRANCE DOORS:	U-0.77
WINDOWS (FIXED)	U-0.38
WINDOWS (OPERABLE)	U-0.45
FENESTRATION SHGC	0.40
FENESTRATION % OF EXTERIOR WALL	11.28%

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

PROJECT INFORMATION

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE: 04/16/2021

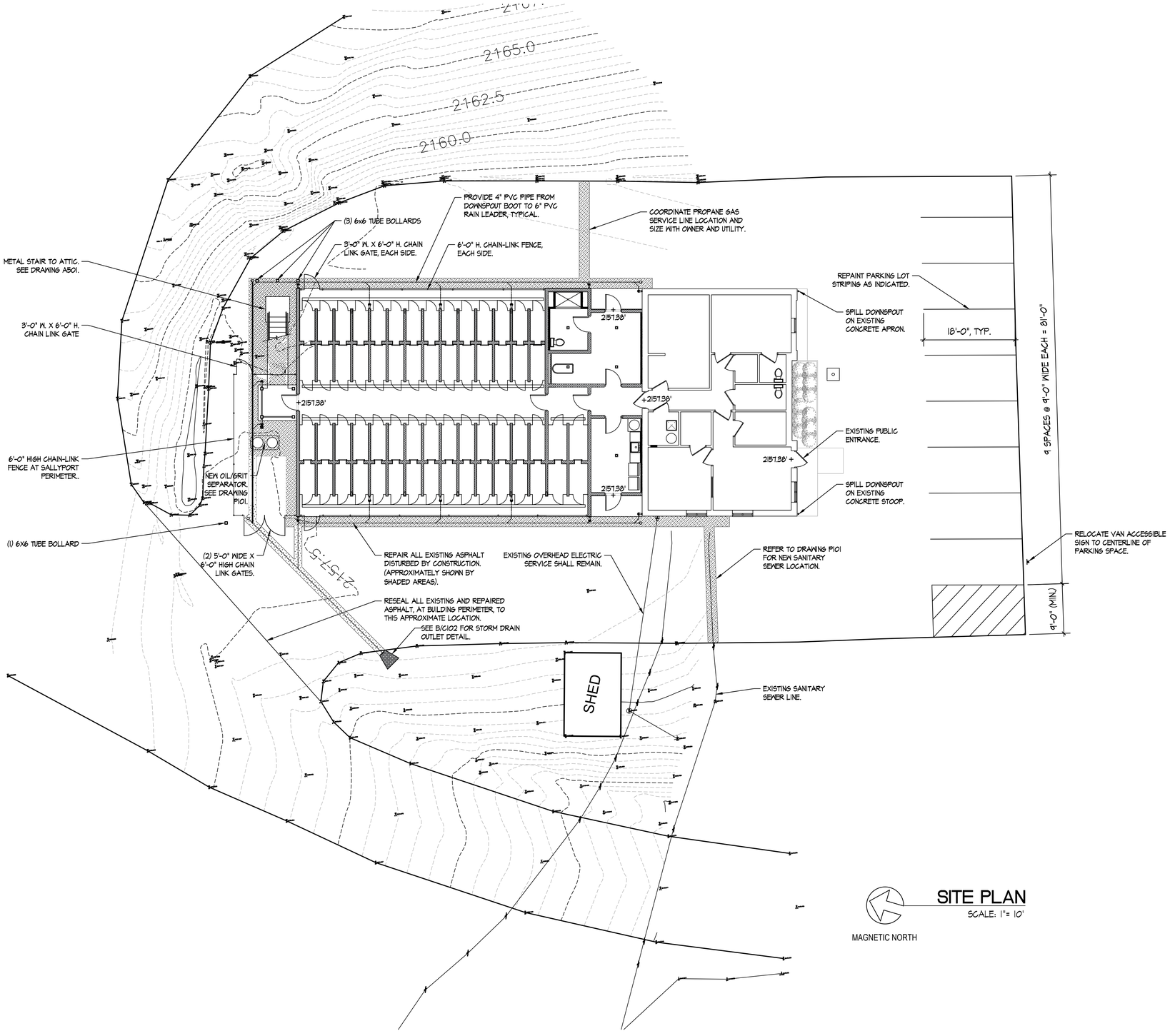
NO.	REVISION DATE
1	
2	
3	

SHEET: G100

DRAWN BY | CHECKED BY

PROJECT NO. 2088

THE LANE GROUP INC.



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ADDITIONS AND RENOVATIONS TO WASHINGTON COUNTY CC PORTER ANIMAL SHELTER

SITE PLAN

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE:	04/16/2021

NO.	REVISION DATE
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SHEET: C101

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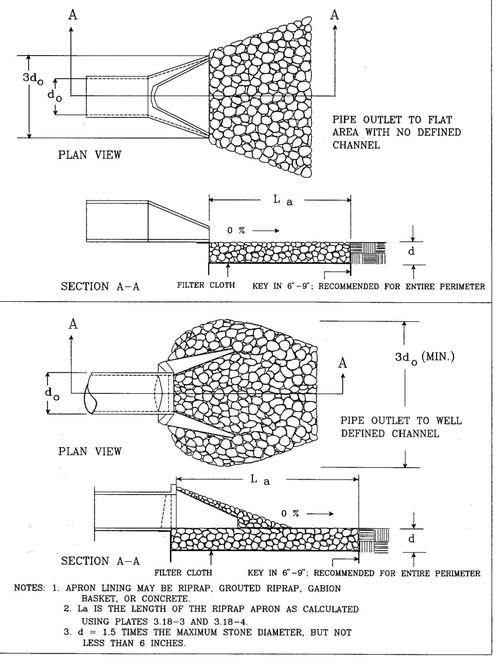
PROJECT NO.	2088

THE LANE GROUP INC.

PIPE OUTLET CONDITIONS



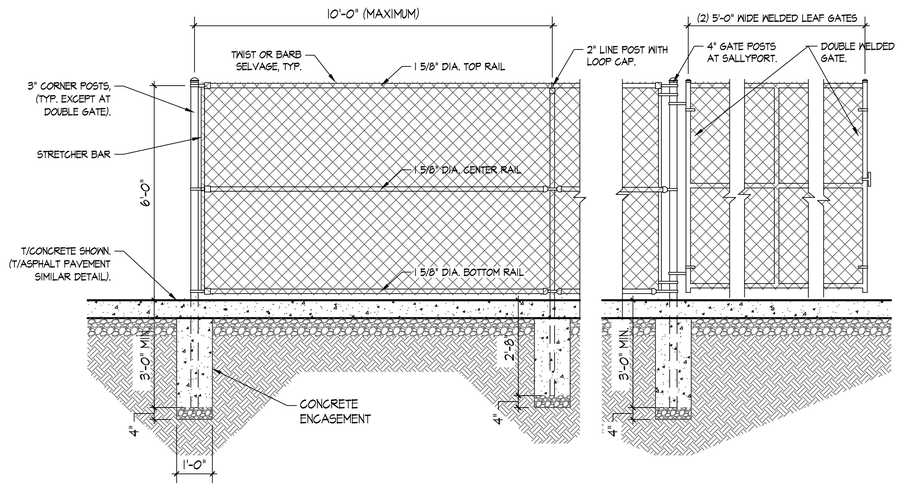
NOTES: 1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18–3 AND 3.18–4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

Source: Va. DSWC Plate 3.18-1

III - 157

B / C102 **STORM DRAIN OUTLET DETAIL**

DO NOT SCALE



A / C102 **CHAIN-LINK FENCE DETAIL**

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

CHAIN-LINK FENCING NOTES:

1. DOUBLE GATE SHALL HAVE A LOCKING MECHANISM, DROP ROD, AND TRUSS ROD.
2. ALL FENCE COMPONENT MATERIALS SHALL BE HOT-DIPPED GALVANIZED STEEL OR IRON AND VINYL COATED TO MATCH COLOR OF FENCE FABRIC.
3. ALL FENCE FABRIC SHALL BE 9-GAUGE (HEAVY DUTY) VINYL COATED PVC. COLOR SHALL BE MANUFACTURER'S STANDARD DARK BROWN COLOR.

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

SITE DETAILS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE: 04/16/2021

NO.	REVISION DATE
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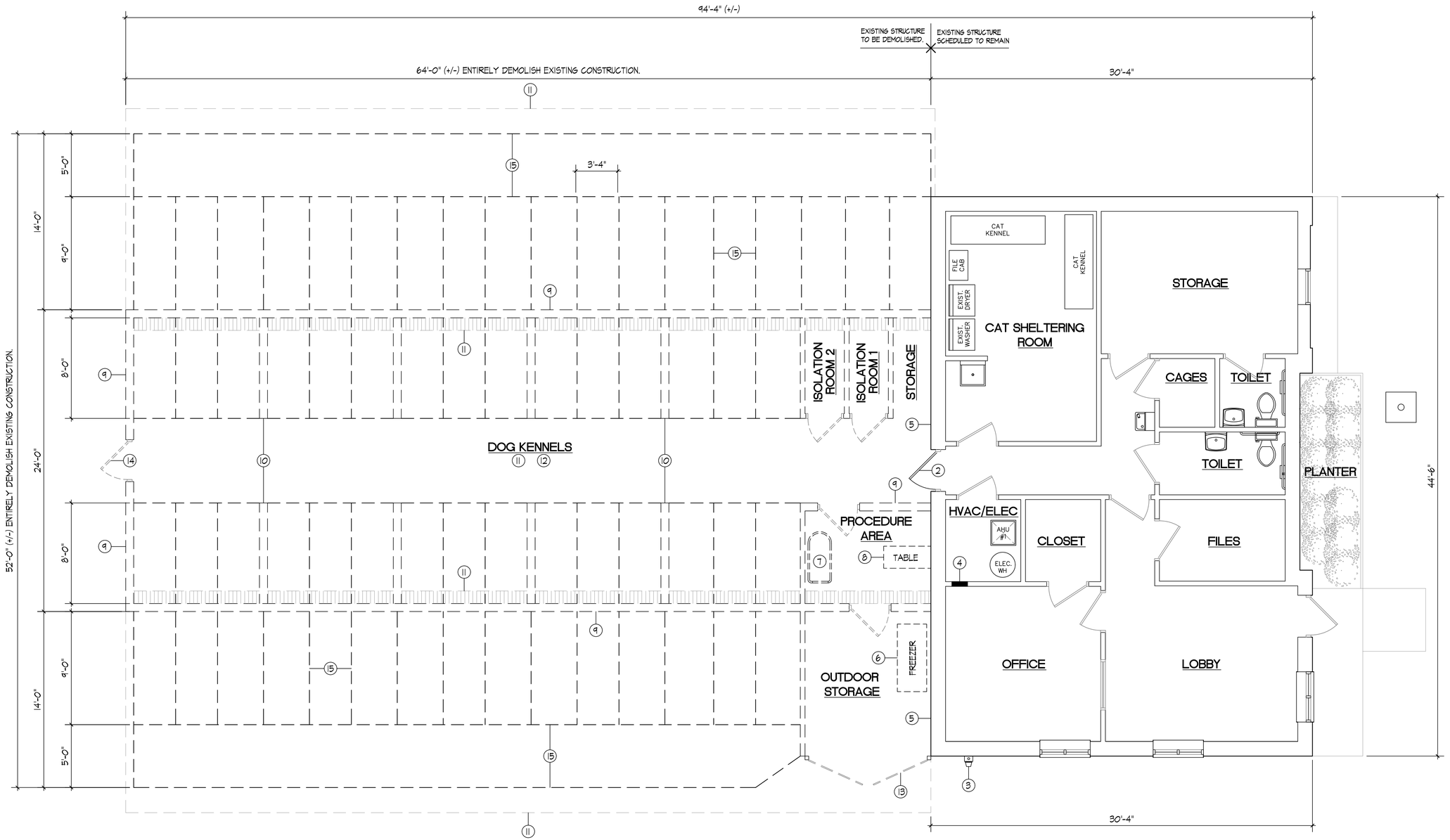

DEMOLITION KEY NOTES

1. THE INTENT IS TO FULLY DEMOLISH ALL EXISTING CONSTRUCTION INDICATED WITH DASHED LINES. IN BRIEF, THIS MEANS COMPLETE DEMOLITION OF THE DOG KENNELS, INCLUDING FOOTINGS, FOUNDATION WALLS, FLOOR SLAB, CMU WALLS, CHAIN-LINK FENCING AND GATES, CEILING MATERIALS, ROOF STRUCTURE AND ALL RELATED PLUMBING, MECHANICAL, AND ELECTRICAL WITHIN THE AREA TO BE DEMOLISHED.
2. EXISTING 3'-0" WIDE x 7'-0" HIGH HOLLOW METAL DOOR AND FRAME SHALL REMAIN.
3. EXISTING ELECTRICAL METER BASE SHALL REMAIN.
4. EXISTING ELECTRICAL PANELBOARD SHALL REMAIN.
5. EXISTING CMU WALL SHALL REMAIN. REMOVE EXISTING GUTTERING, ALL EXISTING ELECTRICAL DEVICES, ETC. AND PREPARE WALL FOR NEW FINISH.
6. EXISTING FREEZER SHALL BE SALVAGED. RELOCATE TO NEW PROCEDURE ROOM #112.
7. EXISTING PET BOOSTER TUB SHALL BE SALVAGED. RELOCATE TO NEW PROCEDURE ROOM #112.
8. EXISTING WALL-MOUNTED TABLE SHALL BE SALVAGED. RELOCATE TO NEW PROCEDURE ROOM #112.
9. EXISTING CMU WALL SHALL BE REMOVED IN IT'S ENTIRETY.
10. REMOVE EXISTING CMU WALLS x 4'-0" (+/-) HIGH AND CHAIN-LINK FENCING THAT IS FROM TOP OF WALL TO CEILING.
11. REMOVE EXISTING CONCRETE FLOOR SLAB IN IT'S ENTIRETY. REMOVE ALL TRENCH DRAINS, FOOTINGS AND FOUNDATION WALLS. REMOVE ALL UNDER SLAB UTILITES THAT ARE WITHIN THE LIMITS OF NEW CONSTRUCTION.
12. REMOVE EXISTING GYPSUM WALLBOARD CEILINGS AND WOOD ROOF TRUSSES.
13. REMOVE EXISTING 10'-0" WIDE x APPROX. 8'-0" HIGH WOOD FENCING AND GATES.
14. REMOVE EXISTING HOLLOW METAL DOOR AND FRAME.
15. REMOVE CHAIN-LINK FENCING x APPROX. 8'-0" HIGH.

MAGNETIC NORTH

DEMOLITION FLOOR PLAN

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

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

DEMOLITION
FLOOR PLAN

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 0021
04-16-2021
ARCHITECT

DATE:	04/16/2021
NO.	REVISION DATE
1	
2	
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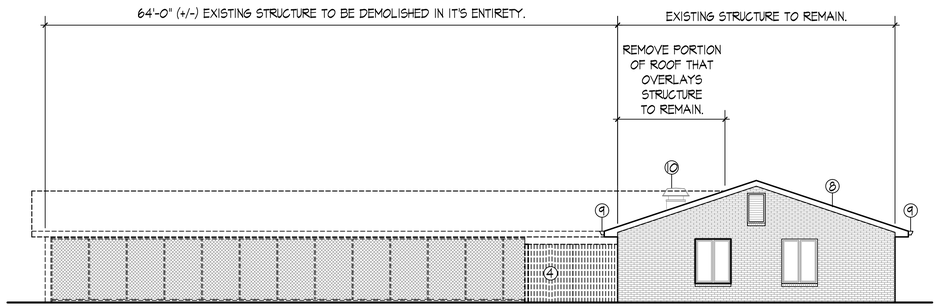
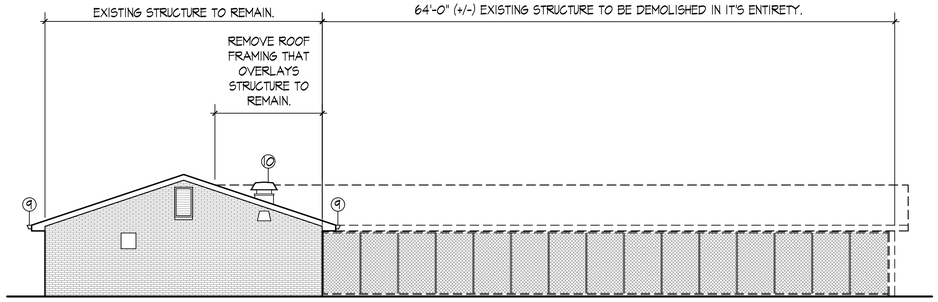
SHEET:	D101
DRAWN BY	CHECKED BY
PROJECT NO.	2088

THE LANE GROUP INC.



WEST ELEVATION-DEMOLITION

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

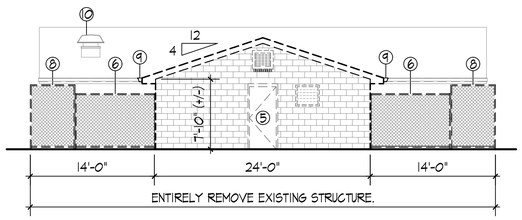


EAST ELEVATION-DEMOLITION

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

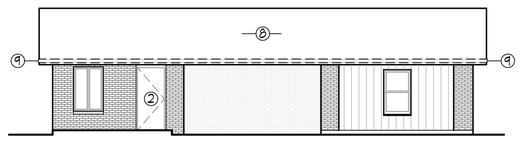
DEMOLITION KEY NOTES

1. THE INTENT IS TO FULLY DEMOLISH ALL EXISTING CONSTRUCTION INDICATED WITH DASHED LINES. IN BRIEF, THIS MEANS COMPLETE DEMOLITION OF THE DOG KENNELS, INCLUDING FOOTINGS, FOUNDATION WALLS, FLOOR SLAB, CMU WALLS, CHAIN-LINK FENCING AND GATES, CEILING MATERIALS, ROOF STRUCTURE AND ALL RELATED PLUMBING, MECHANICAL, AND ELECTRICAL WITHIN THE AREA TO BE DEMOLISHED.
2. EXISTING 3'-0" WIDE x 7'-0" HIGH HOLLOW METAL DOOR AND FRAME SHALL REMAIN.
3. EXISTING ELECTRICAL METER BASE SHALL REMAIN.
4. REMOVE EXISTING 10'-0" WIDE x APPROX. 8'-0" HIGH WOOD FENCING AND GATES.
5. REMOVE EXISTING HOLLOW METAL DOOR AND FRAME.
6. REMOVE CHAIN-LING FENCING OVER KENNELS x APPROX. 6'-0" HIGH.
7. REMOVE CHAIN-LINK FENCING OVER DOG RUN x APPROX. 8'-0" HIGH.
8. REMOVE EXISTING ASPHALT SHINGLES AND FELT UNDERLAYMENT ON PORTION OF THE BUILDING THAT IS SCHEDULED TO REMAIN.
9. REMOVE ALL EXISTING METAL EDGE TRIM, GUTTERING, AND DOWNSPOUTS. (DOWNSPOUTS NOT SHOWN). PROVIDE NEW METAL EDGE TRIM AND BOX STYLE GUTTER TO MATCH NEW CONSTRUCTION.
10. EXISTING EXHAUST HOOD SHALL REMAIN.



NORTH ELEVATION-DEMOLITION

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



SOUTH ELEVATION-DEMOLITION

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

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

DEMOLITION ELEVATIONS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE:	04/16/2021
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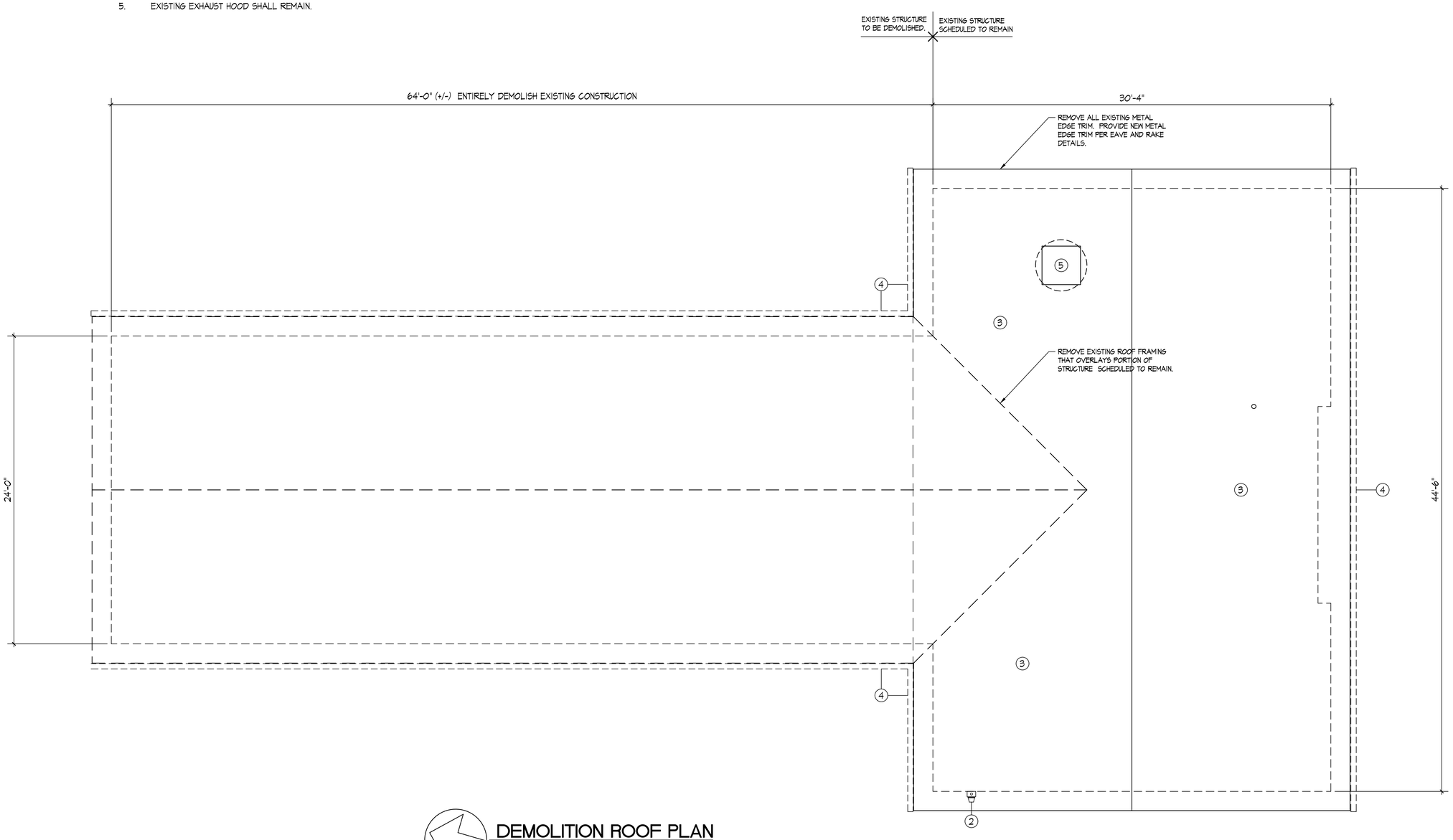
THE LANE GROUP INC.

DEMOLITION KEY NOTES

1. THE INTENT IS TO FULLY DEMOLISH ALL EXISTING CONSTRUCTION INDICATED WITH DASHED LINES. IN BRIEF, THIS MEANS COMPLETE DEMOLITION OF THE DOG KENNELS, INCLUDING FOOTINGS, FOUNDATION WALLS, FLOOR SLAB, CMU WALLS, CHAIN-LINK FENCING AND GATES, CEILING MATERIALS, ROOF STRUCTURE AND ALL RELATED PLUMBING, MECHANICAL, AND ELECTRICAL WITHIN THE AREA TO BE DEMOLISHED.
2. EXISTING ELECTRICAL METER BASE SHALL REMAIN.
3. REMOVE EXISTING ASPHALT SHINGLES AND FELT UNDERLAYMENT ON PORTION OF THE BUILDING THAT IS SCHEDULED TO REMAIN.
4. REMOVE ALL EXISTING METAL EDGE TRIM, GUTTERING, AND DOWNSPOUTS (DOWNSPOUTS NOT SHOWN). PROVIDE NEW BOX STYLE GUTTER TO MATCH NEW CONSTRUCTION.
5. EXISTING EXHAUST HOOD SHALL REMAIN.



MAGNETIC NORTH

DEMOLITION ROOF PLAN

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

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

DEMOLITION ROOF PLAN

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
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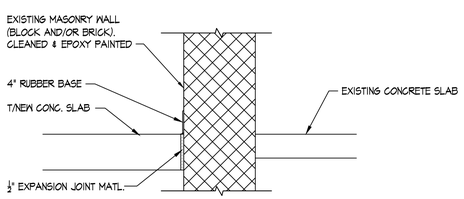

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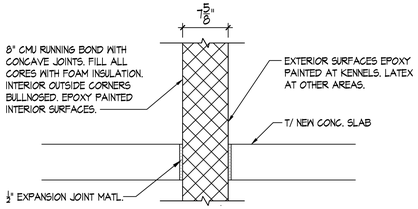

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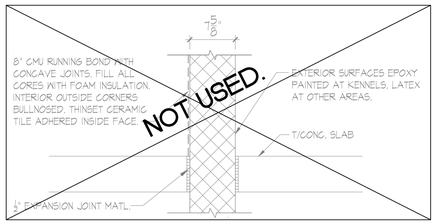

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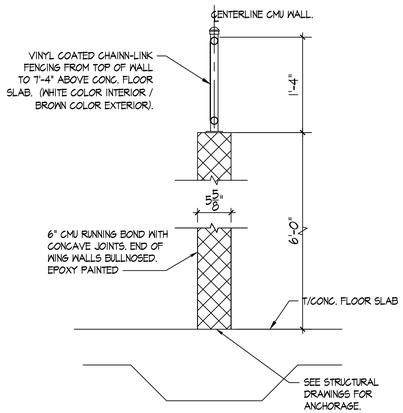

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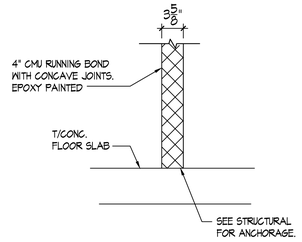

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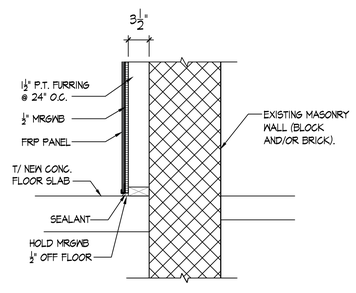

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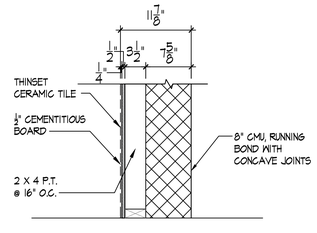

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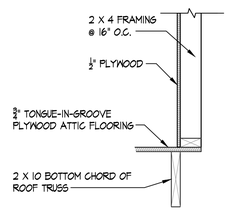

G

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ADDITIONS AND RENOVATIONS TO WASHINGTON COUNTY CC PORTER ANIMAL SHELTER

PARTITION TYPES
PARTITION DETAILS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE: 04/16/2021

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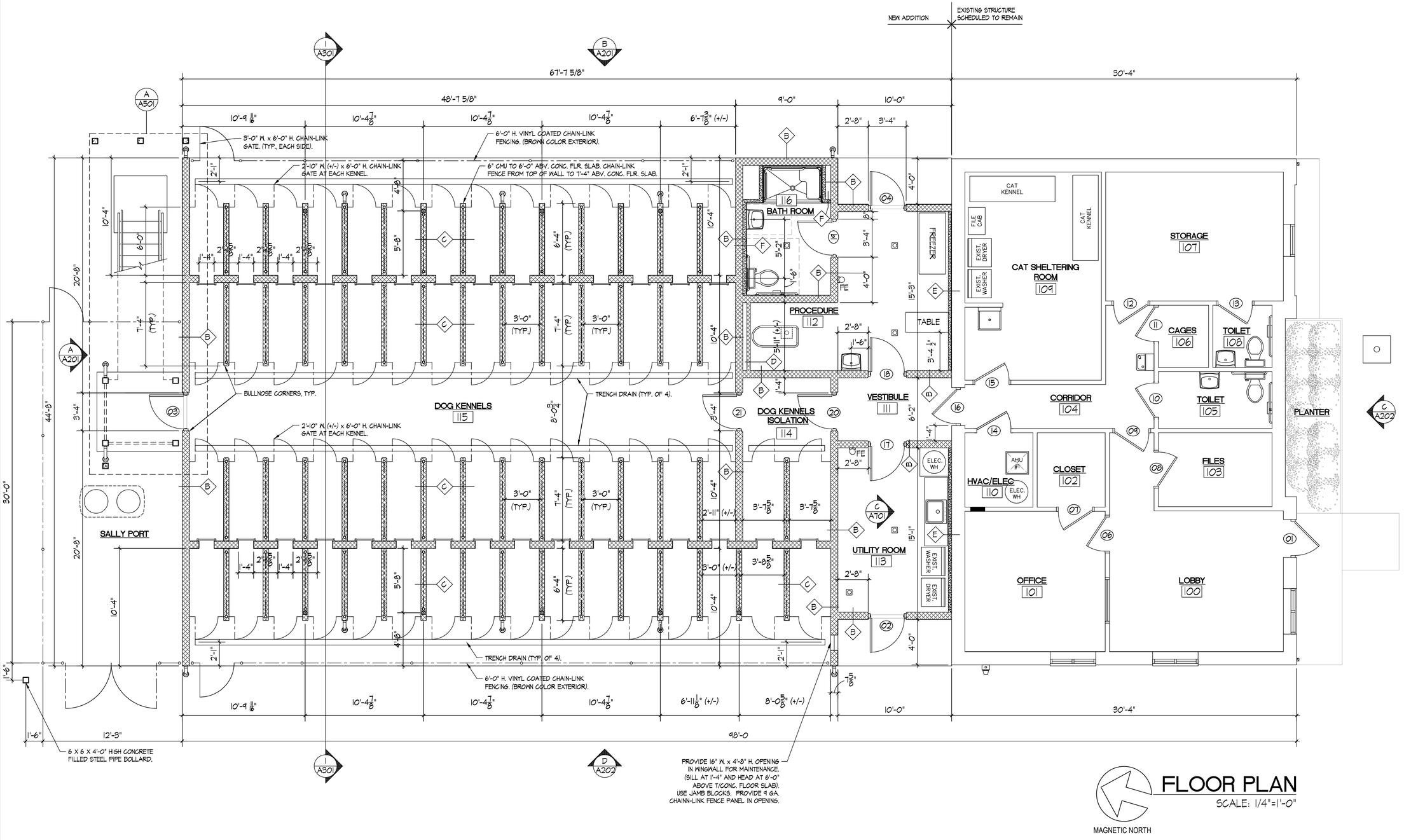

FLOOR PLAN

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

MAGNETIC NORTH

ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

FLOOR PLAN

D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

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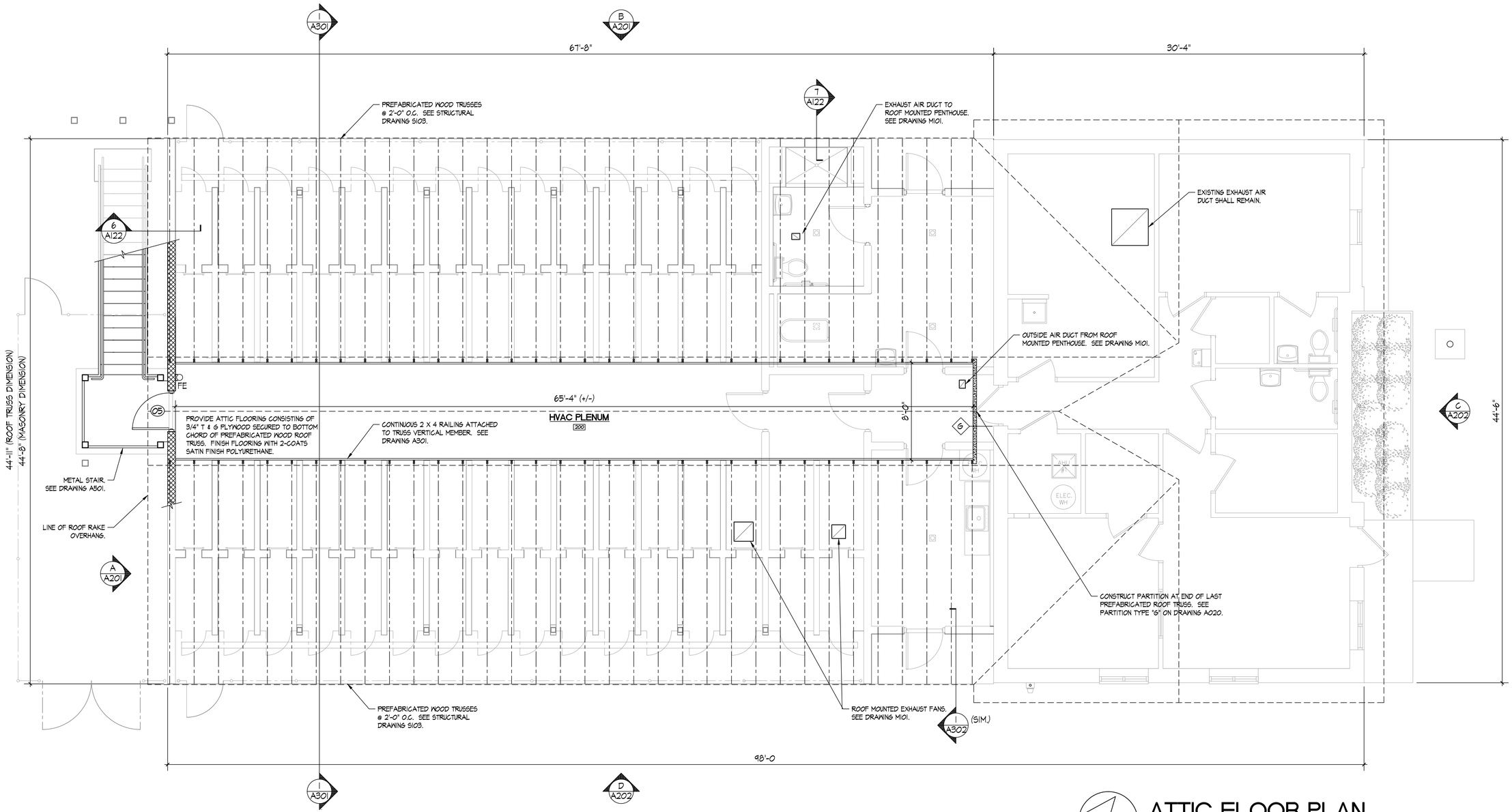

ATTIC FLOOR PLAN

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

MAGNETIC NORTH

FOR WOOD TRUSS LAYOUT, SEE DRAWING S103.

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

ATTIC FLOOR PLAN

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D. MICHAEL WEAVER
LIC. NO. 0021
04-16-2021
ARCHITECT

DATE:	04/16/2021
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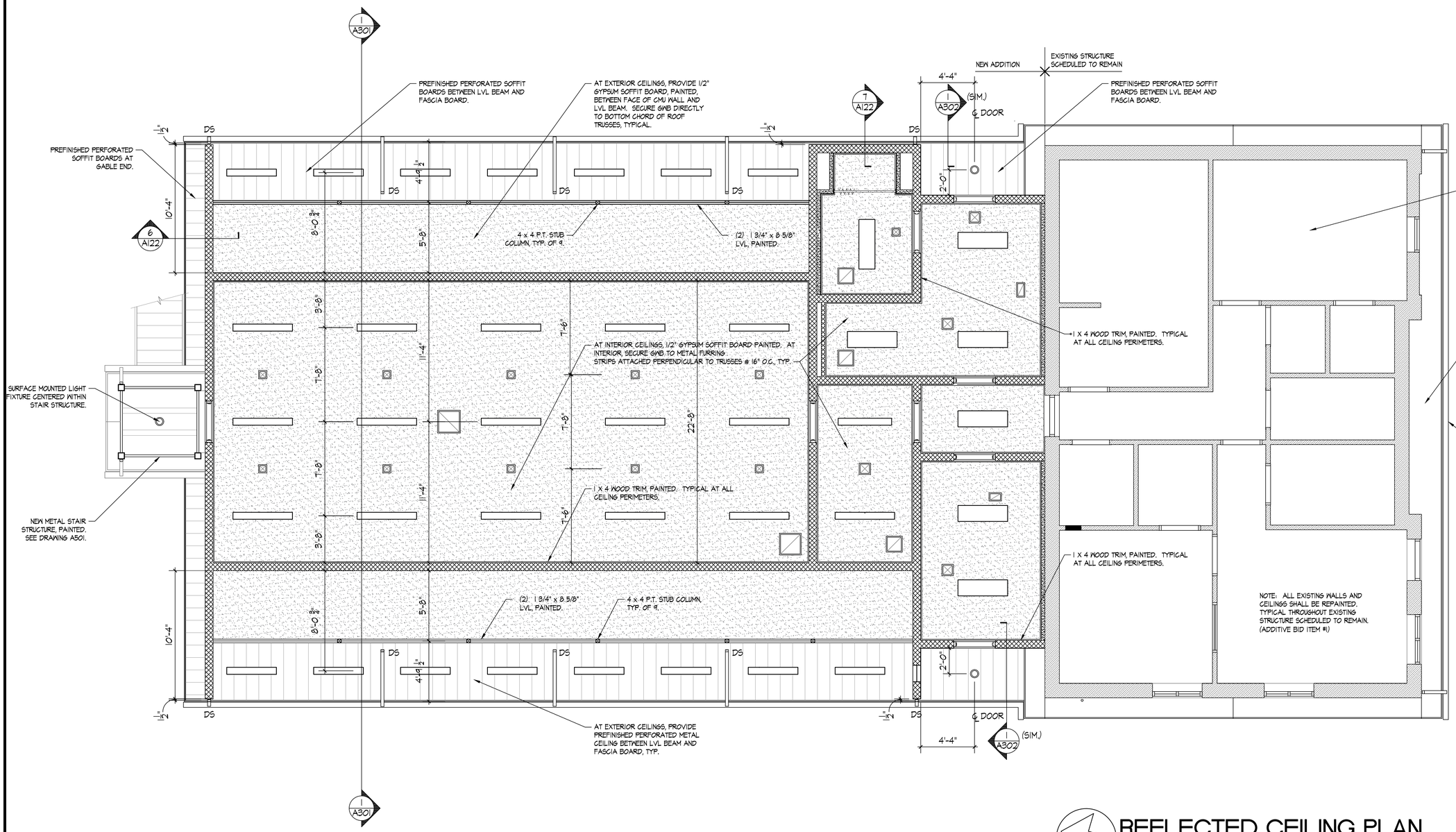

REFLECTED CEILING PLAN

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

MAGNETIC NORTH

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

REFLECTED CEILING PLAN

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
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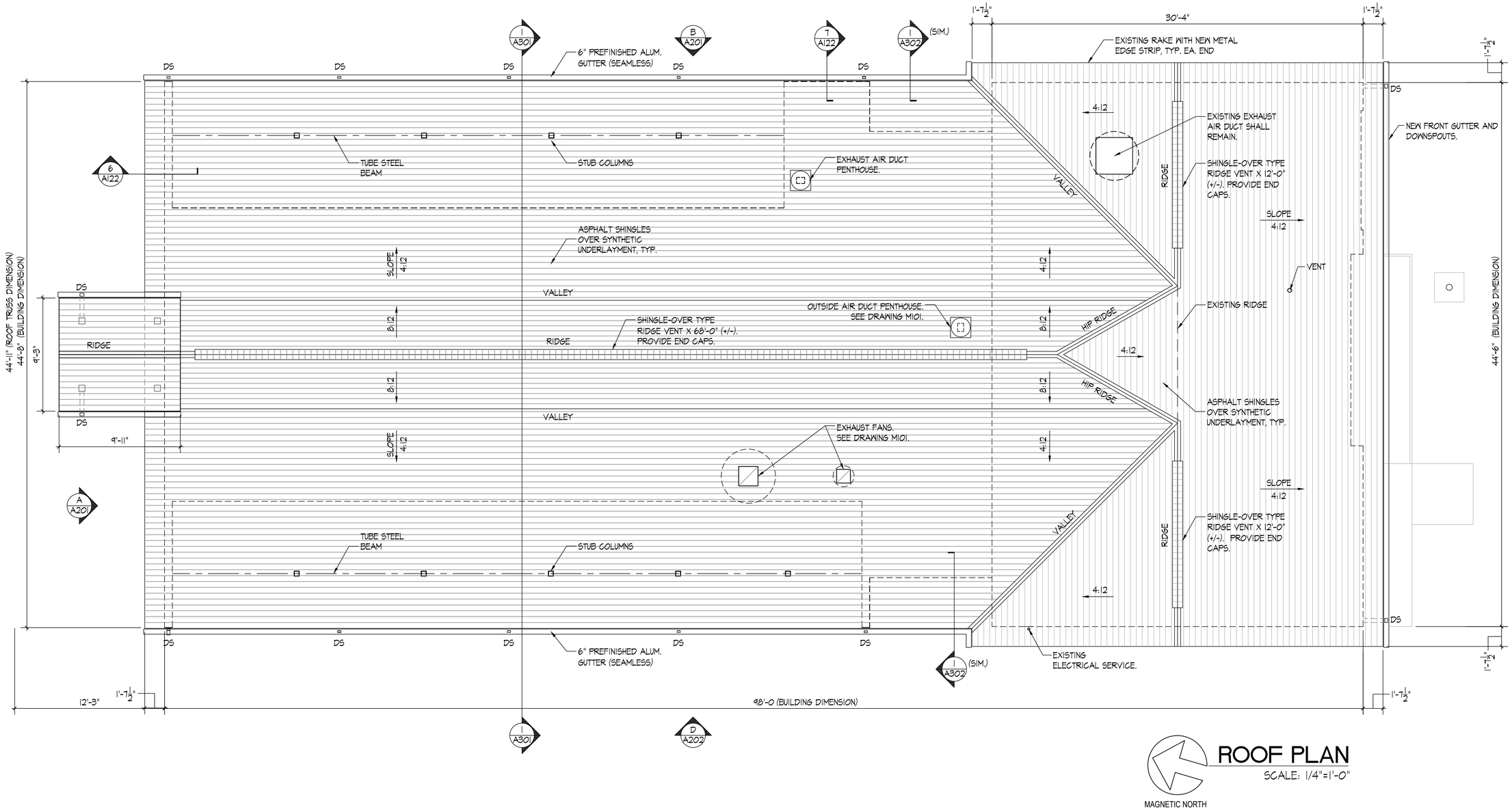

ROOF PLAN

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

MAGNETIC NORTH

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

ROOF PLAN

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
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04-16-2021
ARCHITECT

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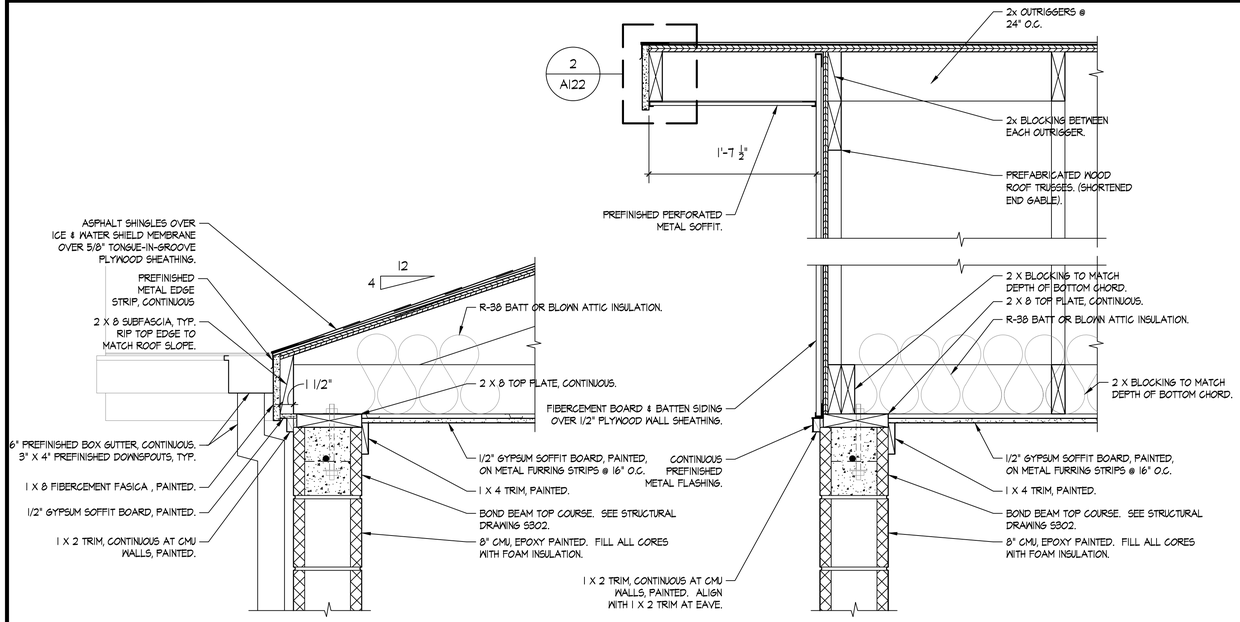
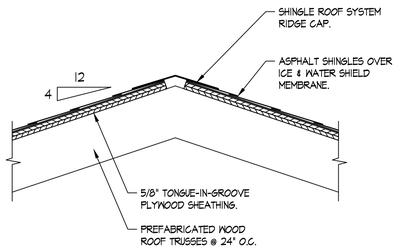


SEE ALSO DETAIL 3/S302.

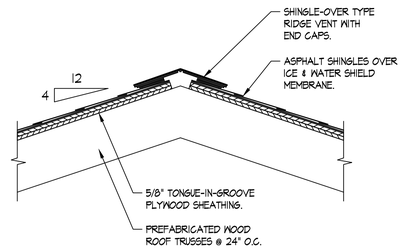
7 A122 **EAVE DETAIL**
SCALE: 1-1/2"=1'-0"

SEE ALSO DETAIL 5/S302.

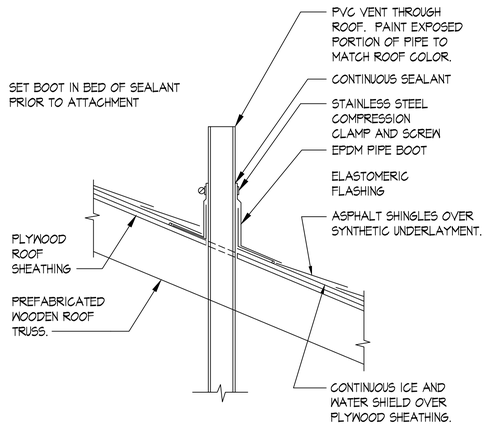
6 A122 **GABLE DETAIL**
SCALE: 1-1/2"=1'-0"



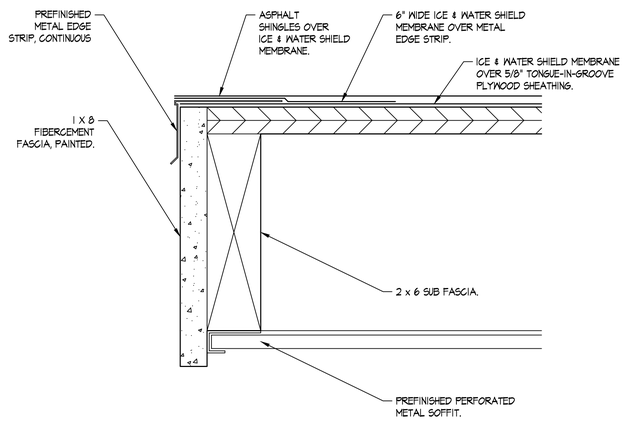
5 A122 **RIDGE DETAIL**
SCALE: 1-1/2"=1'-0"



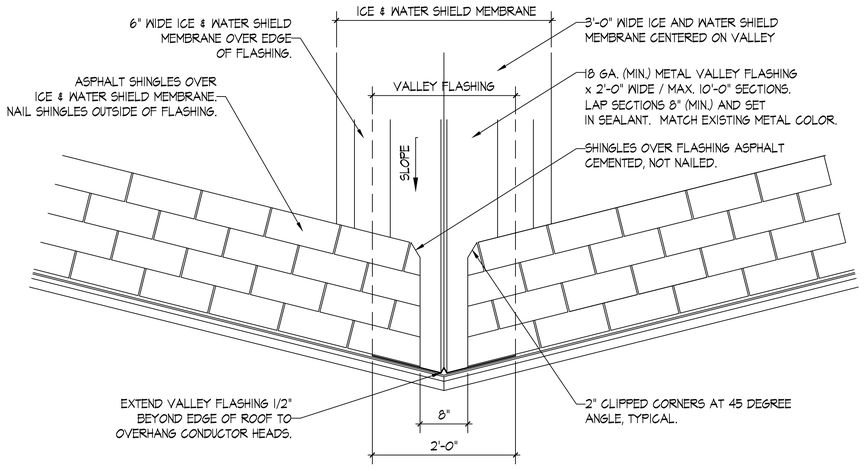
4 A122 **RIDGE VENT DETAIL**
SCALE: 1-1/2"=1'-0"



3 A122 **TYPICAL PIPE PENETRATION DETAIL ON SHINGLED ROOF**
SCALE: 1-1/2"=1'-0"



2 A122 **DETAIL**
SCALE: 3"=1'-0"



1 A122 **VALLEY DETAIL**
SCALE: 1"=1'-0"

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

ROOF DETAILS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE:	04/16/2021
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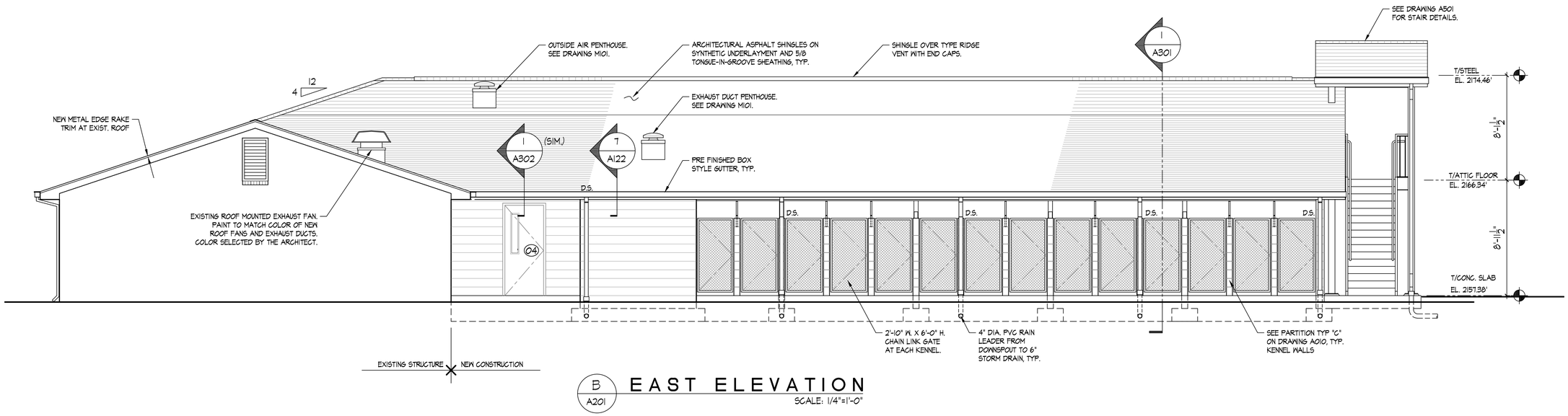
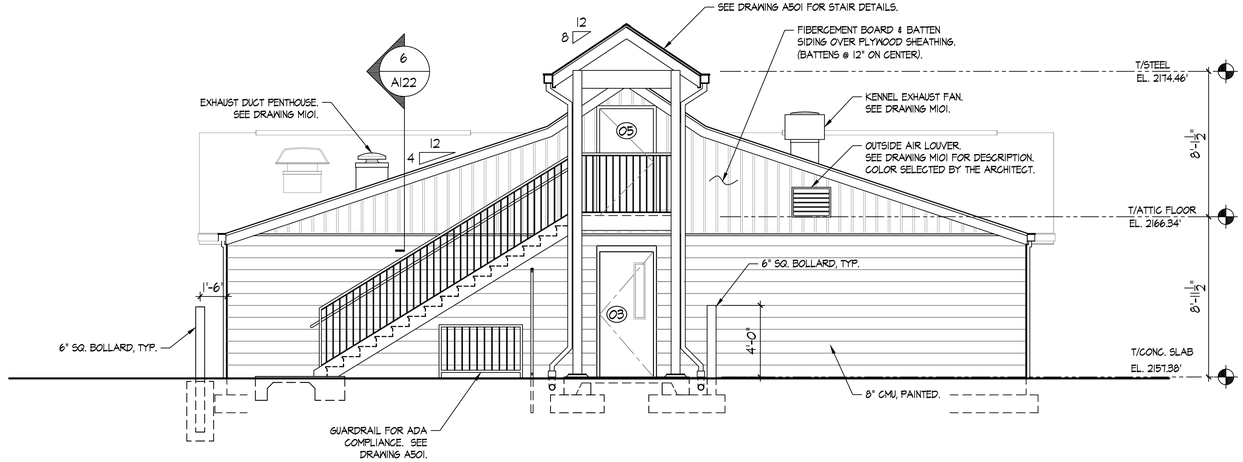


B A201 **EAST ELEVATION**

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

NOTE: FOR CLARITY, THE OUTSIDE CHAIN-LINK FENCE IS NOT SHOWN.



A A201 **NORTH ELEVATION**

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

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

EAST AND NORTH
BUILDING ELEVATIONS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE: 04/16/2021

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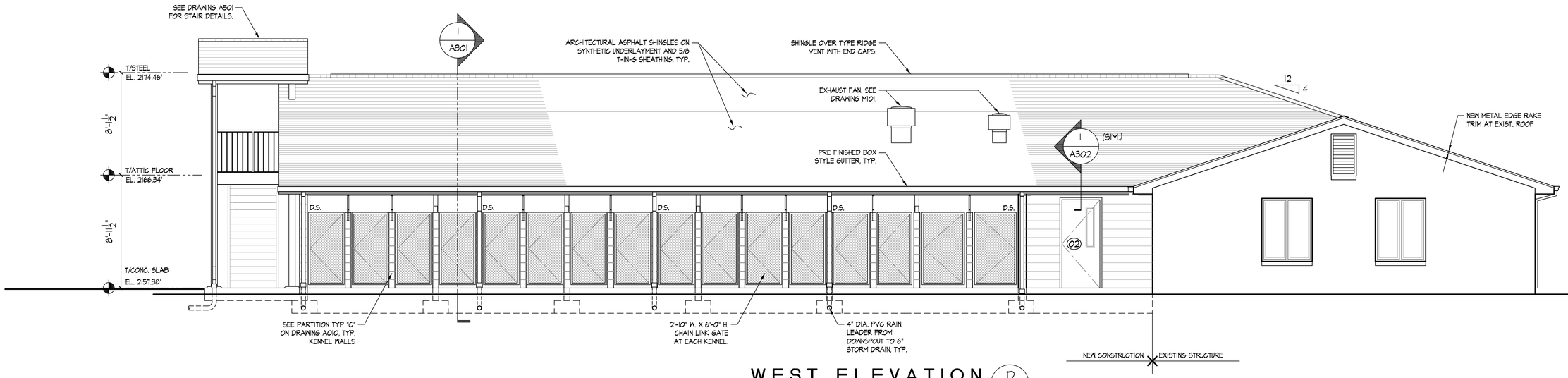
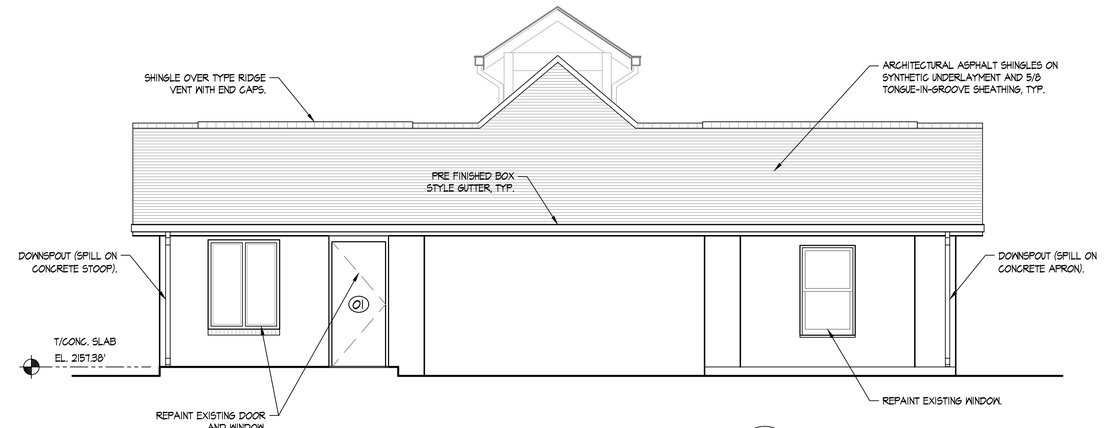


WEST ELEVATION

D / A202

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

NOTE: FOR CLARITY, THE OUTSIDE CHAIN-LINK FENCE IS NOT SHOWN.



SOUTH ELEVATION

C / A202

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

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

WEST AND SOUTH
BUILDING ELEVATIONS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
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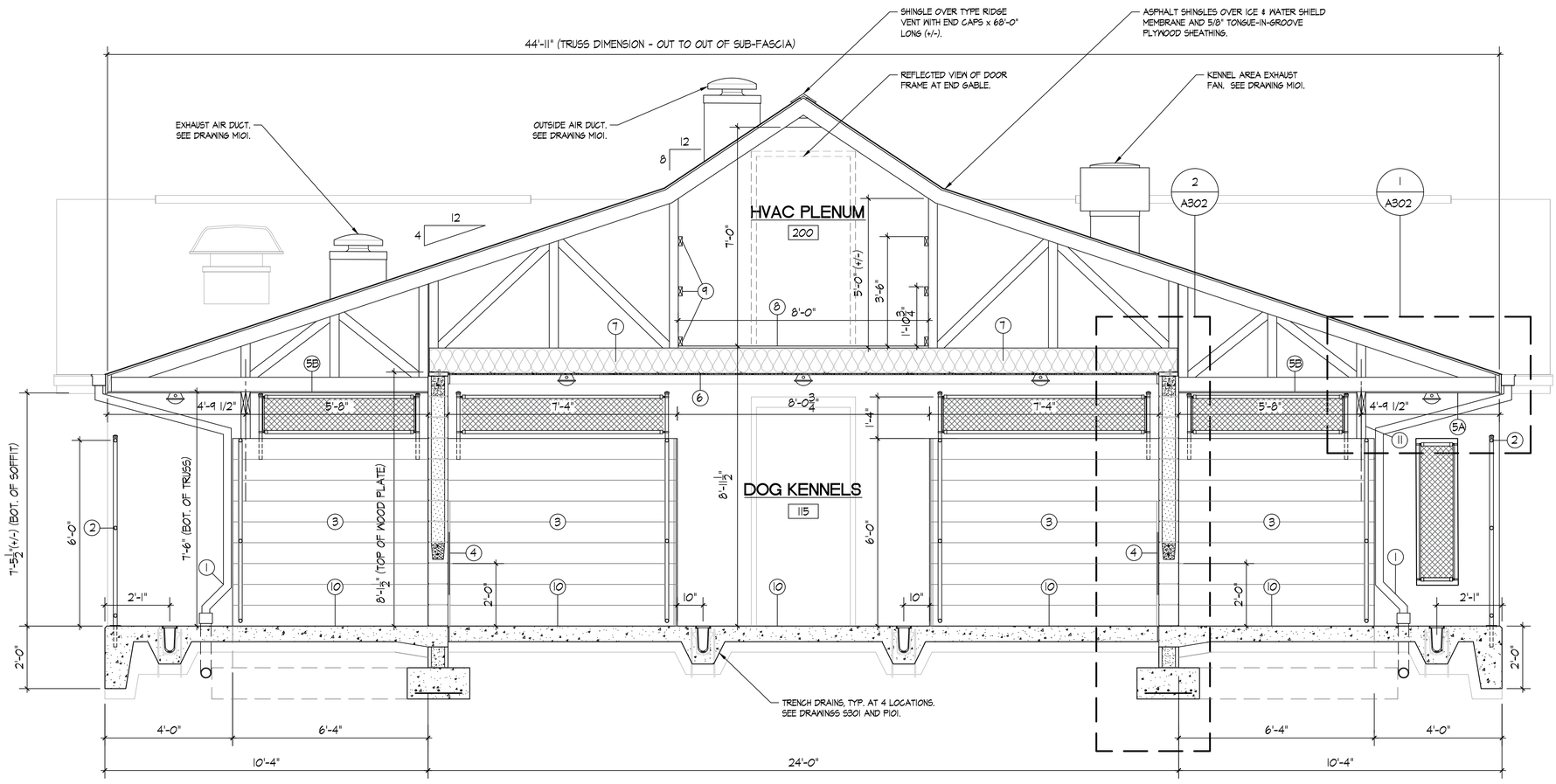

1 / A301 BUILDING SECTION

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

BUILDING SECTION KEY NOTES

1. PREFINISHED ALUMINUM DOWNSPOUT, TYPICAL. CONNECT EACH DOWNSPOUT TO A PVC BOOT. CONNECT PVC BOOT TO UNDERGROUND PVC STORM DRAIN. DAYLIGHT AS INDICATED ON SITE PLAN, DRAWING C101.
2. 6'-0" HIGH x 9 GAUGE (HEAVY DUTY) VINYL COATED PVC CHAIN-LINK FENCE. PROVIDE BROWN COLOR AT EXTERIOR FENCING.
3. 8" x 6'-0" HIGH CMU, EPOXY PAINTED. PROVIDE BULL-NOSED ENDS. PROVIDE 9 GAUGE (HEAVY DUTY) VINYL-COATED CHAIN-LINK FENCE FROM TOP OF CMU TO A HEIGHT OF 7'-4" ABOVE TOP OF CONCRETE FLOOR SLAB. PROVIDE WHITE COLOR VINYL COATED INTERIOR FENCING AND BROWN COLOR AT EXTERIOR FENCING.
4. INSULATED GUILLOTINE TYPE DOG DOORS AT CENTERLINE OF EACH KENNEL. PROVIDE 16" WIDE x 24" HIGH MASONRY OPENING. USE JAMB BLOCKS AT EACH OPENING. BEAR LINTEL ABOVE OPENINGS 8" ON EACH JAMB. BASIS OF DESIGN PRODUCT IS "KENNEL CLAD" INSULATED GUILLOTINE KENNEL DOORS AS MANUFACTURED BY SECURITY BOSS. PROVIDE 18 GA. ALUMINUM CLAD INSULATED PANEL DOOR WITH A HIDDEN FLOOR SEAL AND A HIDDEN TOP WALL SEAL. PROVIDE HEAVY-DUTY CHANNEL SIDE RAILS, 2 1/2" WIDE x 48" LONG.

5A. PREFINISHED PERFORATED METAL SOFFIT BOARD BETWEEN LVL BEAM AND FASCIA.

5B. 1/2" EXTERIOR SOFFIT GYPSUM BOARD, SMOOTH PAINTED FINISH, BETWEEN FACE OF CMU WALL AND LVL BEAM. AT EXTERIOR, ATTACH SOFFIT BOARD DIRECTLY TO BOTTOM CHORD OF WOOD PREFABRICATED TRUSSES.

6. 1/2" EXTERIOR SOFFIT GYPSUM BOARD, SMOOTH PAINTED FINISH. AT INTERIOR, ATTACH SOFFIT BOARD TO METAL FURRING CHANNELS LOCATED PERPENDICULAR TO ROOF TRUSSES @ 16" O.C.
7. R-38 BATT INSULATION ABOVE ALL OCCUPIED AREAS. PROVIDE INSULATION DAM BETWEEN WOOD ROOF TRUSSES AT THE TOP OF EACH EXTERIOR WALL.
8. 3/4" PLYWOOD ATTIC FLOORING. FINISH WITH 2-COATS OF SATIN POLYURETHANE.
9. (3) 2 x 4's CONTINUOUS IN ATTIC PLENUM SPACE FROM EAST END WALL TO PARTITION TYPE "6" AT WEST END OF ATTIC.
10. PROVIDE RESINOUS FLOOR FINISH ON SMOOTH TROWELED CONCRETE FLOOR SLAB. BASIS OF DESIGN PRODUCT IS "RESUFLOR TOPCOAT TX" AS MANUFACTURED BY THE SHERWIN WILLIAMS COMPANY. TURN FINISH UP 8" AT EACH CMU WALL. COLOR SELECTED BY THE ARCHITECT.
11. PROVIDE OPAQUE STAIN FINISH ON 4 X 4 STUB COLUMNS AND LVL BEAM. COLOR SELECTED BY THE ARCHITECT.

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

BUILDING SECTION

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

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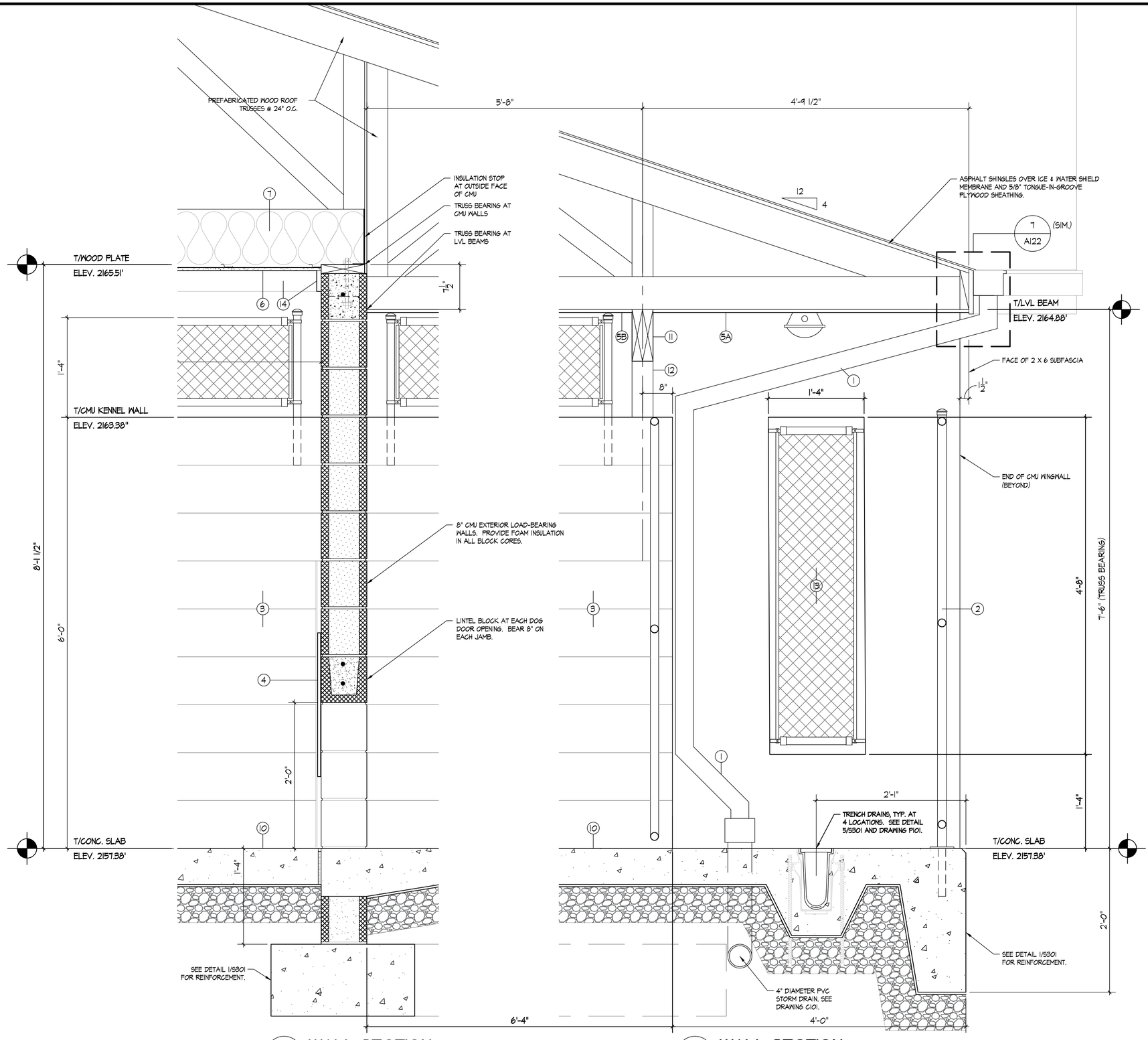

2 A302 **WALL SECTION**
SCALE: 1 1/2" = 1'-0"

1 A302 **WALL SECTION**
SCALE: 1 1/2" = 1'-0"

WALL SECTION KEY NOTES

1. PREFINISHED ALUMINUM DOWNSPOUT, TYPICAL. CONNECT EACH DOWNSPOUT TO A PVC BOOT. CONNECT PVC BOOT TO UNDERGROUND PVC STORM DRAIN. DAYLIGHT AS INDICATED ON SITE PLAN, DRAWING C101.
2. 6'-0" HIGH x 9 GAUGE (HEAVY DUTY) VINYL COATED PVC CHAIN-LINK FENCE. PROVIDE BROWN COLOR AT EXTERIOR FENCING.
3. 8" x 6'-0" HIGH CMU, EPOXY PAINTED. PROVIDE BULL-NOSED ENDS. PROVIDE 9 GAUGE (HEAVY DUTY) VINYL-COATED CHAIN-LINK FENCE FROM TOP OF CMU TO A HEIGHT OF 7'-4" ABOVE TOP OF CONCRETE FLOOR SLAB. PROVIDE WHITE COLOR VINYL COATED INTERIOR FENCING AND BROWN COLOR AT EXTERIOR FENCING.
4. INSULATED GUILLOTINE TYPE DOG DOORS AT CENTERLINE OF EACH KENNEL. PROVIDE 16" WIDE x 24" HIGH MASONRY OPENING. USE JAMB BLOCKS AT EACH OPENING. BEAR LINTEL ABOVE OPENINGS 8" ON EACH JAMB. BASIS OF DESIGN PRODUCT IS "KENNEL CLAD" INSULATED GUILLOTINE KENNEL DOORS AS MANUFACTURED BY SECURITY BOSS. PROVIDE 18 GA. ALUMINUM CLAD INSULATED PANEL DOOR WITH A HIDDEN FLOOR SEAL AND A HIDDEN TOP WALL SEAL. PROVIDE HEAVY-DUTY CHANNEL SIDE RAILS, 2 1/2" WIDE x 48" LONG.
5A. PREFINISHED PERFORATED METAL SOFFIT BOARD BETWEEN LVL BEAM AND FASCIA.
5B. 1/2" EXTERIOR SOFFIT GYPSUM BOARD, SMOOTH PAINTED FINISH, BETWEEN FACE OF CMU WALL AND LVL BEAM. ATTACH SOFFIT BOARD DIRECTLY TO BOTTOM CHORD OF WOOD PREFABRICATED TRUSSES.
6. 1/2" EXTERIOR SOFFIT GYPSUM BOARD, SMOOTH PAINTED FINISH. AT INTERIOR, ATTACH SOFFIT BOARD TO METAL FURRING CHANNELS LOCATED PERPENDICULAR TO ROOF TRUSSES @ 16" O.C.
7. R-38 BATT OR BLOWN INSULATION ABOVE ALL OCCUPIED AREAS. PROVIDE INSULATION DAM BETWEEN WOOD ROOF TRUSSES AT THE TOP OF EACH EXTERIOR WALL.
8. NOT USED.
9. NOT USED.
10. 6" (MIN. CONCRETE SLAB-ON-GRADE BEARING ON 10 MIL. POLY. VAPOR BARRIER AND 6" NO. 57 STONE. REINFORCE WITH 4 X 4 X W4/W4 WELDED WIRE FABRIC AT 2" FROM TOP OF SLAB. PROVIDE RESINOUS FLOOR FINISH ON SMOOTH TROWELED CONCRETE FLOOR SLAB. BASIS OF DESIGN PRODUCT IS "RESUFLOR TOPCOAT TX" AS MANUFACTURED BY THE SHERWIN WILLIAMS COMPANY. TURN FINISH UP 8" AT EACH CMU WALL. COLOR SELECTED BY THE ARCHITECT.
11. (2) 1 3/4" X 8 5/8" LVL BEAM. BEAR UPON 4 X 4 WOOD STUB COLUMN. (SEE DETAIL 1/S302). PROVIDE OPAQUE STAIN FINISH ON BEAM. COLOR SELECTED BY THE ARCHITECT.
12. 4 X 4 STUB COLUMN. (SEE DETAIL 1/S302). PROVIDE OPAQUE STAIN FINISH ON COLUMNS. COLOR SELECTED BY THE ARCHITECT.
13. PROVIDE MASONRY OPENING IN WINGWALL. FILL OPENING WITH 9 GAUGE (HEAVY DUTY) VINYL COATED PVC CHAIN-LINK FENCING. PROVIDE BROWN COLOR AT EXTERIOR FENCING.
14. 1 X 4 CEILING TRIM, PAINTED, AT ALL INTERIOR CMU CEILING PERIMETERS. COMPOSITE MATERIAL IS ACCEPTABLE.

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

WALL SECTION

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9021
04-16-2021
ARCHITECT

DATE:	04/16/2021
NO.	REVISION DATE
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SHEET:	A302
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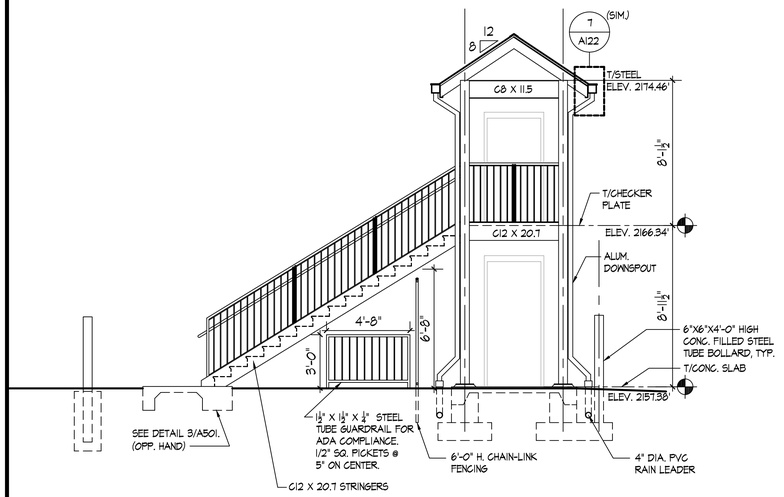
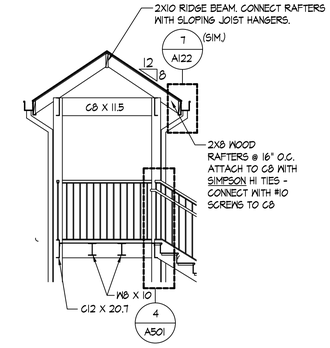
PROJECT NO.	2088



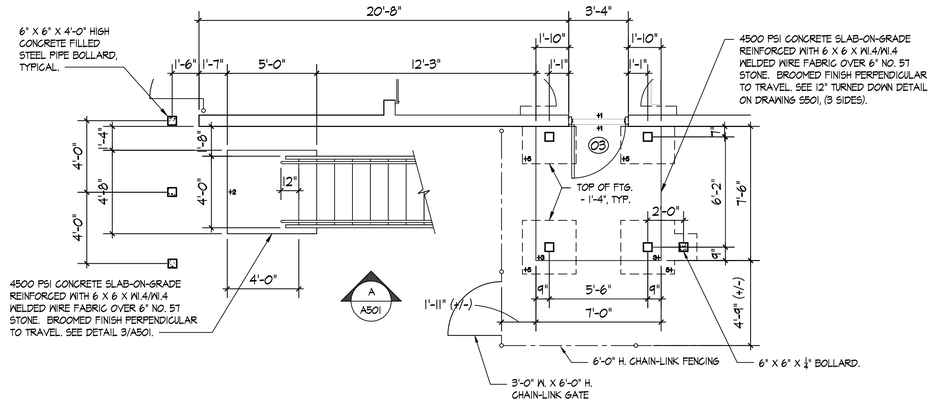
A A501 **STAIR ELEVATION**
SCALE: 1/4"=1'-0"

SPOT NO.	SPOT ELEVATION	NOTE
1	2157.38'	MAIN FLOOR LEVEL, (MATCH EXISTING).
2	2157.34'	MAIN FLOOR LEVEL - 1/2".
3	2157.22'	OUTSIDE EDGE OF STOOP. (SLOPE 1/4" PER FOOT).
4	2166.34'	ATTIC FLOOR LEVEL. (MAIN FLOOR LEVEL + 8'-11 1/2")
5	2156.05'	TOP OF FOOTING, (MAIN FLOOR LEVEL - 1'-4").

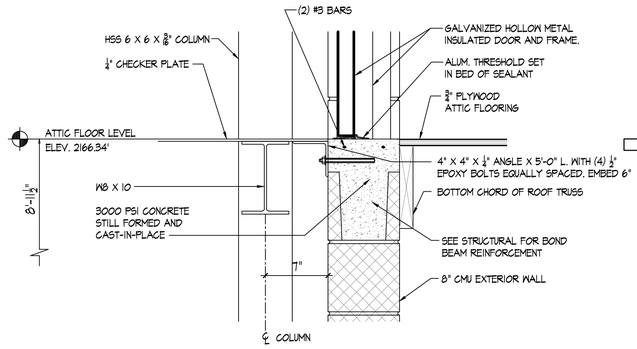


1 A501 **STAIR SECTION**
SCALE: 1/4"=1'-0"

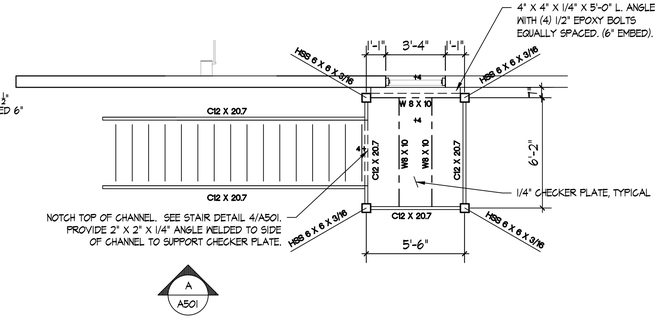
NOTE: ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED AND PAINTED.



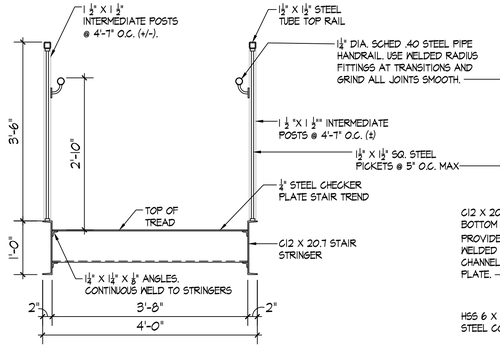
STAIR FOUNDATION PLAN
SCALE: 1/4"=1'-0"



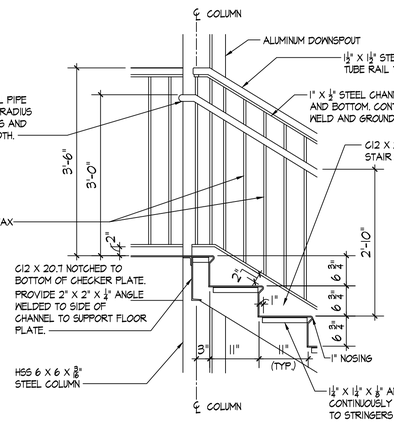
6 A501 **STAIR DETAIL**
SCALE: 3/4"=1'-0"



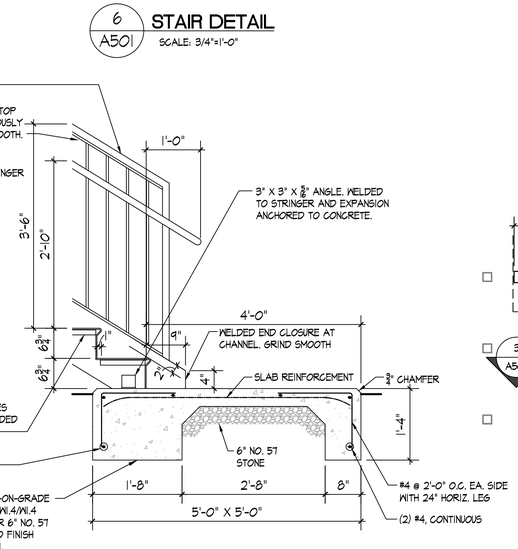
STAIR FRAMING PLAN
SCALE: 1/4"=1'-0"



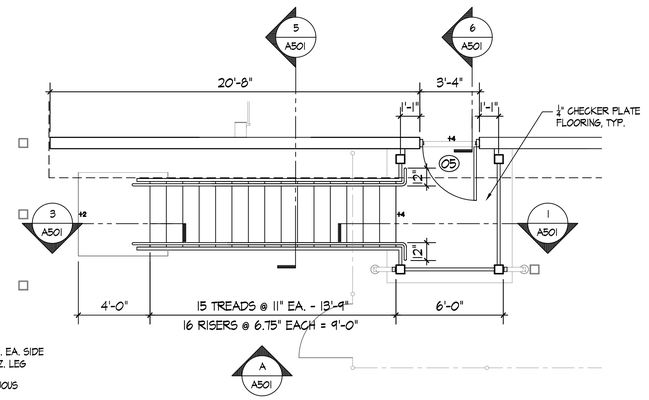
5 A501 **STAIR DETAIL**
SCALE: 3/4"=1'-0"



4 A501 **STAIR DETAIL**
SCALE: 3/4"=1'-0"



3 A501 **STAIR DETAIL**
SCALE: 3/4"=1'-0"



STAIR PLAN - UPPER LEVEL
SCALE: 1/4"=1'-0"

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

STAIR PLAN / STAIR DETAILS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

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PROJECT NO. 2088

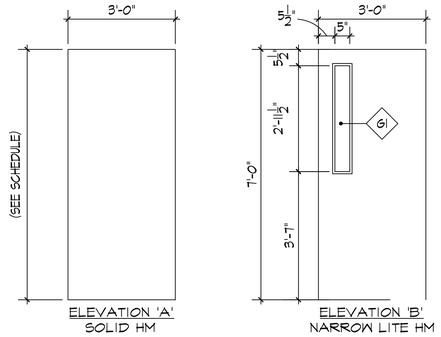
THE LANE GROUP INC.

DOOR SCHEDULE

MARK	FROM ROOM	TO ROOM	DOORS							FRAMES					FIRE RATING	HARDWARE SET NO.	REMARKS
			WIDTH	HEIGHT	THK.	MATERIAL	TYPE	FINISH	GLASS	MATERIAL	FINISH	JAMB	HEAD	ELEV.			
01	WAITING AREA	EXTERIOR	3'-0"	7'-0"	1 3/4"	EXISTING HOLLOW METAL	B	PAINT, P-1	EXISTING	EXISTING HOLLOW METAL	PAINT, P-1	EXIST.	EXIST.	--	--	EXIST.	1,2,3,4,5,6,7,8
02	UTILITY 113	EXTERIOR	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	B	PAINT, P-1	G4	GALV. HOLLOW METAL	PAINT, P-1	J-1	SIM TO J-1	1	--	HW-1	1,2,3,4,5,6,7,8
03	KENNELS 115	EXTERIOR	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	B	PAINT, P-1	G4	GALV. HOLLOW METAL	PAINT, P-1	J-1	SIM TO J-1	1	--	HW-1	1,2,3,4,5,6,7,8
04	PROCEDURE 112	EXTERIOR	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	B	PAINT, P-1	G4	GALV. HOLLOW METAL	PAINT, P-1	J-1	SIM TO J-1	1	--	HW-1	1,2,3,4,5,6,7,8
05	ATTIC 200	EXTERIOR	3'-0"	6'-0"	1 3/4"	GALV. HOLLOW METAL	A	PAINT, P-2	--	GALV. HOLLOW METAL	PAINT, P-2	J-2	SIM TO J-2	2	--	HW-2	1,2,3,4,5,6,7,8
06	LOBBY 100	OFFICE 101	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	B (SIM)	EXISTING	EXISTING	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	
07	CLOSET 102	OFFICE 101	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	A	EXISTING	--	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	
08	LOBBY 100	FILES 103	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	A (SIM)	EXISTING	--	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	DUTCH DOOR
09	CORRIDOR 104	LOBBY 100	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	B (SIM)	EXISTING	EXISTING	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	1 HR.	EXISTING	
10	TOILET 105	CORRIDOR 104	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	A	EXISTING	--	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	
11	CAGES 106	CORRIDOR 104	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	A	EXISTING	--	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	
12	STORAGE 107	CORRIDOR 104	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	B (SIM)	EXISTING	EXISTING	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	1 HR.	EXISTING	
13	STORAGE 107	TOILET 108	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	A	EXISTING	--	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	
14	HVAC 110	CORRIDOR 104	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	A	EXISTING	--	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	
15	CORRIDOR 104	CAT ROOM 109	3'-0"	6'-8"	1 3/4"	EXISTING WOOD	A	EXISTING	--	EXISTING WOOD	EXISTING	EXISTING	EXISTING	3	--	EXISTING	
16	CORRIDOR 104	VESTIBULE 111	3'-0"	7'-0"	1 3/4"	EXISTING HOLLOW METAL	B (SIM)	PAINT, P-3	EXISTING	EXISTING HOLLOW METAL	PAINT, P-3	EXISTING	EXISTING	1	1 HR.	HW-3	7,8
17	VESTIBULE 111	UTILITY 113	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	B	PAINT, P-3	G-1	GALV. HOLLOW METAL	PAINT, P-3	J-1	SIM TO J-1	1	--	HW-4	1,3,4,5,6,7,8
18	VESTIBULE 111	PROCEDURE 112	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	A	PAINT, P-3	--	GALV. HOLLOW METAL	PAINT, P-3	J-1	SIM TO J-1	1	--	HW-4	1,3,4,5,6,7,8
19	PROCEDURE 112	BATHROOM 116	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	A	PAINT, P-3	--	GALV. HOLLOW METAL	PAINT, P-3	J-1	SIM TO J-1	1	--	HW-5	1,3,4,5,6,7,8
20	VESTIBULE 111	DOG ISOLATION 114	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	B	PAINT, P-3	G-1	GALV. HOLLOW METAL	PAINT, P-3	J-1	SIM TO J-1	1	--	HW-6	1,3,4,5,6,7,8
21	DOG ISOLATION 114	DOG KENNELS 115	3'-0"	7'-0"	1 3/4"	GALV. HOLLOW METAL	B	PAINT, P-3	G-1	GALV. HOLLOW METAL	PAINT, P-3	J-1	SIM TO J-1	1	--	HW-6	1,3,4,5,6,7,8

GLAZING SCHEDULE

MARK	DESCRIPTION
G1	1/4" LAMINATED SAFETY GLASS
G2	3/16" CLEAR TEMPERED GLASS
G3	FIRE RATED GLASS
G4	1" LOW 'E' INSULATED SAFETY GLAZING

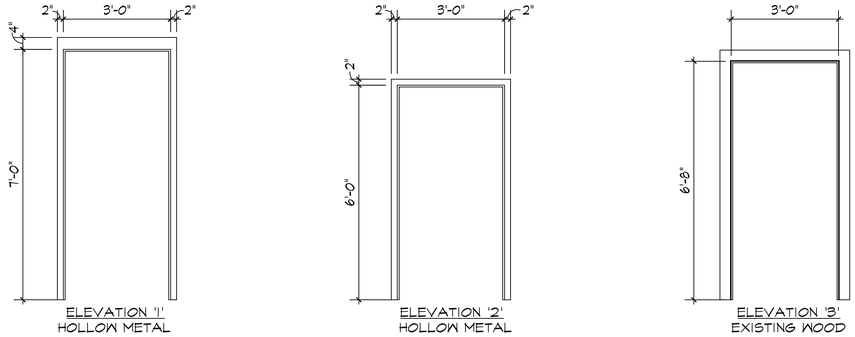


ELEVATION 'A' SOLID HM

ELEVATION 'B' NARROW LITE HM

DOOR TYPES

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



ELEVATION '1' HOLLOW METAL

ELEVATION '2' HOLLOW METAL

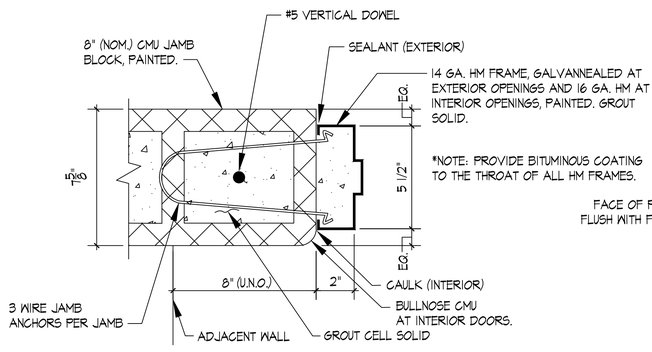
ELEVATION '3' EXISTING WOOD

FRAME TYPES

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

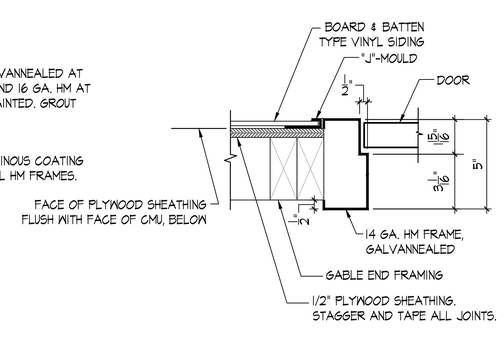
DOOR SCHEDULE REMARKS

1. ALL HOLLOW METAL DOORS AND FRAMES SHALL BE GALVANNEALED A40/ZF120 IN ACCORDANCE WITH ANSI/SDI A250.8 AND SDI-112.
2. EXTERIOR DOORS SHALL BE MODEL 1, "FULL FLUSH", BEVELED EDGE POLYSTYRENE INSULATED WITH A THERMAL EFFICIENCY OF U=0.61 OR BETTER.
3. ALL HOLLOW METAL DOORS SHALL BE LEVEL 2, "HEAVY DUTY", IN ACCORDANCE WITH STEEL DOOR INSTITUTE, STANDARD SDI-108, TABLE 2.
4. EXTERIOR DOOR FRAMES SHALL BE FULL PROFILE WELDED, 14 GAUGE. INTERIOR DOOR FRAMES MAY BE SEAM WELDED, 16 GAUGE.
5. PROVIDE A BITUMINOUS COATING TO THE THROAT OF ALL HOLLOW METAL FRAMES AT MASONRY WALLS. FRAMES SHALL BE GROUTED SOLID.
6. HOLLOW METAL DOORS AND FRAMES SHALL BE REINFORCED IN ACCORDANCE WITH ANSI/SDI A250.8, TABLE 4, "MINIMUM HARDWARE REINFORCING THICKNESS."
7. DOOR HARDWARE SHALL BE MOUNTED IN ACCORDANCE WITH ANSI/SDI A250.8, TABLE 5, "HARDWARE LOCATIONS.
8. PAINT COLORS "P-1", "P-2", AND "P-3" SHALL BE SELECTED BY THE ARCHITECT. ALL DOOR AND FRAME PAINT SHALL BE OIL BASED SEMI-GLOSS ENAMEL



TYPICAL CMU JAMB (J-1)

(HEAD DETAIL SIMILAR, BUT 4")



JAMB AT ATTIC DOOR #5 (J-2)

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

DOOR SCHEDULES AND DETAILS

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

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THE LANE GROUP INC.

FINISH SCHEDULE

ROOM NO.		FLOOR								BASE						WALL								CEILING						CEILING HEIGHT						REMARKS
		EXISTING VINYL COMPOSITION TILE	EXISTING SHEET VINYL	EXISTING SEALED CONCRETE	EXISTING PAINTED WITH SHERWIN-WILLIAMS "ARMORSEAL 8100"	SHERWIN-WILLIAMS RESINOUS FLOORING W/ "RESIFLOR TOPCOAT TX"	3/4" PLYWOOD (POLYURETHANE FINISH)			EXISTING 4" RESILIENT RUBBER COVE	EXISTING 4" WOOD (REPAINT)	8" SHERWIN-WILLIAMS RESINOUS FLOORING W/ "RESIFLOR TOPCOAT TX"	CONTINUOUS 2 X 4 (POLYURETHANE FINISH)	PORCELAIN TILE		EXISTING GYPSUM WALL BOARD (REPAINT)	EXISTING CMU (REPAINT)	EXISTING CMU - (REPAINT WITH S-W "PRO INDUSTRIAL ACRYLIC")	CMU - (PAINT WITH S-W "PRO INDUSTRIAL ACRYLIC, B66-600 SERIES"	FRP PANEL ON MR GYP. WALL BOARD	2" x 2" PORCELAIN MOSAIC TILE ON CEMENTITIOUS BOARD	EXPOSED ROOF FRAMING		EXISTING GYPSUM WALLBOARD (PAINTED)	NEW 1/2" GYPSUM SOFFIT BOARD (PAINTED)	EXPOSED ROOF SHEATHING				8'-0" ABOVE T/CONC. FLOOR SLAB (REPAINTED)	8'-1 1/2" ABOVE T/CONC. FLOOR SLAB (PAINTED)	OPEN ROOF STRUCTURE. NO FINISHED CEILING.				
100	LOBBY	●								●						◖	◗							●						●						1
101	OFFICE	●								●						◖	◗							●						●						1
102	CLOSET	●								●						◖	◗							●						●						1
103	FILES	●									●					◖	◗							●						●						1
104	CORRIDOR	●									●					◖	◗							●						●						1
105	TOILET	●									●					◖	◗							●						●						1
106	CAGES		●								●					◖	◗							●						●						1
107	STORAGE	●								●						◖	◗							●						●						1
108	TOILET	●								●						◖	◗							●						●						1
109	CAT SHELTERING ROOM				●					●						◖	◗							●						●						1 ALL WORKINCLUDED IN BASE BID.
110	HVAC/ELEC			●						●						●								●						●						1
111	VESTIBULE					●						●								●					●						●					
112	PROCEDURE					●						●								◖	◗				●						●					
113	UTILITY ROOM					●						●								◖	◗				●						●					2
114	DOG KENNELS ISOLATION					●						●								●					●						●					
115	DOG KENNELS					●						●								●					●						●					
116	BATHROOM					●						●								◖	◗				●						●					3
200	HVAC PLENUM						●						●									●				●						●				

FINISH SCHEDULE NOTES

1. IT IS THE INTENT THAT ALL PREVIOUSLY PAINTED SURFACES WITHIN THE EXISTING BUILDING (i.e., WOOD BASE, GWB WALLS, CMU WALLS, GWB CEILINGS) SHALL BE REPAINTED.

   PAINTING OF THE CAT SHELTERING ROOM # 109 SHALL BE A PART OF THE BASE BID.
   PAINTING OF ALL OTHER EXISTING INTERIOR SPACES WITHIN THE BUILDING SCHEDULED TO REMAIN SHALL BE A PART OF ADDITIVE BID ITEM #1.

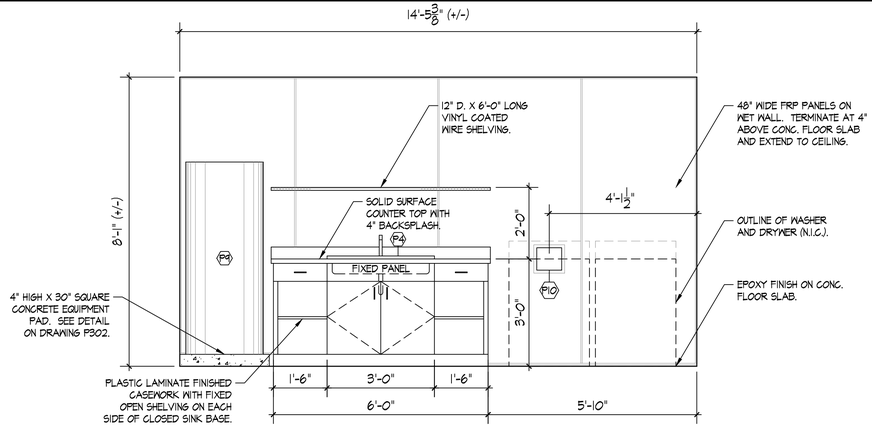
2. FIBERGLASS REINFORCED PANELS. BASIS OF DESIGN IS MARLITE "PEBBLED" PANELS, COLOR # P 199 "BRIGHT WHITE" COLOR. PROVIDE WHITE PVC TRIM MOLDINGS AT TOP EDGE, BOTTOM EDGE, VERTICAL EDGE, INSIDE CORNER, AND VERTICAL JOINTS. ADHERE FRP PANELS TO 1/2" MRGWB SUBSTRATE WITH MARLITE ADHESIVE.

3. PROVIDE 2" x 2" THIN-SET MOSIAC PORCELAIN TILE WITHIN SHOWER AND AT TOILET "WET WALL". BASIS OF DESIGN IS ROCA TILE "UNGLAZED DOT MOUNTED PORCELAIN MOSIAC". COLOR SELECTED BY THE ARCHITECT. INSTALL WITH ADHESIVE RECOMMENDED BY THE TILE MANUFACTURER.

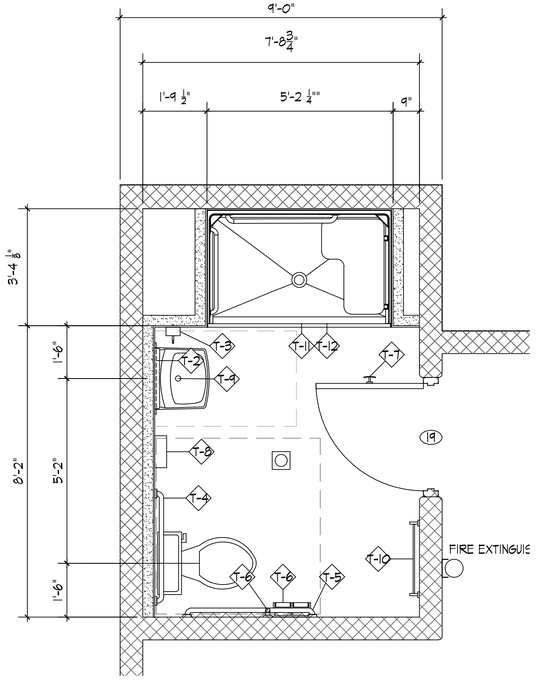
TOILET ACCESSORY SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL NO.	MOUNTING	REMARKS
T-1	TOILET PAPER DISPENSER	BOBRICK	B-2740	SURFACE	.
T-2	MIRROR	BOBRICK	B-290 2430	SURFACE	.
T-3	LIQUID SOAP DISPENSER	BOBRICK	B-6562	SURFACE	.
T-4	36" GRAB BAR	BOBRICK	B-5806 x 36	SURFACE	.
T-5	42" GRAB BAR	BOBRICK	B-5806 x 42	SURFACE	.
T-6	18" GRAB BAR (VERTICAL)	BOBRICK	B-5806 x 18	SURFACE	.
T-7	ROBE HOOK	BOBRICK	B-6727	SURFACE	.
T-8	PAPER TOWEL DISPENSER	BOBRICK	B-2620	SURFACE	.
T-9	THERMAL PROTECTIVE DRAIN COVERS	TRUEBRO	1ATB9	LAV PIPES AND VALVES	.
T-10	TOWEL BAR	BOBRICK	B-6747X24	SURFACE	.
T-11	SHOWER ROD	BOBRICK	B-207 X 60	SURFACE	.
T-12	SHOWER HOOKS / SHOWER CURTAIN	BOBRICK	B-204-1 / B-204-3	HUNG FROM CURTAIN ROD.	

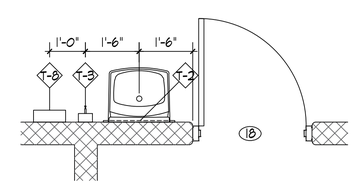
NOTE: THE BOBRICK WASHROOM EQUIPMENT, INC. ACCESSORIES SPECIFIED SERVE TO ESTABLISH SIZE, FUNCTION AND QUALITY STANDARD. EQUAL ACCESSORIES MANUFACTURED BY BRADLEY CORPORATION OR ASI MAY BE SUBSTITUTED AS APPROVED BY THE OWNER.



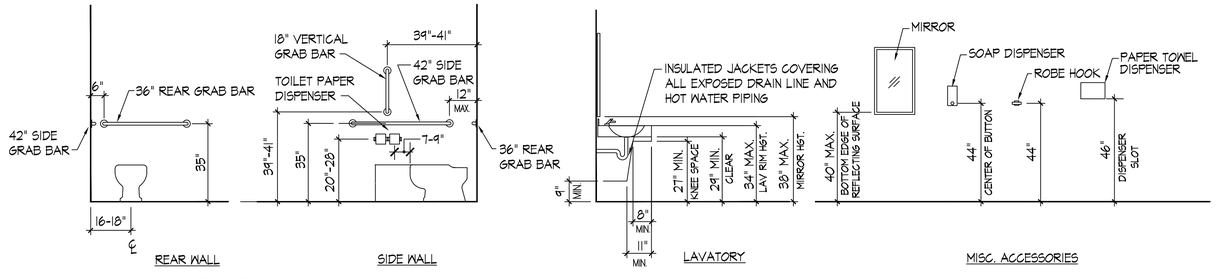
C / A701 UTILITY ROOM #113 ELEVATION
SCALE: 1/2" = 1'-0"



B / A701 ENLARGED BATHROOM #116 PLAN
SCALE: 1/2" = 1'-0"



A / A701 ENLARGED PROCEDURE RM. #112
SCALE: 1/2" = 1'-0"



TYPICAL ACCESSIBLE MOUNTING HEIGHTS

SCALE: 3/8"= 1'-0"

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FINISH SCHEDULE
TOILET ACCESSORY SCHEDULE

COMMONWEALTH OF VIRGINIA
D. MICHAEL WEAVER
LIC. NO. 9031
04-16-2021
ARCHITECT

DATE: 06/16/2021

NO.	REVISION DATE
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2	
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PROJECT NO. 2088

THE LANE GROUP INC.

STRUCTURAL NOTES

LOAD CHART

BUILDING CODE		
	2015 VIRGINIA UNIFORM STATEWIDE BUILDING CODE	
	PART I - VIRGINIA CONSTRUCTION CODE	
	PART II - VIRGINIA EXISTING BUILDING CODE	
	2015 INTERNATIONAL BUILDING CODE	
	2015 INTERNATIONAL EXISTING BUILDING CODE	
	ASCE 7-10	
RISK CATEGORY	2015 IBC TABLE 1604.5	II
SLAB ON GRADE		
	NOT DESIGNED FOR CONCENTRATED OR PATTERN LOADS	
ROOF DEAD LOAD	ESTIMATED TOTAL LOAD USED IN CALCULATIONS	19 PSF MAX.
		11 PSF MIN.
ROOF LIVE LOAD	MINIMUM UNIFORM DESIGN LOAD	20 PSF
	MINIMUM CONCENTRATED LOAD (ALL PRIMARY ROOF MEMBERS)	300 LBS
CONSTRUCTION		
	ROOF CONSTRUCTION PHASE LOADING	15 PSF
SNOW		
	SNOW IMPORTANCE FACTOR, Is	1.0
	GROUND SNOW LOAD, Pg	25 PSF
	FLAT ROOF SNOW LOAD, Pf	21 PSF
	SNOW EXPOSURE FACTOR, Ce	1.0
	THERMAL FACTOR, Ct (EXTERIOR KENNEL AREA)	1.2
	SLOPE FACTOR, Cs	1.0
	RAIN ON SNOW SURCHARGE	0 PSF
WIND		
	PROCEDURE	DIRECTIONAL (CH. 27 ASCE 7)
	BASIC WIND SPEED, V	115 MPH
	ALLOWABLE STRESS DESIGN WIND SPEED, Vasd	90 MPH
	WIND EXPOSURE CATEGORY	B
	INTERNAL PRESSURE COEFFICIENT, GCpi	+/-0.18
	COMPONENTS & CLADDING	SEE CHART
SEISMIC		
	SEISMIC IMPORTANCE FACTOR, Ie	1.0
	MAPPED SPECTRAL RESPONSE, Ss	27.60%
	MAPPED SPECTRAL RESPONSE, S1	9.70%
	SITE CLASS	D
	SPECTRAL RESPONSE COEFFICIENT, Sds	29.10%
	SPECTRAL RESPONSE COEFFICIENT, Sd1	15.50%
	SEISMIC DESIGN CATEGORY	C
	SEISMIC-FORCE RESISTING SYSTEM:	ASCE 7 - TABLE 12.2-1
	ORDINARY REINFORCED MASONRY SHEAR WALLS	
	SEISMIC RESPONSE COEFFICIENT, Cs	0.145
	SEISMIC MODIFICATION FACTOR, R	2.0
	ANALYSIS PROCEDURE	EQ. LATERAL FORCE
	DESIGN BASE SHEAR (NEW ADDITION)	9 KIPS
ICE		
	ICE THICKNESS	0.75 INCH
	GUST SPEED	30 MPH
FLOOD		
	FLOOD ZONE	X
SOIL		
	UNIT WEIGHT OF SOIL	110 PCF
	MODULUS OF SUBGRADE REACTION	100 PCI
	NET ALLOWABLE BEARING PRESSURE	2000 PSF

GENERAL NOTES:

A. SPECIAL INSPECTIONS ARE REQUIRED BY THE BUILDING CODE. REFER TO PROJECT SPECIFICATIONS, AND SCHEDULE OF SPECIAL INSPECTIONS FOR SPECIFIC REQUIREMENTS.

B. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.

C. CONTRACTOR SHALL VERIFY THE REQUIREMENT OF OTHER TRADES FOR SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES AND ADDITIONAL ITEMS TO BE PLACED OR SET SIMULTANEOUS WITH STRUCTURAL WORK.

D. DETAILS SHOWN ARE TYPICAL AND APPLY TO SIMILAR OR LIKE CONDITIONS.

E. DO NOT SCALE DRAWINGS, FOLLOW DIMENSIONS ON PLANS.

F. DO NOT CHANGE THE SIZE, LENGTH OR SPACING OF STRUCTURAL ELEMENTS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

G. DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING AND TEMPORARY SUPPORTS IS THE SOLE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH OSHA SAFETY REGULATIONS.

H. CONTRACTOR SHALL VERIFY MECHANICAL EQUIPMENT WEIGHTS, ROOF OR WALL OPENINGS SIZES AND LOCATIONS, AND SIZES OF EQUIPMENT PADS, WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND SUPPLIERS. NOTIFY ENGINEER IF LOADS ARE HIGHER THAN THOSE SHOWN.

I. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS INCLUDING DIMENSIONS TO EXISTING STRUCTURES, GRADES, UTILITIES, FRAMING, FOUNDATIONS AND HIDDEN CONDITIONS AND COORDINATE THESE CONDITIONS WITH THE CONTRACT DOCUMENTS. NOTIFY THE ARCHITECT AND ENGINEER OF EXISTING CONDITIONS THAT ARE NOT AS SHOWN.

J. PENETRATIONS:
1. FOLLOW APPROPRIATE PENETRATION DETAIL ON DOCUMENTS AND REFER TO NOTES. SHOULD CORING OR CUTTING BE REQUIRED:
   a. INSPECT BOTH SIDES OF WALL FOR BEAMS OR OTHER ELEMENTS THAT CAN BE HARMED BY PENETRATION. ADJUST PENETRATIONS TO MISS STRUCTURAL ELEMENTS.

K. BEAMS/JOISTS/COLUMNS: DO NOT CUT/CORE/DAMAGE (EXISTING) BEAMS/JOISTS/COLUMNS OR OTHER MAJOR STRUCTURAL ELEMENTS OF THE BUILDING UNLESS SPECIFICALLY DETAILED. SHOULD ACCIDENTAL DAMAGE OCCUR, CONTACT STRUCTURAL ENGINEER PRIOR TO PROCEEDING.

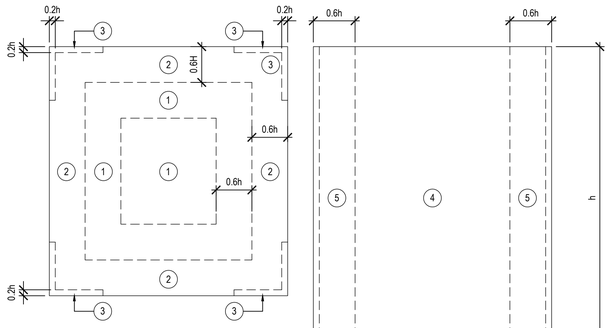
COMPONENTS & CLADDING

ROOF	SURFACE PRESSURE (PSF)			
AREA	10 SF	20 SF	50 SF	100 SF
NEGATIVE ZONE 1	-20.4 PSF	-19.8 PSF	-19.1 PSF	-18.5 PSF
NEGATIVE ZONE 2	-35.5 PSF	-32.7 PSF	-28.9 PSF	-26.1 PSF
NEGATIVE ZONE 3	-52.5 PSF	-49.1 PSF	-44.6 PSF	-41.2 PSF
POSITIVE ALL ZONES	16.0 PSF	16.0 PSF	16.0 PSF	16.0 PSF

OVERHANG ZONE 2	-41.5 PSF	-41.5 PSF	-41.5 PSF	-41.5 PSF
OVERHANG ZONE 3	-69.9 PSF	-63.1 PSF	-54.0 PSF	-47.2 PSF

SEE a = 4.5 FT DIAGRAMS

WALLS	SURFACE PRESSURE (PSF)			
AREA	10 SF	20 SF	50 SF	100 SF
NEGATIVE ZONE 4	-24.2 PSF	-23.2 PSF	-21.8 PSF	-20.8 PSF
NEGATIVE ZONE 5	-29.8 PSF	-27.8 PSF	-25.2 PSF	-23.2 PSF
POSITIVE ZONE 4 & 5	22.3 PSF	21.3 PSF	20.0 PSF	18.9 PSF



ROOF PLAN

WALL ELEVATION

CC DIAGRAM - FLAT/HIP/GABLE (0° ≤ 0 ≤ 45°)

EARTHWORK FOR STRUCTURES:

A. SUBGRADES AND COMPACTED FILL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER REGISTERED AS A PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF VIRGINIA TO VERIFY CONFORMANCE. OBSERVING ENGINEER SHALL APPROVE SUBGRADES PRIOR TO CONCRETE PLACEMENT.

B. SLAB-ON-GRADE PREPARATION:
1. VERIFY MINIMUM MODULUS OF SUBGRADE
2. PROOFROLL SUBGRADE AS DESCRIBED BELOW
3. INTERIOR SLABS:
   a. UNDERLAIN BY 4 INCHES (MIN.) NO. 57 CRUSHED STONE BED. DO NOT PLACE PIPE/CONDUIT WITHIN THE STONE BED.
   b. (10)-MIL (MIN.) ASTM 1745 VAPOR RETARDER (ON TOP OF STONE)
      TAPE ALL SEAMS WITH MANUFACTURER'S SUPPLIED TAPE
      SEAL TO PERIMETER FOUNDATION WALLS
      TAPE/SEAL ALL EDGES AND ALL PENETRATIONS
      REPAIR/PATCH ANY DAMAGE OR PUNCTURES
      CLEAR VAPOR RETARDER OF ALL DEBRIS PRIOR TO PLACEMENT OF CONCRETE
4. EXTERIOR SLABS:
   a. UNDERLAIN BY MINIMUM 6 INCHES THICK NO. 57 CRUSHED STONE BED. DO NOT PLACE PIPE/CONDUIT WITHIN THE STONE BED.
   b. REMOVE ROCK PINNACLES WITHIN ZONE OF SLAB OR STONE SUB-BASE TO AT LEAST THE BOTTOM ELEVATION OF THE STONE SUB-BASE.

C. COMPACTED FILL/BACKFILL:
1. PROOFROLL SUBGRADE PER BELOW
2. PERFORM DENSITY AND MOISTURE TESTING: MINIMUM OF ONE FIELD DENSITY TEST PER 2000 SQ FT PER LIFT PLACED (MINIMUM OF ONE TEST PER LIFT)
3. PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS FOR GENERAL BACKFILL/FILL
   a. 4 INCHES IN THICKNESS WHEN USING LIGHT-WEIGHT EQUIPMENT (LESS THAN 3000-LBS).
4. COMPACTED TO AT LEAST 98 PERCENT MAXIMUM DRY DENSITY PER ASTM D-698, STANDARD PROCTOR
5. CONSIST OF MATERIALS CLASSIFYING SC, SM, SP, SW, GC, GM, GP OR GW PER ASTM D-2487
6. MOISTURE CONTENT WITHIN (2) PERCENT OF OPTIMUM
7. SHALL BE FREE OF BOULDERS, ORGANICS, TRASH, PARTICLES OF 3 INCHES OR MORE IN DIAMETER, AND OTHER DELETERIOUS MATERIAL
8. PLASTICITY INDEX LESS THAN (20)
9. USE ONLY MECHANICAL HAND TAMPS OR SMALL VIBRATORY COMPACTORS/ROLLERS, NOT EXCEEDING 3000 POUNDS WEIGHT, WHEN CLOSER TO BELOW GRADE WALLS THAN A DISTANCE EQUAL TO THE HEIGHT OF THE BACKFILL ABOVE THE TOP OF THE FOUNDATIONS (1:1 SLOPE)
   a. BACKFILL EACH SIDE OF FOUNDATION WALLS SIMULTANEOUSLY.
10. SUBGRADES REQUIRING UNDERCUTTING SHALL BE BACKFILLED WITH COMPACTED FILL OR AN OPEN GRADED CRUSHED STONE TO THE ORIGINAL DESIGN SUBGRADE ELEVATION.
11. DO NOT PLACE COMPACTED FILL ON FROZEN OR OVER-WET SUBGRADES.

D. PROOFROLLING:
1. SLAB-ON-GRADE SUBGRADES
2. NATURAL SUBGRADES BELOW AREAS TO RECEIVE COMPACTED FILL
3. PROOFROLL USING A LOADED DUMP TRUCK OR RUBBER TIRED ROLLER.
4. AREAS WHICH EXHIBIT EXCESSIVE PUMPING, WEAVING OR RUTTING SHALL BE UNDERCUT, ALLOWED TO DRY AND RE-COMPACTED OR EXCAVATED AND REPLACED WITH COMPACTED FILL OR OPEN GRADED STONE.

E. UNSUITABLE, LOOSE OR SOFT SOIL SHALL BE REMOVED FROM THE EXCAVATION PRIOR TO PLACING FILL, STONE OR CONCRETE. DISTURBED, UNSUITABLE, OR EXCAVATED MATERIAL OCCURRING BELOW 45 DEGREES FROM HORIZONTAL BEGINNING AT THE BOTTOM MOST OUTER EDGE OF WALLS OR FOUNDATIONS SHALL BE REPLACED WITH COMPACTED FILL.

F. EXCAVATIONS SHALL BE BRACED OR SLOPED IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. THE CONTRACTOR SHALL STAGE CONSTRUCTION SEQUENCE SO AS NOT TO UNDERMINE AN ADJACENT BUILDING, PREVIOUSLY CAST FOUNDATION, SLOPE OR OTHER STRUCTURE DURING THE CONSTRUCTION.

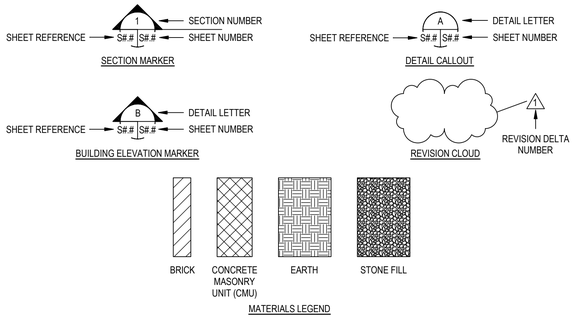
G. BLASTING IS NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER AND OWNER. ALTERNATIVE ROCK BREAKING METHODS MAY BE USED, SUBMIT FOR REVIEW PRIOR TO USE.

H. IF NON-UNIFORM ROCK OR DISINTEGRATED ROCK IS ENCOUNTERED AT FOUNDATION DESIGN SUBGRADE ELEVATION, UNDERCUT THIS MATERIAL ONE FOOT MINIMUM AND REPLACE WITH COMPACTED FILL.

I. EVIDENCE OF KARST ACTIVITY OR SINKHOLES SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING.

J. SLOPE EXCAVATIONS, INSTALL SWALES AND/OR DE-WATERING PUMPS TO MAINTAIN DRY SOIL CONDITIONS AND PREVENT STANDING WATER IN EXCAVATIONS FOR FOUNDATIONS AND SLABS.

GENERAL NOTES FOR SECTIONS AND DETAILS



MATERIALS LEGEND

STRUCTURAL LEGEND

RE-ENTRANT BARS (2) #4 x 4'-0" LG. CENTER ON CORNER

PROSIM ENGINEERING, LLC
what we do matters
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the LANE GROUP 25th ANNIVERSARY 1996-2021
engineering | architecture | environmental

ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

STRUCTURAL NOTES AND LEGEND

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023840
April 16, 2021
PROFESSIONAL ENGINEER

DATE: 04/16/2021

NO.	REVISION DATE
1	
2	
3	

SHEET: S000

DRAWN BY: DA | CHECKED BY: AL

PROJECT NO. 2088

THE LANE GROUP INC.

STRUCTURAL NOTES

CONCRETE AND REINFORCEMENT:

A. GENERAL CONCRETE SHALL BE:

LOCATION	WEIGHT	STRENGTH (PSI)	AIR (%) (± 1%)	SLUMP (IN.) (± 1/2)	MAX W/C RATIO	EXPOSURE CATEGORY
FOUNDATIONS	NW	3000	N/A	5	0.52	F0
INTERIOR SLAB-ON-GRADE WITH CRACK CONTROL FIBER	NW	3000	<3	4	0.52	F0
EXTERIOR SLAB-ON-GRADE WITH CRACK CONTROL FIBER	NW	4500	5.5-6	4	0.48	F1

FIELD SAMPLING SHALL BE OBTAINED FROM MIDDLE OF BATCH

1. NORMAL WEIGHT (NW) CONCRETE SHALL BE 145 - 150 PCF
2. SLUMPS ABOVE ARE PRIOR TO ADDITION OF PLASTICIZERS OR MID RANGE WATER REDUCER. MAXIMUM SLUMP AFTER APPROVED ADDITIVES SHALL BE (8) INCHES MAXIMUM.
3. MATERIALS:
   - CEMENT: ASTM C 150 TYPE I/II
   - FLY ASH: ASTM C618 CLASS C OR F, 20% MAX.
   - AGGREGATE: ASTM C33, GRADED
   - STRIP FOOTINGS, WALLS PIERS (CROSS SECTION 6" OR GREATER): 1-1/2 INCH MAXIMUM
   - SLAB-ON-GRADE: 1 INCH MAXIMUM
4. FIBROUS REINFORCEMENT (CRACK CONTROL):
   - ASTM C 1116 TYPE III AND ASTM C1018 PERFORMANCE LEVEL I I5
   - 100 PERCENT VIRGIN POLYPROPYLENE, FIBRILLATED FIBERS
   - MINIMUM VOLUME PER CUBIC YARD OF 0.1 PERCENT (1.5 POUNDS)
   - WHEN INDICATED, FIBER SHALL BE IN ADDITION TO STEEL REINFORCEMENT.

B. CONCRETE WORK SHALL BE IN FULL ACCORDANCE WITH:
- AMERICAN CONCRETE INSTITUTE (ACI) 301, 315, AND 318
- CRSI RECOMMENDED PRACTICE OF PLACING REINFORCING BARS
- ACI 117 FOR PLACEMENT TOLERANCES (CONCRETE AND REINFORCEMENT)
- ACI 302.1 CONCRETE FLOOR AND SLAB CONSTRUCTION
- ACI 306 AND ACI 305 COLD/HOT WEATHER CONCRETING
- ACI 308.1 FOR CURING OF CONCRETE
- ACI 309R-05 GUIDE FOR CONSOLIDATION OF CONCRETE
- ACI 347-04 (CHAPTER 5) GUIDE TO FORMWORK FOR CONCRETE
- ACI "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES".

C. SLABS
1. CEMENTITIOUS MATERIAL CONTENT IN ACCORDANCE WITH TABLE 8.4.4b OF ACI 302.1.
2. FINE AGGREGATE: BLEND OF NATURAL AND MANUFACTURED
3. MINIMUM MODULUS OF RUPTURE (MOR) PER ASTM C 496:
   - 3000 PSI MIX - 492 PSI
   - 4500 PSI MIX - 604 PSI
4. MORTAR FRACTION (VOLUME PERCENTAGE OF CEMENTITIOUS MATERIALS, AGGREGATE, WATER AND AIR THAT PASS THE NO. 8 SIEVE) SHALL BE 55 TO 57 PERCENT.
5. USE BOND BREAK / THERMAL SEPARATION MATERIAL (1/4 IN. MAX. THICKNESS) ALONG FOUNDATION WALLS, AROUND COLUMNS AND OTHER ITEMS THE SLAB IS CAST AGAINST. (DECK-O-FOAM BY W.R. MEADOWS, INC OR EQUAL)
6. COMBINED AGGREGATE GRADATIONS:
   - 1 1/2 INCH STONE — 8 TO 18 PERCENT ON EACH SIEVE ABOVE 100
   - or
   - 3/4 OR 1 INCH STONE — 8 TO 22 PERCENT ON EACH SIEVE ABOVE 100
   - #4 TO #16 — 0 TO 4 PERCENT (ROUND OR CUBICALLY SHAPED AGGREGATE)
   - 4 TO 8 PERCENT (SLIVERED, SHARP OR ELONGATED AGGREGATE)
   - #30 AND #50 SIEVES — 8 TO 15 PERCENT ON EACH
   - #100 SIEVE — 1 1/2 TO 5 PERCENT

   a. PERCENT RETAINED ON TWO ADJACENT SIEVE SIZES SHALL NOT FALL BELOW (5) PERCENT
   b. PERCENT RETAINED ON THREE ADJACENT SIEVE SIZES SHALL NOT FALL BELOW (8) PERCENT
   c. IF PERCENT RETAINED ON TWO ADJACENT SIEVE SIZES IS LESS THAN (8) PERCENT, THEN THE TOTAL PERCENT RETAINED ON EITHER SIEVE AND ADJACENT OUTSIDE SIEVE SHALL BE AT LEAST (13) PERCENT.
7. FLOOR FLATNESS:
   a. PER ACI 302 AND ACI 117
   c. CLASS B (1/4-INCH IN 10 FEET) - APPLIES TO INTERIOR NON-SLOPING SLABS

D. SLAB CONTROL JOINTS:
1. CUT IN ACCORDANCE WITH ACI 302.1R
2. CUT AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN 4 HOURS OF SLAB PLACEMENT
3. USE 'SOFT CUT' EARLY-ACCESS SAW - USE HIGH SPEED 3600 RPM (MIN.)
4. LENGTH TO WIDTH RATIOS OF PATTERN SHALL NOT EXCEED 1.25
5. JOINTS SHOWN ON THE PLANS ARE GUIDELINES. CONTRACTOR SHALL SUBMIT PLAN OF JOINT LOCATIONS AND PROPOSED INSTALLATION.
6. EPOXY JOINT FILLER SHALL BE INSTALLED IN SLAB JOINTS AFTER ALL CONSTRUCTION TRAFFIC HAS TERMINATED.

E. REINFORCING:
1. ASTM A615, GRADE 60 FOR DEFORMED BARS
2. ASTM A185, FOR FLAT SHEET WELDED WIRE FABRIC
3. DEVELOPMENT LENGTH FOR REINFORCEMENT(db = BAR DIAMETER):

STRENGTH	DEVELOPMENT LENGTH, LD #6 AND SMALLER	#7 AND LARGER	HOOK, LDH
3000 PSI	44 db	55 db	22 db
4500 PSI	36 db	45 db	18 db

4. DEVELOPMENT LENGTH MINIMUM OF 12 INCHES. HOOK DEVELOPMENT LENGTH MINIMUM 6 INCHES. DEVELOPMENT LENGTH ADJUSTMENTS:
   - TOP BAR REINFORCING: ABOVE MULTIPLIED BY 1.3.
   - CLASS B TENSION LAPS: ABOVE MULTIPLIED BY 1.3.
5. SPLICES SHALL BE CLASS B TENSION SPLICES UNLESS NOTED. WELDED WIRE FABRIC SHALL HAVE A MINIMUM LAP OF 6 INCHES. IF USED, MECHANICAL OR WELDED SPLICES SHALL DEVELOP 125% OF THE BAR YIELD STRENGTH.
6. CONCRETE CLEAR COVER SHALL BE (UNLESS NOTED OTHERWISE):
   - BELOW GRADE (UNFORMED) 3"
   - BELOW GRADE (FORMED) 2"
   - EXPOSED TO WEATHER OR WATER 2"
7. PROVIDE DOWELS IN FOUNDATIONS TO MATCH THE SIZE AND QUANTITY AS VERTICAL WALL REINFORCEMENT.
8. PROVIDE CORNER BARS AT CORNERS AND INTERSECTING WALLS.
9. PROVIDE (2) #4 X 4'-0" LONG AT ALL SLAB RE-ENTRANT CORNERS (RB)

F. CONCRETE FINISHES:
1. COORDINATE FLOOR SLAB LAYOUT WITH ARCHITECTURAL DRAWINGS FOR EXACT LIMITS, EXTENT OF DEPRESSIONS AND FINISHES.
2. SLAB EXPOSED TO VIEW, COVERED WITH RESILIENT FLOORING, CARPET, PAINT OR OTHER FILM-FINISH COATING SHALL RECEIVE A TROWEL FINISH.
3. EXTERIOR SLABS (KENNEL AREAS) TO RECEIVE A SMOOTH TROWEL FINISH.
4. PROVIDE 1-INCH CHAMFER AT EXPOSED CONCRETE CORNERS

G. CONDUITS, PIPES OR DUCTS (EXCEEDING ONE-THIRD THE FOUNDATION, SLAB OR WALL THICKNESS (INCLUDING CROSSINGS)) SHALL NOT BE PLACED WITHIN THE THICKNESS OF THE FOUNDATION, WALL OR SLAB UNLESS SPECIFICALLY DETAILED. SEE THE MECHANICAL AND/OR ELECTRICAL PORTION OF THE CONTRACT DOCUMENTS FOR LOCATION OF SLEEVES AND ACCESSORIES. PIPES AND DUCTS SHALL BE LOCATED BETWEEN THE LAYERS OF REINFORCEMENT. REFER TO APPROPRIATE PENETRATION DETAILS. DETAIL ALL SUCH PENETRATIONS AND EMBEDDED ITEMS CLEARLY ON THE REINFORCEMENT SUBMITTAL.

H. REINFORCING STEEL AND EMBEDDED ITEMS SHALL BE ACCURATELY PLACED IN THE POSITIONS SHOWN, TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.

I. EPOXY GROUTING OF DEFORMED BAR DOWELS OR ANCHOR RODS INTO EXISTING OR HARDENED CONCRETE SHALL BE INSTALLED ACCORDING TO EPOXY MANUFACTURERS RECOMMENDATION TO PROVIDE FULL DEVELOPMENT OF THE BAR OR BOLT FOR THE SPECIFIC CONCRETE STRENGTH AT POINT OF ATTACHMENT.
1. APPLY LOADS ONLY AFTER EPOXY HAS REACHED FULL STRENGTH.
2. ALL PARTS OF ANCHORING SYSTEM (RODS, NUTS, WASHERS, BITS, EPOXY, ETC.) SHALL BE FROM A SINGLE SUPPLIER.
3. WORK MUST BE PERFORMED BY ACI CERTIFIED EPOXY ANCHOR INSTALLER.

J. NO REPAIR OR RUBBING OF CONCRETE SHALL BE MADE PRIOR TO INSPECTION BY ARCHITECT/ENGINEER OR OWNER'S REPRESENTATIVE.

CONCRETE MASONRY:

A. MASONRY CONSTRUCTION SHALL BE IN CONFORMANCE WITH:
1. THE MASONRY SOCIETY (TMS) 402 / 602 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES" - ALLOWABLE STRESS DESIGN
2. TMS 602 FOR PLACEMENT TOLERANCES FOR MASONRY & REINFORCEMENT
3. TMS 602 FOR COLD/HOT WEATHER METHODS
4. ACI "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES"
5. ASTM C270 STANDARD SPECIFICATION FOR MORTAR FOR UNIT MASONRY
6. ASTM C91 "STANDARD SPECIFICATION FOR MASONRY CEMENT"

B. MASONRY UNITS:
1. ASTM C90 GRADE N
2. MINIMUM NET COMPRESSIVE STRENGTH:
   - CONCRETE MASONRY UNITS: 1900 PSI NET AREA AT TIME OF DELIVERY
   - MASONRY ASSEMBLAGE (f'm): 1500 PSI AT 28 DAYS VERIFIED USING THE UNIT STRENGTH METHOD DESCRIBED IN TMS 402 SECTION 1.4 B.2
3. WEIGHT: LIGHTWEIGHT

C. MORTAR (ASTM C270):
1. COMPLY WITH ASTM C270 PROPORTION SPECIFICATION
2. MASONRY CEMENT (ASTM C91)
   - TYPE S: MASONRY IN CONTACT WITH EARTH, BELOW GRADE, REINFORCED UNIT MASONRY, ALL EXTERIOR WALLS AND LOAD BEARING WALLS
   - TYPE N: INTERIOR NON-LOAD BEARING WALLS
   - MORTAR PLACEMENT: FULL BEDDING

D. GROUT:
1. ASTM C-476 FINE OR COARSE PER GROUT SPACE REQUIREMENTS IN TABLE 3.2.1 OF TMS 602
2. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI
3. BE CONSOLIDATED BY MECHANICAL VIBRATION
4. PLACED PER SECTION 3.5 OF TMS 602

E. REINFORCING:
1. ASTM A615, GRADE 60 FOR DEFORMED BARS
2. JOINT REINFORCEMENT:
   - PLACE IN ALL WALLS - INTERIOR, EXTERIOR, BEARING, NON-BEARING AND RETAINING
   - 9 GAGE LADDER TYPE - GALVANIZED
   - 16" ON CENTER VERTICAL SPACING MAXIMUM
   - HOOK & EYE AT VENEER - SEE ARCH FOR THERMAL CONDUCTION RESTRICTIONS
   - PLACE ABOVE AND BELOW EACH OPENING (EXTEND 24 INCHES PAST OPENING ENDS)
   - INCORPORATE PRE-FORMED T'S AND EL'S AT CORNERS
   - SPLICE 8-INCHES
3. MINIMUM REINFORCEMENT (UNLESS NOTE OTHERWISE) (1) VERTICAL #5 VERTICAL BAR:
   - AT EACH CORNER
   - INTERSECTING WALL JOINTS
   - AT END OF WALLS
   - 10'-0" O.C.
   - ALONG EACH SIDE OF OPENINGS
   - ALONG EACH SIDE OF CONTROL JOINTS
4. MAINTAIN REINFORCEMENT SPACING ABOVE AND BELOW OPENINGS
5. GROUT ALL CELLS CONTAINING REINFORCEMENT
6. GROUT ALL CELLS BELOW GRADE/SLAB ELEVATION
7. UNLESS OTHERWISE SHOWN, GROUT CAVITY BETWEEN MASONRY VENEER AND CMU BACKUP WHEN BELOW GRADE/SLAB LEVEL.
8. LOCATE VERTICAL REINFORCEMENT IN MIDDLE OF CELLS UNLESS NOTED OTHERWISE. USE REBAR POSITIONERS.
9. REFER TO SCHEDULES FOR REBAR DEVELOPMENT LENGTH, SPLICES AND HOOK DIMENSIONS
10. PROVIDE DOWELS IN FOUNDATIONS/SLABS TO MATCH THE SIZE, QUANTITY AND SPACING OF VERTICAL REINFORCEMENT
11. SHOP DRAWINGS SHALL CLEARLY INDICATE REBAR PLACEMENT AND INCLUDE PLAN VIEWS, ELEVATIONS, SECTIONS AND JOINT LOCATIONS.

F. JOINTS:
1. PROVIDE VERTICAL MASONRY CONTROL JOINTS AT A MAXIMUM OF 20'-0" O.C. UNLESS NOTED OTHERWISE. SEE TYPICAL DETAIL FOR BOND BEAM CONDITIONS AT JOINTS.
2. PROVIDE VERTICAL MASONRY CONTROL JOINTS AT LOCATIONS WHERE A CHANGE IN MASONRY HEIGHT OCCURS.
3. PROVIDE JOINTS AT LOAD BEARING TO NON-LOAD BEARING WALL INTERFACES.
4. COORDINATE LOCATIONS WITH ARCHITECTURE AND WITH STRUCTURAL SUPPORTS.
5. INDICATE JOINT LOCATIONS ON REINFORCING DRAWINGS.

G. BRACING AND GENERAL CONSTRUCTION OF MASONRY WALLS:
1. INSTALL AND MAINTAIN BRACING AND WARNINGS IN ACCORDANCE WITH BIA/LIUNA/MCAA/NCMA/PCA'S "STANDARD PRACTICE FOR BRACING MASONRY WALLS UNDER CONSTRUCTION"

H. PIPES AND CONDUIT WITHIN MASONRY SHALL BE PLACED VERTICALLY WITHIN CELLS. HORIZONTAL RUNS OF CONDUIT WITHIN WALLS SHALL BE LIMITED TO THE SPACE BETWEEN THE VERTICAL REINFORCEMENT LOCATIONS. CONDUIT IS NOT TO INTERFERE WITH REINFORCEMENT OR GROUT PLACEMENT. SEE THE MECHANICAL AND/OR ELECTRICAL PORTION OF THE CONTRACT DOCUMENTS FOR LOCATION OF SLEEVES AND ACCESSORIES. REFER TO APPROPRIATE PENETRATION DETAILS.

I. SEE PLANS FOR LINTEL SCHEDULES.

J. IF APPROVED BY THE A/E PRIOR TO INSTALLATION OR AS INDICATED ON THE PLANS, EPOXY GROUTING OF DEFORMED BAR DOWELS OR ANCHOR RODS INTO MASONRY SHALL BE INSTALLED ACCORDING TO EPOXY MANUFACTURERS RECOMMENDATION TO PROVIDE FULL DEVELOPMENT OF THE BAR OR BOLT FOR THE SPECIFIC CONCRETE STRENGTH AT POINT OF ATTACHMENT.
1. APPLY LOADS ONLY AFTER EPOXY HAS REACHED FULL STRENGTH.
2. ALL PARTS OF ANCHORING SYSTEM (RODS, NUTS, WASHERS, BITS, EPOXY, ETC.) SHALL BE FROM A SINGLE SUPPLIER UNLESS SPECIFIED OTHERWISE.
3. WORK MUST BE PERFORMED BY ACI CERTIFIED EPOXY ANCHOR INSTALLER.
4. PROVIDE MANUFACTURERS RECOMMENDED SCREENS IN HOLLOW BLOCK UNITS AS REQUIRED.

STRUCTURAL WOOD:

A. DESIGN OF STRUCTURAL ELEMENTS OR SYSTEMS, CONSTRUCTED PARTIALLY OR WHOLLY OF WOOD OR WOOD-BASED PRODUCTS IS BASED ON THE FOLLOWING METHOD:
1. ALLOWABLE STRESS DESIGN
   a. AMERICAN WOOD COUNCIL:
      - NDS - NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
      - SDPWS - SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC
   b. AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
   c. AITC 104 - TYPICAL CONSTRUCTION DETAILS

B. FASTENING:
1. AS INDICATED ON PLANS, SECTIONS, NOTES AND DETAILS WITH MINIMUM OF:
   a. IBC 2015 TABLE 2304.10.1

C. MISCELLANEOUS MATERIALS SHALL COMPLY WITH:
1. STEEL PLATES — ASTM A36
   a. WELDING — E70XX ELECTRODES
2. BOLTS / NUTS — ASTM A307 / ASTM A563
3. LAG SCREWS — ANSI / ASME STANDARD B18.2.1
4. WOOD SCREWS — ASME B18.6.1 GALVANIZED
5. NAILS — ASTM F1667 GALVANIZED
6. ALL PRESSURE TREATED LUMBER FASTENERS — AISI/ASTM GRADE 316 / 305 / 304 STAINLESS
7. CONNECTORS TO MASONRY OR CONCRETE:
   a. RED HEAD — TAPCON
   b. HILTI — KWIK-CON II
   c. SIMPSON — TITEN 2

D. METAL FRAMING CONNECTORS AND ACCESSORIES:
1. STEEL SHEET GALVANIZED G60; ASTM A 653 OR HSLAS TYPE A OR B
   a. PRESSURE TREATED WOOD: STEEL SHEET GALVANIZED G185; ASTM A 653

E. SAWN LUMBER:
1. DEPT. OF COMMERCE (DOC) VOLUNTARY PRODUCT STANDARD PS 20 AMERICAN SOFTWOOD LUMBER STANDARD
2. AMERICAN WOOD COUNCIL (AWC):
   a. ANSI/AWC NDS NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
   b. NATIONAL DESIGN SPECIFICATION SUPPLEMENT
   c. AWC SDPWS SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC
3. GRADE STAMP ALL LUMBER OR PROVIDE WRITTEN CONFIRMATION OF GRADE AND COMPLIANCE WITH THESE REQUIREMENTS
4. GRADE: NO. 2 (MIN.) SOUTHERN PINE (SP) PER AGENCY CERTIFIED BY AMERICAN LUMBER STANDARD COMMITTEE (ALSC)
5. MOISTURE CONTENT: SURFACE DRY AT (19) PERCENT MAXIMUM
6. ROOF SHEATHING - PLYWOOD
   a. SPAN RATING — 24/0
   b. GRADE STRESS LEVEL — S-3
   c. SPECIES GROUP — 4
   d. EXPOSURE CLASSIFICATION — EXTERIOR
   e. THICKNESS — 5/8-INCH
   f. ATTACHMENT
   i. EDGES — 8d DEFORMED NAILS AT 6 INCHES O.C.
   ii. INTERMEDIATE SUPPORTS — 8d NAILS AT 12 INCHES O.C.
7. FLOOR SHEATHING - PLYWOOD
   a. SPAN RATING — 32/16
   b. GRADE STRESS LEVEL — S-3
   c. SPECIES GROUP — 4
   d. EXPOSURE CLASSIFICATION — EXTERIOR
   e. THICKNESS — 23/32-INCH THICK
   f. ATTACHMENT
   i. GLUE AND USE SPIRAL SHANK NAILS
   ii. EDGES — 8d NAILS AT 6 INCHES O.C.
   iii. INTERMEDIATE SUPPORTS — 8d NAILS AT 12 INCHES O.C.
8. WALL SHEATHING - PLYWOOD
   a. PANEL LONG SIDES TO BE PLACED PARALLEL WITH FRAMING.
   b. SPAN RATING — 24/0
   c. GRADE STRESS LEVEL — S-3
   d. SPECIES GROUP — 4
   e. EXPOSURE CLASSIFICATION — EXTERIOR
   f. THICKNESS — 1/2 INCH
   g. ATTACHMENT
   i. EDGES — 8d NAILS AT 6 INCHES O.C.
   ii. INTERMEDIATE SUPPORTS — 8d NAILS AT 12 INCHES O.C.

F. LAMINATED VENEER LUMBER (LVL)
1. ASTM D 5456 STANDARD SPECIFICATION FOR EVALUATION OF STRUCTURAL COMPOSITE LUMBER PRODUCTS
2. INTERCONNECT MULTI-PLY BEAMS PER MANUFACTURERS RECOMMENDATIONS.

G. WOOD FRAME IS DESIGNED AS A NON-SELF SUPPORTING SYSTEM. CONTRACTOR SHALL ADEQUATELY BRACE FRAME (FOR FULL WIND LOADS) UNTIL ROOF SHEATHING, SHEAR WALLS AND CONNECTORS HAVE BEEN COMPLETELY INSTALLED AND ACCEPTED. TEMPORARY BRACING SHALL BE DETAILED SO AS NOT TO INTERFERE WITH ANY OTHER TRADES.

H. DO NOT CUT OR NOTCH BUILT UP OR SOLID WOOD ELEMENTS (COLUMNS, POSTS, JACK OR KING STUDS, LINTELS, GIRDERS OR OTHER KEY STRUCTURAL ELEMENTS).
1. OPENINGS IN ENGINEERED WOOD PRODUCTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS.

I. PRESERVATIVE TREATMENT - PER AMERICIAN WOOD PRESERVERS ASSOCIATION (AWPA) U1 PER TABLE 2-1 SERVICE CONDITIONS FOR USE CATEGORY DESIGNATIONS:
1. GROUND CONTACT - GENERAL USE — UC4A
2. PROVIDE AWPA VERIFICATION FOR MATERIALS TO BE USED.
3. KILN-DRY LUMBER AFTER PRESERVATIVE TREATMENT TO 19 PERCENT MAXIMUM MOISTURE CONTENT.

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

STRUCTURAL NOTES

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023540
April 16, 2021
PROFESSIONAL ENGINEER

DATE: 04/16/2021

NO.	REVISION DATE
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SHEET: S001

DRAWN BY: DA | CHECKED BY: AL

PROJECT NO. 2088

THE LANE GROUP INC.

STRUCTURAL NOTES

PREFABRICATED WOOD TRUSS:

A. DESIGN, DETAILING, FABRICATION AND ERECTION SHALL COMPLY WITH:
1. TPI 1, NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION
2. TPI DSB, RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES
3. TPI HIB, COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES
4. TPI, QUALITY CONTROL MANUAL
5. AMERICAN INSTITUTE OF TIMBER CONSTRUCTION - TIMBER CONSTRUCTION STANDARDS
6. AMERICAN FOREST PRODUCTS ASSOCIATION - NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION AND SUPPLEMENT
7. NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH SUPPLEMENTS BY AMERICAN FOREST AND PAPER ASSOCIATION

B. DESIGN AND DRAWING PREPARATION AND SUBMITTALS:
1. TRUSS DESIGN SHALL BE PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA WHICH INCLUDES DESIGN OF TRUSSES, TRUSS CONNECTIONS, AND PROVIDES DESIGN LOADING AND REACTIONS APPLIED TO THE SUPPORTING STRUCTURE.
2. PROVIDE TRUSS DESIGN DRAWINGS TO THE BUILDING OFFICIAL IN ACCORDANCE WITH IBC SECTION 2303.4.1.1
3. TRUSS SUBMITTAL PACKAGE IN ACCORDANCE WITH IBC SECTION 2303.4.3 INCLUDING TRUSS PLACEMENT DIAGRAM PER IBC SECTION 2303.4.2.

C. DESIGN CRITERIA
DEFLECTION CRITERIA

LOCATION	MATERIAL SUPPORTED	LIVE LIMIT	LATERAL PRESSURE LIMIT	DEAD + LIVE LIMIT
ROOF				
	PLASTER, GYPSUM, STUCCO	L/360	L/360	L/240
	NON-PLASTER (SUSPENDED)	L/240	L/240	L/180
	NO CEILING	L/180	L/180	L/120
FLOOR		L/360	—	L/240

REFERENCE IBC TABLE 1604.3 (NOTE F), FOR COMPONENTS & CLADDING WIND LOAD DEFLECTIONS, MODIFY NOTE F, FOR THIS PROJECT, WHERE THE MAXIMUM REDUCTION IS TAKEN AS 0.7W.

LOADING - REFER TO LOADING INFORMATION IN STRUCTURAL NOTES

D. PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT - WHERE REQUIRED ON THE TRUSS DESIGN DRAWINGS, COMPLY WITH IBC SECTION 2303.4.1.2. TRUSS MANUFACTURER SHALL PROVIDE INFORMATION, HARDWARE AND ACCESSORIES REQUIRED FOR TRUSS BRACING AND CONNECTIONS.

E. WOOD TRUSS FRAMING MATERIALS SHALL BE:
1. WOOD MATERIAL:
   a. MINIMUM NO. 2 GRADE SOUTHERN PINE PER AGENCY CERTIFIED BY ALSC
   b. SURFACE DRY AT 19 PERCENT MAXIMUM MOISTURE CONTENT
2. METAL FRAMING ANCHORS AND ACCESSORIES:
   a. GALVANIZED G60
   b. ASTM A 653, OR HSLAS TYPE A OR B
4. BOLTS/NUTS: ASTM A307 / ASTM A563
5. LAG SCREWS: ANSI/ASME STANDARD B18.2.1
6. WOOD SCREWS: ASME B18.6.1
7. NAILS: ASTM F1667

F. WOOD CONNECTORS - BASIS OF DESIGN
1. ALL WOOD CONNECTORS TO BE MANUFACTURED BY SIMPSON STRONG TIE OR APPROVED EQUAL. TO BE CONSIDERED EQUAL, THE CONNECTOR MUST CONFIGURED SIMILAR AND HAVE THE SAME OVERALL STRUCTURAL QUALITIES AS THE SIMPSON EQUIVALENT MODEL.

G. ALIGN WEBS OF TRUSSES, CONTRACTOR TO COORDINATE ANY UTILITIES IN TRUSSES WITH TRUSS SUPPLIER

H. THE TRUSS DESIGNER IS RESPONSIBLE FOR INCLUDING FRAMING FOR OPENINGS AND THE EFFECT OF THESE OPENINGS ON THE TRUSSES.

SCHEDULE OF SPECIAL INSPECTION NOTES

1. Special Inspections shall comply with the requirements of:
   2015 Virginia Construction Code - Chapter 17
   2015 International Building Code - Chapter 17
2. The Inspection and Testing Agent(s) shall be engaged by the Owner or the Owner's Agent and not by the Contractor or Sub-Contractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The Qualifications of the Special Inspector(s) and/or testing agencies must be subject to the approval of the Building Official and/or the Design Professional.

a. A pre-inspection meeting is to occur between the Special Inspector, Contractor, Owner, Geotechnical Engineer, Architect, Structural Engineer and Civil Engineer (Building Official to be invited). The following shall be reviewed (minimum):
- List of inspectors that will be on site, with disipline and copy of qualifications/certifications for each.
- Contractor anticipated schedule of work for inspectors. This is to be updated monthly.
- Establish notice time for Contractor to contact Special Inspector to notify of work to be inspected.
- Contact information within Special Inspection firm for Contractor (primary, backup) and method of contact.
- Special Inspector shall have a full set of contract documents, specifications along with updates.
- Contractor shall provide Special Inspector a copy of approved shop drawings that are relevant to inspections.
- Code Requirements for Special Inspector.
- Review list of required special inspections for Project.
- Special Inspector shall present samples of each checklist to be utilized by inspectors that directly correlates to required IBC inspections. Examples are: Structural Fill Observations, Summary of Field Density, Foundation Excavation Observations, Reinforcement Observations, Concrete Placement Observations, Concrete/Grout Truck Field Log, Structural Masonry CMU, Mortar, Grout and Reinforcement Observations.

b. Special Inspection reports to be submitted to Contractor, Owner, Architect, Structural Engineer, Civil Engineer and Building Official no later than:
- Noted Deficiency that is not immediately addressed and reinspected: 24 hours
- Test Reports: 24 hours
- Inspection / Field Reports: 72 hours
- Deficiency Log (updated): Once per month

c. Special Inspector / Report Requirements:
- Digital photos (12 megapixel sensor size, 3200 image resolution) must be taken of EVERY inspection observed. Key photos and photos of deficiencies are to be contained within report, other photos are to be maintained by Special Inspector sorted by date of inspection, inspection report number and location of inspection. Photos are to be available immediatly to team upon request. At closure of project, provide copy of digital photos to Owner.
- Contained in each field report, a graphical copy of the floor plan (or appropriate portion) shall be highlighted to show where the inspection took place.
- Report shall clearly indicate project name, date and time of inspection, inspectors name, weather (including temperature), location (see above graphic requirement), items inspected/observed and condition thereof, deficiencies (with resolution if applicable), any areas that could not be inspected, and any areas where work had occurred without notification for inspections

d. Special Inspector, upon request, shall be on site during Structural or Civil Engineer visits to site.

3. The list of Special Inspectors may be submitted as a separate document, if noted so above.
4. Special Inspections as required by IBC Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.2.
5. Observe on a random basis; operations need not be be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection or steel element.
6. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 306, N7.
7. RDP shall review fabricator/supplier/producer certificates and/or shop drawings for conformance with appropriate standards of practice, quality assurance and compliance with contract documents
8. Review records and test results for conformance with requirements and specifications

Are *Requirements for Seismic Resistance* included in the *Statement of Special Inspections*? Yes (No)
Are *Requirements for Wind Resistance* included in the *Statement of Special Inspections*? Yes (No)

Registered Design Professional (RDP) in Responsible Charge:

Allan Long
Signature

04/16/2021
Date

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STRUCTURAL NOTES

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023840
PROFESSIONAL ENGINEER
April 16, 2021

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PROJECT NO. 2088

THE LANE GROUP INC.

2015 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1705.6 SOILS (IBC TABLE 1705.6)

MATERIAL	ITEM	WORK UNDERWAY/INSPECTION	SERVICE	REQ'D	REFERENCE STANDARD	IBC REFERENCE	FREQUENCY		
							CONTINUOUS	PERIODIC	NOTE
Soil	1	Verify materials below shallow foundations are adequate to achieve the design bearing capacity	Field Inspection	X		1705.6	-	X	-
	2	Verify excavations are extended to proper depth and have reached proper material	Field Inspection	X		1705.6	-	X	-
	3	Perform classification and testing of compacted fill materials	Field Inspection	X		1705.6	-	X	-
	4	Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	Field Inspection	X		1705.6	X	-	-
	5	Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly	Field Inspection	X		1705.6	-	X	-

2015 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1705.3 CONCRETE CONSTRUCTION (IBC TABLE 1705.3 - MODIFIED)

MATERIAL	ITEM	WORK UNDERWAY/INSPECTION	SERVICE	REQ'D	REFERENCE STANDARD	IBC REFERENCE	FREQUENCY		
							CONTINUOUS	PERIODIC	NOTE
Reinf. Steel	1	Inspect reinforcement, including prestressing tendons and verify placement	Shop (4) and Field Inspection	X	ACI 318 CH 20, 25.2, 25.3, 26.5.1-26.5.3	1908.4	-	X	-
	2	Reinforcing bar welding:							
	2a	Verify weldability of reinforcing bars other than ASTM A 706	Shop (4) and Field Inspection		AWS D1.4, ACI 318: 26.5.4		X	-	7
	2b	Inspect single-pass fillet welds, maximum 5/16 in.	Shop (4) and Field Inspection				X	-	7
	2c	Inspect all other welds	Shop (4) and Field Inspection				X	-	7
Anchors	3	Inspect anchors cast in concrete	Shop (4) and Field Inspection	X	ACI 318: 17.8.2		-	X	7
	4	Inspect anchors post-installed in hardened concrete members:							
	4a	Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	Field Inspection		ACI 318: 17.8.2.4	Table 1705.3 Footnote (b)	X	-	7
	4b	Mechanical anchors and adhesive anchors not defined in (4a)	Field Inspection	X	ACI 318: 17.8.2		-	X	7
		Inspection of anchors and reinforcing steel post-installed in hardened concrete: per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, and/or embedment and tightening torque.	Field Inspection	X			-	Or as required by the research report issued by an approved agency	7
Concrete	5	Verify use of required mix design	Shop (4) and Field Inspection	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	-	X	7
	6	Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete	Shop (4) and Field Inspection	X	ASTM C 172, ASTM C 31, ACI 318: 26.4.5, 26.12	1908.10	X	-	8
	7	Inspect concrete and shotcrete placement for proper application techniques.	Field Inspection	X	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8	X	-	-
	8	Verify maintenance of specified curing temperatures and techniques	Field Inspection	X	ACI 318: 26.4.7-26.4.9	1908.9	-	X	8
Prestressed	9	Inspect prestressed concrete:							
	9a	Application of prestressing forces	Field Inspection		ACI 318: 26.9.2.1		X	-	7
	9b	Grouting of bonded prestressing tendons	Field Inspection		ACI 318: 26.9.2.3		X	-	7
Precast	10	Inspect erection of precast concrete members	Field Inspection		ACI 318: 26.8	per construction documents	-	X	-
		Perform inspections of welding and bolting in accordance with Section 1705.2	Field Inspection			1705.2	-	X	-
Post Tension	11	Verify in-situ concrete strength, prior to stressing tendons in post-tensioned concrete prior to removal of shores and forms from beams and structural slabs	Shop (4) and Field Inspection		ACI 318: 26.10.2		-	X	-
Formwork	12	Inspect formwork for shape, location and dimensions of the concrete member being formed	Field Inspection		ACI 318: 26.10.1 (b)		-	X	-

2015 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1704.2.5 FABRICATORS

MATERIAL	ITEM	ACTIVITY/TYPE OF INSPECTION	REQ'D	REFERENCE STANDARD	IBC REFERENCE	FREQUENCY		
						CONTINUOUS	PERIODIC	NOTES
Inspection of Fabricators	1	Verify fabrication/quality control procedures	X		1704.2.5	-	X	-
	2	Special cases - work unusual in nature, including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements			1705.1.1	-	X	7

2015 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1705.4 MASONRY CONSTRUCTION

MATERIAL	ITEM	TYPE OF INSPECTION	SERVICE	REQ'D	REFERENCE STANDARD	IBC REFERENCE	FREQUENCY		
							CONTINUOUS	PERIODIC	NOTE
	1	(A) Quality Assurance Level A, B, C	Design standard of performance	B	ACI 530-13 3.1.1, 3.1.2, 3.1.3	1705.4	-	-	-
	2	**Level A, B, and C Quality Assurance:**							
Masonry	2a	Verify compliance with approved submittals	Field Inspection	X	ACI 530.1-13 ARTICLE 1.5		-	X	-
	3	**(B) Level B Quality Assurance**							
	3a	Verify f'_m and f'_{AAC} prior to construction	Testing by unit strength method or prism test method	X	ACI 530.1-13 ARTICLE 1.4B		-	X	-
	4	**(C) Level C Quality Assurance:**							
	4a	Verify f'_m and f'_{AAC} prior to construction and for every 5000 sf during construction	Testing by unit strength method or prism test method		ACI 530.1-13 ARTICLE 1.4B		-	X	-
Grout & Mortar	4b	Verifications of proportions of materials in premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site	Field Inspection		ACI 530-13 TABLE 3.1.3		X	-	-
Masonry	4c	Verify placement of masonry units and construction of mortar joints	Field Inspection		ACI 530.1-13 ARTICLE 3.3B		-	X	-
	5	**(D) Level B & C Quality Assurance:**							
Grout & Mortar	5a	Verification of Slump Flow and Visual Stability Index (VSI) of self-consolidating grout as delivered to the project	Field Inspection	X	ACI 530.1-13 ARTICLE 1.5 B.1.b.3		X	-	-
	5b	Proportions of site-mixed mortar, grout and prestressing grout for bonded tendons	Field Inspection	X	ACI 530.1-13 ARTICLES 2.1, 2.6 A, 2.6 B, 2.6 C, 2.4 G.1.b		-	X	-
Reinf. Steel & Anchors	5c	Verify grade type and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	Field Inspection	X	ACI 530.1-13 ARTICLES 2.4, 3.4 AND ACI 530-13 SECTION 6.1		-	X	-
Mortar Joints	5d	Verify construction of mortar joints	Field Inspection	X	ACI 530.1-13 ARTICLE 3.3 B		-	X	-
Reinf. Steel & Anchors	5e	Verify placement of reinforcement, connectors, and prestressing tendons and anchorages	Field Inspection	X	ACI 530.1-13 ARTICLES 3.2E, 3.4, 3.6A AND ACI 530-13 SECTION 6.1, 6.2.1, 6.2.6, 6.2.7		Continuous - C	Periodic - B	-
Grout & Mortar	5f	Verify grout space prior to grouting	Field Inspection	X	ACI 530.1 -13 ARTICLES 3.2 D, 3.2 F		Continuous - C	Periodic - B	-
Reinf. Steel & Anchors	5g	Verify placement of grout and prestressing grout for bonded tendons	Field Inspection	X	ACI 530.1 -13 ARTICLES 3.5, 3.6 C		X	-	-
Masonry	5h	Verify size and location of structural masonry elements	Field Inspection	X	ACI 530.1-13 ARTICLE 3.3F		-	X	-
Reinf. Steel & Anchors	5i	Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction	Field Inspection	X	ACI 530-13 SEC. 1.2.1 (e), 6.1.4.3, 6.2.1		Continuous - C	Periodic - B	-
	5j	Verify welding of reinforcement	Field Inspection		ACI 530-13 SEC. 8.1.6.7.2, 9.3.3.4 (c), 11.3.3.4 (b)	1705.3.1 and AWS D1.4	X	-	-
Masonry	5k	Verify preparation, construction, and protection of masonry during cold weather (temperatures < 40 F) or hot weather (temperatures > 90 F)	Field Inspection	X	ACI 530.1-13 ARTICLE 1.8C, 1.8D		-	X	-
Reinf. Steel & Anchors	5l	Verify application and measurement of prestressing force	Field Inspection		ACI 530.1-13 ARTICLE 3.6 B		X	-	-
Masonry	5m	Verify placement of AAC masonry units and construction of thin-bed mortar joints (first 5000 sf of AAC masonry)	Field Inspection		ACI 530.1-13 ARTICLE 3.3 B.9, 3.3 F.1.b		X	-	-
	5n	Verify placement of AAC masonry units and construction of thin-bed mortar joints (after the first 5000 sf of AAC masonry)	Field Inspection		ACI 530.1-13 ARTICLE 3.3 B.9, 3.3 F.1.b		Continuous - C	Periodic - B	-
Grout & Mortar	5o	Verify properties of thin-bed mortar for AAC masonry (first 5000 sf of AAC masonry)	Field Inspection		ACI 530.1-13 ARTICLE 2.1 C.1		X	-	-
	5p	Verify properties of thin-bed mortar for AAC masonry (after the first 5000 sf of AAC masonry)	Field Inspection		ACI 530.1-13 ARTICLE 2.1 C.1		Continuous - C	Periodic - B	-
	6	Observe field grout specimens, mortar specimens, and/or prisms	Field Inspection	X	ACI 530.1-13 ARTICLE 1.4.B.2.a.3, 1.4.B.2.b.3, 1.4.B.2.c.3, 1.4.B.3, 1.4.B.4		Continuous - C	Periodic - B	-

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April 16, 2021
PROFESSIONAL ENGINEER

DATE: 04/16/2021

NO.	REVISION DATE
1	
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SHEET: S003

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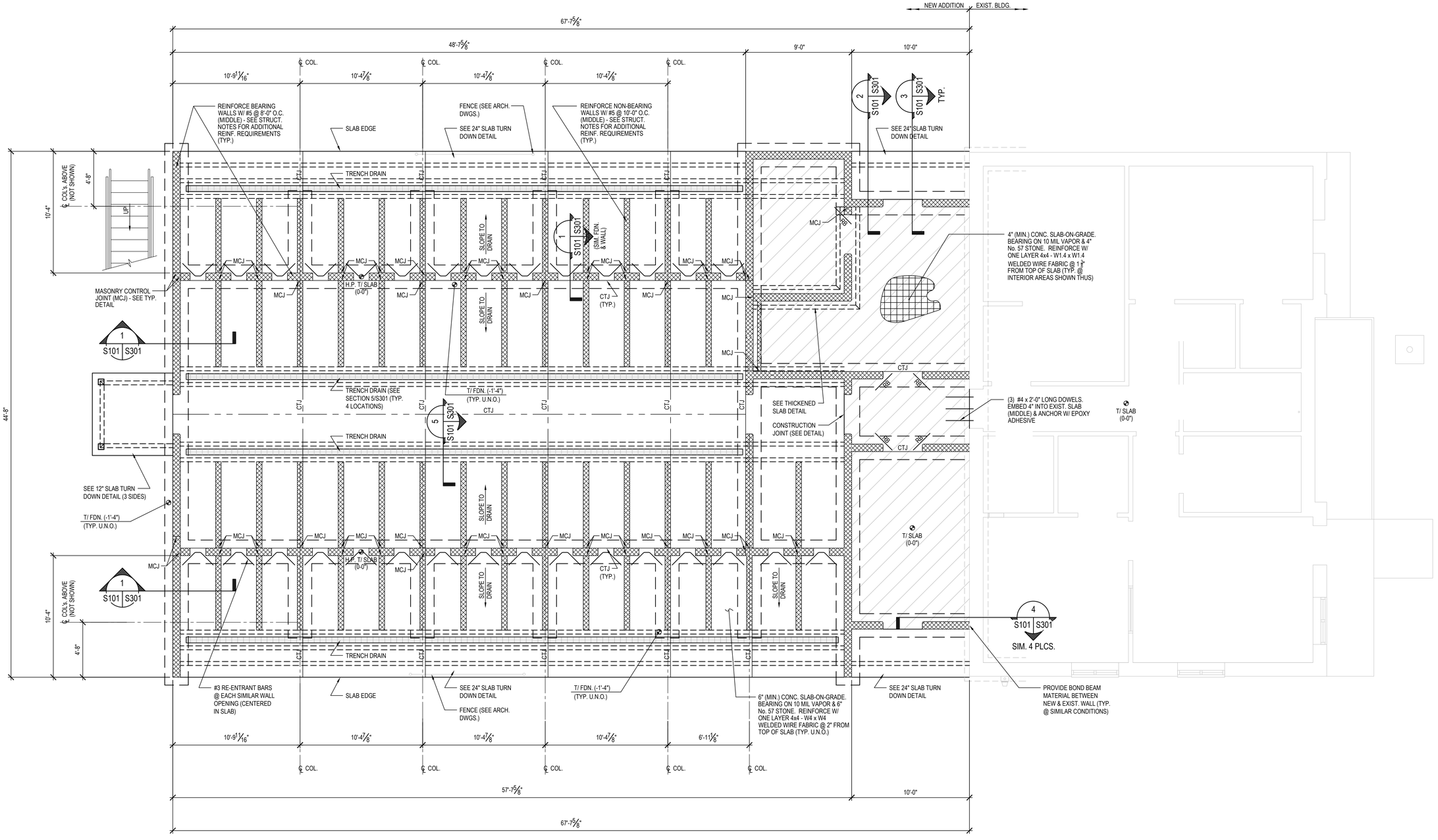
PROJECT NO. 2088

THE LANE GROUP INC.



FOUNDATION AND SLAB PLAN

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

MAGNETIC NORTH

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

FOUNDATION PLAN

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023840
April 16, 2021
PROFESSIONAL ENGINEER

DATE: 04/16/2021

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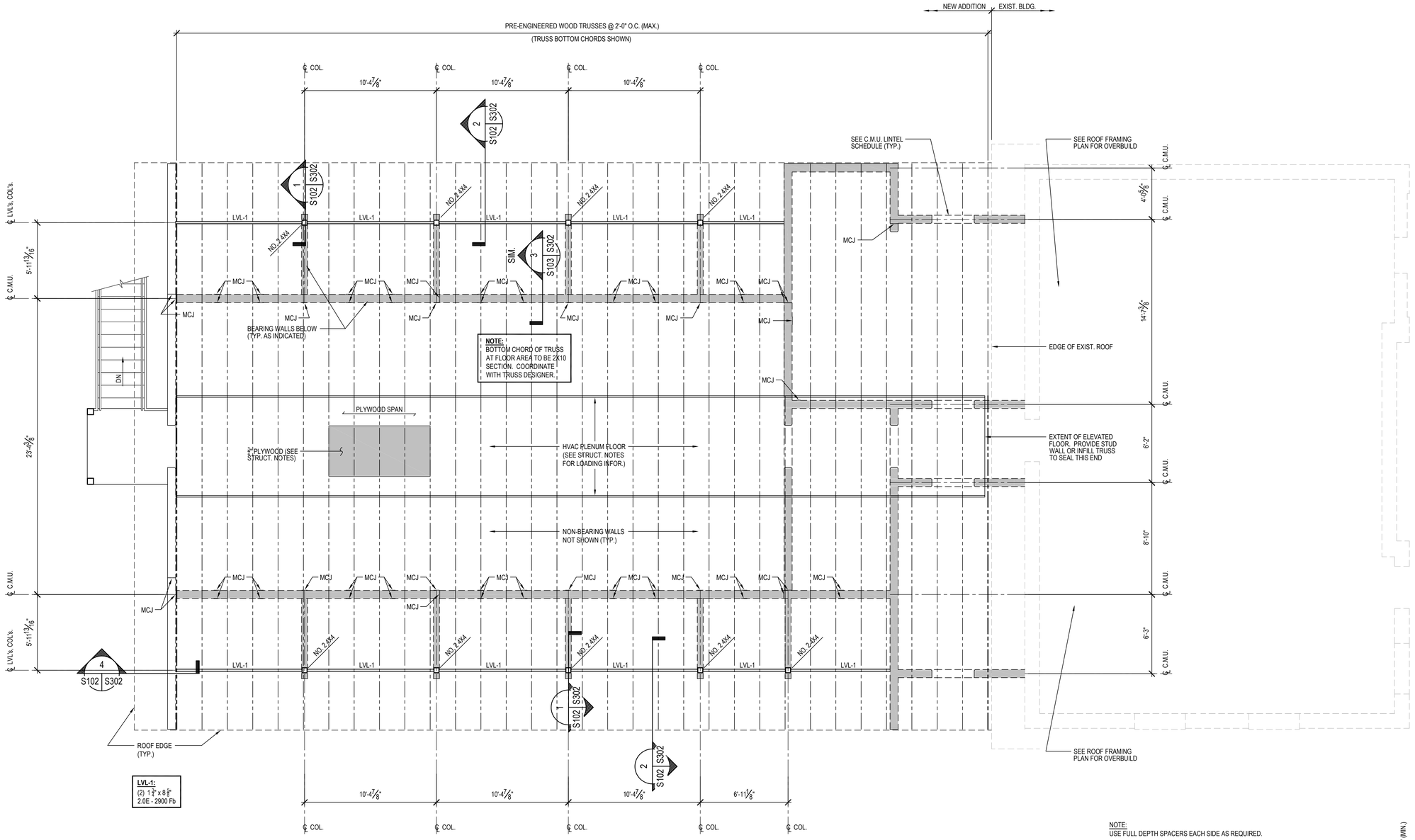
THE LANE GROUP INC.

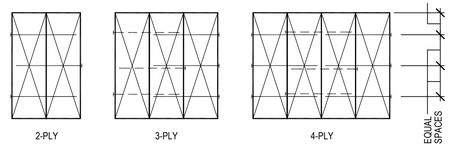


TRUSS BEARING PLAN

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

MAGNETIC NORTH

NOTE:
USE FULL DEPTH SPACERS EACH SIDE AS REQUIRED.



LVL FASTENING REQUIREMENTS FOR MULTIPLE PLY MEMBERS

(MINIMUM REQUIREMENTS -
VERIFY COMPLIANCE W/ SUPPLIER RECOMMENDATIONS)

- FOR 12" DEEP (OR LESS) MEMBERS, NAIL PLIES TOGETHER WITH (2) ROWS OF 16d x 3 1/2" COMMON NAILS AT 12" ON CENTER (ADD 1 ROW FOR 16d SINKERS).
- FOR 14", 16" OR 18" DEEP MEMBERS, NAIL PLIES TOGETHER WITH (3) ROWS OF 16d x 3 1/2" COMMON NAILS AT 12" ON CENTER (ADD 1 ROW FOR 16d SINKERS).
- FOR 20", 22" OR 24" DEEP MEMBERS, NAIL PLIES TOGETHER WITH (4) ROWS OF 16d x 3 1/2" COMMON NAILS AT 12" ON CENTER (ADD 1 ROW FOR 16d SINKERS).

NOTE: SIMPSON SDS WOOD SCREWS MAY BE SUBSTITUTED FOR NAILS.

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ATTIC FLOOR FRAMING PLAN

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023940
April 16, 2021
PROFESSIONAL ENGINEER

DATE: 04/16/2021

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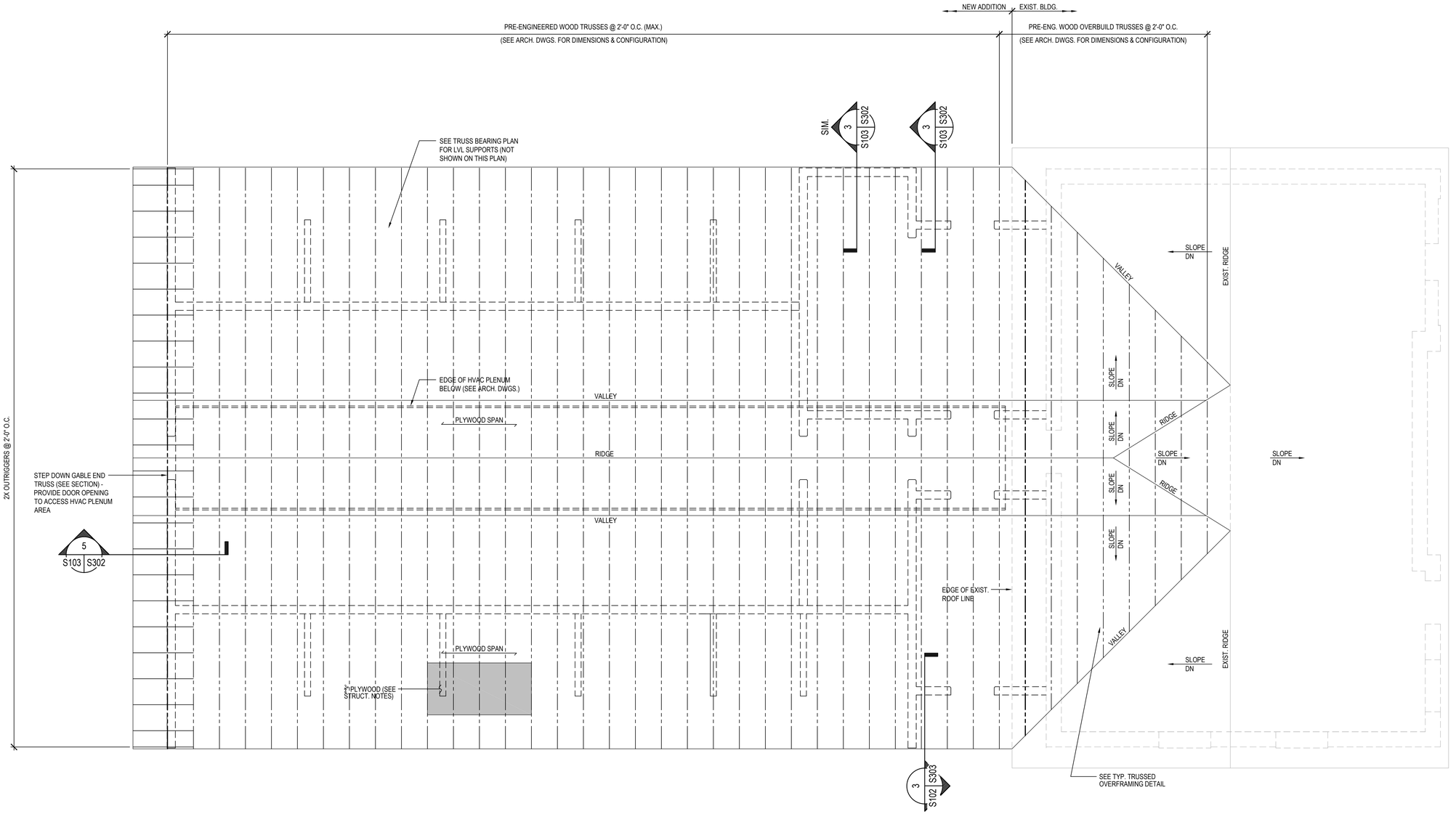
THE LANE GROUP INC.



ROOF FRAMING PLAN

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

MAGNETIC NORTH

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ROOF FRAMING PLAN

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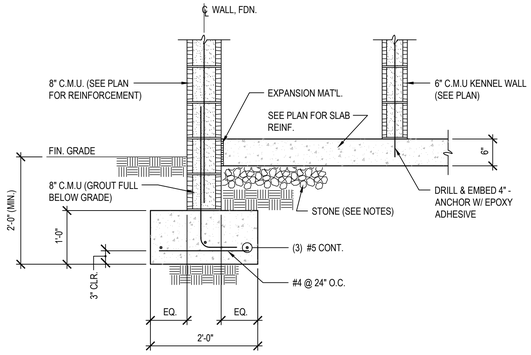
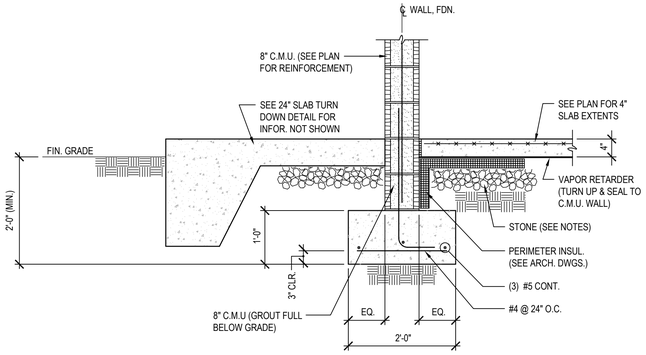


1 S101 | S301 **PERIMETER FOUNDATION WALL**

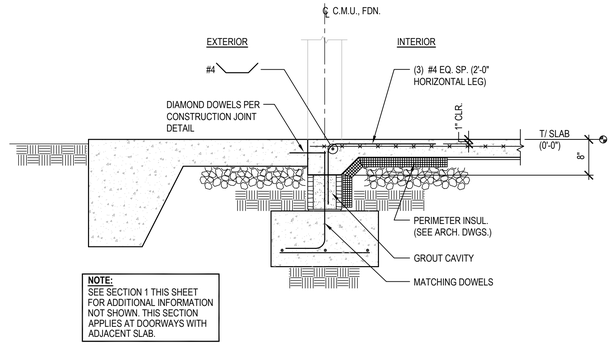
SCALE: 3/4" = 1'-0"



2 S101 | S301 **FOUNDATION WALL - ENCLOSED**

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

NOTE:
APPLIES TO CONDITIONED / INTERIOR SPACES.

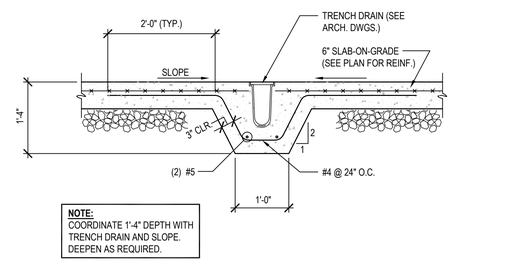


3 S101 | S301 **MANDOOR SECTION**

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

4 S101 | S301 **NEW FOUNDATION AT INTERFACE**

SCALE: 3/4" = 1'-0" (TYP. 4 LOCATIONS)



5 S101 | S301 **TRENCH DRAIN**

SCALE: 3/4" = 1'-0" (TYP. 4 LOCATIONS)

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STRUCTURAL SECTIONS

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023340
April 16, 2021
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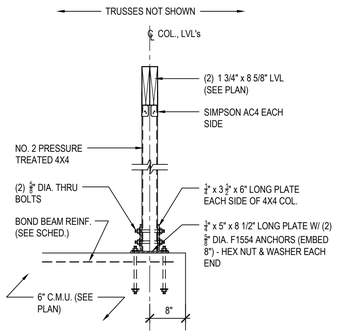
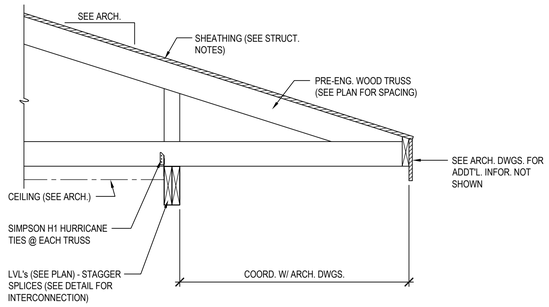


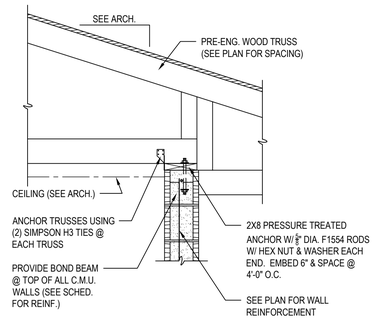
1 S102 S302 **LVL TO COLUMN SEAT**

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



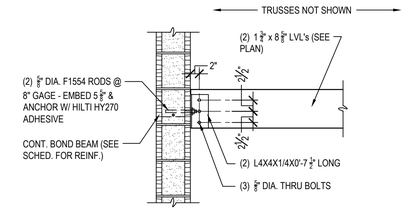
2 S102 S302 **TRUSS TO LVL CONNECTION**

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



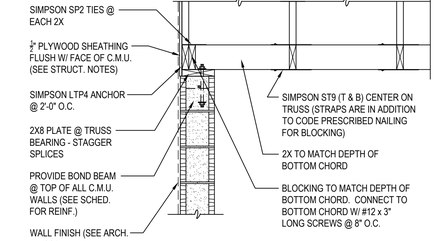
3 S103 S302 **TRUSS TO C.M.U. CONNECTION**

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



4 S102 S302 **LVL CONNECTION AT C.M.U.**

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



5 S103 S302 **TYPICAL OUTRIGGER SECTION**

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

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CC PORTER ANIMAL SHELTER

STRUCTURAL SECTIONS

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ALLAN J. LONG
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PROFESSIONAL ENGINEER

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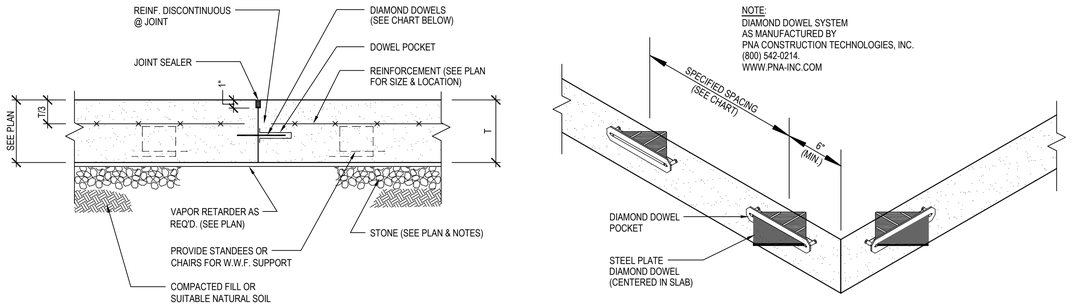
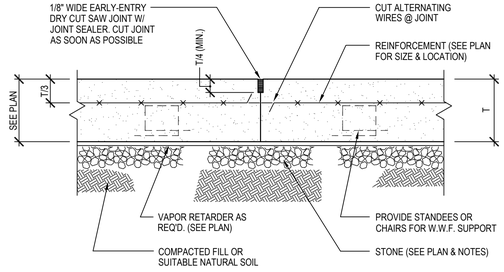


TYPICAL SLAB CONSTRUCTION JOINT (CSJ)

N.T.S.

(COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS AND FINISHES FOR APPEARANCE)

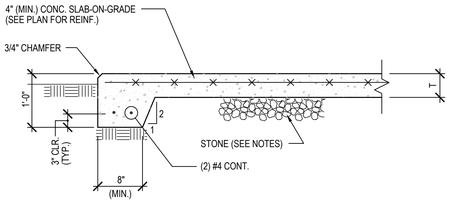
DOWEL SIZE AND SPACING CHART		
SLAB THICKNESS (IN.) (T)	DIAMOND DOWEL DIMENSIONS (IN.)	DOWEL SPACING C/C (IN.)
4-6	1/4 x 4 1/2 x 4 1/2	18
7-8	3/8 x 4 1/2 x 4 1/2	18
9-11	3/4 x 4 1/2 x 4 1/2	20



TYPICAL SLAB CONTRACTION JOINT (CTJ)

N.T.S.

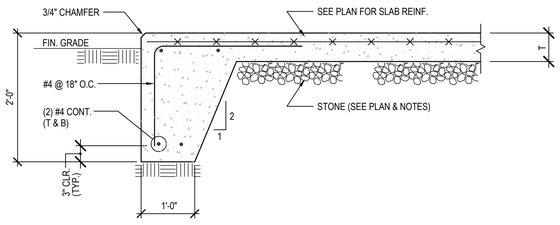
(COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS AND FINISHES FOR APPEARANCE)



TYPICAL 12" SLAB TURN DOWN

N.T.S.

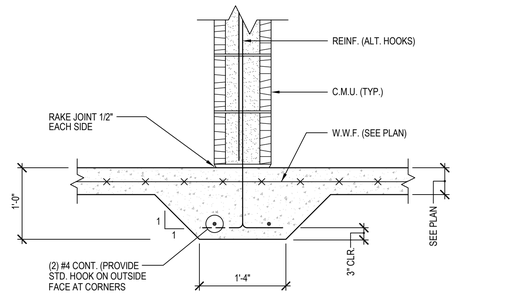
(SEE PLAN FOR LOCATION)



TYPICAL 24" SLAB TURN DOWN

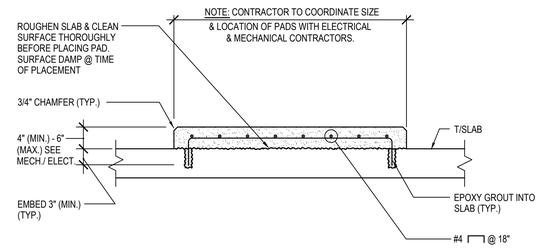
N.T.S.

(SEE PLAN FOR LOCATION)



TYPICAL THICKENED SLAB DETAIL

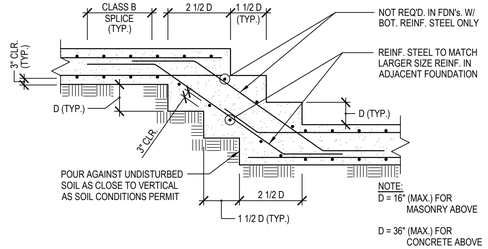
N.T.S.



ELECTRICAL / MECHANICAL EQUIPMENT PAD

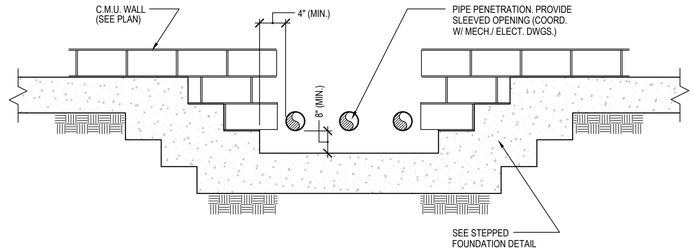
N.T.S.

(REFER TO MECHANICAL, ELECTRICAL & PLUMBING DRAWINGS FOR LOCATIONS)



STEPPED FOUNDATION DETAIL

N.T.S.



STEPPED FOUNDATION AT UTILITIES

N.T.S.

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CC PORTER ANIMAL SHELTER

TYPICAL DETAILS

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
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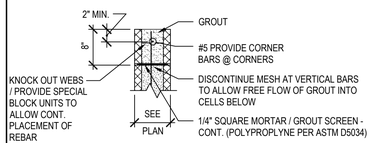
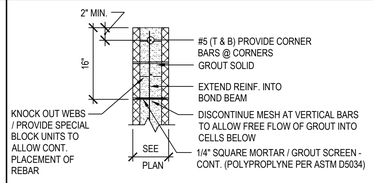
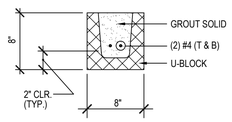
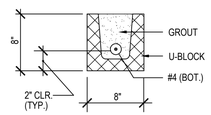
THE LANE GROUP INC.

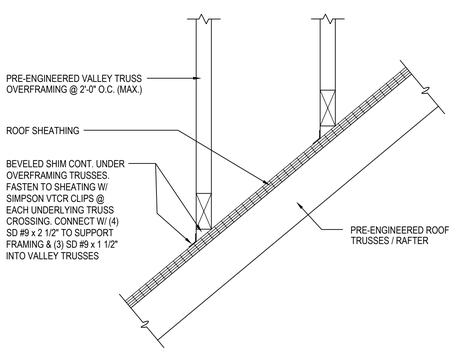
MASONRY BOND BEAM SCHEDULE

	CONCRETE MASONRY UNITS (C.M.U.)
SINGLE PROVIDE WHERE SHOWN AND AT TOP OF ALL WALLS 12'-0" OR LESS	
DOUBLE PROVIDE WHERE SHOWN AND AT TOP OF ALL WALLS GREATER THAN 12'-0" TALL	

MASONRY LINTEL SCHEDULE

SPAN	8 INCH CONCRETE MASONRY UNITS (C.M.U.) - BEARING
UP TO 4'-0"	
SPAN	8 INCH CONCRETE MASONRY UNITS (C.M.U.) - NON-BEARING
UP TO 5'-0"	

NOTES:
1. PROVIDE 16" BEARING @ EACH END OF C.M.U. LINTELS.
2. PROVIDE FULL BEDDING @ BEARINGS AND FOR ONE COURSE ABOVE ALL LINTELS.
3. GROUT CELLS UNDER BEARING FULL HEIGHT. SEE PLANS/ NOTES FOR REINFORCEMENT.
4. NO PENETRATIONS ARE PERMITTED WITHIN LINTEL.
5. C.M.U. LINTELS ARE TO BE SHORED UNTIL GROUT HAS REACHED 85 PERCENT OF STRENGTH.



TYPICAL TRUSSED OVERFRAMING DETAIL

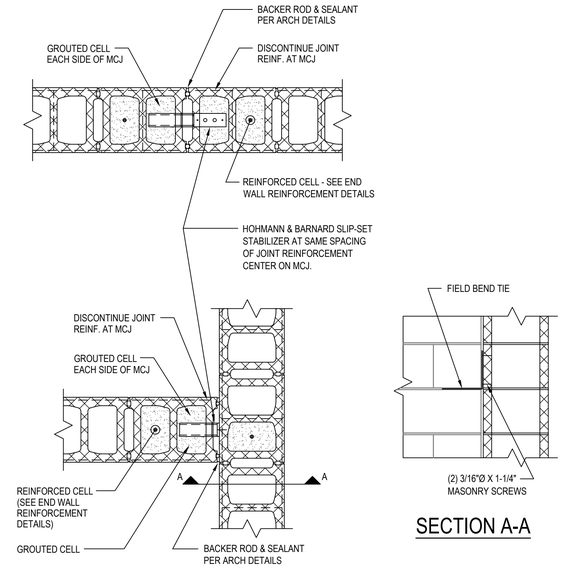
N.T.S.

MASONRY REINFORCEMENT LAP DIMENSIONS

ALLOWABLE STRESS DESIGN
fs = 24,000 PSI MAX.
fy = 60,000 PSI
f'm = 1500 PSI

ASTM BAR SIZE	LAP	LDH	PERMITTED BLOCK SIZE
3	18	11	6, 8, 10, 12
4	24	15	6, 8, 10, 12
5	30	18	8, 10, 12
6	43	34	8, 10, 12
7	46	36	10, 12
8	70	59	10, 12
9	73	61	12

NOTES:
1. WELDING OF LAPS ARE PERMITTED IN COMPLIANCE WITH ACI 530/ 530.1 AND AWS D1.4, WELDS MUST DEVELOP 1.25 x YIELD OF BAR.
2. MECHANICAL SPLICES ARE PERMITTED IN COMPLIANCE WITH ACI 530/ 530.1, MECHANICAL SPLICES MUST DEVELOP 1.25 x YIELD OF BAR.
3. LAPS ON EPOXY COATED BARS ARE TO BE INCREASED BY 50 PERCENT.



MASONRY CONTROL JOINT DETAILS

N.T.S.

NOTE:
POSITION SLIP-SET AT COURSE BENEATH BOND BEAMS. DISCONTINUE LONGITUDINAL REINFORCEMENT AT MCJ'S WITHIN BOND BEAMS.

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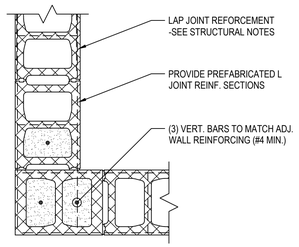
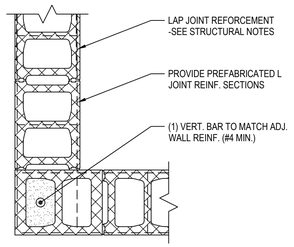


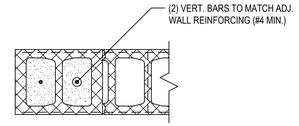
BEARING WALLS



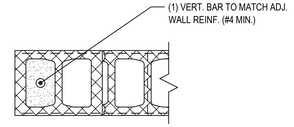
NON-BEARING WALLS

CORNER REINFORCEMENT DETAIL

N.T.S.



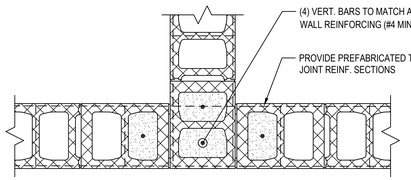
BEARING WALLS



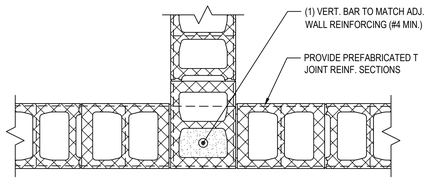
NON-BEARING WALLS

END WALL REINFORCEMENT DETAIL

N.T.S.



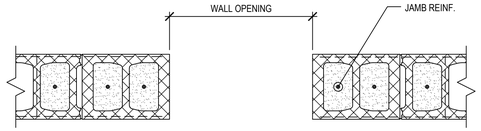
BEARING WALLS



NON - BEARING WALLS

T-INTERSECTION REINFORCEMENT DETAIL

N.T.S.



JAMB REINFORCEMENT SCHEDULE

WALL OPENING	JAMB REINF.
4'-0" OR LESS	(1) #5
(4'-1") TO (6'-0")	(2) #5
(6'-1") TO (8'-0")	(3) #5
(8'-1") TO (12'-0")	(4) #5

NOTES:

1. JAMB REINF. IS IN ADDITION TO SPECIFIED VERTICAL REBAR REINFORCEMENT.
2. ALL REINFORCEMENT SPACING @ 8" O.C.

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engineering | architecture | environmental

ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

TYPICAL DETAILS

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023840
April 16, 2021
PROFESSIONAL ENGINEER

DATE: 04/16/2021

NO.	REVISION DATE
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SHEET: S503

DRAWN BY: DA | CHECKED BY: AL

PROJECT NO. 2088

THE LANE GROUP INC.

ELECTRICAL & MECHANICAL GENERAL PROVISIONS

GENERAL: The General Conditions and Supplemental General Conditions are part of this division. The Contractor shall and hereby agrees that he will read carefully all paragraphs and be bound by their conditions.

WORK DESCRIPTION: Provide all labor, equipment, material, (tools, services), etc. required to complete installation specified herein and/or shown or scheduled on the drawings. This section supplements all sections of this Division and shall apply to all phases of work hereinafter specified, shown on the drawings or required to provide a complete installation of systems shown. The specifications and drawings are complementary and are for the complete interpretation of the work. Unless noted or modified by specific notation to the contrary, the modification and/or description of any item in the documents carries with it the instruction to furnish, install and connect same. It shall be understood that the intent governs the work, regardless of whether or not this instruction is explicitly stated. No exclusion from, or limitation in the drawings or specifications, for the work shall be the reason for omitting the appurtenances or accessories necessary to complete any required system or item of equipment.

SPECIAL CONDITIONS: By the act of submitting a bid, this Contractor agrees that all of the "Contract Documents" in each of the Divisions of the complete specifications have been reviewed and studied and all requirements and coordination resulting therefrom are included in his proposal. The Contractor further acknowledges that he has visited the site to become familiar with existing conditions. In the Mechanical Division, the word "Contractor" means the Mechanical/Plumbing Contractor. In the Electrical Division, the word "Contractor" means the Electrical Contractor. The word "provide" means furnish, install and connect. Do not scale drawings having 1/4" or smaller scale. Because of small scale, it is not possible to indicate all offsets, fittings and accessories; provide such as are required for complete installation. The right is reserved to move any element as much as ten (10) feet at no increase in cost provided the Contractor is notified before work in question is started. The Contractors shall coordinate between trades responsible for determining and verifying the characteristics of electrical current available to operate all the mechanical and plumbing equipment prior to ordering such equipment.

RELATED WORK SPECIFIED ELSEWHERE: Foundations and pads required for equipment furnished under this Division of the Specifications are specified elsewhere. Flashing of conduits into roofing and outside walls are specified elsewhere. Heating, ventilating, and air-conditioning equipment are specified elsewhere. Plumbing equipment is specified elsewhere.

REGISTRATION: Contractors and Sub-Contractors furnishing and installing work under the Mechanical and Electrical divisions of these specifications shall be registered in the Commanwealth of Virginia whether they are bound by legal contracts with the Owner of the project, with the General Contractor or another Sub-Contractor.

CODES AND STANDARDS: The intent is that the complete installation shall comply with applicable laws and ordinances, utility company regulations, and applicable requirements of the latest editions of the following:

1. International Building Code, Plumbing Code, Mechanical Code, Gas Code.
2. NFPA: National Fire Protection Association.
3. AGA: American Gas Association.
4. FM: Association of Factory Mutual Fire Insurance Company.
5. ASME: American Society of Mechanical Engineers.
6. ASTM: American Society of Testing Materials.
7. NSF: National Sanitary Foundation.
8. PDI: Plumbing Drainage Institute.
9. UL: Underwriters Laboratories.
10. NEC: National Electrical Code.
11. NEMA: National Electrical Manufacturer's Association.
12. SMACNA: Sheet Metal and Air Conditioning Contractors National Association.
13. ARI: American Refrigeration Institute.
14. PFMA: Power Fan Manufacturer's Association.
15. MSS: Manufacturer's Standard Society of Valve and Fittings Ind.
16. ANSI: American National Standard Institute.
17. ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers.
18. ADA: Americans with Disabilities Act.
19. NESC: National Electrical Safety Code.
20. OSHA: Occupational Safety and Health Act.

Where the contract documents exceed minimum requirements, the contract documents take precedence. Comply with all requirements for permits, licenses, fees and codes. Permits, licenses, fees, inspections and arrangements required for the work under this contract shall be obtained at the completion of the work unless otherwise specified. Comply with the requirements of the applicable utility companies serving this work. Make all arrangements with the utility companies for proper coordination of the work. Pay all charges required by the utility.

COORDINATION OF WORK: Plan all work so that it proceeds with a minimum of interference with other trades. Inform all parties concerned, of the openings required for equipment or conduit in the building construction for work and provide all special frames, sleeves, inserts, supports, anchor bolts, etc. as required. Coordinate the work with all tradesmen. Conceal all work where possible. All work shall be installed as neatly as possible in the locations shown but shall be subject to such deviations, modifications and relocations as may be necessary to conform to the requirements of the architectural drawings and as necessary to avoid interferences with the structural work and the work of other trades, and interferences between the various trades. This shall be done at no cost to the Owner. No work or equipment shall be installed which would require ceilings to be lower than required by drawings, unless approval is obtained from the Architect. It is the responsibility of the General Contractor to coordinate the work of his subcontractors. To this end, the General Contractor shall require that the various subcontractors carefully examine and familiarize themselves with the architectural and structural drawings and drawings covering all other trades so that the work may be coordinated. If necessary to coordinate and expedite the work, the Contractor shall prepare "interference drawings" and submit them to the Architect for approval. Such drawings shall shown the work of the various trades involved, illustrate proposed details of construction and arrangement of equipment and apparatus, and clearly indicate any deviations from contract requirements.

EXECUTION OF THE WORK: Prior to installation, submit certified prints and/or descriptive brochures for all major electrical and mechanical pieces of equipment, fixtures, materials, etc. Submittals shall show: manufacturer's catalog number, finishes, optional features and modifications. When work in accordance with manufacturer's recommendation is specified, a copy of recommendations will be kept in the job office. Reference shall be made to drawing schedules and details for: manufacturer, model, catalog number, size, capacity, performance, installation, etc. of equipment, fixtures and materials. Equipment of manufacturers other than those named will be acceptable provided, in the opinion of the Engineer, it is of equal substance, function, performance and appearance.

CHOICE OF MATERIALS AND EQUIPMENT: In submitting substitutions, bidders should note the following minimum considerations:

1. Capacities shown are absolute minimum and must be equaled.
2. Physical size limitations for space allotted.
3. Structural properties.
4. Static and dynamic weight limitation.
5. Noise level.
6. Interchange ability.
7. Vibration generation.
8. Accessibility for maintenance and replacement.
9. Compatibility with other materials, assemblies and equipment.
10. Similar items shall be same manufacturer and style, etc. except where specifically exempted.

All material and equipment, for which a UL Standard, a NEMA Standard, an AGA approval, or an ASME requirement is established, shall be so approved and labeled or stamped. Label or stamp shall be conspicuous and not covered, painted or otherwise obscured from casual inspection. Adhesives are not acceptable as a mounting, supporting, or assembling technique. The Contractor shall pay any costs added to the total contract as a result of any substitutions. Equipment, etc. shall not be purchased without the Engineer's written approval (shop drawings).

EXISTING SERVICES: No service shall be interrupted without permission of the Owner. When encountered in work, protect existing active: sewer, water, gas, electric, other utility service, structures; when required for proper execution of work, relocate them as directed. If existing active services are not indicated, request Engineer for instructions. When encountered in work, whether or not indicated, cap or plug or otherwise discontinue existing active: sewer, water, gas, electric, other utility services, structures as directed. Notify the Engineer of action taken. If removal is required, request instructions.

DRAWINGS: Drawings are diagrammatic. The Contractor shall install the work in such manner that the equipment, piping, vents, conduit, panels, ductwork, etc. will fit in space provided, maintain head room, and if in finished areas, be neatly installed and as "out-of-the-way" as physically possible. All equipment, piping, ductwork, conduits, etc., shall be installed to provide needed maintenance and passage space.

FEES: The Contractor shall pay for fees and inspections as may be required for electric, gas, H.V.A.C., plumbing, etc and all other systems requiring inspections by agencies having jurisdiction.

COMPLETION ITEMS: Provide all labor, equipment, materials, etc. required to complete installation specified herein and/or shown on the scheduled drawings.

EQUIPMENT OPERATION: This Division is responsible for: proper rotation, observing that lubricating has been properly performed, motors operate within nameplate limits, overload heater elements properly sized, and reporting observed discrepancies to the Engineer. Operate all motors for at least one hour. At the end of this hour's run, check for motor temperature. On equipment furnished by other sections, if lubricating is not correct, or if motors do not operate within proper limits, this Division is responsible for notifying the General Contractor as to the deficiencies and for leaving the piece of equipment involved in a locked "OFF" condition.

OPERATING INSTRUCTIONS: Furnish to the Owner written operating and maintenance instructions for each system and each piece of equipment. Include in the equipment data binder specified above, instructions to start and stop each piece of equipment, itemized maintenance schedule and submittals. When systems are completely adjusted, furnish personnel for one full day to instruct the Owner's operators.

CUTTING AND PATCHING: All cutting of surfaces will be by the General Contractor except for minor cutting for piping, conduit, etc. which shall be accomplished by these contractors. All major patching back will be by the General Contractor. Minor patching for piping, etc. shall be by these contractors. It will be the contractor's responsibility to advise the General Contractor of all locations and to size all openings. The contractors shall coordinate with the General Contractor for the best routing of piping and ductwork to clear existing construction. The contractors shall provide sleeves where required. The contractors shall coordinate with the General Contractor prior to bid and advise the General Contractor of anticipated requirements for cutting and patching so that the General Contractor may include these in his bids.

BACKFILLING: For earth backfill, remove from spaces to be filled all unsuitable material, including all rubbish, trash, refuse, and other debris. Place no backfill until foundations are braced and have cured sufficiently to develop adequate strength to withstand pressures of backfilling operations. Trenches shall not remain open for extended periods of time during wet weather. Secure approval of the Local Authority prior to commencing this work. Material for backfill shall be clean and unfrozen, free from substance subject to rot, corrosion, or termite attack and rock. If fill is required on both sides of a wall, it shall be brought up simultaneously and evenly on both sides. Backfilling around piping shall be by hand and for a depth of one foot above the pipe, taking care not to disturb the pipe or injure pipe coatings. Deposit backfill in horizontal layers not to exceed 6" depth, measured loose, compacting each layer thoroughly by approved mechanical devices. Work shall be at once discontinued if damage to waterproofing, piping or other construction occurs, and such damage shall be satisfactorily repaired before work is resumed. Bring all backfill to required subgrades. Unless otherwise noted on the drawings or in the Specifications, see paragraph "COMPACTION" below, backfill to be compacted by suitable mechanical means in 6" layers to be at least 95% maximum density at optimum moisture content as determined by Standard Proctor Density Test. (A.S.T.M. Designation D-1557-58T).

COMPACTION: Fill material at optimum moisture content shall be placed in uniform horizontal layers not more than 6" thick, measured loose, over the fill areas involved. Compact each layer fully and uniformly at optimum moisture content to a minimum density in percentage of Standard Proctor Maximum As determined by ASTM D-698 or AASHO Standard Method T-99 as follows:

1. Top two (2) feet of fill under roadways, and fill below footings of buildings supported on compacted earth fill.....100%
2. Fill under floor slabs and surfaced areas such as walks, steps, concrete paving, parking bays, curbs, etc., and remainder of fill under roadways.....98%
3. Fill under lawn and planted areas.....85%

Fill material shall be allowed to air dry to proper moisture content as each layer is placed, if necessary, prior to compaction. For the guidance of the Contractor: the following method is suggested as procedure for achieving the specified degree of compaction. Compact each layer of fill material fully and uniformly by making continuous runs over material with a sheeps foot roller containing teeth not less than 7" long and having an area of not less than 5 square inches each. The sheeps foot roller weight should impose a load upon each tooth between 1000 and 2200 pounds. Sheeps foot rollers should be made of not less than two sections, operated side by side and mounted in such a manner that each section may oscillate independently of the other. Continue rolling until the teeth of the roller penetrate a maximum of 3/4" over the entire surface of each lift. The moisture content of the fill material must be rigidly controlled during compaction by additional wetting to obtain a ratio to within 2% of the optimum as determined by the field tests. Material containing excessive moisture must be permitted to dry to proper moisture content before being rolled. If soil classification is proper for its use, a 10 ton vibrating type roller may be used for compaction of fill to obtain required degree of compaction, subject to approval by the Local Authority of such equipment.

GUARANTEE AND WARRANTY: Provide all labor, equipment, material, etc. required to complete installation specified herein and/or shown or scheduled on the drawings. Each piece of equipment shall meet performance specifications after one (1) year actual operation. The Contractor shall replace or make good any defect due to faulty workmanship or material which shall develop within one (1) year from date of acceptance. This guaranty shall cover both materials and labor. For the first year after final acceptance, the Contractor shall provide, at no cost to the Owner, any required maintenance and service necessary to assure the proper operation of the system. Date of acceptance shall be that date on which the contract has been satisfactorily completed in accord with contract documents and verified by the Engineer. If a whole or partial system, or equipment, is put into use for benefit of any party, other than Contractor, and with prior written permission of the Owner, this agreed date shall become the "date of acceptance".

END OF SECTION

MECHANICAL PROVISIONS

GENERAL PROVISIONS: See the Electrical and Mechanical General Provisions which are a part of this specification Division.

SCOPE: Furnish and install all labor, materials and equipment shown on the mechanical drawings and as specifications herein pertain, including all items and specialties required for complete working systems whether specified or not. Power wiring and connections required for this work will be furnished and installed under the electrical work.

SHEET METAL WORK AND AIR DISTRIBUTION: Install sheet metal work of galvanized steel erected according to details and standards as follows. Cross break all rectangular sheet metal work. Install transitions with side angles not over 30 degrees from run, and turns and elbows with centerline radius equal to 1-1/2 times duct width unless factory built turning vanes are installed. Provide vibration isolator hangers and fireproof flexible duct connections at fans and air handling units.

All sheet metal installations shall meet the following standards:

1. ASHRAE Guide and Data Book – Equipment, current chapter on duct construction.
2. ADC Standard 1062R2, Air Diffusing Equipment Test Code.
3. ADC Standard 1062:GRD–84, Test Code for Grilles, Registers and Diffusers.
4. AMCA Test Code 72–81, Flexible Air Duct Test Code.
5. AMCA Standard 210, Test Code for Air Moving Devices.
6. ASHRAE Standard 70–72, Method of Testing for Rating the air flow performance of outlets and inlets.
7. NFPA 90–A, Standard for the Installation of Air Conditioning & Ventilating Systems, 1980 edition
8. NFPA 101
9. SMACNA Publications as follows:
   a. High Pressure Duct Construction Standards, 3rd edition, 1975
   b. Low Pressure Duct Construction Standards, 5th edition, 1976
10. SMACNA HVAC Duct Construction Standard – Metal & Flexible, First Edition,1985
11. Fire and Smoke Rating Test Standard: ASTM E84, NFPA 255 and UL 723
12. All duct sizes given are clear outside sizes.

Seal all ductwork joints("S" locks, drives, etc.) with Durkee–Atwood "insta–seal" class 1; Hardcast #P301; Tramco 440; or United Mcgill, Uni–Cast Tape.

For all ducts with longest side 24 IN and over: Construct using the Ductmate: Nexus: Quicduc: Traverse Duct Connection(TDC) or Pyramid–Lok duct connection systems.

A. Seal flanged ends with pressure sensitive, high density, closed cell, neoprene or polyurethane tape gasket or "Tramco 440".
B. For smaller duct sizes:Above systems are optional.
C. For smaller duct sizes(longest side 23 IN or less): Above systems are optional.

All ductwork hangers & supports must be in accordance with SMACNA HVAC duct construction standard section IV.

Install registers and air diffusers in accordance with schedule and with opposed blade volume control and sponge rubber gaskets for each unit. A certified Balancing Contractor shall balance air flows according to drawings reporting on AABA forms – See equipment start up. Duct sizes given on drawings are "clear outside" sheet metal sizes.

CONCEALED MEDIUM STATIC DUCTED INDOOR HVAC UNIT 1: Slim, compact design for limited space requirements. Installs out of sight between the ceiling and structure with ducted distribution to the indoor space.

APPROVALS: Units are ETL certified for the U.S. and Canada.

WARRANTY: Components – Limited ten years for qualifying installations. See Warranty Certificate for details.

FEATURES: Pre–Heat Function – Delays the operation of the fan until the indoor coil has reached a pre–determined temperature which prevents the discharge of cold air while the system is operating in the 'heating' mode.

LED Readout/Infrared Receiver Panel – Mounted on unit (may be remotely located). LEDs display unit operation status, and codes for maintenance and servicing. Infrared receiver for use with a wireless remote control (not furnished).

Auto Addressing (Heat Pump Systems Only) – An optional wireless remote control (not furnished) can be used to inquire and modify each indoor unit's address. Slim, compact design for limited space requirements. Installs out of sight between the drop ceiling and ceiling slab with ducted distribution to the indoor space.

Auto Restart – Automatically restores the previous function setting if power is interrupted.

Built–In Condensate Pump – 28 Inch lift.

Duct Connections – Return air connections can be made horizontally or from the bottom of the unit with interchangable panel.

Electronic Expansion Valve – Assures optimal performance throughout the application range.

Flare Connections – Equipped with liquid and gas flare fittings for quick and secure piping.

Four–Stage Fan Speed (Standard Efficiency PSC Motor) – Fan functions at four levels: low, medium, high and super–high. Super–high speed is available with simple wiring change on main control board.

Three–Stage Fan Speed (High Efficiency DC Motor) – Fan functions at three levels: low, medium, high.

Air Filter – Cleanable air filter is furnished as standard

OUTDOOR SECTION OF HVAC UNIT 1: The SUZ Series outdoor units are specifically designed to work with the ducted, 4–way cassette, one–way cassette and multi–position air handler indoor units. The outdoor units must have a thermally fused powder coated finish. The outdoor unit shall be completely factory assembled, piped and wired. Each unit shall be run tested at the factory.

If an alternate manufacturer is selected, any additional material, cost, and labor to install additional lines shall be incurred by the contractor. Contractor responsible for ensuring alternative brand compatibility in terms of availability, physical dimensions, weight, electrical requirements, etc. Outdoor unit shall have a sound rating no higher than 55 dB(A). If an alternate manufacturer is selected, any additional material, cost, and labor to meet published sound levels shall be incurred by the contractor. Refrigerant lines from the outdoor unit to the indoor units shall be insulated in accordance with the installation manual. The outdoor unit shall meet performance requirements per schedule and be within piping limitations & acceptable ambient temperature ranges as described in respective manufacturers' published product catalogs. Non–published product capabilities or performance data are not acceptable.

The outdoor unit shall be capable of guaranteed operation in heating mode down to –13°F ambient temperatures and cooling mode up to 115°F without additional restrictions on line length & vertical separation beyond those published in respective product catalogs. Models with capacity data for required temperature range published as "for reference only" are not considered capable of guaranteed operation and are not acceptable. If an alternate manufacturer is selected, any additional material, cost, and labor to meet ambient operating range and performance shall be incurred by the contractor. The outdoor unit shall be provided with a manufacturer supplied 20 gauge hot dipped galvanized snow /hail guard. The snow/hail guard protects the outdoor coil surfaces from hail damage and snow build–up in severe climates. Four–legged outdoor unit mounting systems shall be provided by manufacturer. Stand shall be made from 7 gauge plate steel with thermally fused polyester powder coat finish that meets ASTM D3451–06 standards. Stands shall be provided with galvanized mounting hardware and meets all ASCE 7 overturning safety requirement.

Unit Cabinet: The casing shall be fabricated of galvanized steel, bonderized, finished with an electrostatically applied, thermally fused acrylic or polyester powder coating for corrosion protection. Assembly hardware shall be cadmium plated for weather resistance. Cabinet color shall be Munsell 3Y 7.8/1.1. Two (2) mild steel mounting feet, traverse mounted across the cabinet base pan, welded mount, providing four (4) slotted mounting holes shall be furnished. Assembly shall withstand lateral wind gust up to 155 MPH to meet applicable weather codes.The casing(s) shall be fabricated of galvanized steel, bonderized and finished.

Fan: The unit shall be furnished with a direct drive propeller type fan. The outdoor unit fan motor shall be a direct current (DC) motor and have permanently lubricated bearings. The fan motor shall be mounted for quiet operation. The fan shall be provided with a raised guard to prevent contact with moving parts. The outdoor unit shall have horizontal discharge airflow.

Refrigerant and Refrigerant Piping: R410A refrigerant shall be required for systems.

Polyolester (POE) oil widely available and used in conventional domestic systems shall be required. Prior to bidding, manufacturers using alternate oil types shall submit material safety data sheets (MSDS) and comparison of hygroscopic properties for alternate oil with list of local suppliers stocking alternate oil for approval at least two weeks prior to bidding.

Refrigerant piping shall be phosphorus deoxidized copper (copper and copper alloy seamless pipes) of sufficient radial thickness as defined by the equipment manufacturer and installed in accordance with manufacturer recommendations.

All refrigerant piping must be insulated with ¢" closed cell, CFC–free foam insulation with flame–Spread index of less than 25 and a smoke–development index of less than 50 as tested by ASTM E 84 and CAN / ULC S–102. R value of insulation must be at least 3.

Refrigerant line sizing shall be in accordance with manufacturer specifications.

Coil: The outdoor unit coil shall be of nonferrous construction with lanced or corrugated plate fins on copper tubing. The coil fins shall have a factory applied corrosion resistant Blue Fin finish. Uncoated aluminum coils/fins are not allowed. The coil shall be protected with an integral metal guard.

Refrigerant flow from the outdoor unit shall be regulated by means of an electronically controlled, precision, linear expansion valve. Outdoor unit shall be pre–charged with sufficient R–410a refrigerant for up to twenty five (25) feet of refrigerant piping for capacities up to 24,000 BTU/h. All refrigerant lines between outdoor and indoor units shall be of annealed, refrigeration grade copper tubing. ARC Type, meeting ASTM B280 requirements, individually insulated in twin–tube, flexible, closed–cell, CFC–free (ozone depletion potential of zero), elastomeric material for the insulation of refrigerant pipes and tubes with thermal conductivity equal to or better than that of 0.27 BTU–inch/hour per Sq Ft / oF, a water vapor transmission equal to or better than 0.08 Perm–inch and superior fire ratings such that insulation will not contribute significantly to fire and up to 1" thick insulation shall have a Flame–Spread Index of less than 25 and a Smoke–development Index of less than 50 as tested by ASTM E 84 and CAN / ULC S–102. All refrigerant connections between outdoor and indoor units shall be flare type.

Compressor: The compressor shall be a high performance, hermetic, inverter driven, variable speed, dual rotary type manufactured by Mitsubishi Electric Corporation. The compressor motor shall be direct current (DC) type equipped with a factory supplied and installed inverter drive package. The compressor will be equipped with internal thermal overload protection.

The outdoor unit must have the ability to operate over the full capacity range with a maximum height difference of 50 feet (15 meters) for 18,000 BTU/h models, and have refrigerant tubing length of up to 100 feet (30 meters) for 18,000 BTU/h models between the indoor and outdoor units.

Filters, sight glasses, and traps shall not be used, and no additional refrigerant oil shall be required. The compressor shall be mounted so as to avoid the transmission of vibration.

Basepan Heater: Each outdoor unit module shall be equipped with a basepan heater to protect the coil against ice build–up during prolonged winter operation. Basepan heater shall activate only if compressor is operating in heating mode at an outdoor ambient temperature of 36F or below.

Electrical: The outdoor unit electrical power supply shall be 208/230 volts, 1–phase, 60 hertz. The unit shall be capable of satisfactory operation within voltage limits of 187 volts to 253 volts.

The outdoor unit shall be controlled by microprocessors located in the indoor unit and outdoor unit. A 12 to 24 volt DC data stream shall communicate between the units providing all necessary information for full function control.

The outdoor unit shall be equipped with Pulse Amplitude Modulation (PAM) compressor inverter drive control for maximum efficiency with minimum power consumption.

MAKE–UP AIR UNIT (MAU–1): This section includes Packaged Make–Up Air Units with integral Indirect Gas–Fired heating for indoor installation. Airflow arrangement shall be Outdoor Air with Recirculation. Each unit shall be constructed in a horizontal configuration.

SUBMITTALS: Product Data: For each type or model, include the following: Complete fan performance curves for Supply Air, with system operating conditions indicated, as tested in an AMCA Certified Chamber.

Sound performance data for Supply Air, as tested in an AMCA Certified chamber.

Motor ratings, electrical characteristics and motor and fan accessories.

Dimensioned drawings for each type of installation, showing isometric and plan views, to include location of attached ductwork and service clearance requirements.

Estimated gross weight of each installed unit.

Installation, Operating and Maintenance manual (IOM) for each model.

QUALITY ASSURANCE: Source Limitations: Obtain Packaged Make–Up Air Unit with Integral Heating with all appurtenant components or accessories from a single manufacturer.

Product Options: Drawings must indicate size, profiles and dimensional requirements of Make–Up Air Units and are to be based on the specific system indicated. Refer to Division 1 Section "Product Requirements".

Certifications: Entire unit shall be ETL Certified per U.L. 1995 and bear an ETL mark. Indirect gas–fired heaters shall be ETL certified as a component of the unit.

COORDINATION: Coordinate size and location of all building penetrations required for installation of each Make–Up Air Unit and associated ducting, plumbing and electrical systems. Coordinate sequencing of construction of associated plumbing, HVAC, and electrical supply.

MANUFACTURERS: Available Manufacturers: Subject to compliance with specifications contained within this document, manufacturers offering products that may be incorporated into the work include, but are not limited to: Greenheck Fan Corporation

MANUFACTURED UNITS: Unit with integral indirect gas–fired Heating shall be fully assembled at the factory and consist of an insulated metal cabinet, filter assembly for intake air, sensors, motorized recirculation dampers, supply air blower assembly, and electrical control unit with all specified components and internal accessories factory installed and tested and prepared for single–point high voltage connection.

CABINET: Materials: Formed, double wall insulated metal cabinet, fabricated to permit access to internal components for maintenance. Underside of unit shall have formed metal panels covering base panel insulation.

Outside casing: 18 gauge, galvanized (G90) steel meeting ASTM A653 for components that do not receive a painted finish. Pre–painted components as supplied by the factory shall have polyester urethane paint on 18 gauge G60 galvanized steel. Base rail is 12 gauge, galvazined (G90) steel.

Internal Assemblies: 24 gauge galvanized (G90) steel except for motor supports which shall be minimum 14 gauge galvanized (G90) steel.

Comply with NFPA 90A and NFPA 90B and erosion requirements of UL 181.

Materials: Fiberglass Insulation. If insulation other than fiberglass is used, it must also meet the Fire Hazard Classification shown below.

1. Thickness: 1 inch (25 mm)
2. Fire Hazard Classification: Maximum flame spread of 25 and smoke developed of 50, when tested in accordance with ASTM C 411.
3. Location and application: Floor of each unit shall be insulated with either one half inch thick or 1 inch thick rigid fiberglass insulation, covered on one surface with integral aluminum foil.

Access panels: Unit shall be equipped with hinged access panels to provide easy access to all major components.

Supply Air blower assembly: Blower assembly consists of an electric motor and a belt driven, double width, double inlet forward curve blower. Assembly shall be mounted on heavy gauge galvanized rails and further mounted on minimum 1.125 inch thick neoprene vibration isolators.

Control panel / connections: Unit shall have an electrical control center where all high and low voltage connections are made. Control center shall be constructed to permit single–point high voltage power supply connections.

Indirect Gas–Fired Furnace: Shall be ETL Certified as a component of the unit. Shall have an integral combustion gas blower. Shall be ETL Certified for installation downstream of a cooling coil. Shall have fault sensors to provide fault conditions to optional digital controller or building controls. Shall have 4–pass tubular heat exchangers, constructed of type 409 stainless steel. Heat exchanger tubes shall be installed on the vest plate by means of swaged assembly, welded connections are not acceptable. Heat exchanger tubes shall be supported by a minimum of two fabricated assemblies that support the tubes and also permit expansion and contraction of the tubes. Heat exchanger shall have a ten year extended warranty. Furnace control shall be 12:1 electronic modulating. Shall be encased in a weather–tight metal housing with intake air vents. Large, metal lift–off or hinged door shall provide easy access to the enclosed vest plate, control circuitry, gas train, burner assembly and exhaust blower. Shall include a kit for indoor mounting with Vertical Concentric venting.

Motorized Recirculating Air Damper designed to permit 100% recirculation of exhaust air shall be factory installed. Damper shall be controlled by Building Pressure.

Sensors are considered to be part of various optional operational modes or device controllers and are to be factory supplied and installed as specified by the A/E.

BLOWER: Blower section construction, Supply Air: Belt drive motor and blower shall be assembled onto a minimum 14 gauge galvanized steel platform and must have neoprene vibration isolation devices, minimum of 1 – 1/8 inches thick. Blower assemblies: Shall be statically and dynamically balanced and designed for continuous operation at maximum rated fan speed and horsepower. Centrifugal blower housing: Formed and reinforced steel panels to make curved scroll housing with shaped cutoff. Forward curved blower (fan) wheels: Galvanized or aluminum construction with inlet flange and shallow blades curved forward in direction of airflow. Mechanically attached to shaft with set screws. Blower section motor source quality control: Blower performance shall be factory tested for flow rate, pressure, power, air density, rotation speed and efficiency. Ratings are to be established in accordance with AMCA 210, "Laboratory Methods of Testing Fans for Rating".

MOTORS: Blower motors greater than .75 horsepower shall be "NEMA Premium" unless otherwise indicated. Compliance with EPAct minimum energy–efficiency standards for single speed ODP and TE enclosures is not acceptable. Motors shall be heavy–duty, permanently lubricated type to match the fan load and furnished at the specified voltage, phase and enclosure. Drives shall be sized for a minimum of 150% of driven horsepower and pulleys shall be fully machined cast–type, keyed and fully secured to the fan wheel and motor shafts. Electric motors of ten horsepower or less shall be supplied with an adjustable drive pulley. Comply with requirements in Division 23 05 13, matched with fan load. Motors shall be 60 cycle, 1 phase, 208 volt.

UNIT CONTROLS: The unit shall be constructed so that it can function as a stand–alone heating system controlled by factory–supplied controllers, thermostats and sensors or it can be operated as a heating system controlled by a Building Management System (BMS).

Variable Frequency Drive (VFD): Unit shall have factory installed variable frequency drive for modulation of the supply air blower assembly. The VFD shall be factory–programmed for unit–specific requirements and shall not require additional field programming to operate.

Sensors to be provided with the unit include:

1. Heating Inlet Air Sensor
2. Fire Stat Type III

FILTERS: Unit shall have 2" thick MERV 8 disposable pleated filters located in the outdoor air intake and shall be accessible from the exterior of the unit.

EXAMINATION: Prior to start of installation, examine area and conditions to verify correct location for compliance with installation tolerances and other conditions affecting unit performance. See unit IOM. Proceed with installation only after all unsatisfactory conditions have been corrected.

INSTALLATION: Installation shall be accomplished in accordance with these written specifications, project drawings, manufacturer's installation instructions as documented in manufacturer's IOM, Best Practices and all applicable building codes.

CONNECTIONS: In all cases, industry Best Practices shall be incorporated. Connections are to be made subject to the installation requirements shown above.

FIELD QUALITY CONTROL: Manufacturer's Field Service: Engage a factory authorized service representative to inspect field assembled components and equipment installation, to include electrical and piping connections. Report results to A/E in writing. Inspection must include a complete startup checklist to include (as a minimum) the following: Completed Start–Up Checklists as found in manufacturer's IOM.

START–UP SERVICE: Engage a factory authorized service representative to perform startup service. Clean entire unit, comb coil fins as necessary, and install clean filters. Verify water source for compliance with manufacturer's requirements for flow and temperature. Measure and record electrical values for voltage and amperage. Refer to Division 23 "Testing, Adjusting and Balancing" and comply with provisions therein.

DEMONSTRATION AND TRAINING: Engage a factory authorized service representative to train owner's maintenance personnel to adjust, operate and maintain the entire Make–Up Air unit.

CABINET EXHAUST FANS: Exhaust fans shall be equal to Acme sizes as indicated on schedule; approved equivalents will be acceptable. Provide starters as a part of this section or as shown on the drawings. Air deliveries shall be as indicated; units shall bear the AMCA Certified Performance Ratings Seal, AMCA Certified Sones Rating Seal and U.L. Label. Wheels shall be of centrifugal, forward curved design and shall be statically and dynamically balanced. Generally, all fans shall be provided with back draft dampers. For cabinet type, above ceiling fan housings shall be reinforced phosphatized steel construction; interior surfaces shall be finished in a dark color and grille for ceiling–installed fans shall be white metal with three–dimensional grid and shall have symmetrical, finished appearance. Grille screws shall be concealed from view. Grids shall have a minimum of 80% free area. Electrical connections – see Electrical Provisions of the Specifications & electrical drawings.

Exhaust Fans: Exhaust fan on/off controls by electrical tradesmen.

EQUIPMENT START–UP: Initial start–up and service, including heat balance, of all operating equipment, together with any components factory–furnished, shall be done by service employees of equipment manufacturer according to the printed service and installation manuals for the equipment. A written report of start–up and service data, together with copies of the service and installation manuals, will be required by the designer prior to Final Inspection. After start–up a certified independent balancing contractor must ballance all H.V.A.C. systems Prior to balancing install clean air filters throughout and furnish owner with two (2) full sets of filters or filter media.

CONTROLS: Except as noted, install under this division heating and air conditioning controls as described and as detailed with all wiring, conduit, control devices, connections, calibration, check–out and adjustment for a complete working system and with installation according to the electrical work specifications. Prior to final inspection, install an "As Built" diagram and description of controls, including operating instructions in the maintenance manuals. Whether field or factory installed, install relays and contactors equal to ASCO, electric controls equal to Mercoid & Honeywell and breakers and starters equal to Square D.

Each HVAC system shall be furnished and installed with programmable thermostats equal to Honeywell PRO 8000, with sub–bases which shall be wall mounted in locations as shown on the drawings. Programmable thermostat assemblies shall provide staged heating and cooling, automatic changeover, fan control and programming to operate all HVAC blower fans continuously during occupied schedules, day/night programmable schedules, holiday schedules, etc. Time guard circuit to prevent compressor short cycling as a result of a change in the thermostat setting. Also, automatically prevents compressor restart at least 5 minutes after shutdown. Each unit controller shall include a display and key pad for 7–day programming. Each unit controller to maintain space temperature and humidity set point control capabilities. Dehumidification reheat control capabilities shall signal H.V.A.C. unit to activate 1st stage of electric heat simultaneously with one stage of cooling. Each unit controller shall have reheat dehumidification capabilities to operate space conditions at 50%± relative humidity. Controller to be capable of opening motorized outdoor air dampers during occupied periods and close when unoccupied.

Control wiring between the remote thermostat and the unit will be required and must be installed in conduit continuously.

Provide and install in HVAC units 1 and 2, an auxiliary 20 amp single pole relay for control of toilet exhaust fan circuit. Relay to be normally open and close upon HVAC unit activation into occupied mode.

Units require connection between thermostat and outdoor section. Provide all interlocking controls. Install duct detectors supplied by Fire Alarm contractor, in return ductwork to shut down units in alarm conditions. Coordinate shut down requirements with equipment manufacturer.

FIELD TOUCH UP PAINTING: Field touch up painting of all equipment furnished must maintain factory shop coat painting and factory finish painting as required per equipment manufacturers recommdations.

END OF SECTION

SEE SHEET MPE102 FOR CONTINUATION OF SPECIFICATIONS

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PLOT DATE: 4/16/2021 HE PROJECT # 21–003

the LANE GROUP 25th ANNIVERSARY 1996-2021
engineering | architecture | environmental

ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

MECHANICAL, PLUMBING, & ELECTRICAL SPECIFICATIONS

NO.	REVISION DATE
1	
2	
3	

DATE: 04/16/2021

SHEET: MPE101

DRAWN BY: TRM
CHECKED BY: DEC/JWR

PROJECT NO. 2088

THE LANE GROUP INC.

PLUMBING PROVISIONS

RELATED DOCUMENTS: Drawings and general provisions of contract, including General Conditions and General Requirement sections, apply to work of this Section. General Conditions apply to work of this Section.

SCOPE – PLUMBING: Furnish and install all labor, materials, and equipment shown on the Plumbing Drawings and specified herein, including all items and specialties required, whether specified or not, for complete working systems. In general, the Plumbing Work consists of the following:

1. Sanitary soil, waste, and vent piping systems and related items with connections as shown on the drawings.
2. Domestic hot and cold water piping and and related items with hot and cold water connections as shown on the drawings.
3. Propane gas piping system and related trim.

WORK UNDER OTHER SPECIFICATIONS: All electrical connections required for plumbing work will be furnished and installed under the Electrical Work Specifications Electrical Contractor to furnish all power wiring required for the equipment except as shown or noted. Under this work, rough out any additional items of equipment furnished under other sections of work. Coordinate closely with the Owner's representative.

VALVES, DRAINS AND SPECIALTIES – GENERAL PLUMBING: Approved equivalents by Walworth, Powell, Crane, Jenkins, Wade and Zurn acceptable as they apply. Valves and strainers shall be full size of pipe run; install valve stems vertical up.

1. Check Valves: Crane #36 threaded and #1342 solder.
2. Escutcheons: Split, chrome plated brass with deep recess where required for sleeves extending above finished floor. Install at sleeves in finished areas.
3. Gate Valves: Crane #424 threaded 2–1/2" and smaller; #7–1/2E flanged 3" and larger; and #1334 solder. Jenkins #32A and #1100R ball type acceptable except as noted.
4. Pipe Cleanouts: Zurn Supremo, Series 1400, with cast iron ferrule, all bronze plug and with nickel bronze covers to match surrounding finish.
5. Pipe Hangers: Either adjustable trapeze type, ring type, clevis type or "auto-grip" with minimum 1/4" hanger rod. Install copper plated hangers for uninsulated copper piping. Size hangers to clear insulation on pipework; no cutting of insulation is permitted. See a detail on the drawings for piping supports above new ceilings, where the detail is applicable.
6. Pipe Sleeves: Galvanized Schedule 40 steel pipe set flush with surface for horizontal and 1" above finish floor for sleeves through upper floors. Sleeves will not be required where openings are core drilled. Size sleeves to clear insulation on pipework; no cutting of insulation is permitted. Fire seal all piping extending through fire walls with 3M, or equal, Fire Barrier Penetration Sealing System #CP 25N/S for 2 hour penetrations. Submit the UL Assembly shop drawings for approval.
7. Pipe Unions: Crane ground joint brass–to–iron seat type through 1–1/2" size and flanged 2" and larger, except dielectric unions equal to ENCO shall be installed where different pipe materials join and at each water heater on both cold water and hot water piping.
8. Support Points: Inserts, ramsets, expansion shields, or anchors equal to Phillips Redhead. Power drive is permissible.
9. Square Head Cock with Check (Gas Cock): Crane.

PIPE, FITTINGS AND JOINTS: Pipe and fittings to be according to ASTM Standards for the duty and use. Where piping materials are noted on the plans other than specified herein, make up joints according to manufacturer's directions. Install according to use as follows:

1. Domestic Water: Type "L" ASTM B88 hard drawn copper with wrought solder fittings, except piping exterior of the building, hung on–grade shall be Type "K" soft drawn copper without joints. Clean joint surfaces to bright finish and make up with non–acid flux and no lead #95–5 solder. 50–50 solder will not be allowed. All piping under slabs on grade shall be encased with 1/2" Armaflex insulation. PEX as specified below will be acceptable alternate for copper.
2. Sanitary Soil, Waste and Vent: Schedule 40 P.V.C. with long sweep elbows except through fire rated walls or ceilings provide metal pipe.
3. Propane Gas Piping: Schedule 40 ASTM A53 black steel with screwed joints made up with Teflon tape for sizes 1–1/2" and smaller and welded 2" and larger. All underground piping paper wrapped and coated as per NFPA 54.

DOMESTIC WATER PIPING HOT AND COLD POTABLE WATER DISTRIBUTION:
REFERENCES:

A. ASTM International
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM F876 Standard Specification for Cross–linked Polyethylene (PEX) Tubing
ASTM F877 Standard Specification for Cross–linked Polyethylene (PEX) Plastic Hot and Cold Water Distribution Systems
ASTM F1807 Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross–linked Polyethylene (PEX) Tubing
ASTM F2159 Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross–linked Polyethylene (PEX) Tubing

B. National Sanitation Foundation (NSF)
Standard 14 Plastics Piping System Components and Related Materials
Standard 61 Drinking Water System Components – Health Effects

C. International Code Council (ICC)
International Mechanical Code
International Plumbing Code

D. International Association of Plumbing Officials (IAPMO)
Uniform Plumbing Code
Uniform Mechanical Code

E. Plastic Pipe Institute (PPI)
Technical Report TR–3 Policies and Procedures for Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials
Technical Report TR–4 Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Piping and Fitting Compounds

F. Zurn PEX Inc.
Plumbing Installation Guide

SYSTEM DESCRIPTION

A. Design Requirements:
Standard Grade hydrostatic pressure ratings from the Plastic Pipe Institute in accordance with TR–3 and listed in TR–4. The following three standard–grade hydrostatic ratings are required;
1. 200 degrees F at 80 psi
2. 180 degrees F at 100 psi
3. 73 degrees F at 160 psi

Tubing tested in general accordance with ASTM E84 for a flame spread/smoke developed index of 25/50 or less for the following PEX tube sizes encased with 1/2 inch fiberglass insulation;
1. 1–1/4 inch
2. 1–1/2 inch
3. 2 inch

Tubing tested in general accordance with ASTM E84 for a flame spread/smoke developed index of 25/50 or less for the following PEX tube sizes;
1. 3/8 inch
2. 1/2 inch
3. 5/8 inch
4. 3/4 inch
5. 1 inch

B. Performance Requirements: To provide a PEX tubing hot and cold potable water distribution system, which is manufactured, fabricated and installed to comply with regulatory agencies and to maintain performance criteria stated by the PEX tubing manufacturer without defects, damage or failure
1. Comply with NSF Standard 14
2. Comply with NSF Standard 61
3. Show compliance with ASTM F877

QUALITY ASSURANCE

A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity and possesses the skills and knowledge to install a PEX potable water distribution system. Installer will utilize skilled workers holding a trade qualification license or equivalent or apprentices under the supervision of a licensed tradesperson

DELIVERY, STORAGE AND HANDLING

A. Delivery – Deliver materials in manufacture's original, unopened, undamaged containers with identification labels intact until ready for installation

B. Storage and Protection – Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Store PEX tubing indoors, in cartons or under cover to avoid dirt or foreign material from entering the tubing.

Do not expose PEX tubing to direct sunlight for more than six months. If construction delays are encountered, cover the tubing that is exposed to direct sunlight.

WARRANTY
Manufacturer's Warranty: Shall cover the repair or replacement of properly installed tubing and fittings proven defective as well as incidental damages

Warranty period for PEX tubing and subsequent system shall be 25 year non–prorated warranty against failure due to defect in material or workmanship, beginning with the date of installation.

It is the installer's responsibility to avoid mixing fittings manufactured by others as it will reduce the owner's warranty

HOT AND COLD POTABLE WATER DISTRIBUTION SYSTEM: All products, components, etc. specified herein are manufactured by and/or are available from Zurn PEX, Inc. tubing manufacturer

PRODUCT SUBSTITUTION: No substitutions are permitted

MATERIALS

A. Tubing
1. Cross–linked polyethylene (PEX) manufactured by the Silane method
2. Non barrier type
   a. Shall have a pressure and temperature rating of 160 PSI at 73°F, 100 PSI at 180°F and 80 PSI at 200°F
   b. Tubing shall have a minimum of 6 months UV protection
3. Manufactured in accordance with ASTM F876 and ASTM F877 and tested for compliance by an independent third–party agency
4. Must have Pex 5006 chlorine designation
5. Plenum tested in accordance with ASTM E84
6. Must have a 25 year non–prorated warranty

B. Fittings: Fittings shall be manufactured by Zurn PEX Inc, identified by the letters "Q" or "Z".

Manufactured in accordance with ASTM F1807 or ASTM F2159 and/or comply with ASTM F877 system standard as identified on the fitting

C. Crimp Systems
Qickclamp: Listed to ASTM F877, identified as a Zurn PEX Inc, Qickclamp by the "Qickclamp" and "Q" marking.

Copper Crimp Ring: Listed to ASTM F1807 and/or ASTM F877, black in color and identified as a Zurn PEX Inc, ring by the letter "Q."

D. Tools
Qickclamp tools shall be supplied by the PEX tubing manufacturer, identified by the name "Zurn" on the tool.

Copper Crimp Ring tools shall be supplied by the PEX tubing manufacturer or approved by the PEX tubing manufacturer for use.

E. Manifold
1. QickPort Preassembled Manifold
2. Copper Manifold System
3. CR Manifold
4. Multi Port Fittings
5. Copper Manifold Header

F. Valves: Shall be of the plastic or metal type, meeting the requirements of ASTM F877, identified as such with the appropriate mark on the product

MANUFACTURER'S INSTRUCTIONS: Comply with manufacture's product data, including product technical bulletins, technical memo's, installation instructions and design drawings, including; Zurn PEX Plumbing Installation Guide

EXAMINATION:

A. Site Verification of Conditions

Verify that site conditions are acceptable for the installation of the PEX potable water system

Do not proceed with installations of the PEX potable water system until unacceptable conditions are corrected

INSTALLATION

A. Install Zurn PEX tubing in accordance with tubing manufacturer's recommendations and as indicated in the Zurn PEX Plumbing Installation Guide

B. Do not Install PEX tubing within 6 inches of gas appliance vents or within 12 inches of any recessed light fixtures

C. Do not solder within 18 inches of PEX tubing in the same waterline. Make sweat connections prior to making PEX connections

D. Ensure no glues, solvents, sealants or chemicals come in contact with the tubing without prior permission from the tubing manufacturer

E. Do not expose PEX tubing to direct sunlight for more than 6 months

F. Use grommets or sleeves at the penetration for PEX tubing passing through metal studs

G. Use a PEX manufacturer recommended fire stop sealant manufacturer

H. Protect PEX tubing with sleeves where abrasion may occur

I. Use nail plates where PEX tubing penetrates wall stud or joists and has the potential for being struck with a screw or nail

J. Allow slack of approximately 1/8 inch per foot of tube length to compensate for expansion and contraction

K. Minimum horizontal supports are to be installed not less than 32 inches between hangers in accordance with model plumbing codes and the Zurn PEX Plumbing Installation Guide

L. Pressurize Zurn PEX tubing in accordance with applicable codes or in the absence of applicable codes, test pressure shall be at least equal to normal system working pressure, but not less than 40 PSI water or air and not greater than 225 PSI water, 125 PSI air

M. Refer to other sections listed in Related Sections paragraph herein for related products installation

FIELD QUALITY CONTROL

A. Site Tests

To ensure system integrity, pressure test the system before covering tubing in concrete and after other trades have worked in the vicinity of the tubing

Repair and replace any product that has been damaged according to manufacturer's recommendation

PROTECTION: Protect installed work from damage due to subsequent construction activity on the site

PLUMBING FIXTURES: Fixtures and trim shall be American–Standard, Crane, Eljer or Kohler according to Schedule. Install fixtures and trim of one make and design in each area or location and with Zurn chair carriers, Josam Bulldog Carriers or Smith for fixtures at chases and for all lavatories, urinal and water coolers. Where walls supporting plumbing fixtures without chases are built of steel studs, install fixture carriers with block bases in the wall for fixture support, setting the block bases flush with or below the finished floor line and connecting minimum of three (3) studs with steel plates for support of fixture. Install minimum 1/2" water supplies with stops to fixtures. Install P–traps at any fixture of 17 gauge semi–cast brass with cleanouts. P–traps below floor shall be cast iron. Plumbing fixture trim shall be chrome plated.

INSTALLATION – PLUMBING PIPING: Cut pipe square, ream, and thread with sharp dies for threaded fittings. Install piping straight, plumb, without sags and parallel with building elements, maintaining minimum 1/4" per foot grade on gravity systems. Install hangers on maximum centers of 5' for cast iron pipe, 6' for other pipes 1–1/2" and smaller, 10' for other pipes 2" and larger and at elbows or as recommended by the manufacturer for the material. Support stacks at base. Fill space between pipe and sleeves through floor slabs on grade with poured compound. Install cleanouts on sewer within the building line at a minimum distance of 50'–0" and set flush with finished floor materials. Install unions and manual valves, whether shown or not, at each side of operating equipment, maintenance points, water heaters, and as shown in details. Install shut–off valves in water supplies to groups of fixtures. Where required for valves, install Milcor aluminum access panels inside primed paint grade where ceiling system is not accessible.

TESTS: After complete erection of piping systems and before installation of fixtures or equipment completely test piping, check for leaks and make tight. No caulking or peening–over of leaking fittings shall be permitted. After completion of tests piping systems shall be flushed as indicated herein and domestic water piping system sterilized as specified herein. Tests may be made in sections, but flushing and sterilization shall be accomplished after complete erection. Where state code specifies method of test, such code shall take precedence over the test specified herein.

1. Sanitary, Soil, Waste and Vent: Isolate or close with test plugs and fill with water for minimum 5 PSIG (10'–0" foot head) hydrostatic pressure placed on the highest joint for minimum of 24 hours. No exfiltration allowed.
2. Domestic Water and Treated Water: Water test with water furnished for the service at 150 PSIG for domestic and 50 PSI for treated for minimum of 24 hours, flushing before and after test. No exfiltration allowed.
3. Gas: In strict accordance with NFPA 54.

DOMESTIC WATER PIPING STERILIZATION: Flush out the pipe lines until the water runs clear. This shall be done after the pressure test and before disinfection. Drain and clean strainers and dirt pockets. After the domestic piping system has been tested and cleaned, the system shall be sterilized in accordance with the State Department of Public Health by the following methods:

1. Introduce HTH solution, chlorine gas, or similar chlorination agent in sufficient quantity to produce a residual of 50 ppm of chlorine as determined by residual chlorine tests at the ends of the lines, and allow to stand for not less than 24 hours. Fill the lines slowly and open and close all valves while the chlorine is being introduced into the system. Operate valves, pumps, etc. at least 5 times, or 5 minutes.
2. After the disinfecting solution has been left standing for 24 hours, flush out the system until chlorine content is less than 1.0 ppm and/or water is comparable to that supplied by the water utility. If after flushing out the system, bacteriological samples are not satisfactory, repeat the disinfection process until satisfactory bacteriological samples can be obtained.

Disinfection of new supply mains shall be performed before these mains are connected to the existing water supply mains. Where connecting into the existing mains and it is not practical to include the connection pieces (i.e. pipe, fittings and valves) in normal disinfecting process, these connecting pieces shall be swabbed with chlorine solution containing not less than 100 ppm available chlorine prior to making connection. Have samples obtained from the end of the longest piping run, analyzed by the water utility chemist and submit a copy of the test to the Engineer.

END OF SECTION

INSULATION PROVISIONS

RELATED DOCUMENTS: Drawings and general provisions of contract, including General Conditions and General Requirement sections, apply to work of this Section.

SCOPE – INSULATION SYSTEMS: Furnish and install all labor, materials and equipment shown on the mechanical drawings and as specified herein, including all items and specialties required, whether specified or not, for complete systems of pipe insulation. External ductwork insulation specified in other sections of this DIVISION are not a part of this section and will be furnished and installed under other sections of this DIVISION. In general, the insulation work consists of the following work:

1. Insulation of domestic hot and cold water piping systems.

INSULATION: HOT AND COLD PIPING: Install molded fiberglass insulation with vapor–barrier jacket and butted solidly together with joints and seams staggered. Cover fittings with molded insulation sections. For hot piping, seal joints and flaps with Lagtone and cover fittings with 8 oz. canvas jacket over Lagtone sealer and sealed on with Lagtone, sealing off insulation ends with jacket and Lagtone. For cold piping, seal joints and flaps with adhesive, sealing off insulation ends with mastic. Cover insulated fittings with 0.002" thick aluminum foil sealed on with adhesive and cover with 8 oz. canvas jacket and coat of mastic. Fitting covers equal to one piece PVC "Zeston" covers shall be used.

Install insulation thickness on piping as follows:
1. Domestic Water Systems and Condensate Piping ..... 1/2"

Equal materials, mastic, adhesives, and sealers made by Manville, Gustin–Bacon, Foster, Armstrong and PPG Industries are acceptable when labeled and/or listed. Adhesives, mastics and insulation materials used shall be Underwriter's labeled and/or listed for a maximum rating of 25 for flame and 50 for smoke.

INSTALLATION – INSULATION SYSTEMS: Install this work using mechanics experienced in the trade. Systems shall be completely erected and tested and all surfaces shall be clean and dry prior to application of insulation. For insulation, install saddles between support and insulation at all piping support points equal to Fee & Mason, Figure 171, for hot piping and minimum 20 gage galvanized steel saddles 18" long for cold piping. Install rigid insulation sections in cold piping insulation at saddles, sealing the rigid section to the run of insulation. Install insulation continuous through sleeves or core drilled holes for cold piping. Stapling of pipe insulation on cold water is not acceptable unless all staples are vapor sealed with mastic to the Engineer's satisfaction. No duct tape will be allowed on any insulation system. A continuous vapor barrier seal will be required on all cold water systems. Failure to maintain this barrier will not be allowed.

END OF SECTION

ELECTRICAL PROVISIONS

RELATED DOCUMENTS: Drawings and General Provisions of Contract, including General Conditions and Division I General Requirement Sections, apply to work of this section.

DESCRIPTION OF WORK: Furnish and install all labor, materials, and equipment shown on the drawings and specified herein, including all items and specifications required, whether specified or not, for complete working systems. In general, the Electrical Work consists of the following:

1. Secondary distribution with connections as detailed.
2. Wiring and equipment for lighting and power, together with lighting fixtures and devices.
3. Wiring and connecting equipment of other trades.
4. Power service shall be 1 phase 3 wire 120/240 volts.

CONNECTION TO OTHER SPECIFICATION WORK: Under this work division, furnish and install all labor and materials, together with the required switches, for connecting power to heating, air conditioning and ventilation, plumbing, and Owner–supplied equipment.

SECONDARY WIRE AND CABLE: Except as noted, install minimum #12 AWG 600–volt copper Type THHN/THWN or as noted on the drawings. Install solid conductors for #10 size and smaller. No aluminum wire will be allowed. #8 wire and larger shall be stranded copper. Although not necessarily shown, provide a complete "green" ground throughout bonded and grounded as per NEC.

RACEWAYS: Install conduit, wireways and surface metal raceways of malleable steel material and with electric or hot dip galvanized or rust resistant finish. Use no aluminum conduit. Conceal all raceways where possible. Install liquid–tight "Greenfield" with grounding conductors in outdoor, or wet locations and at all motor connections and other points subject to vibration. Install rigid conduit with threaded fittings as required by the National Electrical Code on service conduits to above the building floor line or as noted. Other conduit runs may be electric metallic tubing with malleable steel compression or set screw type connectors. Bushings for conduit 2" and smaller shall be plastic. Bushings for conduit 2–1/2" and larger shall be equal to Appleton Efcor Series 55 or OZ type "B" with metal ring and insulator as an integral part of the bushing.

BOXES, CABINETS, SUPPORTS AND SPECIALTIES: Install of galvanized malleable steel alloy. Install cabinets with grey baked finish on exposed surfaces and removable trim with hinged doors and flush locks, all keyed alike. Install boxes underground, for exterior outlets and as required by the National Electric Code with threaded cast hubs and gasketed covers attached with screws. Pressed boxes will not be allowed. Unless noted otherwise, install other switches, receptacles, and lighting outlets of pressed steel box with proper cover and size and with ears and studs where required. Ceiling outlet boxes shall be minimum 4" octagon 2–1/8" deep and with extension rings where additional volume is required. Single gang wall boxes shall be minimum 4" high X 2–1/8" wide X 2–1/8" deep except boxes in masonry shall be 2–1/2" deep. Boxes shall be equal to Steel City, Appleton or Raco. Use solid gang box for two gangs or more.

PANELBOARD & BREAKERS: Install safety dead front breaker type, surface mounting as required and shown. All breakers quick–make and quick–break with trip free handles, thermal–magnetic trip. Multi pole breakers shall have a common trip. All breakers ambient compensated and all interiors with integrated capacity bussing. All branch breaker handles shall operate in the same plane. Furnish all "spare" breakers. All H.V.A.C. equipment breakers shall be H.A.C.R. rated. See the plans for schedules indicating number of branch circuits, ratings, arrangements, etc. Provide neutral bars for all system feeders isolated from the panel box. Provide separate "ground" bars installed with lugs or connectors on the bar grounded to the panel box. Bus bars shall be of sequence phase type arranged for the specified service. All circuits shown as common neutral shall be installed as per N.E.C. Where relays, time clocks or contactors are called for, provide panelboard with oversized can for installation. Separate cans adjacent to the panelboard, and mounted same as the panelboard, are acceptable.

SAFETY SWITCHES: Install safety switches of heavy duty rating, and with dual element, time lag, cartridge type fuses. Except as noted, install all units with general purpose enclosures inside or NEMA 3R outside. Furnish owner with 1 set of "spare" fuses in addition to all required fuses.

LIGHTING FIXTURES: Install according to schedule and complete with lamps and any hangers, plaster frames and other accessories. Verify ceiling systems for recessed fixture trim. Ceiling system suspension shall not be used for Luminaire suspension. All Luminaires shall be independently hung by wire or other approved means./ Guarantee electronic's replacement for 12 months after final acceptance of project. Support all lay–in type fixtures from structure above with wire hangers. LED lamps shall meet or exceed IES LM–79, IES LM–80, and IES TM–21.

PHONE SERVICE: Coordinate with owner for all telephone service requirements.

INSTALLATION: Install gear with operating handles maximum 6–feet from floor and trims in line. Provide typed directory for panelboard and engraved laminated plastic labels for switches and main service breakers. Install raceways parallel or perpendicular to building members. Close conduit runs during construction. Apply waterproofing compound to joints in rigid conduit runs. Install fittings and supports of same material and finish as conduit. Support raceways with brackets, hangers, or other approved devices. Use no perforated strap or wire hangers. Install pull boxes or points for maximum 200' run and 3 quarter bends in wiring conduit runs and 100' of run and 2 quarter bends in signal and communications conduit runs. Install long sweep elbows in signal and communications conduit runs. Use expansion fittings for crossing building expansion joints. Except for terminations in threaded hubs, lock conduit in place with proper fittings and install bushing. Leave bare copper pull wires in all empty conduit runs. Bond and ground all systems in accordance with N.E.C. As required or as shown on plans, install boxes and devices on surface or flush with building finish, with units rigidly fastened in pl properly aligned. Box extensions may be used. Verify door swings prior to roughing for lighting switches. Install a plate for all devices, including blank plates over blank boxes, plates to be in continuous contact with building finish and not to support box. Pull wire only after areas are cleaned and pull with proper lubricants and continuous between boxes without splice. Make up splices in Wire #10 or smaller with Ideal "Wing Nuts" and in larger wire with approved mechanical connectors and tape. After installation, megger electrical work for grounds and shorts and correct as required. Color code conductors as directed by Owner. Install Health Care type MN cable per N.E.C. and local rules.

TESTING: In conjunction with his work, the Contractor shall do the following:
1. Check outlets for proper polarity and correct as required.
2. Megger all motor and solenoid windings before connection for insulation resistance and record readings. If found low, advise supplier so that steps may be taken to dry out insulation or otherwise raise insulation resistance to an acceptable value.
3. Check running currents of all motors and if there is any major unbalance or variation from rated, determine the cause.

END OF SECTION

END OF ELECTRICAL & MECHANICAL PROVISIONS

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PLOT DATE: 4/16/2021 HE PROJECT # 21–003

the LANE GROUP 25th ANNIVERSARY 1996-2021
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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

MECHANICAL, PLUMBING, & ELECTRICAL SPECIFICATIONS

DATE:	04/16/2021
NO.	REVISION DATE
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SHEET: MPE102

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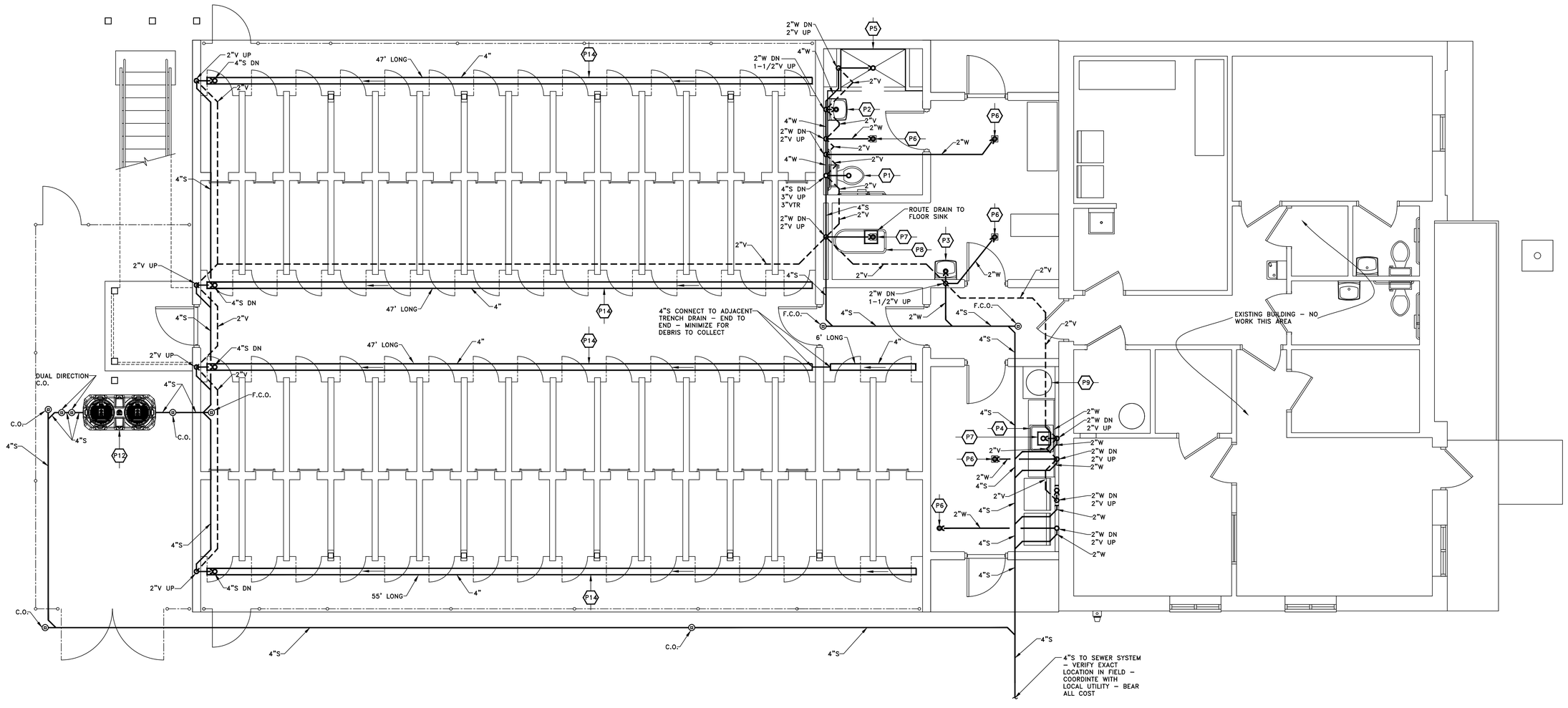
TRM	DEC/JWR

PROJECT NO. 2088

THE LANE GROUP INC.



SANITARY SEWER, WASTE, AND VENT PIPING FLOOR PLAN

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

HE *HOLSTON ENGINEERING, INC.*
301 MONTGOMERY ST., SUITE #4, JOHNSON CITY, TN 37604 (423)926-5991 holston.engineering@holsteng.com

PLOT DATE:04/16/2021 HE PROJECT # 21-003

the LANE GROUP 25th ANNIVERSARY 1996-2021
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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

SANITARY SEWER, WASTE,
& VENT PIPING PLAN

COMMONWEALTH OF VIRGINIA
LICENSED PROFESSIONAL ENGINEER
Lic. No. 31491
4/16/21
PROFESSIONAL ENGINEER

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SHEET: P101

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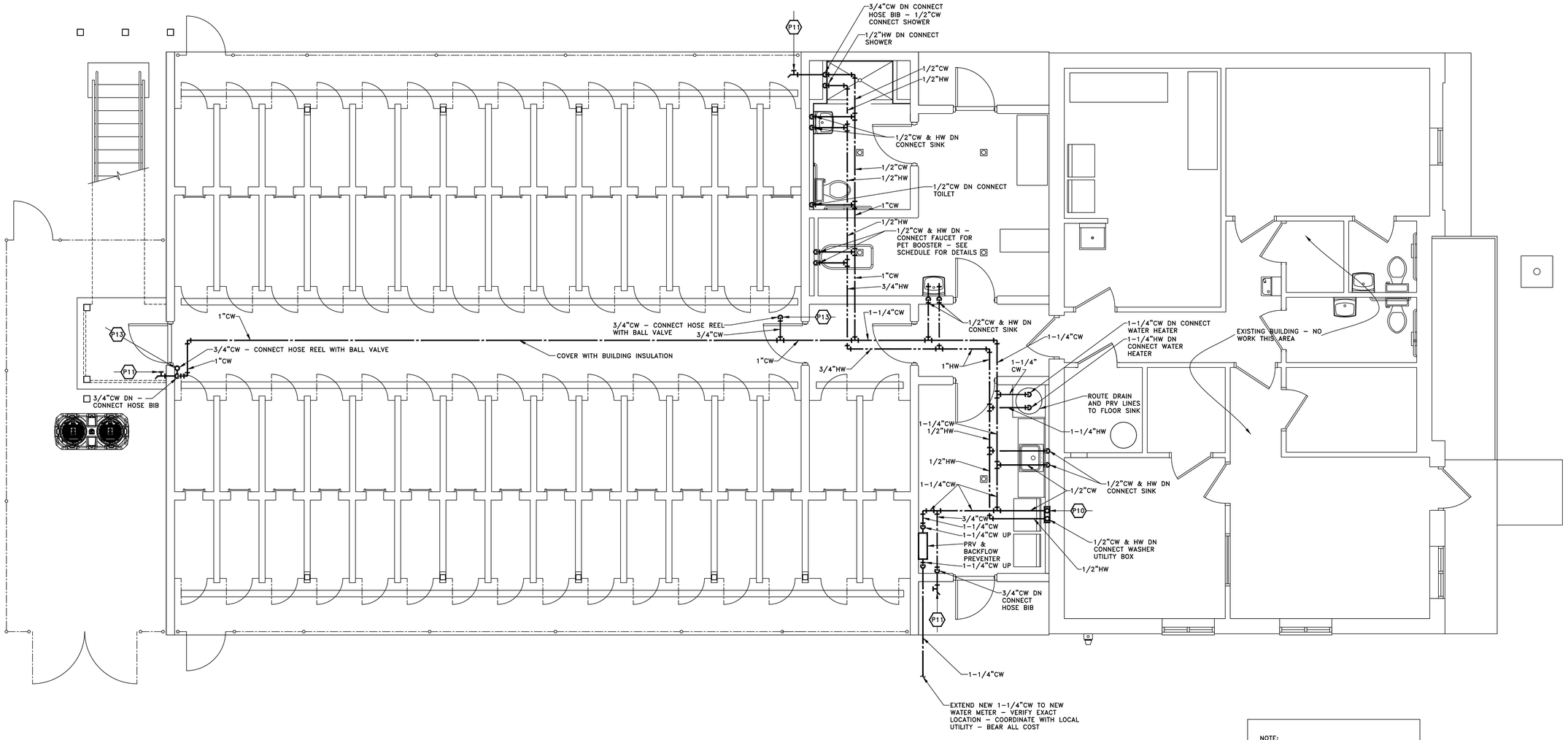
THE LANE GROUP INC.



DOMESTIC WATER PIPING FLOOR PLAN

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

NOTE:
1. ALL WATER LINES BELOW INSULATION

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

DOMESTIC WATER
PIPING PLAN

COMMONWEALTH OF VIRGINIA
DERWIN EUGENE CARTMELL
Lic. No. 31491
PROFESSIONAL ENGINEER
4/16/21

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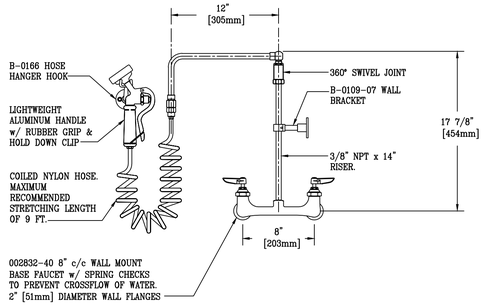
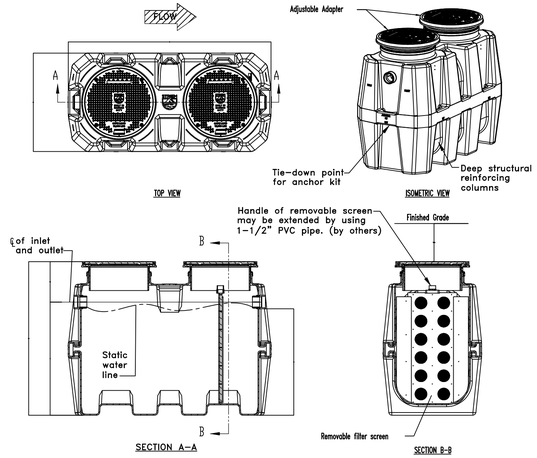
THE LANE GROUP INC.

PLUMBING FIXTURE SCHEDULE

NO.	TYPE	SIZE	REMARKS	MAKE	MODEL
P1	WATER CLOSET HANDICAPPED	16-½" H.	EVERCLEAN FLOOR MOUNTED, PRESSURE ASSISTED SIPHON JET, ELONGATED 16-½" HIGH TANK TYPE WITH WHITE MOLTEX SEAT WITH OPEN FRONT. CONNECT 1/2" COLD WATER AND 4" SOIL. 1.6 GALLON FLUSH.	AMERICAN STANDARD	2467.016
P2	WALL-HUNG LAVATORY HANDICAPPED	20"X18"	VITREOUS CHINA, WALL-HUNG WITH #7385.043 SINGLE LEVER FAUCET ON 4" CENTERS WITH INTEGRAL GRID DRAIN AND AERATOR FOR 2-1/2 GPM FLOW. CONNECT 1/2" HOT AND COLD WATER, 1-1/4" WASTE. MOUNT 34" ABOVE FINISHED FLOOR. NEATLY INSULATE ALL EXPOSED PIPING WITH FACTORY INSULATION KIT EQUAL TO "LAV-GUARD 2" BY TRUEBRO INC. MODEL #102 E-Z (WHITE). PROVIDE CHAIR CARRIER.	AMERICAN-STANDARD	0355.012
P3	WALL-HUNG LAVATORY	20"X18"	VITREOUS CHINA, WALL-HUNG WITH #7385.043 SINGLE LEVER FAUCET WITH ON 4" CENTERS WITH INTEGRAL GRID DRAIN AND AERATOR FOR 1-1/2 GPM FLOW. CONNECT 1/2" HOT AND COLD WATER, 1-1/4" WASTE. PROVIDE CHAIR CARRIER.	AMERICAN-STANDARD	0355.012
P4	SINGLE COMPARTMENT SINK	72"X29-13/16" X44-3/4"	16 GAUGE 300 SERIES STAINLESS STEEL WITH #4 FINISH. 24" LEFT AND RIGHT DRAINBOARDS AND STAINLESS STEEL LEGS WITH ONE #LK-35 STRAINER. WITH ONE #LK543AF10LC SINGLE HOLE CONCEALED DECK MOUNT FAUCET 44" FLEXIBLE HOSE WITH 1.2 GPM SPRAY HEAD + 10" ARC TUBE SPOUT, 2" LEVER - CONNECT 1/2" HOT AND COLD WATER, 1-1/2" WASTE TO FLOOR SINK	ELKAY	WNSF-8136
P5	INDIVIDUAL HANDICAPPED SHOWER UNIT		ADA 60"X36" ROLL-IN SHOWER - PRELEVED BASE, ACRYLX APPLIED ACRYLIC SURFACE, 1/4"SKIRT, 1/2"BEVELED THRESHOLD, BARRIER FREE - SMOOTH WALL, CENTER DRAIN, LIMITED LIFETIME WARRANTY (30 YEAR COMMERCIAL) - PRESSURE BALANCING VALVE CONNECT 1/2"CW AND HW FAUCET, CONNECT 1-1/2" DRAIN.	AQUATIC	16037BFSC
P6	FLOOR DRAIN		FLOOR DRAIN DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH TYPE "B" POLISHED NICKEL BRONZE STRAINER.	ZURN	ZB-415
P7	SANI-FLOOR RECEPTOR (FLOOR SINK)	12"X12"	CAST IRON, WHITE ACID-RESISTING ENAMEL BODY INTERIOR, NICKEL-BRONZE FRAME, ALUMINUM ANTI-SPLASH INTERIOR DOME STRAINER. CONNECT 2" WASTE.	ZURN	ZN-1902-33
P8	PET BOOSTER TUB		OWNER PROVIDED TUB - PROVIDE AND INSTALL T&S BRASS AND BRONZE WORKS, INC. PET GROOMING STATION 8" WALL MOUNT BASE FAUCET - SEE DETAIL THIS SHEET	-	-
P9	ELECTRIC WATER HEATER	80 GAL.	FOAM INSULATED WITH 6 YEAR GUARANTEE, FACTORY INSTALLED AUTOMATIC RESETTING RELIEF VALVE WITH WASTE TO DRAIN. DIELECTRIC UNIONS GATE VALVES ON EACH WATER CONNECTION AND DRAIN VALVE. SEE DETAIL FOR INSTALLATION. MAKE 1-1/4" WATER CONNECTIONS. UNIT FOR 1 PHASE, 240 VOLTS, 36 KW	STATE	CBS 36 IFE
P10	WASHING MACHINE BOX		PLASTIC UNIVERSAL WASHING MACHINE BOX, HIGH IMPACT PLASTIC WASHING MACHINE OUTLET BOX, WITH BRASS VALVE BY MFG. AND KNOCK OUT WASTE.	IPS	W4700
P11	WALL HYDRANT		AUTOMATIC DRAINING, FREEZELESS WALL HYDRANT. CONNECT 3/4" COLD WATER. MOUNT 24" ABOVE FINISHED GRADE	WOODFORD	19
P12	OIL/GRIT SEPARATOR	250 GAL.	STRIEM PROSPECTOR SOLIDS INTERCEPTOR, LIFETIME GUARANTEED, SEAMLESS, ROTATIONALLY-MOLDED MEDIUM DENSITY POLYETHYLENE WITH MINIMUM 3/8" UNIFORM WALL THICKNESS. INTERCEPTOR SHALL BE FURNISHED FOR ABOVE OR BELOW-GRADE INSTALLATION. INTERCEPTOR SHALL BE FURNISHED WITH FILTER SCREEN AND CONNECTION FOR EXTENDING HANDLE FOR DEEP BURIALS. COVER SHALL PROVIDE WATER/GAS TIGHT SEAL AND HAVE A MAXIMUM 16,000 IBS LOAD CAPACITY. CONNECT 4" INLET AND OUTLET SCHEDULE 40 (NO HUB), 250 GALLON LIQUID CAPACITY, 210 GALLONS SOLIDS CAPACITY.	STRIEM	PS-275-S
P13	HOSE REEL		SPRING RETRACTABLE COMPOSITE HOSE REEL, 50' 5/8"WATER HOSE, LIGHTWEIGHT COMPOSITE MEDIUM MATERIAL - WALL, CEILING OR FLOOR MOUNT	REELCRAFT	SWA3850-OLP
P14	TRENCH DRAIN		6-1/4"WIDE, 4" THROAT, DURACOAT CAST IRON TRENCH DRAIN - WITH BOTTOM DOME STRAINER - 3" DRAIN - SLOPE 1/8"PER FT	ZURN	Z886



PET GROOMING STATION WALL MOUNT BASE FAUCET DETAIL
NO SCALE

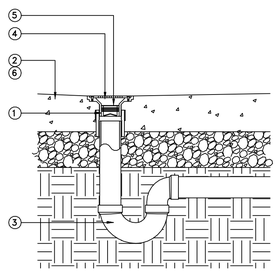


STRIEM PS-750 SOLIDS INTERCEPTOR DETAIL
NO SCALE

SPECIFICATIONS(PS-275-S)
1. 4" inlet/outlet Sch. 40, (No-Hub)
2. Liquid capacity: 250 Gallons
3. Solids capacity: 210 Gallons
4. Unit weight w/std. covers: 270 lbs. w/ cast iron covers: 386 lbs.
5. Highway rated composite cover, 16,000 lbs load.
6. Maximum operating temperature 140°F continuous.

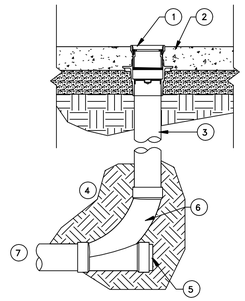
NOTES
1. For gravity drainage applications only. Do not use for pressure applications.
2. 3/8" thick seamless polyethylene walls.
3. Unit supplied with built-in adapter(s) for up to 5" of adjustability. Additional riser(s) are also available for deeper burial depth.
4. Cover placement allows full access to tank For proper maintenance.
5. Designed narrow footprint allows clearance through doorways and down stairwells.
6. Internal components are removable for easy maintenance.
7. For on-the-floor or buried applications.

ENGINEER SPECIFICATION GUIDE
Striem Prospector solids interceptor model PS-275-S shall be lifetime guaranteed and Made in USA of seamless, rotationally-molded Medium Density Polyethylene with minimum 3/8" uniform wall thickness. Interceptor shall be furnished for above or below-grade installation. Interceptor shall be furnished with filter screen and connection for extending handle for deep burials. Cover shall provide water/gas-tight seal and have a maximum 16,000 lbs load capacity



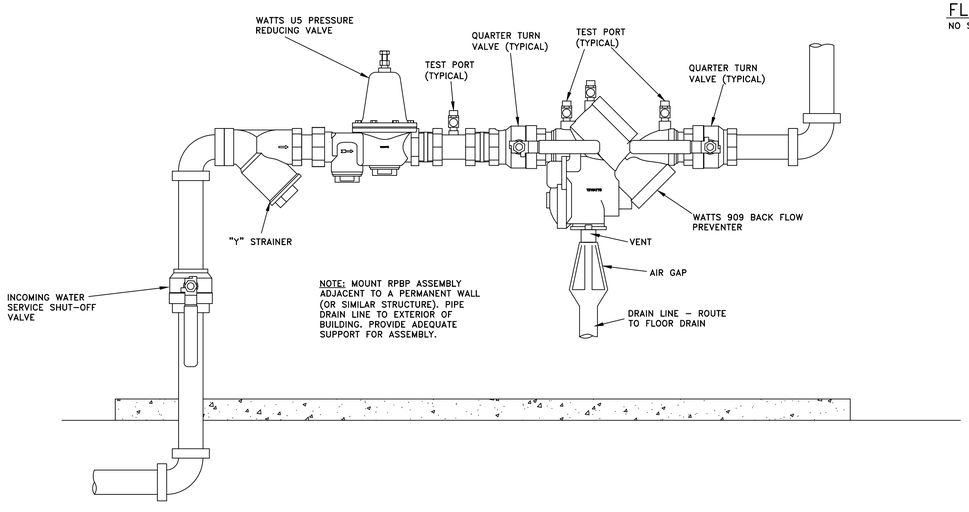
NUMBERED NOTES
1. ADJUSTABLE FLOOR DRAIN ASSEMBLY, SEE SCHEDULE, COORDINATE ELEVATION WITH STRUCTURAL AND ARCHITECTURAL, COORDINATE FLOOR FINISH
2. CONCRETE FLOOR
3. PVC P-TRAP
4. BRASS COVER AND RING
5. WATERLESS TRAP SEAL
6. FLOOR SLOPE- COORDINATE

FLOOR DRAIN with WATERLESS TRAP DETAIL
NO SCALE



NUMBERED NOTES
1. ADJUSTABLE FLOOR CLEAN OUT w/ ANCHOR FLANGE. MATCH PIPE SIZE SERVED. INSTALL FLUSH w/ FINISH FLOOR. COORDINATE
2. FLOOR SYSTEM - COORDINATE w/ STRUCTURAL AND ARCHITECTURAL
3. RISER
4. COMPACTED BACKFILL
5. IF LINE DEAD ENDS, INSTALL WATERTIGHT PLUG
6. COMFINATION WYE 1/8 BEND, ONE PIECE
7. SEWER PIPE

FLOOR CLEANOUT DETAIL
NO SCALE



PRESSURE REDUCER AND BACKFLOW PREVENTER DETAIL
NO SCALE

PLUMBING LEGEND

	CW	COLD WATER SUPPLY PIPING
	HW	HOT WATER SUPPLY PIPING (110°F MAX)
	S&W	SANITARY SOIL & WASTE PIPING
	V	SANITARY VENT PIPING
		GATE OR BALL VALVE
	FD	FLOOR DRAIN WITH P-TRAP AND WATERLESS TRAP PRIMER
	FCO	FLUSH CLEANOUT
	VTR	VENT THRU ROOF
P1		PLUMBING FIXTURES - SEE PLUMBING FIXTURE SCHEDULE
		PIPE ELBOW AND TEE IN PLANE
		PIPE ELBOW AND TEE TURNED DOWN
		PIPE ELBOW AND TEE TURNED UP

HE HOLSTON ENGINEERING, INC.
301 MONTGOMERY ST., SUITE #4, JOHNSON CITY, TN 37604 (423)926-5991 holston.engineering@holsteng.com

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

PLUMBING SCHEDULE & DETAILS

COMMONWEALTH OF VIRGINIA
BENJAMIN R. HOLSTON
Lic. No. 31491
4/16/21
PROFESSIONAL ENGINEER

DATE:	4/16/2021
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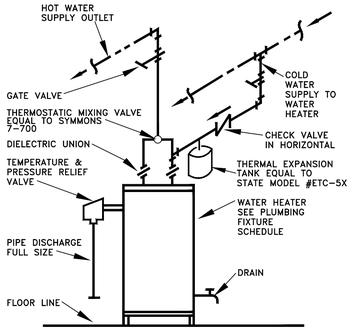
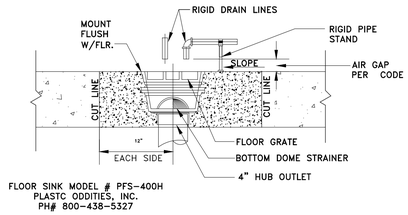
THE LANE GROUP INC.



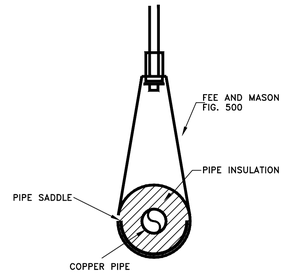
NOTE: SEE FLOOR PLANS FOR PIPE SIZES.

TYPICAL WATER HEATER DETAIL
NO SCALE



FLOOR SINK MODEL # PFS-400H
PLASTC ODDITIES, INC.
PH# 800-438-5327

FLUSH MOUNTED FLOOR SINK DETAIL
NO SCALE



PIPE SUPPORT DETAIL
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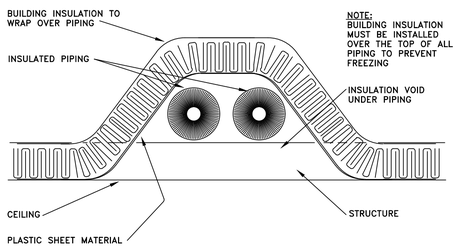

DOMESTIC HOT & COLD WATER LINES IN ATTIC DETAIL
NO SCALE

HE HOLSTON ENGINEERING, INC.
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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

PLUMBING SCHEDULE & DETAILS

COMMONWEALTH OF VIRGINIA
DERMIN EUGENE CARMEL
Lic. No. 31491
PROFESSIONAL ENGINEER
4/16/21

DATE: 4/16/2021

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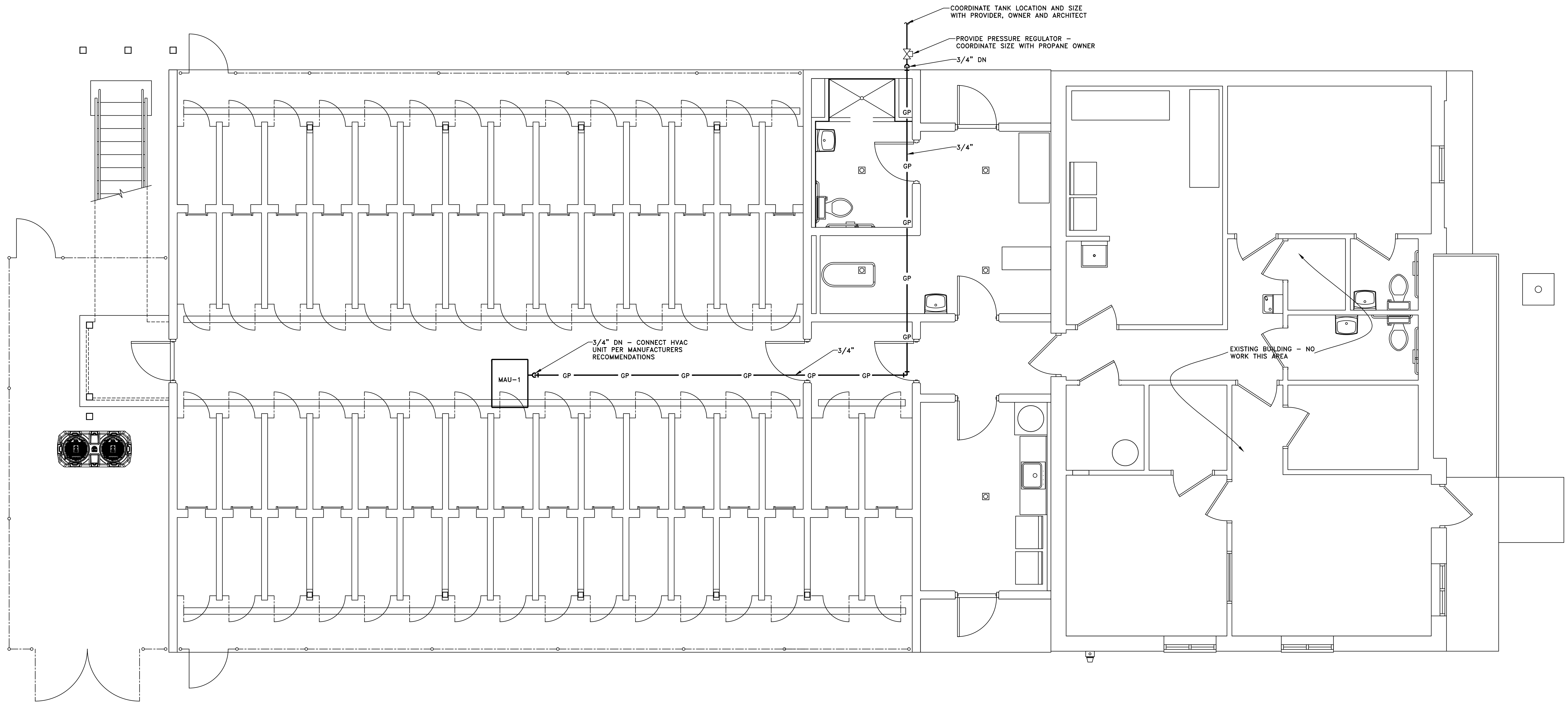

SANITARY SEWER, WASTE, AND VENT PIPING FLOOR PLAN
SCALE: 1/4"=1'-0"

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ADDITIONS AND RENOVATIONS TO WASHINGTON COUNTY CC PORTER ANIMAL SHELTER

GAS PIPING PLAN

COMMONWEALTH OF VIRGINIA
DERWIN EUGENE CARTMELL
Lic. No. 31491
4/16/21
PROFESSIONAL ENGINEER

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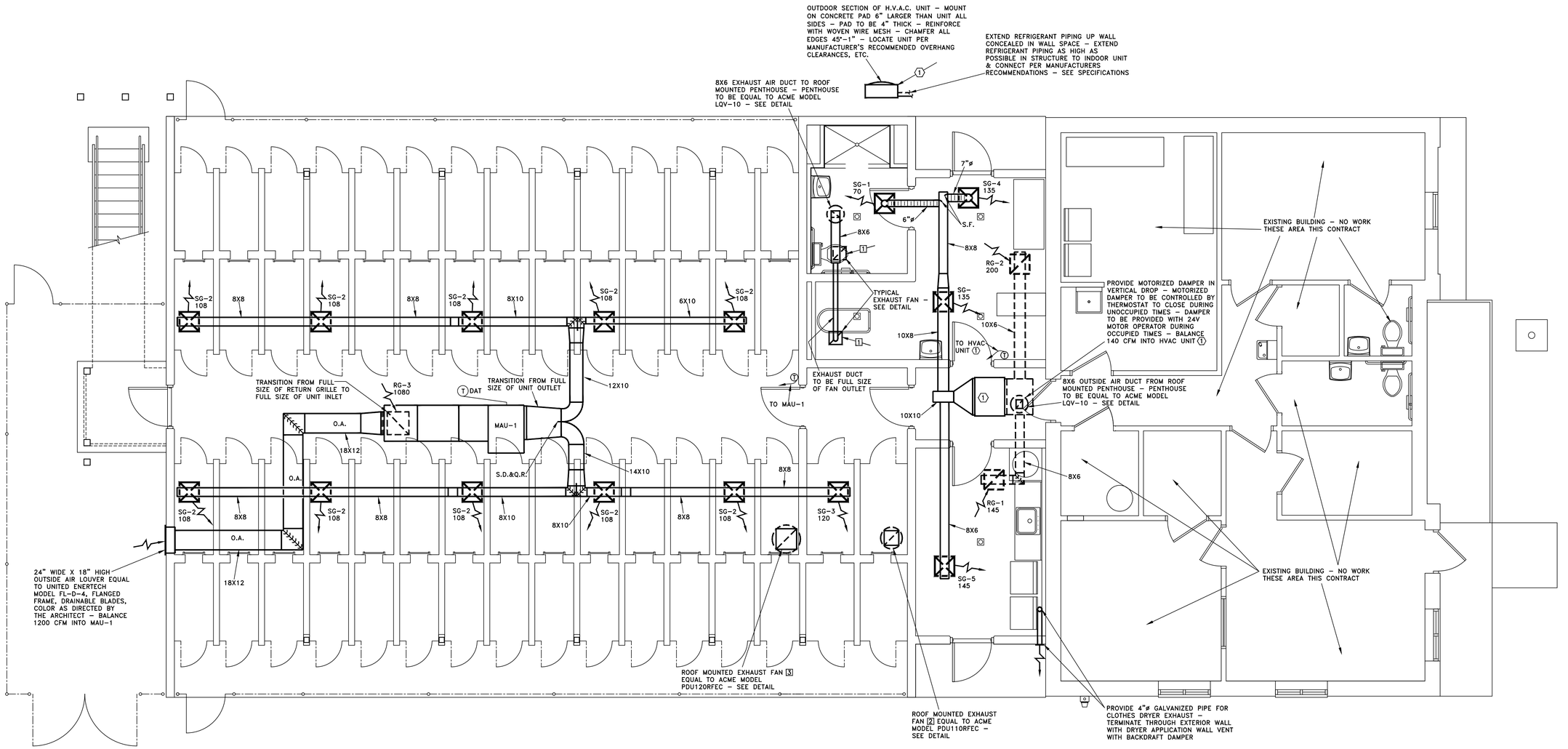

MECHANICAL FLOOR PLAN
SCALE: 1/4"=1'-0"

H.V.A.C. LEGEND

- SUPPLY DUCTWORK WITH 2" EXTERNAL INSULATION
- RETURN DUCTWORK WITH 2" EXTERNAL INSULATION
- FLEXIBLE DUCTWORK EQUAL TO GENFLEX 1L-1
- O.A. — OUTSIDE AIR DUCTWORK WITH 2" EXTERNAL INSULATION
- (T) — ROOM THERMOSTAT – SEE CONTROL SPECIFICATION
- H.V.A.C. UNIT – SEE SCHEDULE AND DETAILS
- AIR DISTRIBUTION OUTLET – SEE SCHEDULE
- EXHAUST FAN – SEE SCHEDULE AND DETAIL
- S.D. & Q.R. — SPLITTER DAMPER AND QUADRANT REGULATOR
- S.F. — SPIN-IN FITTING WITH AIR SCOOP
- (DSD) — DUCT MOUNTED SMOKE DETECTOR – TIE INTO H.V.A.C. UNIT FAN CIRCUIT FOR EMERGENCY SHUT DOWN CONTROL

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MECHANICAL FLOOR PLAN

COMMONWEALTH OF VIRGINIA
DERWIN EUGENE CARTMELL
Lic. No. 0402031491
PROFESSIONAL ENGINEER
4/16/21

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THE LANE GROUP INC.

DUCTLESS SPLIT SYSTEM HEAT PUMP EQUIPMENT SCHEDULE

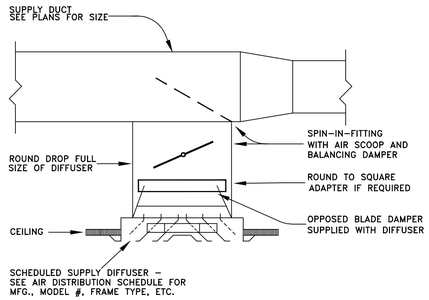
UNIT DESIGNATION	⟨1⟩
MANUFACTURER	MITSUBISHI
INDOOR MODEL #	PEAD-A18AA7
CFM	485
VOLTAGE	208/230V/1ø
M.C.A.	1.69 A
OUTDOOR UNIT MODEL #	SUZ-KA18NAR1
TOTAL COOLING	18,000
HEATING 47°	24,700
C.O.P.	3.20
HSPF	11.5 BTUH/h/W
HEATING 17°	14,000
C.O.P.	2.40
S.E.E.R.	18.8
VOLTAGE	208/230V/1ø
M.C.A.	14 A
D.E.F./HACR BREAK	15 A
OUTSIDE AIR	140 CFM

MAKE-UP AIR UNIT EQUIPMENT SCHEDULE

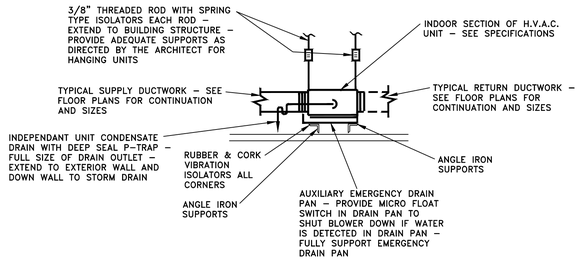
UNIT DESIGNATION	MAU-1
TYPE INDOOR UNIT	MAKE-UP AIR UNIT - HEATING & VENTILATION ONLY
MAUNUFACTURER	GREENHECK
MODEL #	IGX-P112-H12-MF-E
SUPPLY CFM	1200
EXTERNAL STATIC PRESSURE IN H20 AFTER WET COIL	.5"
MOTOR HP	1/2
FUEL TYPE	PROPANE
BTUH INPUT	150,000
BTUH OUTPUT	120,000
TEMP RISE MIN °F	7.7
TEMP RISE MAX °F	92.6
ELEC. CHARACTER	208V/1ø
MCA	14.7 A
MOCP	15 A
OUTDOOR AIR	1200 CFM

AIR DISTRIBUTION SCHEDULE

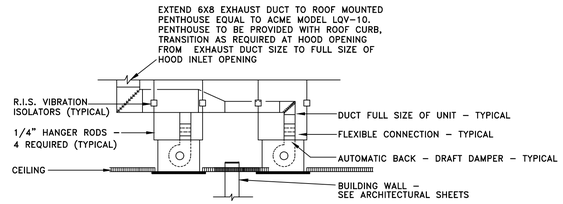
MARK	MANUFACTURER & MODEL NO.	SERVICE	SIZE	C.F.M.	F.P.M.	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES & FEATURES
SG-1	KRUEGER SHPC-04	SUPPLY	6X6	70	280	FOUR WAY THROW DIFFUSER	STEEL	WHITE	FULLY ADJUSTABLE WITH AIR
SG-2			6X6	108	430	WITH FLANGED FRAME			PATTERN CONTROLLERS AND
SG-3			9X9	120	215				OPPOSED BLADE DAMPER
SG-4			9X9	135	240				WITH FLANGED FRAME
SG-5			9X9	145	260				
SG-6	NOT USED								
RG-1	KRUEGER S580	RETURN	10X6	145	345	RETURN GRILLE WITH	ALUMINUM	WHITE	HORIZONTAL BLADES ANGLED
RG-2			12X6	200	400	FLANGED FRAME			TO PREVENT SEE THROUGH
RG-3			20X20	1080	390				AND OPPOSED BLADE DAMPER
RG-4	NOT USED								



CEILING SUPPLY DIFFUSER CONNECTION DETAIL
NO SCALE

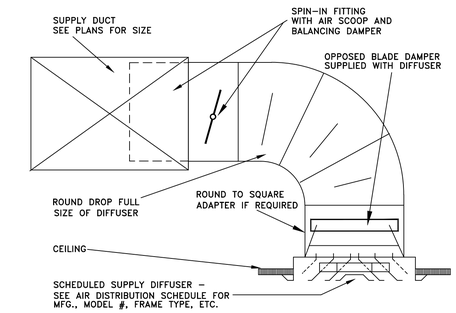


TYPICAL DUCTED H.V.A.C. UNIT ⟨1⟩ DETAIL
NO SCALE



TYPICAL TOILET EXHAUST FAN DETAIL
NO SCALE

FAN NO.	MFG.	MODEL	CFM	S.P.	WATTS	PH/V.
1	ACME	VQ090ESa	70	1/4"	32	1ø/120



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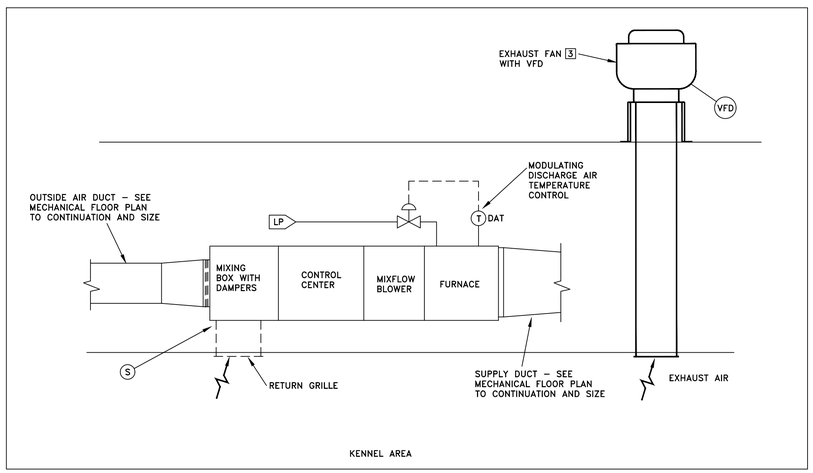
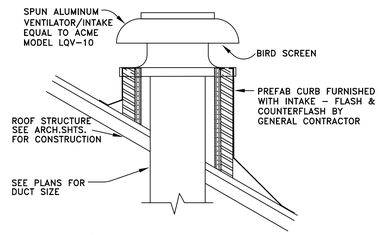
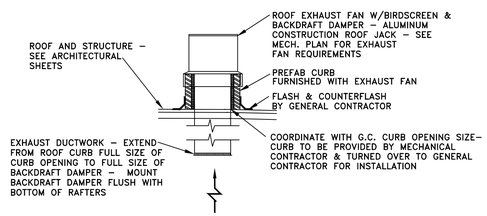


KENNEL CONTROL SCHEME

CONTROL
- SUMMER - 100% OUTSIDE AIR VENTILATION WITH EXHAUST FAN RUNNING TO GET SPACE AT PRESSURE NEUTRAL
- WINTER - 100% OUTSIDE AIR - HAVE DISCHARGE AIR TEMP SET POINT MAINTAINING BY MODULATING LP VALVE. EXHAUST FAN RUNNING TO PROVIDE SPACE @ NEUTRAL PRESSURE
- WINTER BELOW 20°F - REDUCE OUTSIDE AIR TO 50% AND CONTROL DISCHARGE TEMPERATURE SET POINT. REDUCE EXHAUST FAN SPEED TO PROVIDE SPACE AT NEUTRAL PRESSURE
- PROVIDE MANUAL (S) TO CHANGE MIXING BOX DAMPERS TO 50% AND CHANGE VFD TO FIELD BALANCED POINT FOR NEUTRAL PRESSURE CONDITIONS AT LOWER OUTSIDE AIR FLOW.
- FIELD SET VFD FOR BOTH EXHAUST FANS 2 AND 3 FOR NEUTRAL SPACE CONDITIONS AT 100% OUTSIDE AIR.
- FIELD SET EXHAUST FAN 3 FOR NEUTRAL SPACE CONDITIONS WITH 50% OUTSIDE AIR AND RECORD FOR SET POINT #2 FOR USE WHEN MIXING BOX DAMPER IS IN 50% OUTSIDE AIR MODE.
- PROVIDE DISCHARGE AIR TEMPERATURE WITH CONTROLLER FOR DISCHARGE AIR TEMPERATURE CONTROL IN KENNEL.

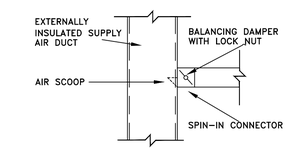


OUTSIDE AIR/EXHAUST PENTHOUSE DETAIL
NO SCALE



TYPICAL ROOF EXHAUST FAN DETAIL
NO SCALE

FAN NO.	MFG.	MODEL	CFM	E.S.P.	DRIVE	RPM	H.P.	ELECTRICAL
2	ACME	PDU110RFEC	120	.75	DIRECT	1850	1/4	115V/1ø
3	ACME	PDU120RFEC	1080	.75	DIRECT	1850	1/4	115V/1ø



TYPICAL SPIN-IN-FITTING
NO SCALE

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

MECHANICAL DETAILS

COMMONWEALTH OF VIRGINIA
DERWIN EUGENE CARTMEL
Lic. No. 0402031421
4/16/21
PROFESSIONAL ENGINEER

DATE:	04/16/2021
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TRM	DEC

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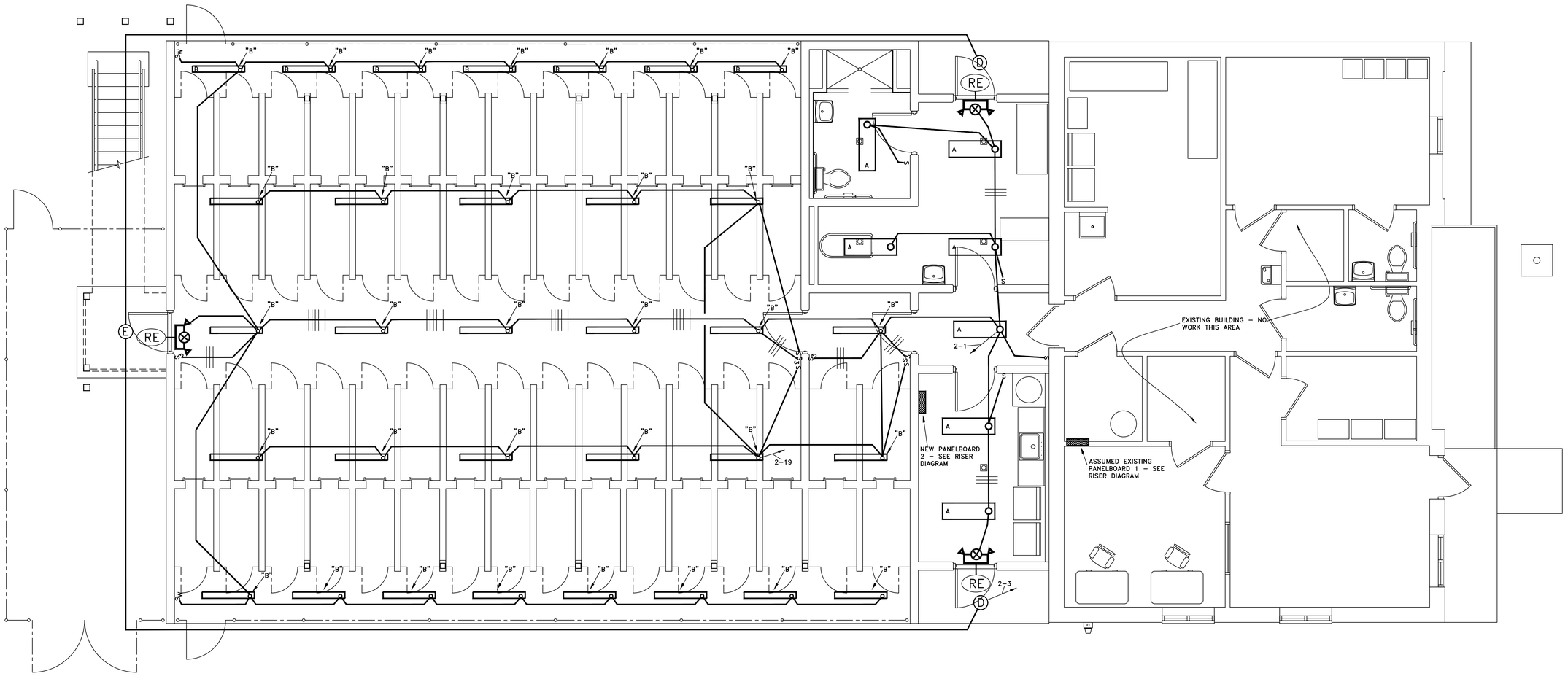

LIGHTING FLOOR PLAN

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

ELECTRIC LEGEND

- A — LIGHTING OUTLET LED. INSERT IS TYPE.
- A — DUPLEX 15 AMPERE CONVENIENCE OUTLET WITH GROUND. BRYANT #5262-I. SUBSCRIPT "A" INDICATES 20 AMPERE SIZE.
- GF — DUPLEX 15 AMPERE GROUND-FAULT CONVENIENCE OUTLET. BRYANT #GFR52FT-I.
- W — DUPLEX 20 AMPERE WEATHERPROOF GROUND-FAULT CONVENIENCE OUTLET. BRYANT #GFR53FT WITH #GFRWPV WEATHERPROOF COVER.
- SINGLE PHASE, 250 VOLT, 3 WIRE SINGLE OUTLET WITH GROUND:
  30 AMP BRYANT #9630FR WITH #9630-ANPNP PLUG
  50 AMP BRYANT #9650FR WITH #9650-ANPNP PLUG
- WALL MOUNTED DATA OUTLET WITH STAINLESS STEEL PLATE WITH OPENING AS REQUIRED BY OWNER/VENDOR. EXTEND 3/4" CONDUIT TO ABOVE CEILING
- J — JUNCTION BOX OUTLET. CONNECT POWER. VERIFY LOCATION AND SERVICE PRIOR TO ROUGH-IN.
- F — FAN OUTLET. CONNECT POWER. PROVIDE CORD AND PLUG IF NEEDED. VERIFY LOCATION AND SERVICE WITH OWNER PRIOR TO ROUGH-IN.
- FUSIBLE SAFETY DISCONNECT SWITCH.
- BRANCH CIRCUIT PANELBOARD.
- S_W — SINGLE POLE, QUIET ACTION, 20 AMPERE TOGGLE SWITCH - BRYANT #4901-I. SUBSCRIPT "W" INDICATES WEATHERPROOF SWITCH -
- S_3 S_4 — 3 AND 4 WAY QUIET ACTION 20 AMPERE TOGGLE SWITCHES. BRYANT #4903-I AND #4904-I.
- CONDUIT CONCEALED. GROUND NOT SHOWN BUT REQUIRED.
- CONDUIT AND 3 WIRES. NO MARKS INDICATE 2 WIRES. GROUND NOT SHOWN BUT REQUIRED.
- 1-1,3 — CONDUIT AND WIRE HOME RUN. NUMBERS INDICATE PANELBOARD AND CIRCUIT NUMBERS. GROUND NOT SHOWN BUT REQUIRED.

1. INSTALL SWITCHES 48"± ABOVE FINISHED FLOOR AND RECEPTACLES AND PHONE/LAN OUTLETS 18"± ABOVE FINISHED FLOOR AND 8"± ABOVE COUNTERS UNLESS NOTED OTHERWISE. ALL DEVICES FLUSH MOUNTED UNLESS OTHERWISE REQUIRED.
2. EQUAL SPEC GRADE DEVICES OF BRYANT, HUBBELL, P & S, LEVITON, AND GENERAL ELECTRIC MAKE ACCEPTABLE. NONE OTHER ACCEPTABLE, EXCEPT WITH WRITTEN PERMISSION.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION
RE	SURFACE MOUNTED EMERGENCY EXIT/LIGHTING UNIT WITH EXTERIOR REMOTE EMERGENCY HEAD, LED LAMPS, NICAD BATTERY, RED FACE, WHITE HOUSING, & ELECTRONIC CHARGING/SWITCHING. LITHONIA-LHQM-LED-R-HO/ELA-LED-WP-M1Z
	EMERGENCY BATTERY BACKUP LUMINAIRE WITH SOLID STATE CHARGING & SWITCHING AND ALL CATALOGUED FEATURES LITHONIA-EU2-LED-M12
A	4' SURFACE-MOUNTED LED LUMINAIRE WITH 4,600 LUMENS , 4000K COLOR TEMPERATURE, AND 120 VOLT INPUT [41 WATTS] CONTRACTOR-SELECT LITHONIA-LBL4-LP840
B	4' SURFACE-MOUNTED WHITE LED LUMINAIRE WITH ALUMINUM HOUSING, POLY LENS, 4,500 LUMENS AND 4000K COLOR TEMP. [45 WATTS] KENALL MLHA8-48-F-MW-CP-2-45L40K-120
C	WALL MOUNTED LED LUMINAIRE COLOR AS SELECTED BY ARCHITECT 120 VOLT INPUT, 4000K COLOR TEMP, WET LABEL, BUILT IN PHOTOCELL, & DARK SKY FRIENDLY. [36 WATTS] LITHONIA-DSXW2-LED-20C-530-40K-TFTM-MVOLT-PE
D	6" ROUND LED DOWNLIGHT WITH 1,500 LUMENS, WET LOCATION LISTED, AND 120 VOLT INPUT [18 WATTS] LITHONIA-LDN6-35/15-MVOLT-GZ10-HSG
E	SURFACE MOUNTED WET LABEL LED LUMINAIRE WITH 3500 LUMENS, 4000K COLOR TEMP, 120 VOLT INPUT, DARK BRONZE ALUMINUM HOUSING, GASKET AND FROSTED LENS. LITHONIA CNY LED PO 40K MVOLT DDB

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ADDITIONS AND RENOVATIONS TO
WASHINGTON COUNTY
CC PORTER ANIMAL SHELTER

LIGHTING FLOOR PLAN

COMMONWEALTH OF VIRGINIA
JOE W. RIGGS
Lic. No. 22741
4-16-21
PROFESSIONAL ENGINEER

DATE:	04/16/2021
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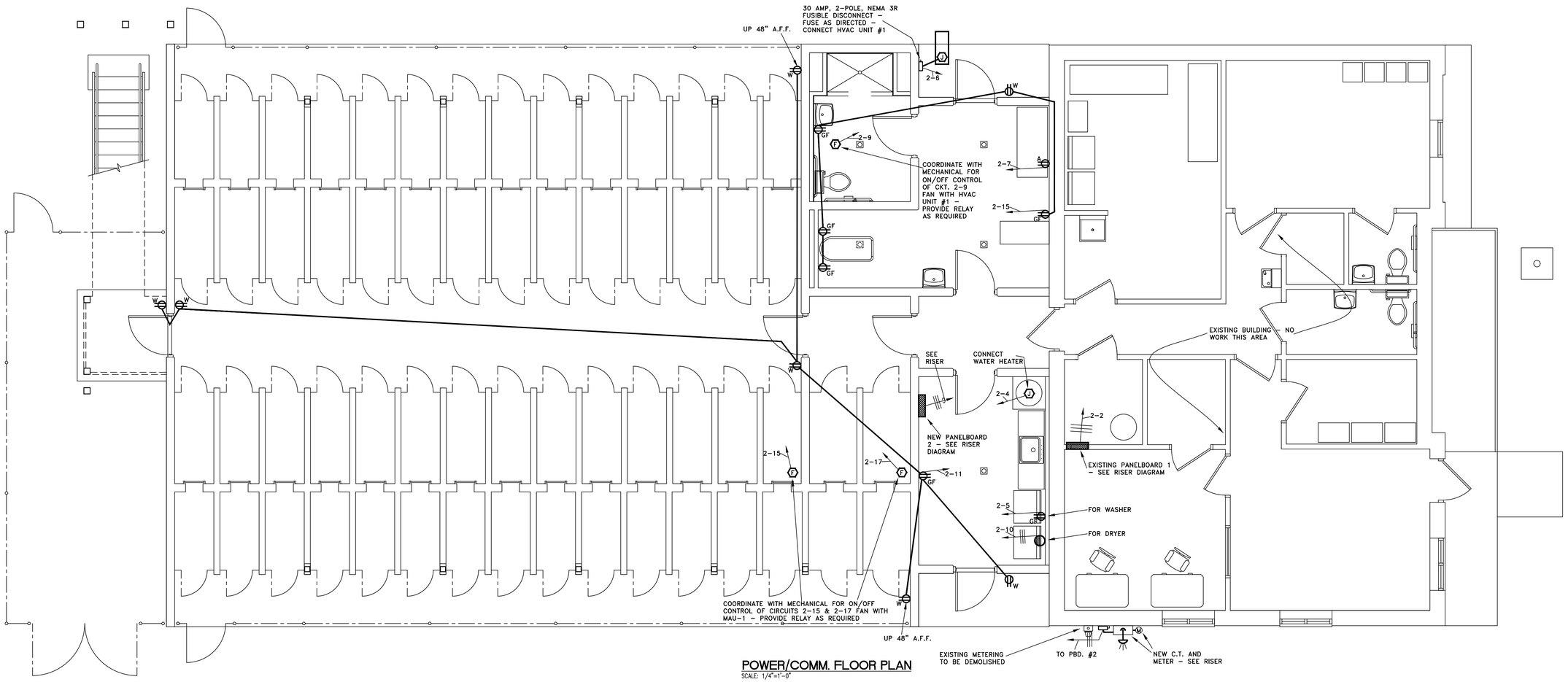
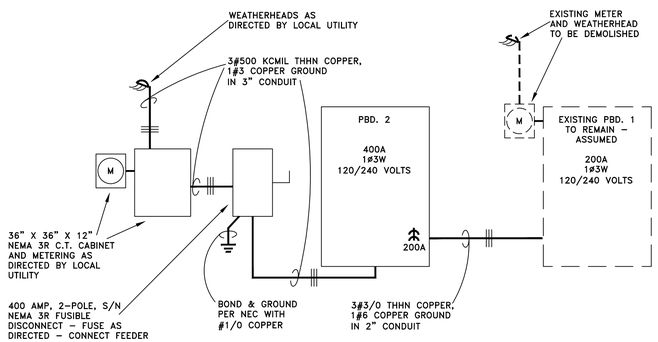


POWER/COMM. FLOOR PLAN

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



ELECTRIC SERVICE RISER DIAGRAM

NO SCALE

BRANCH CIRCUIT PANELBOARD

PANELBOARD NO. 2

FEEDING	WIRE	CIRCUIT AMPS	CIRCUIT NO.	PBD.	CIRCUIT NO.	CIRCUIT AMPS	WIRE	FEEDING	PHASE LOADING-KW A	PHASE LOADING-KW B
LIGHTS	12	20	1		2	200	SEE	EXISTING PBD. 1	13.0	
EXTERIOR LIGHTS			3				RISER			12.0
WASHER			5		4	30	10	WATER HEATER	3.5	
FREEZER			7							3.5
EXHAUST FAN			9		6	15	12	HVAC #1	2.0	
RECEPTACLES			11							2.5
RECEPTACLES			13		8	15	12	MAU-1	2.5	
EXHAUST FAN			15							1.5
EXHAUST FAN			17		10	30	10	DRYER	2.3	
LIGHTS			19							2.6
SPARE	-		21		-	-	-	SPACE	-	
SPARE	-		23		-	-	-			-
SPACE	-	-	-		-	-	-		-	
	-	-	-		-	-	-			-
	-	-	-		-	-	-		-	
	-	-	-		-	-	-			-
	-	-	-		-	-	-		-	
	-	-	-		-	-	-			-
	-	-	-		-	-	-		-	
	-	-	-		-	-	-			-
								PANELBOARD LOADING	23.3	22.1

LOCATION	SEE PLANS	MAINS	400 AMPS M.L.O.
MOUNTING SURFACE		TYPE	NF
SERVICE	1ø 3W 120/240 VOLTS	TOTAL LOAD	45.4 KW

NOTE: PROVIDE EXTERNAL TIMECLOCK/PHOTOCELL CONTROL FOR ALL EXTERIOR LIGHTS ON CKT. 2-3

DESIGN DATA

SERVICE CHARACTERISTICS 1ø 3W 240/120 VOLTS

CONNECTED LOADS:

LIGHTS	2.8 KW
HVAC	6.0 KW
WATER HEATER	4.5 KW
MISC. POWER	9.6 KW
TOTAL ESTIMATED CONNECTED LOAD	22.9 KW
EXISTING LOAD	27.6 KW
TOTAL ESTIMATED LOAD	50.2 KW
SERVICE CAPACITY	400 AMPS

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ADDITIONS AND RENOVATIONS TO
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POWER & COMM. FLOOR PLAN

COMMONWEALTH OF TENNESSEE
JOE W. RIGGS
Lic. No. 22741
4-16-21
PROFESSIONAL ENGINEER

DATE: 04/16/2021

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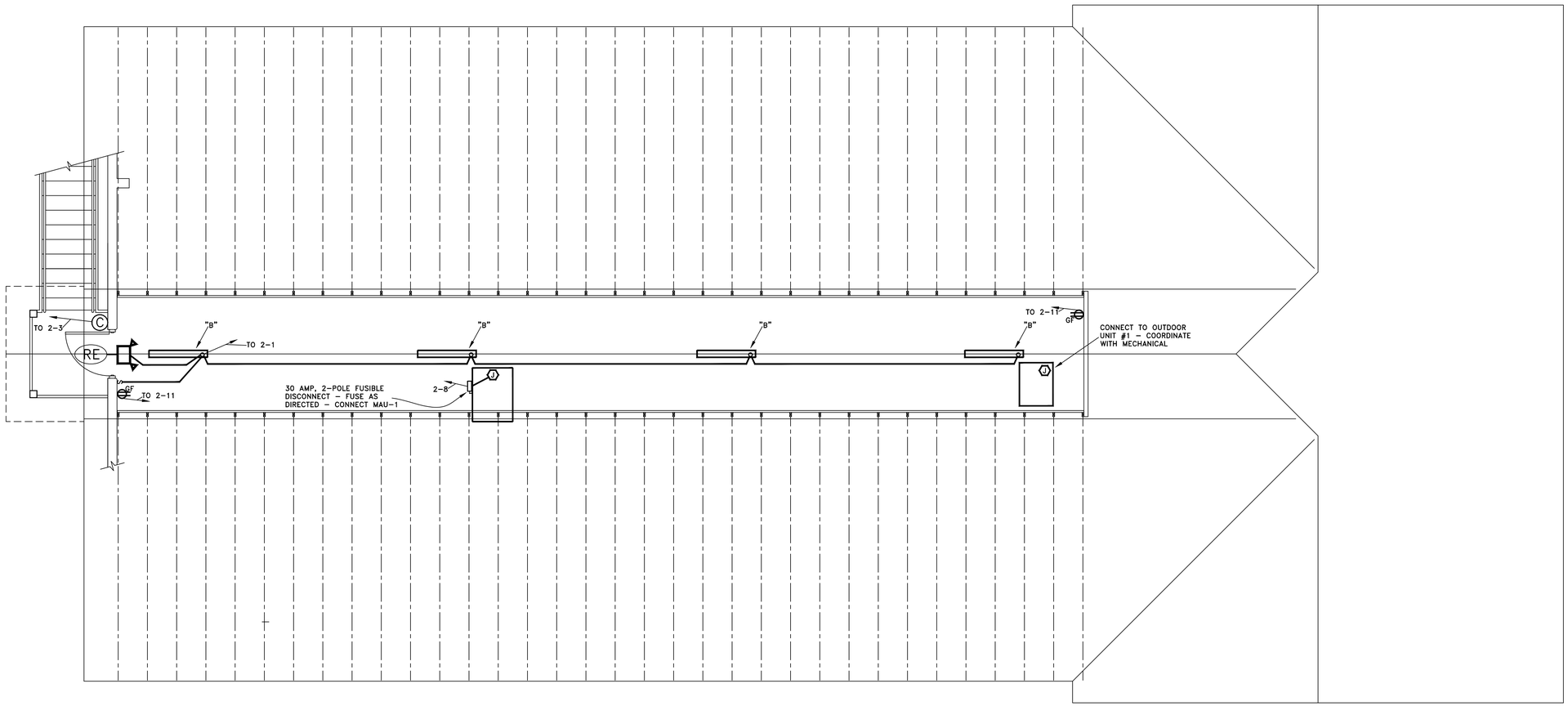

ATTIC ELECTRICAL PLAN
SCALE: 1/4"=1'-0"

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ADDITIONS AND RENOVATIONS TO
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CC PORTER ANIMAL SHELTER

ATTIC ELECTRICAL PLAN

JOE W. RIDGE
Lic. No. 22741
4-16-21

DATE: 04/16/2021

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