ADDITIONS AND RENOVATIONS TO EXISTING

Washington County VA Facility Sheriff's Office - Animal Shelter

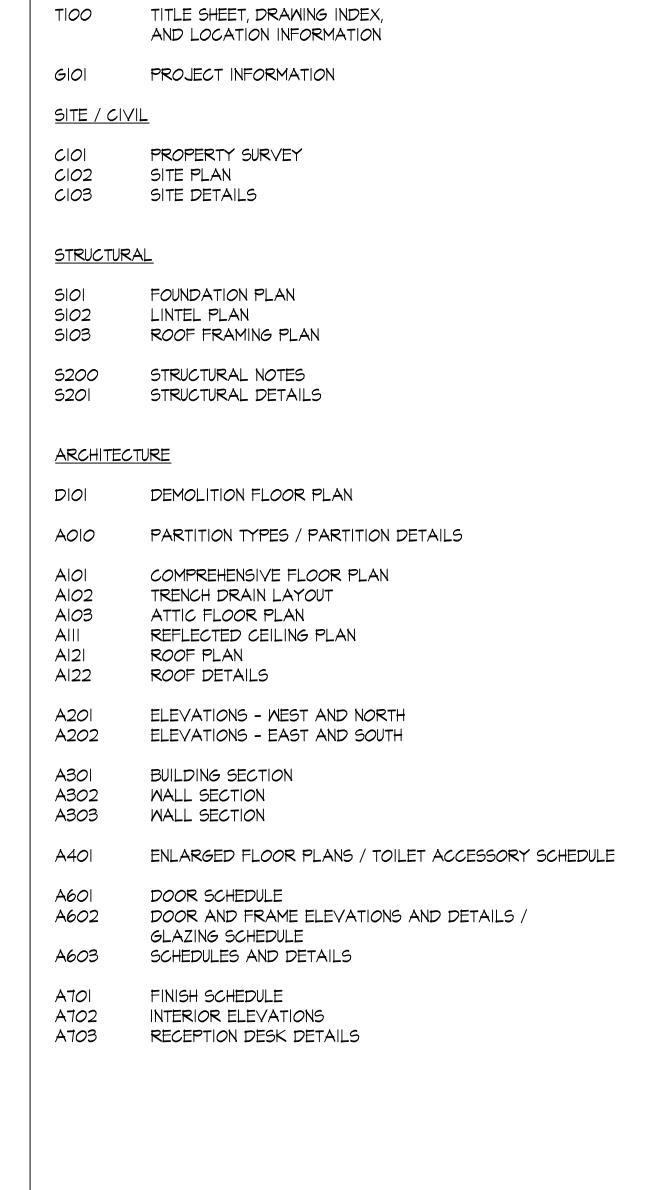
15050 Lee Highway - Bristol, Virginia 24201

BID DOCUMENTS / CONSTRUCTION DOCUMENTS

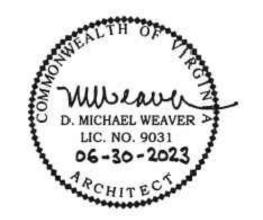
DRAWING INDEX

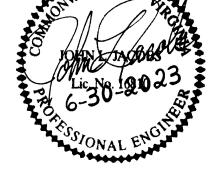
GENERAL PROJECT INFORMATION PROJECT DATA ADDITIONS AND RENOVATIONS TO EXISTING WASHINGTON COUNTY VA FACILITY SHERIFF'S OFFICE - ANIMAL SHELTER 15050 LEE HIGHWAY BRISTOL, VIRGINIA 24201 OWNER / DEVELOPER WASHINGTON COUNTY, VIRGINIA OWNER CONTACT PERSON: BRYAN McALLISTER TELEPHONE NO.: 276-525-1353 OWNER CONTACT PERSON: KEVIN HILL, GENERAL SERVICES MANAGER TELEPHONE NO.: 276-525-1355 DESIGNERS OF RECORD DISCIPLINE LICENSE NO. TELEPHONE NO: ARCHITECT D. MICHAEL WEAVER, AIA VA. 009031 276-206-8571 LANDSCAPE CIVIL ENGR. MATTHEW LANE, P.E. VA. 034173 276-206-8571 STRUCTURAL JOHN L. JACOBS, P.E. VA. 016810 423-787-7828 DERWIN CARTMEL, P.E. 423-926-5991 PLUMBING VA. 031491 DERWIN CARTMEL, P.E. HVAC VA. 031491 423-926-5991 SPRINKLER ELECTRICAL JOE W. RIGGS, P.E. VA. 022741 423-926-5991

FIRE ALARM

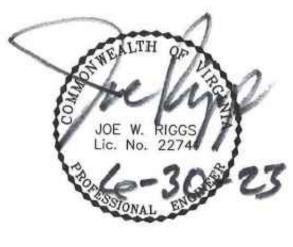


DRAWING INDEX MPE SPECIFICATIONS MECHANICAL, PLUMBING, & ELECTRICAL SPECIFICATIONS MECHANICAL, PLUMBING, & ELECTRICAL SPECIFICATIONS GAS PLUMBING GAS PIPING FLOOR PLAN PLUMBING SANITARY SEMER, WASTE, & VENT PIPING FLOOR PLAN SANITARY SEMER, WASTE, & VENT PIPING FLOOR PLAN DOMESTIC WATER PIPING FLOOR PLAN DOMESTIC WATER PIPING FLOOR PLAN <u>MECHANICAL</u> MECHANICAL FLOOR PLAN MECHANICAL DETAILS ELECTRICAL MAIN LEVEL LIGHTING FLOOR PLAN ATTIC ELECTRICAL PLAN MAIN LEVEL POWER & COMMUNICATIONS FLOOR PLAN









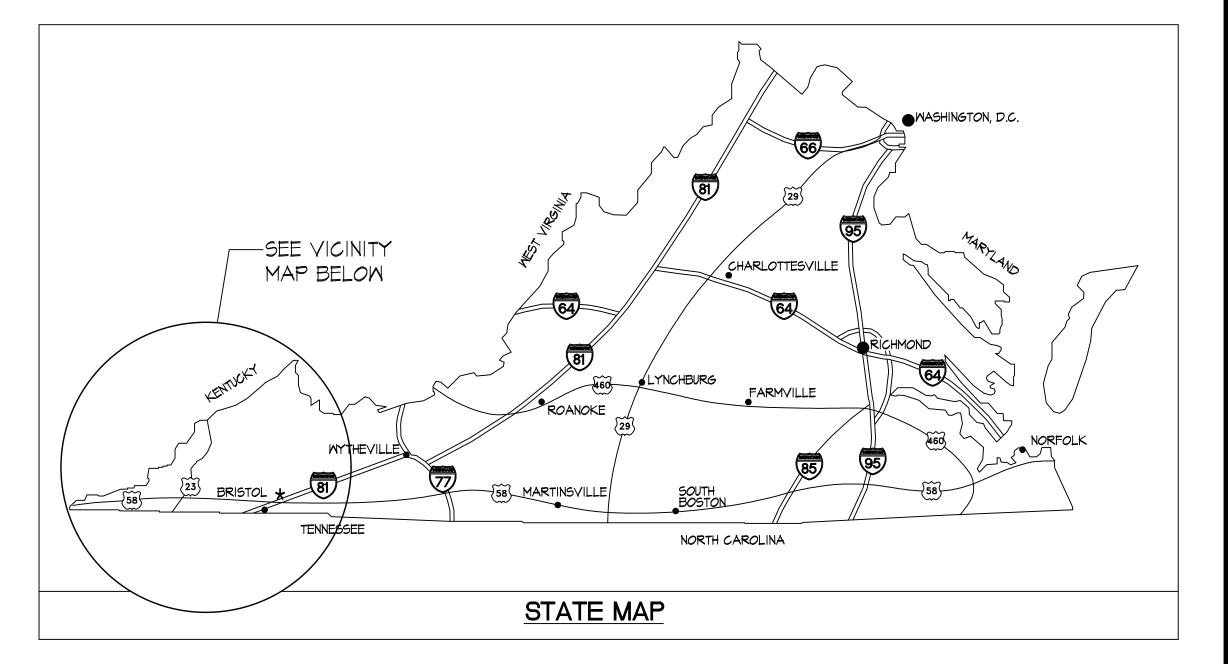
ARCHITECTURE

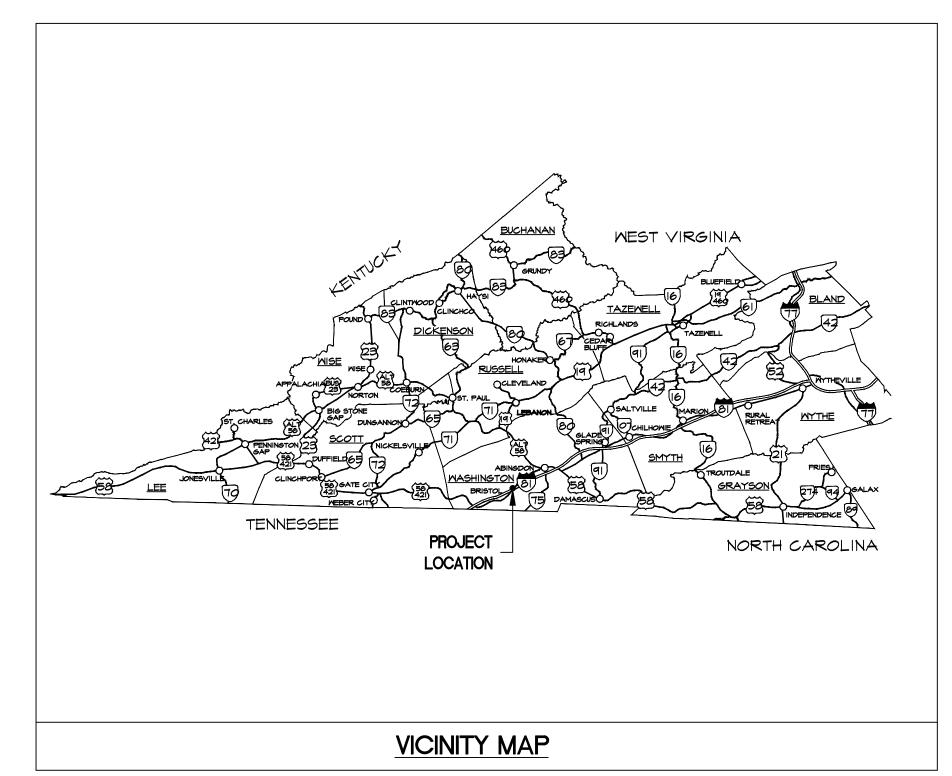
STRUCTURAL MECHANICAL

www.thelanegroupinc.com

the LANE engineering architecture environmental 276.206.8571 - office

Abingdon I Big Stone Gap I Galax





PROJECT
ADDITIONS AND
RENOVATIONS TO EXISTING
WASHINGTON COUNTY VA
SHERIFF'S OFFICE ANIMAL SHELTER

15050 LEE HIGHWAY BRISTOL, VA 24201

TLG PROJECT NO. 22136

TITLE SHEET

DRAWING INDEX

LOCATION INFORMATION

T-100

06-30-2023

MATER FLOW SWITCHES

PRESSURE SWITCHES

SPRINKLER SYSTEM DRAINS AND TEST CONNECTIONS

Interior

Janitor

Joint

NAL TL

VOL

VTR

VIrginia Tech (Go Hokies!)

Vent Thru Roof

Vinyl Wall Covering

VIRGINIA

24201

VIRGINIA

BRISTOL

SHELTER HIGHWAY 5050 SHING

RENOVA

BUILDING

ORMATION

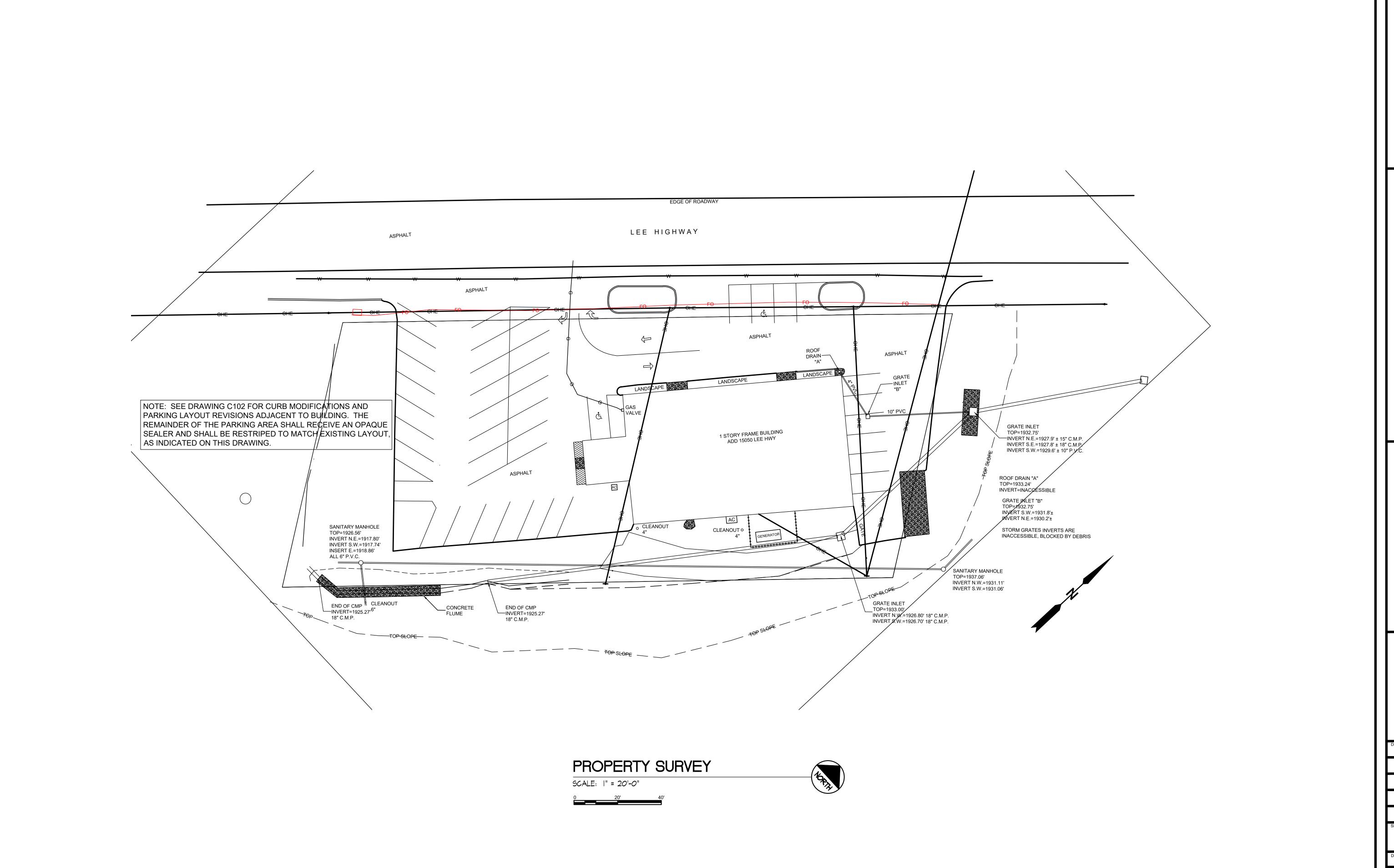
Milleaver 2 D. MICHAEL WEAVER > LIC. NO. 9031 06-30-2023 RCHITECS

06-30-2023

REVISION DATE

G101

CHECKED BY TLG-22136



BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

PROPERTY SURVEY



DATE: 06-30-2023

NO. REVISION DATE

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3
SHEET: C101

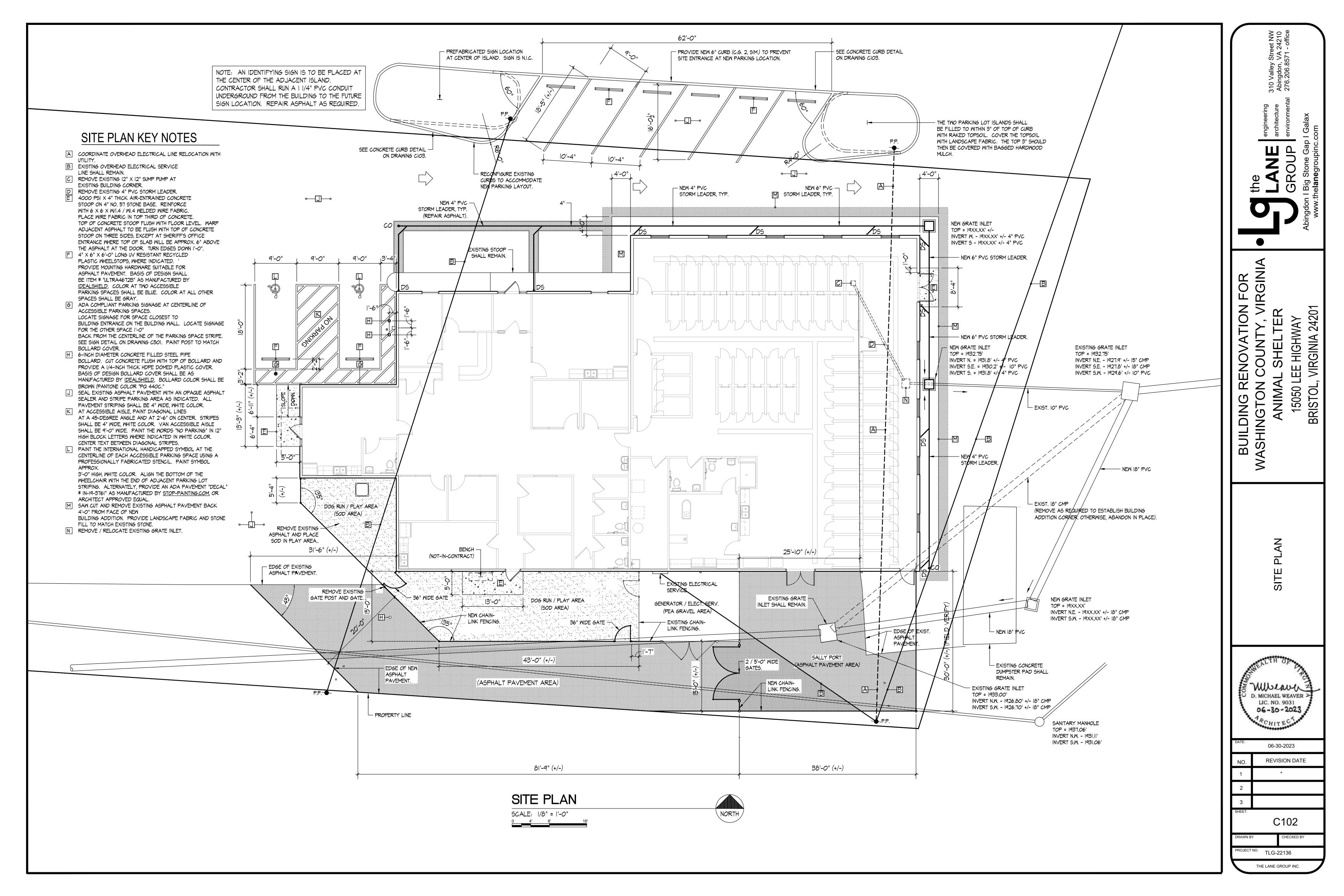
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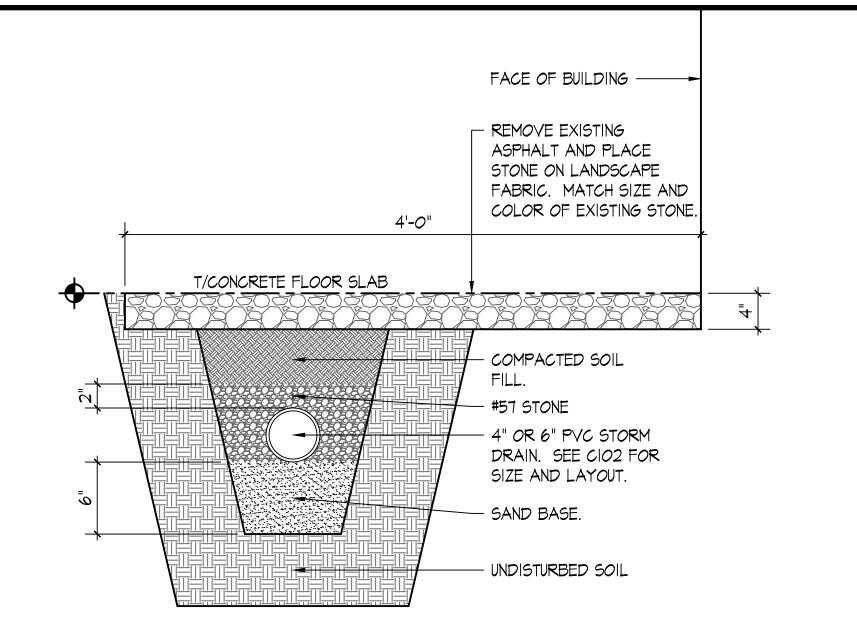
CHECKED BY

PROJECT NO.

TLG-22136

THE LANE GROUP INC.





SUBGRADE SHALL BE PROOF-ROLLED
PRIOR TO PLACING AGGREGATE BASE.

(ALL FILL SHALL BE COMPACTED TO 45% OF STANDARD PROCTOR PER ASTM 698).

3" ASPHALT BASE COURSE (VDOT BM-25.0)

2" ASPHALT SURFACE COURSE (VDOT SM-9.5A)

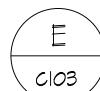
8" AGGREGATE BASE COURSE (VDOT 2IB COMPACTED TO 100% OF STANDARD PROCTOR PER ASTM698)

D

STORM DRAIN DETAIL

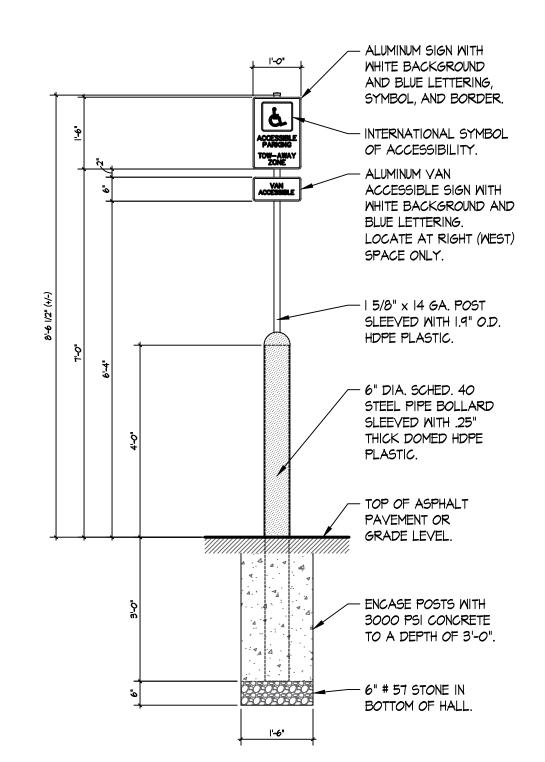
C103

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

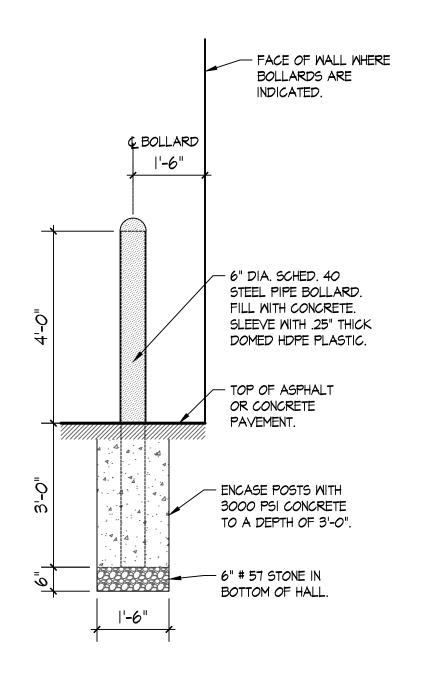


TYPICAL PAVED PARKING SECTION

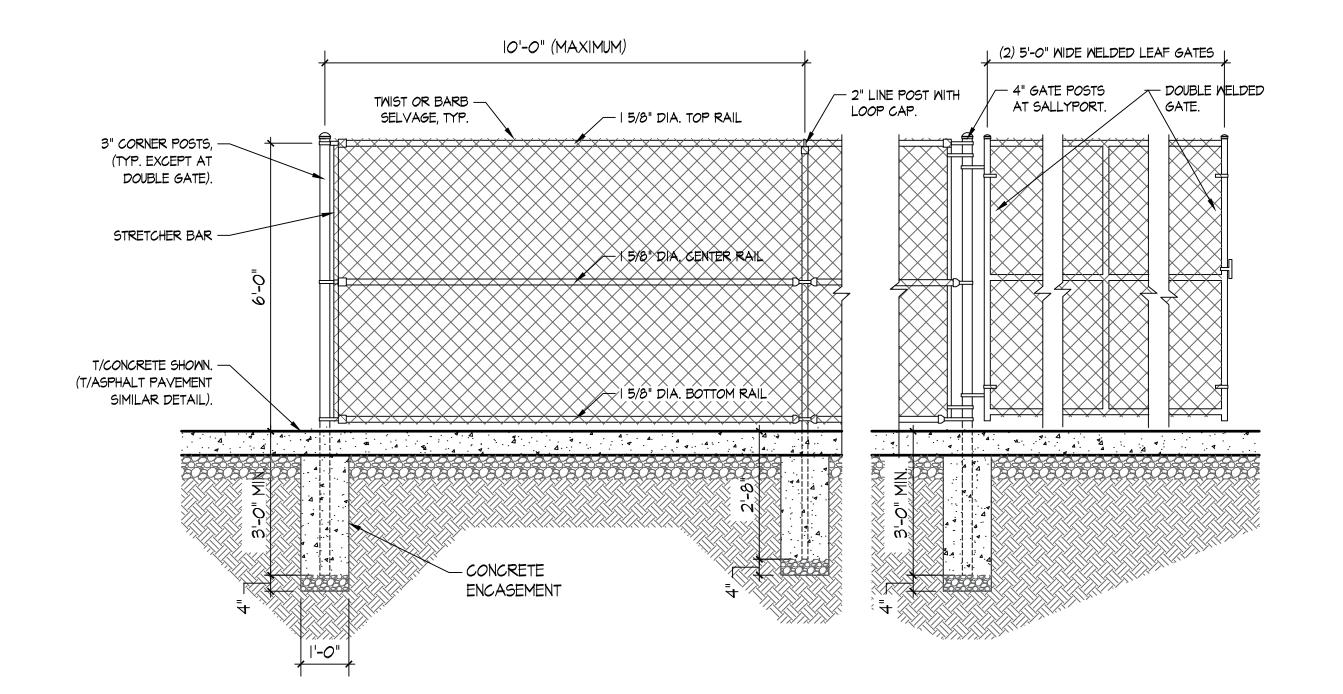
NOT TO SCALE

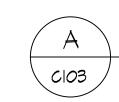












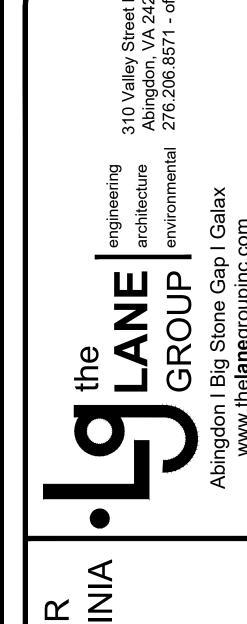
CHAIN-LINK FENCING DETAIL

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

CHAIN-LINK FENCING NOTES:

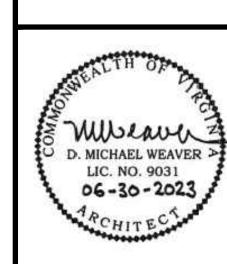
- DOUBLE GATE SHALL HAVE A LOCKING MECHANISM, DROP ROD, AND TRUSS ROD.
 ALL FENCE COMPONENT MATERIALS SHALL BE HOT-DIPPED GALVANIZED STEEL
- OR IRON.

 3. ALL FENCE FABRIC SHALL BE 9-GAUGE (HEAVY DUTY).



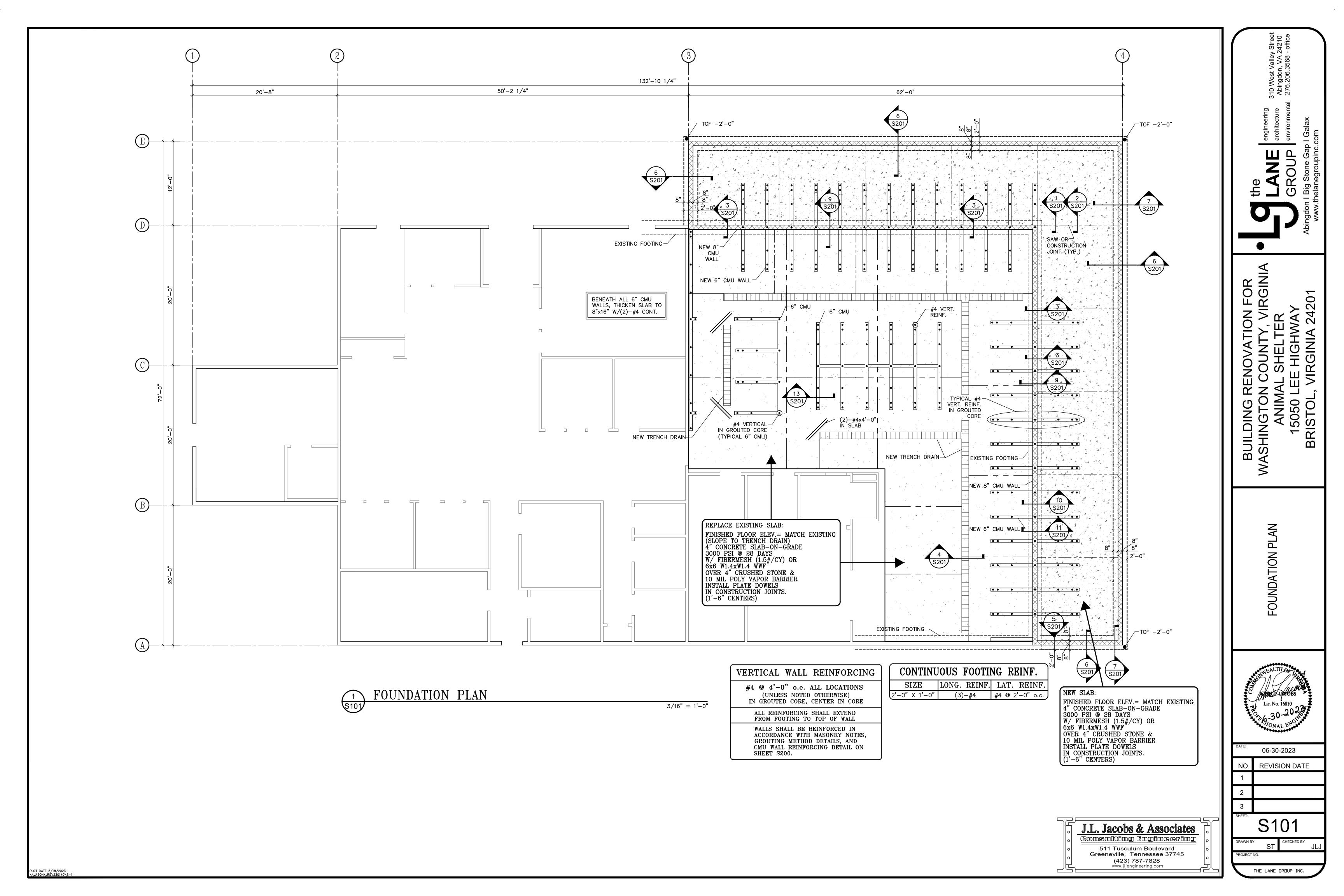
BUILDING RENOVATION FO
WASHINGTON COUNTY, VIRG
ANIMAL SHELTER

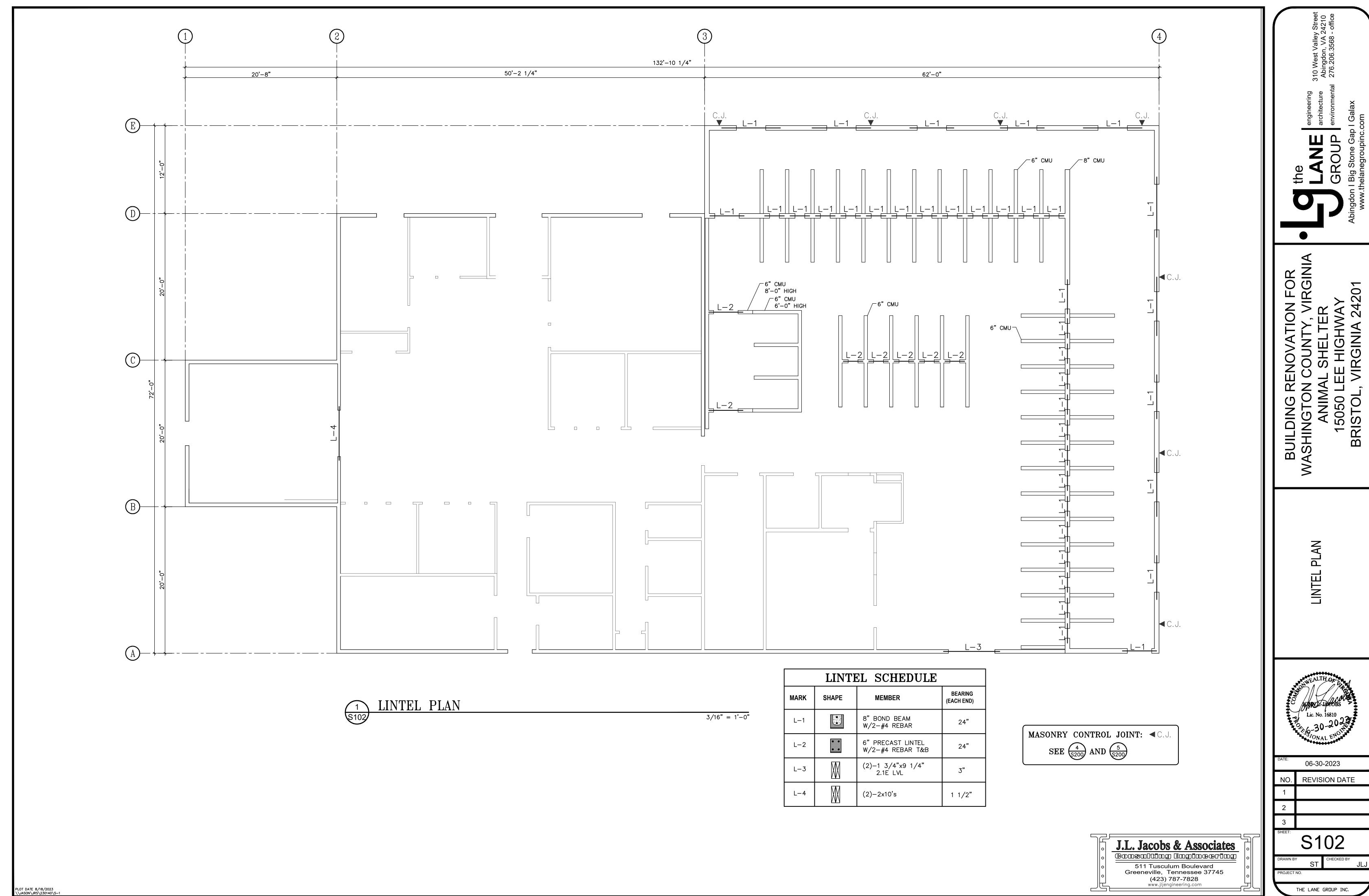
SITE DETAILS

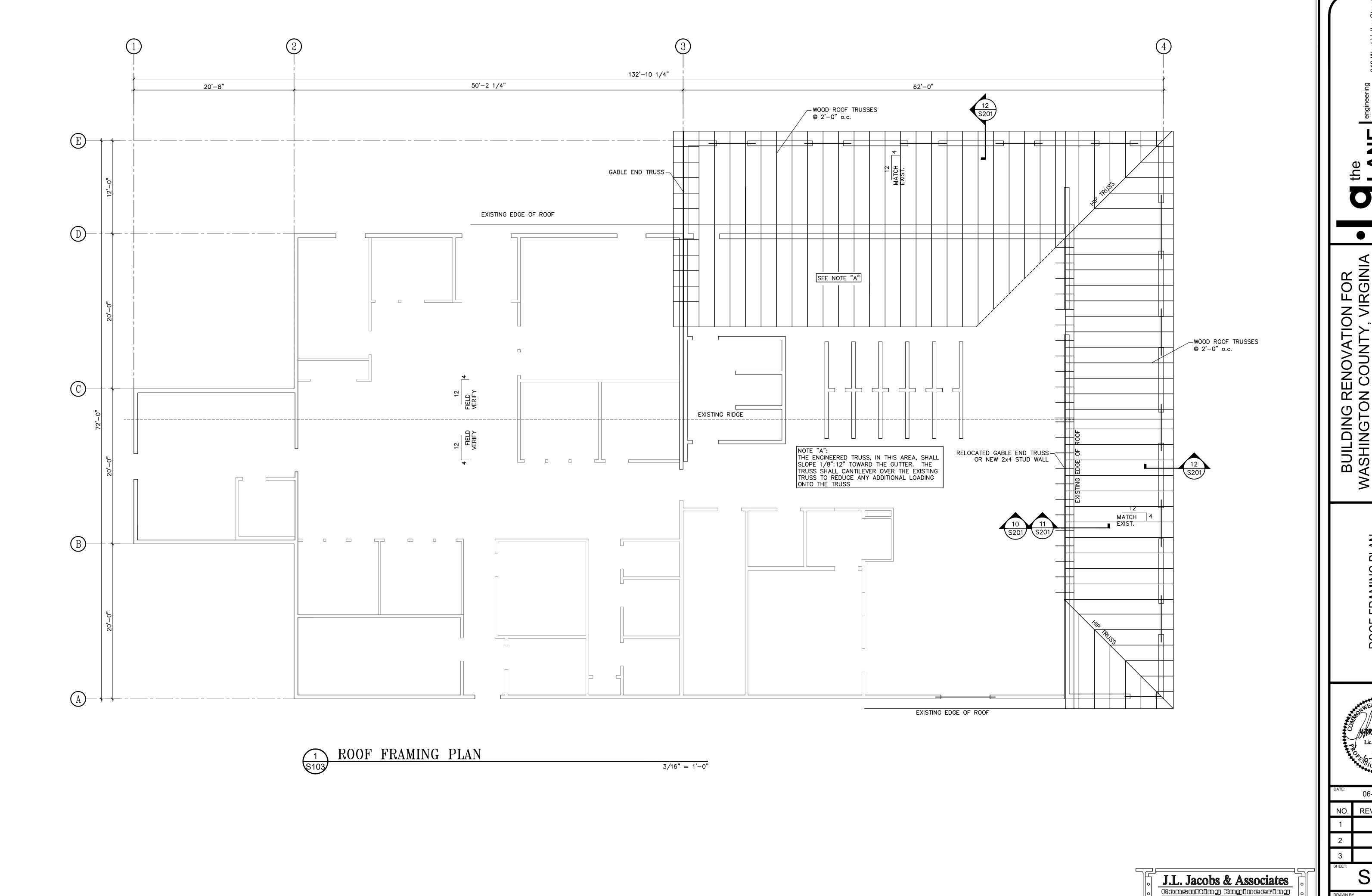


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DATE:	06-30-2023
NO.	REVISION DATE
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SHEET:	C103

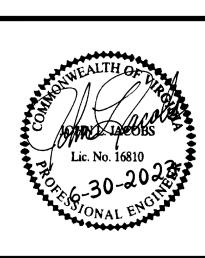
PROJECT NO. TLG-22136







FRAMING



06-30-2023 NO. REVISION DATE

511 Tusculum Boulevard Greeneville, Tennessee 37745 (423) 787-7828 www.jljengineering.com

S103

PLOT DATE 8/18/2023 \\JASON\JRS\230140\S-1

STOP GROUT 1" FROM TOP OF-POUR TO CREATE SHEAR KEY GROUT IN BOND BEAMS & REINFORCED-VERTICAL CELLS PLACED IN TOP OF WALL AFTER WALL HAS BEEN LAID UP GROUT LIFTS NOT TO EXCEED 5 FEET. MECH CONSOLIDATE AND RECONSOLIDATE GROUT VERTICAL REINFORCEMENT FOR CLOSED-END-CONCRETE MASONRY UNITS CAN BE SET AFTER WALL HAS BEEN LAID REBAR POSITIONER, WALL TIE, OR OTHER DEVICE--OPTION 1: TO POSTION VERTICAL REINFORCEMENT, AS REQ'D U-BLOCK UNITS WITH SOLID BOTTOM AT BOND BEAM COURSE HORIZONTAL REINFORCEMENT-PLACED IN BOND BEAMS AS WALL IS LAID UP -CELLS CONTAINING REINFORCEMENT ARE METAL LATH, MESH, OR WIRE-FILLED SOLIDLY WITH SCREEN PLACED IN MORTAR GROUT. VERTICAL CELLS JOINTS UNDER KNOCK-OUT SHOULD PROVIDE A BOND BEAM COURSES TO CONTINUOUS CAVITY PREVENT FILLING OF FREE OF MORTAR UNGROUTED CELLS DROPPINGS CLEANOUT OPENINGS AT BASE OF VERTICALLY REINFORCED CELLS, 32" O.C. MAXIMUM SPACING FOR SOLID GROUTED WALLS. REMOVE MORTAR DROPPINGS THROUGH CLEANOUTS AND VERIFY PLACEMENT AND LOCATION OF VERTICAL REINF. FORM OVER OPENINGS BEFORE PLACING └OPTION 2: STANDARD CMU WITH CROSS WEBS KNOCKED OUT AT BOND BEAM COURSE

LOW LIFT GROUTING PROCEDURES

GROUT POUR HEIGHT < 5'-4"

HIGH LIFT GROUTING PROCEDURES

GROUT POUR HEIGHT > 5'-4" (Reference: TMS 402: Figure SC-20)

TYPICAL DETAIL

#4 VERTICAL AT EACH CORNER #4 VERTICAL AT EACH OPENING--(2)—#4 AT TOP OF WALL AND AT ALL ROOF LEVELS #4 AT TOP OF -IN BOND BEAM WINDOW & DOOR OVERHEAD #4 VERTICAL AT--#4 @ 4'-0" o.c. ËND OF WALLS IN GROUTED CORES HORIZONTAL JOINT REINFORCING AT ALL CMU WALLS AT 16" o.c. ABOVE FIN. FLR. ELEV. UNLESS NOTED AT 8" o.c. BELOW FIN. FLR. ELEV. CMU WALL REINFORCING DETAIL

LAYOUT:

1. Before beginning work, Contractor shall verify all existing building horizontal and vertical dimensions.

GRADING NOTES:

1. Asphalt and other unsuitable materials shall be stripped from the site a distance of 5 feet outside cuts, fills and building limits.

2. Proofroll areas to receive fill, as well as final subgrade areas. Use dump truck weighing at least 20 tons. Any area that rut or pump shall be undercut to firm bearing soils and backfilled with well-compacted soil.

3. Fill soil shall have a minimum dry unit density of 90 pounds per cubic foot, a maximum plasticity index (PI) of 30 or less and be free of topsoil, debris or trash. Place soil fill in 8" loose lifts to 98 percent of the standard proctor maximum dry density within plus or minus two percentage points of its optimum moisture content in accordance with ASTM D698. Test at rate of 1 test per 2500 sq. ft. per lift.

CONCRETE NOTES:

1. All foundation and slab-on-grade concrete shall be 3000 PSI @ 28 days (W/C<49). Exterior concrete shall be 4000 PSI @ 28 days (W/C<46). All exterior concrete shall be air entrained (6 percent). Fly ash shall be limited to 25 percent of cementitious materials. Slump: 4-6". Concrete mix shall not exceed 90 degrees at time of placement.

2. Reinforcing steel shall be A615, grade 60. Concrete cover: Foundations - 3"

3. All work shall be performed in accordance with ACI 301 and 117.

4. Tool all exposed corners.

5. Floor surfaces shall receive steel trowel finish. Exterior flat surfaces shall receive light broom finish.

6. Reinforcement at foundation steps shall be continuous with 24" bar laps.

7. Concrete shall be tested in accordance with ACI 318: a. At least once a day for each strength used that day.

b. At least once for each 150 c.y. of concrete.

c. At least once for each 5,000 sq. ft. of surface area of slabs or walls.

Four (4) cylinders shall be taken for each test. Cylinders shall be tested at 7 and 28 days. Results shall be reported to Designer. Acceptance shall be in accordance with ACI 318.

8. Vapor barrier shall be 15 mils thick, tensile strength >45 lb/inch, puncture resistance = 2200 grams, with taped edges.

MASONRY NOTES:

N.T.S.

N.T.S.

N.T.S.

1. One core of concrete masonry units at exterior building corners shall be filled with grout from the foundation to the bond beam. Core shall have 1 - #5 rebar full depth.

2. Cores below lintel and beam bearing points shall be grouted from foundation to top of wall. Each core shall have 1 - #5 rebar full depth.

3. Roof levels and top of all masonry walls shall have reinforced, grouted bond beam with 2 - #4 continuous. Reinforcement shall be continuous (lapped 20") at corners and intersections.

4. Fully grout all foundation block cores located below slab-on-grade elevation.

5. Block cores at all wall intersections shall be filled with grout and 1 - #4 rebar from foundation to bond beam. One block core in each wall at intersection shall be filled.

6. Install horizontal reinforcing at 16" centers full height of wall.

7. All masonry grout shall be portland cement grout with 3/8" aggregate, 2,000 psi minimum compressive strength, 8"-11" slump.

8. Install vertical control joints at 25' - 0" centers max. Joints shall extend from foundation to top of wall.

9. Masonry net area compressive strength (f'm) = 1500 psi.

10.All block mortar shall be Type M or S.

11.Load bearing and exterior intersecting walls shall be bonded in an overlapping masonry bonding pattern or by steel connectors (1/4x1 1/2x24 W/2" bent-up ends) at 4'-0" centers. Horizontal joint reinforcing shall be continuous through the intersection.

12. Non-load bearing intersecting walls shall be bonded with continuous joint reinforcing or 1/4" mesh galvanized hardware cloth at 16" centers.

13. 6" CMU walls shall be be vertically reinforced at end of walls with 2-#4 rebars in grouted cores. One #4 shall be located at all wall intersections. A vertical #4 rebar shall also be placed at 4'-0" centers along length of wall. All vertical rebars shall be epoxied into the concrete slab to a depth of $3\frac{1}{2}$ ".

WOOD TRUSSES:

1. Truss shop drawings shall be submitted showing all dimensions and details. Drawings shall be stamped by a registered engineer certified to practice in the project state. Drawings shall include permanent and construction bracing recommendations.

2. All roof trusses shall be designed to carry the following loads:

Top chord live load: Top chord dead load: 10 psf

Bottom chord dead load:10 psf

Roof or attic supported mechanical units. See Mechanical drawings for weight and locations. 24 inches

Live Load Deflection: L/360

Wind loads shall be calculated in accordance with ASCE7-16 Figures 30.4B and 30-8.2.

3. Diagonal and lateral bracing shall be installed in accordance with truss manufacturer's recommendations and these drawings.

4. Shop drawings shall include setting plan detailing locations of all trusses.

Roof trusses shall be connected to top plate of wall with the following Simpson, or equal, ties:

up to 320 lbs. uplift:

up to 535 lbs. uplift: H2.5AZ

2 ea. SDWC15600 screws up to 600 lbs. uplift: up to 850 lbs. uplift:

850 lbs. uplift and above: H14 Actual uplift loads shall be determined by truss manufacturer and shall be stated on shop drawings.

6. Jack trusses shall be connected to girder truss with Simpson, or equal, joist hangers furnished by truss manufacturer.

7. Roof sheathing shall be 19/32" or 5/8" APA Rated sheathing 40/20, Exposure 1, minimum 2 span staggered pattern, 4'x8' sheets with 8d common nails at 6" centers around perimeter and 12" centers at intermediate framing members. Use plyclips at mid-span.

8. Shop drawings shall be submitted, by the Contractor after shop drawing approval, to the Building Official for review. (IBC 2303.4.1.1)

WOOD FRAMED CONSTRUCTION:

1. Sill plates in contact with steel, masonry or concrete shall be #2 SYP pressure treated. All 1/2" bolts anchoring these treated sill plates shall be hot-dipped galvanized.

2. Interior non-load-bearing wall sill plates shall be anchored to floor with power driven pins at 24" centers.

3. At beam bearing points, install a number of 2x studs equal to the number of members in the built-up beam. Provide a minimum of 3-2x studs at bearing points of LVL beams. Built-up columns shall be nailed together with 16d nails at 20" centers, full height of the column.

4. Double plates shall lap a minimum of 4'-0". Laps shall be located over studs.

5. Bored holes in 2x4 studs shall not exceed 1 3/8" for load-bearing walls and 2 1/8" for non-load-bearing walls. Bored holes in 2x6 studs shall not exceed 2 1/8" for load-bearing walls and 3 1/4" for non-load-bearing walls. Bored holes shall be centered in the stud.

6. All 2x lumber (shall conform to dressed sizes in Standard PS20) shown on drawings shall be #2 SPF or #2 SYP or better with moisture content less than 19 percent.

7. All exterior walls shall be sheathed with 5/8" APA rated plywood sheathing, Exposure 1, T1-11.

8. Plywood sheathing shall be nailed to outside face of pressure treated furring strips with 8d nails at 4" centers at all plywood edges and at 12" centers at intermediate supports.

200 lb. horiz. or vert. load

Force Procedure

or: 50 plf horiz. or vert.

DESIGN LOADS:

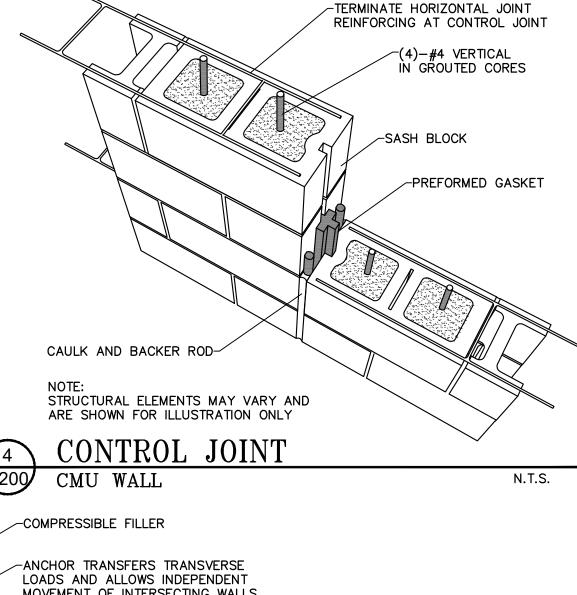
2018 Virginia Statewide Uniform Building Code & ASCE 7-16 Roof Live Load: 30 psf Risk category: Ultimate Design Wind Speed: 107 mph Nominal Design Wind Speed: 83 mph Exposure Category: B Internal pressure coefficients: +/-0.18 Components and cladding: In accordance with ASCE 7-16 Chapter 30. Snow Load (ground): 15 psf Importance factor: 1.0 10.5 psf (flat roof): Snow exposure factor: 1.0 Thermal factor: 100 Year, Rainfall: 2.62 inches/hour

SEISMIC DESIGN DATA:

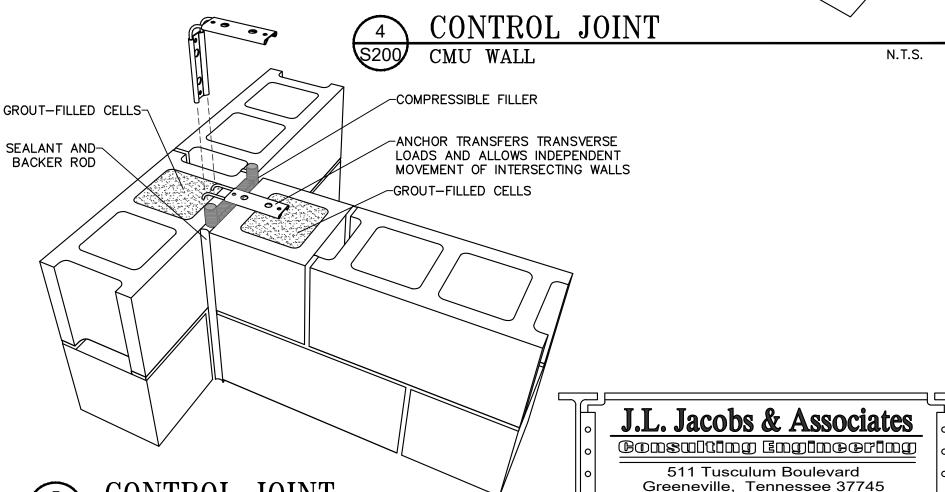
Soil Bearing Pressure: 2000 psf (assumed)

Handrailings:

Importance factor Risk category Spectral response acceleration, Ss Spectral response acceleration, S1 Site class Spectral response coefficient, SDS Spectral response coefficient, SD1 Seismic design category Ordinary reinforced masonry Basic seismic-force resisting system shear walls Response modification factor, R Seismic response coefficient, Cs Design base shear (kips) (ASD) 8.0Analysis procedure Equivalent Lateral



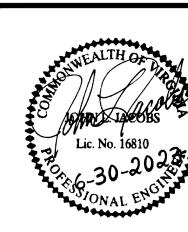
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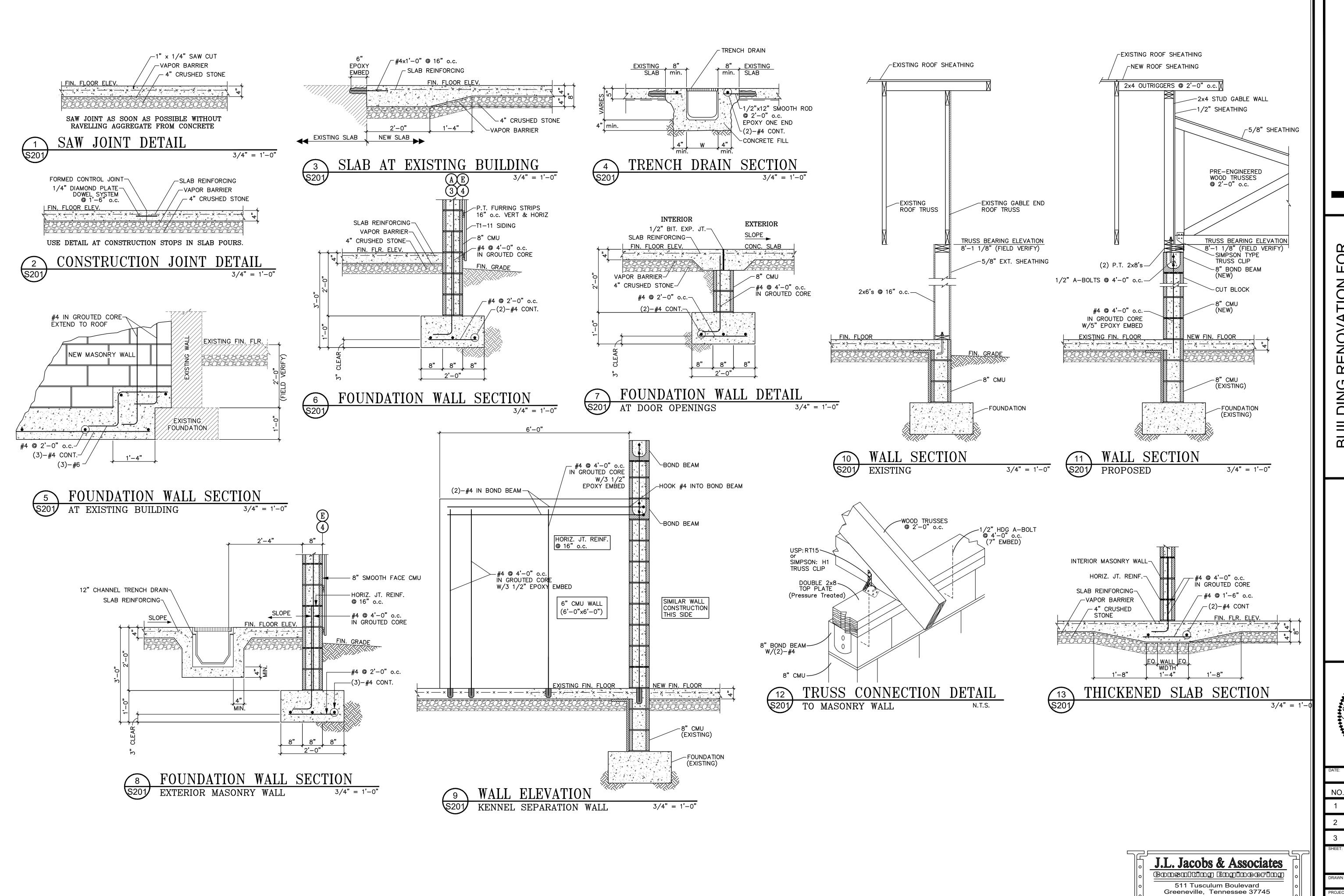
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06-30-2023

NO. REVISION DATE

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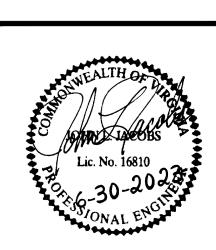
PLOT DATE 8/18/2023

the chaineering architecture GROUP | engineering architecture Abingdon, VA 24210 | environmental 276.206.3568 - office www.thelanegroupinc.com

BUILDING RENOVATION FOR /ASHINGTON COUNTY, VIRGINIA ANIMAL SHELTER 15050 LEE HIGHWAY BRISTOL, VIRGINIA 24201

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TRUCTURAL DETAILS



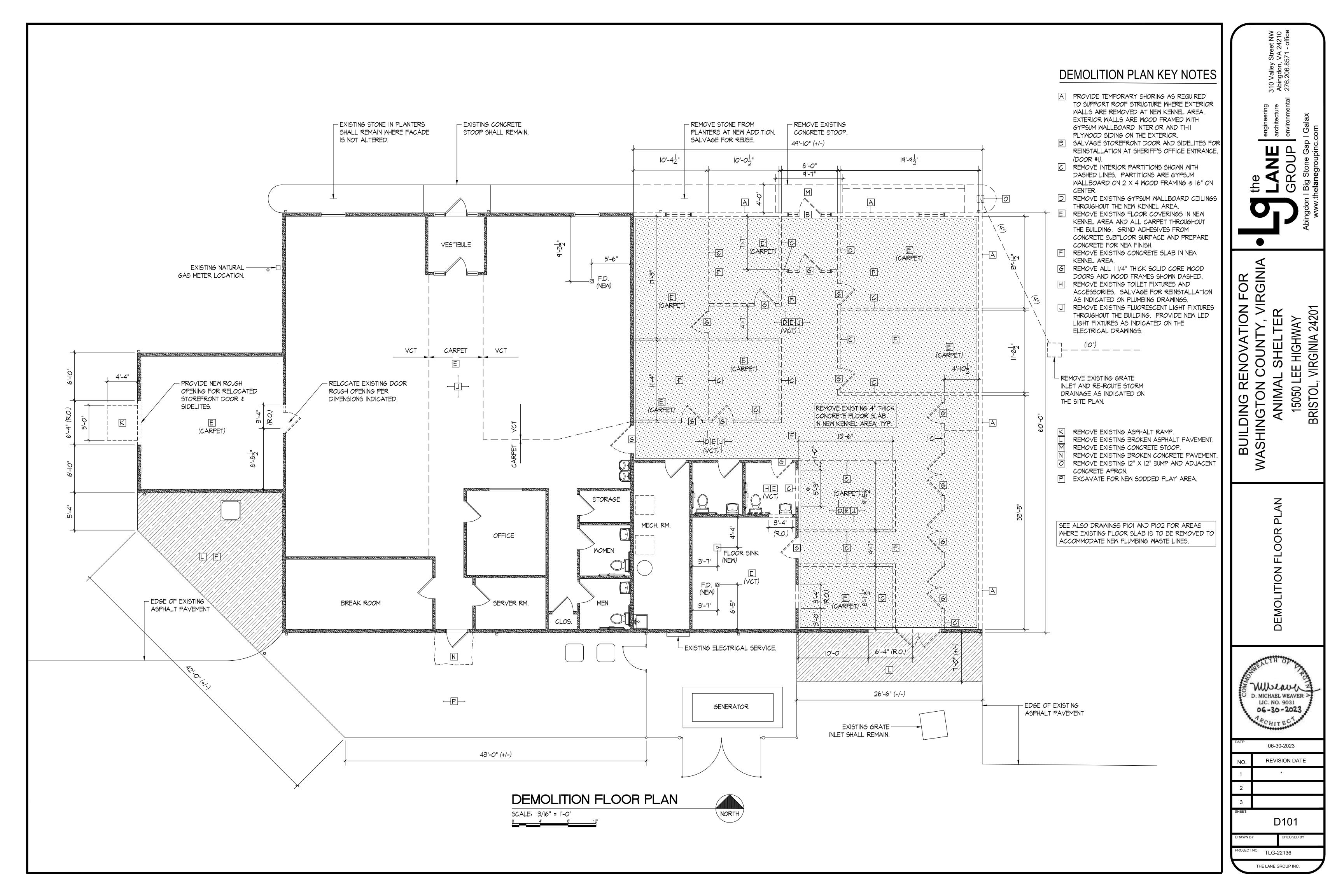
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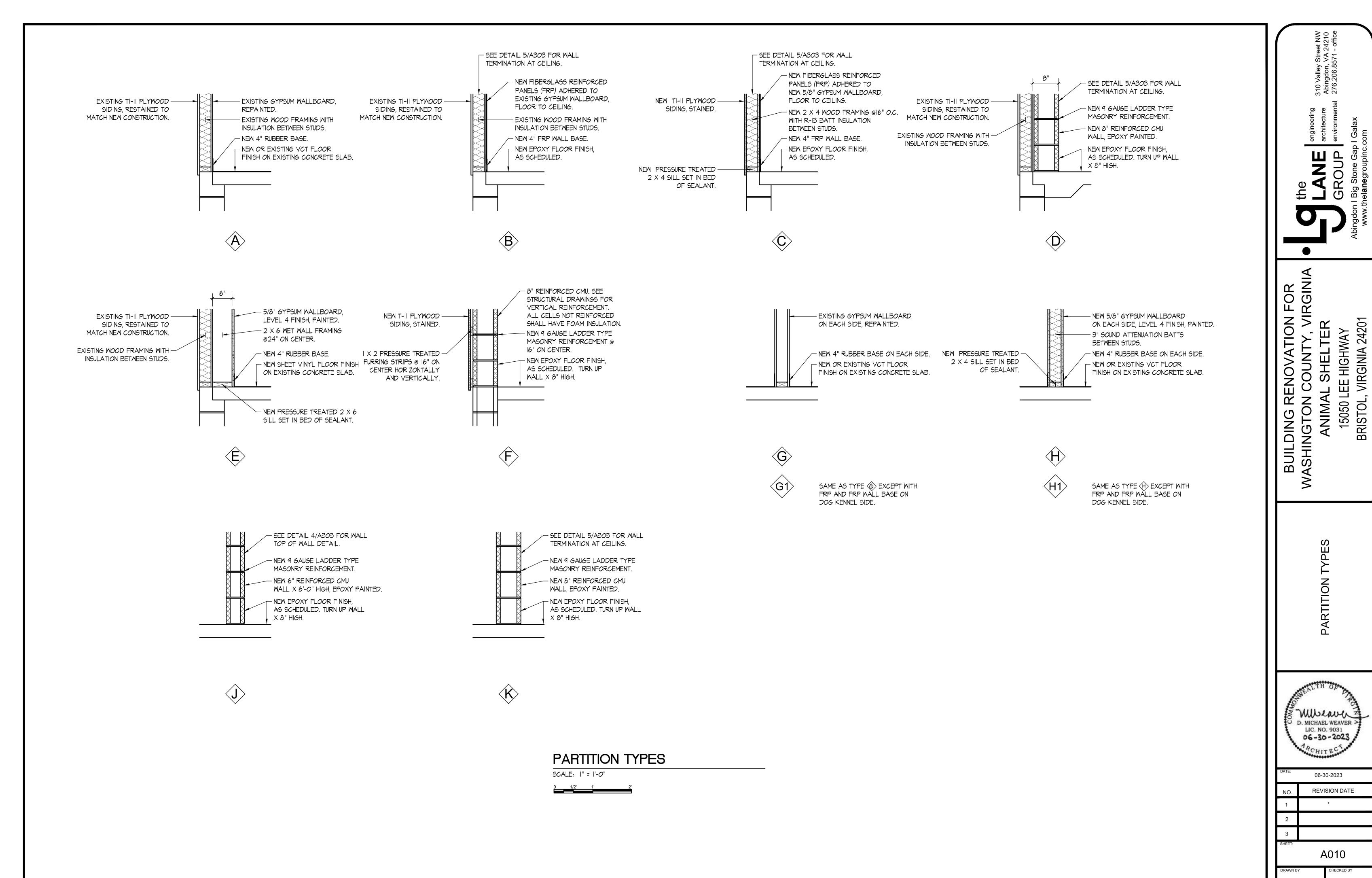
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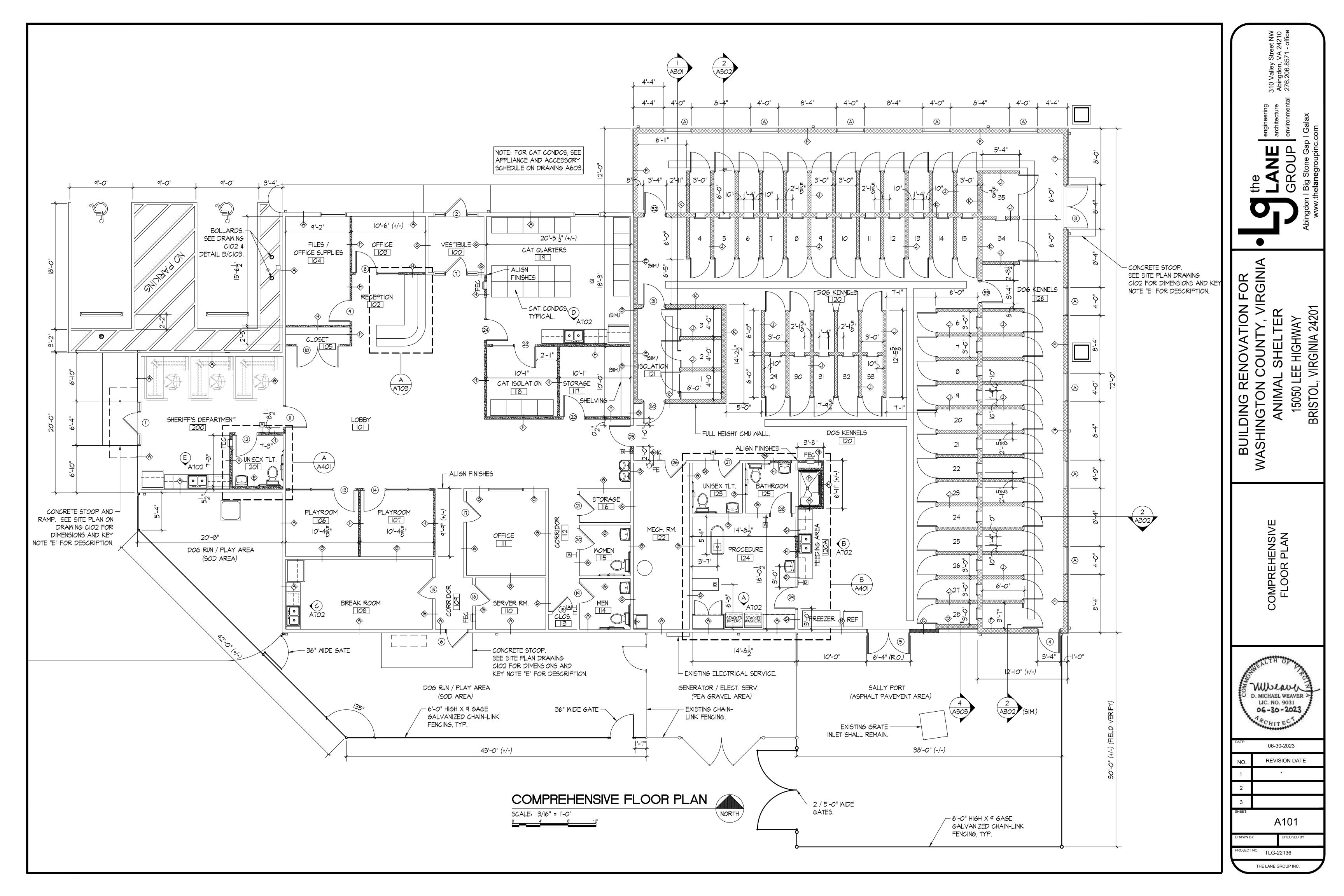
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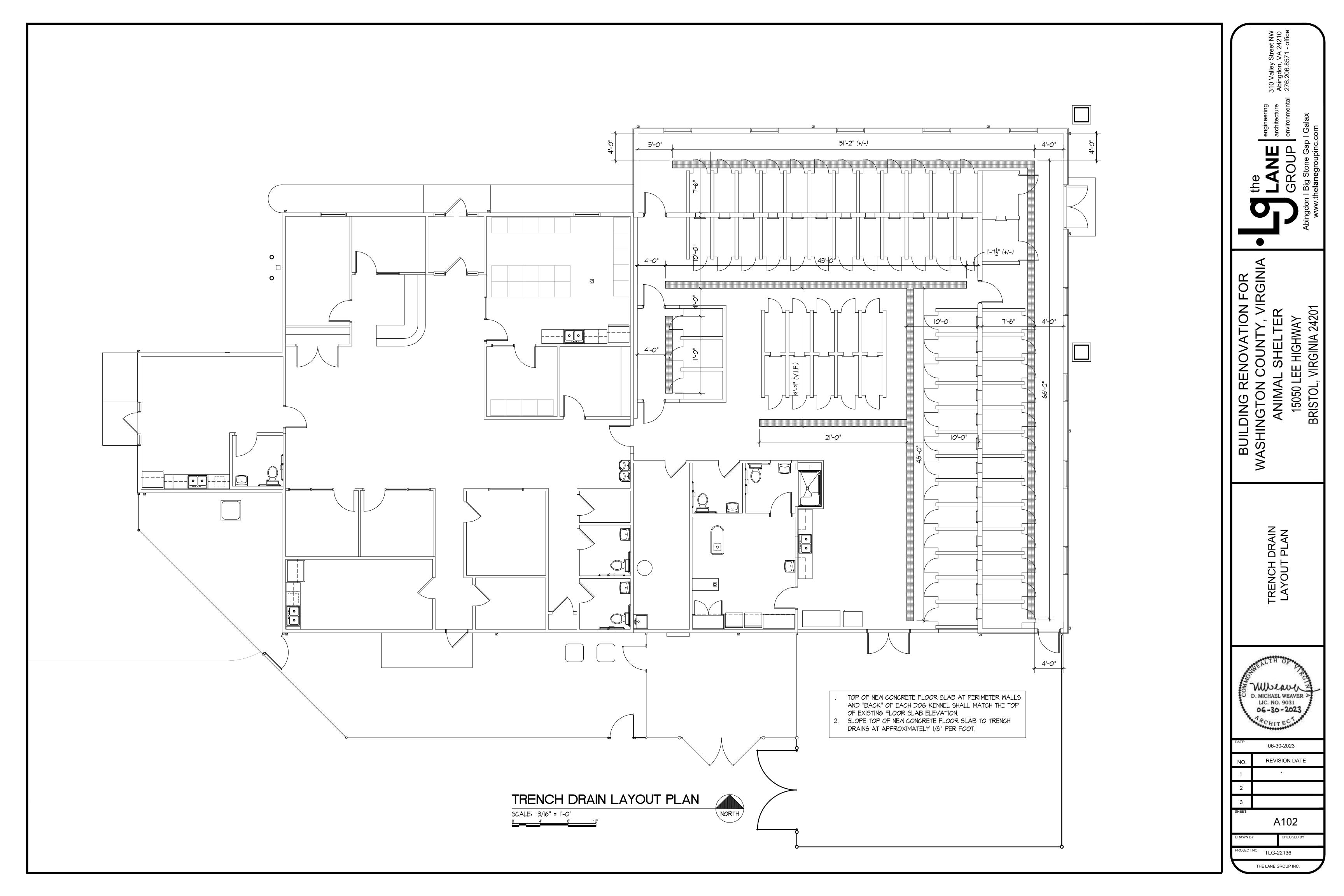
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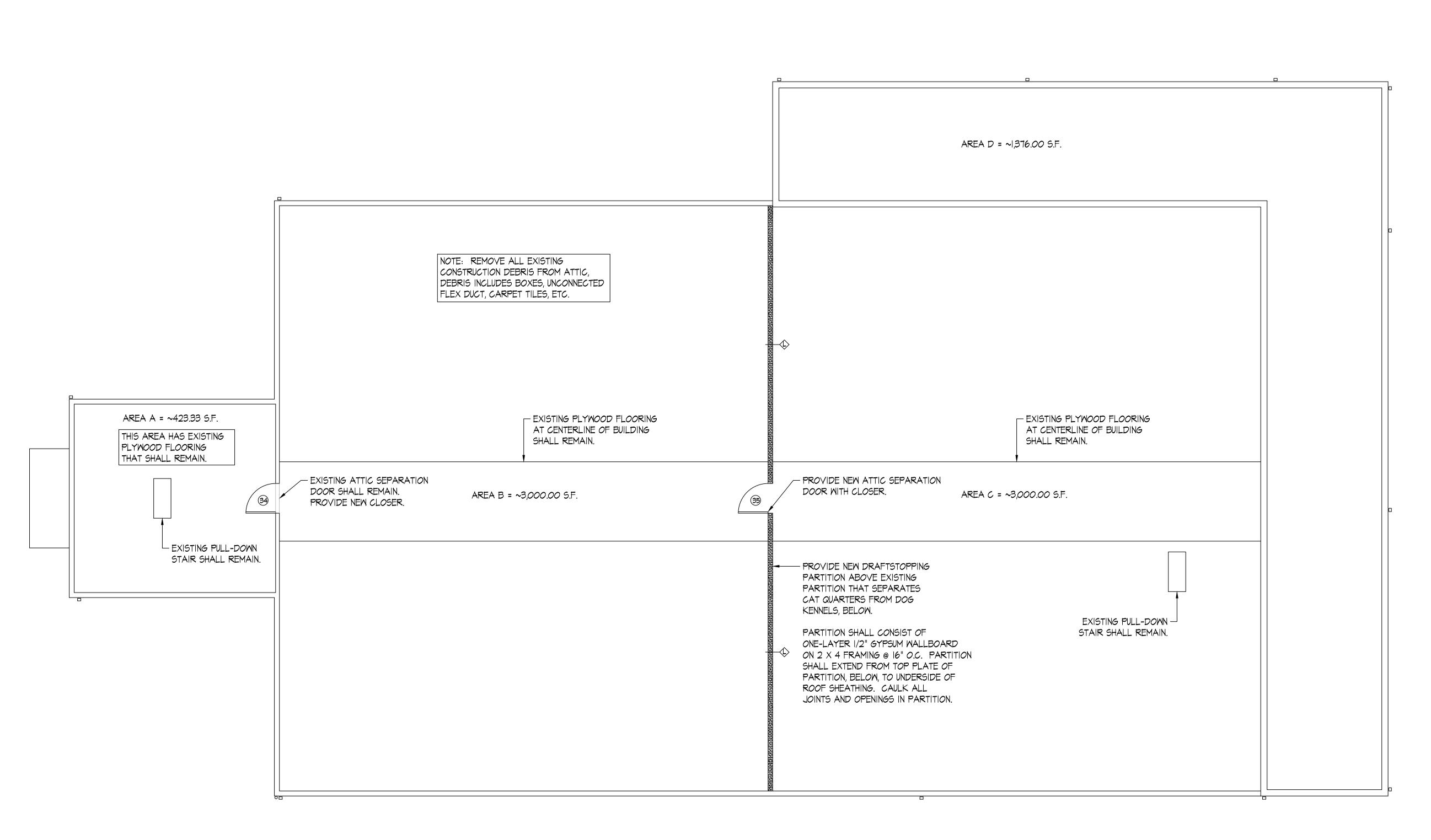




PROJECT NO. TLG-22136







IBC SECTION 718.4, "DRAFTSTOPPING IN ATTICS".

DRAFTSTOPPING SHALL BE INSTALLED TO SUBDIVIDE ATTIC SPACES.

DRAFTSTOPPING SHALL BE INSTALLED TO SUBDIVIDE COMBUSTIBLE ATTIC SPACES AND COMBUSTIBLE CONCEALED ROOF SPACES SUCH THAT ANY HORIZONTAL AREA DOES NOT EXCEED 3,000 SQUARE FEET. VENTILATION OF CONCEALED ROOF SPACES SHALL BE MAINTAINED IN ACCORDANCE WITH IBC 1202.2.1.

OPENINGS IN THE PARTITIONS SHALL BE PROTECTED BY SELF-CLOSING DOORS WITH AUTOMATIC LATCHES.

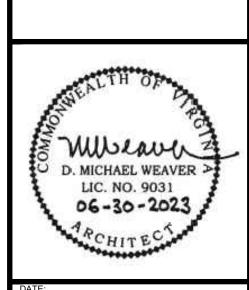


BUILDING RENOVATION FOR WASHINGTON COUNTY, VIRGINIA ANIMAL SHELTER

LEE HIGHWAY , VIRGINIA 24201

15050 LEE I BRISTOL, VIR

ATTIC FLOOR PLAN



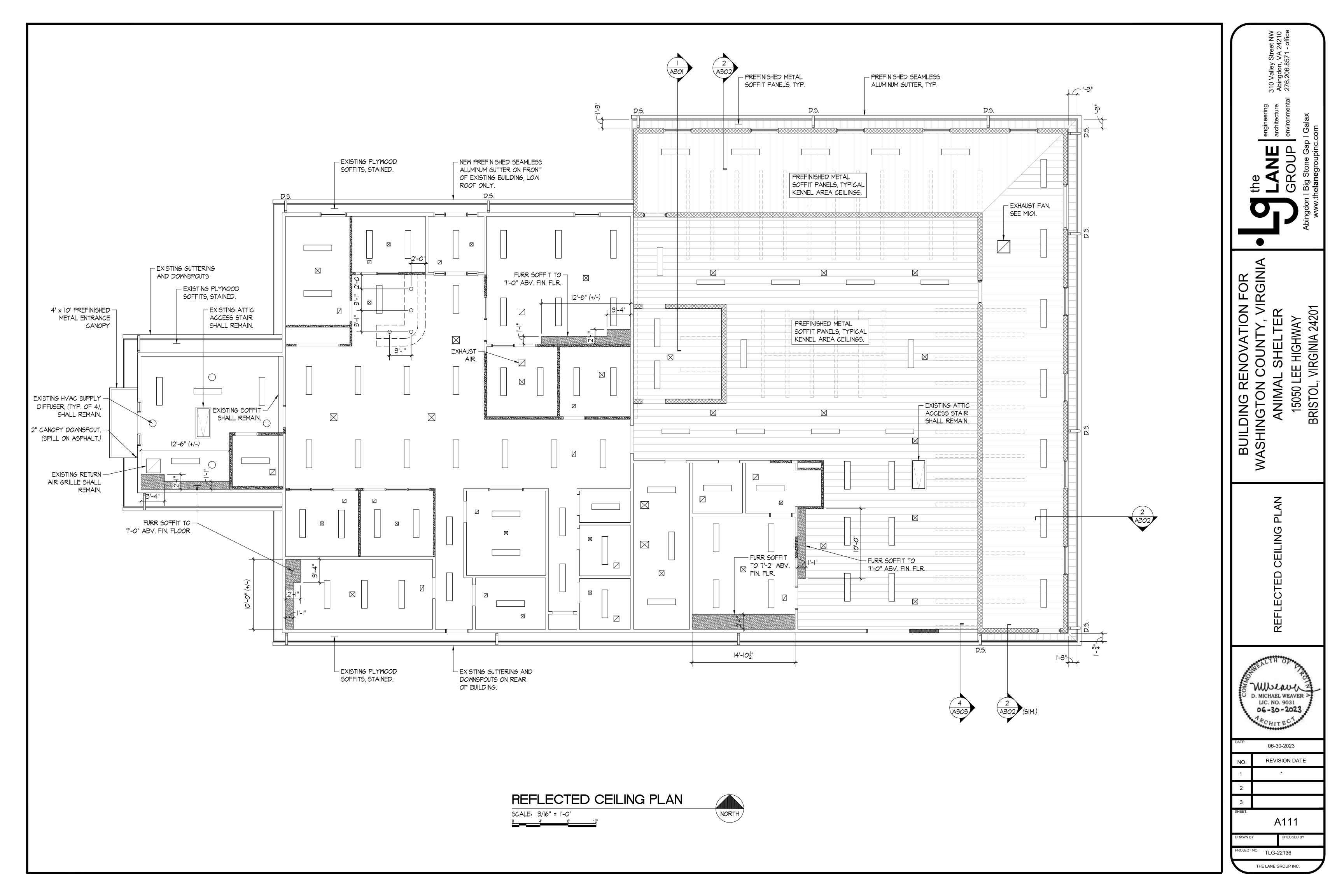
06-30-2023
REVISION DATE
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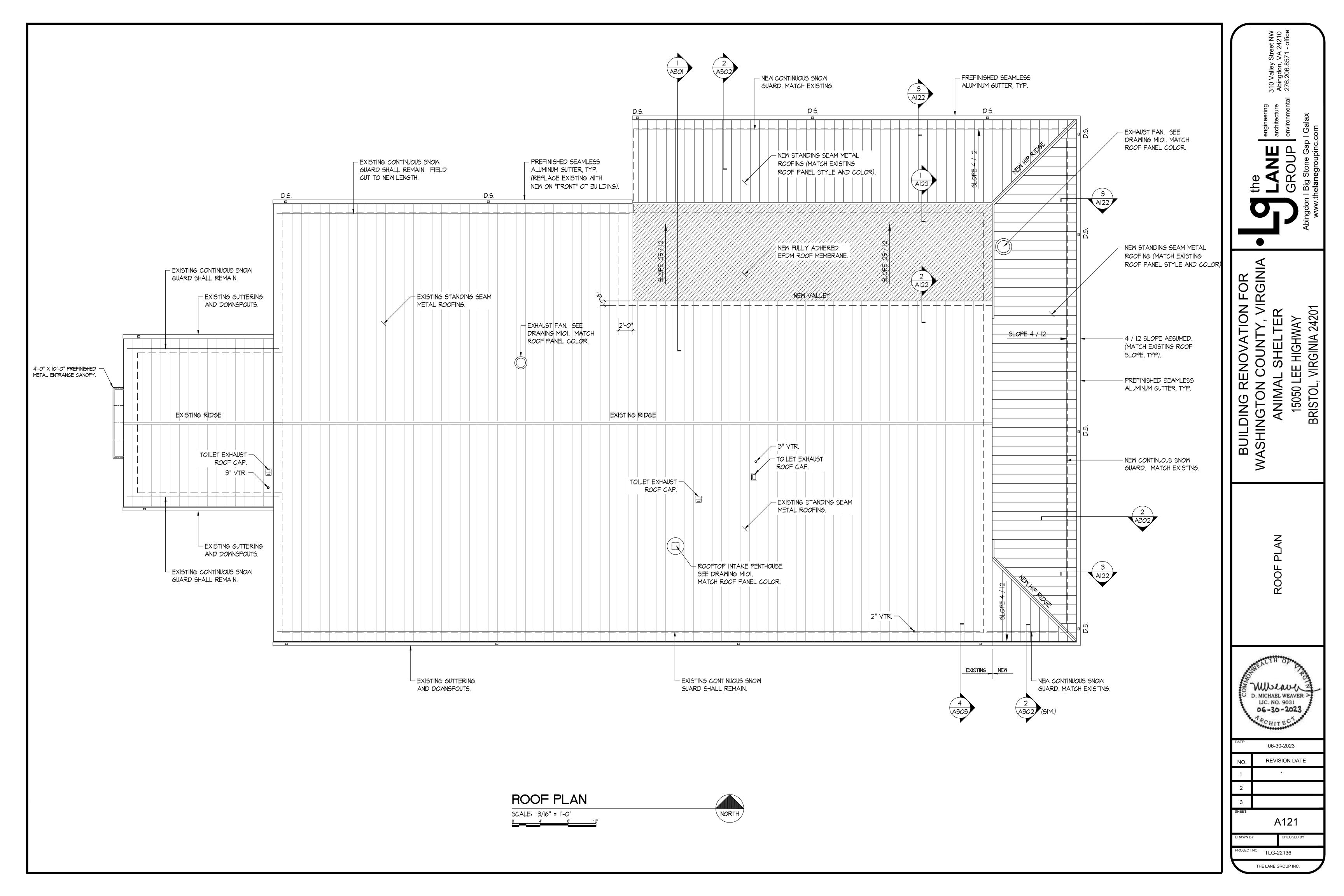
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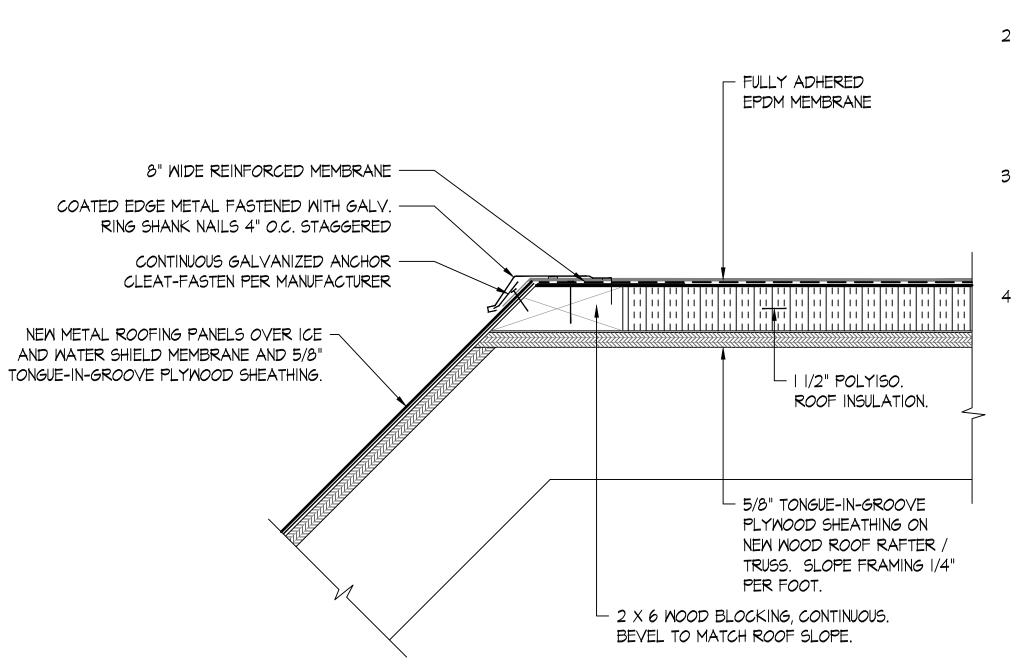
A103
CHECKED BY

PROJECT NO. TLG-22136

THE LANE GROUP INC.







ROOF DETAIL NOTES

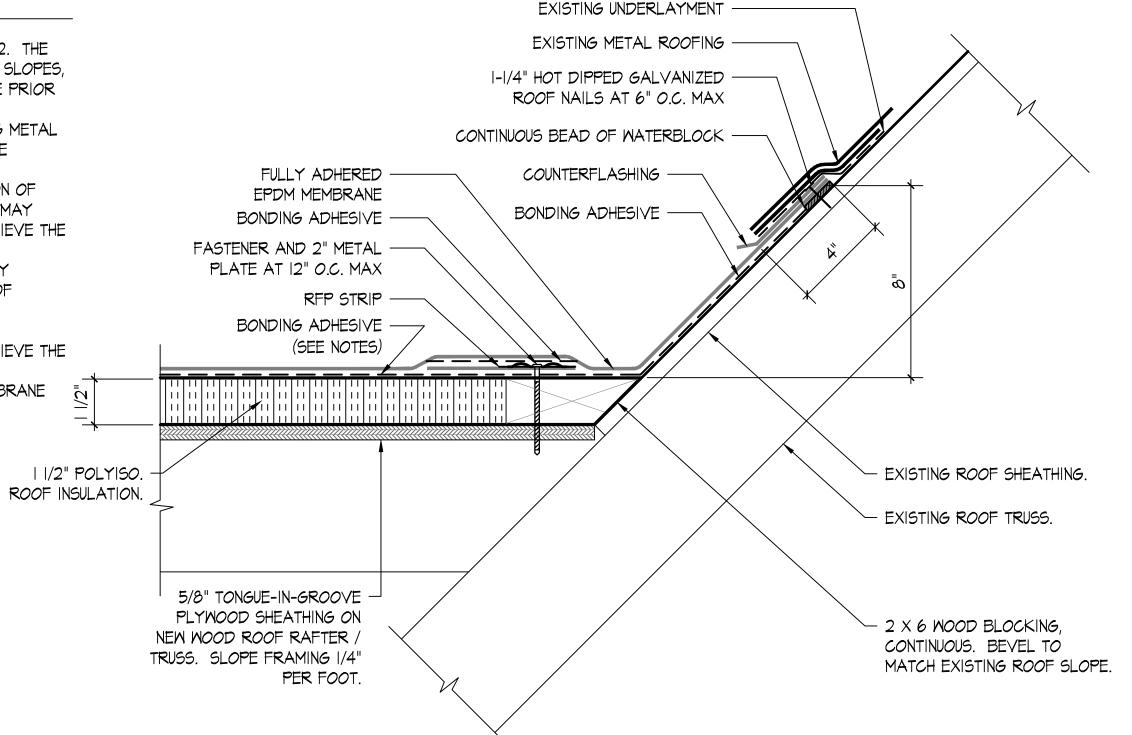
INTENT IS FOR NEW ROOF SLOPES TO MATCH EXISTING SLOPES, BELIEVED TO BE 4 / 12 SLOPES. FIELD VERIFY SLOPE PRIOR TO FABRICATING NEW TRUSSES.

DETAIL 2 / A122 IS INTENDED TO CONVEY AN EXISTING METAL ROOF TO NEW FULLY ADHERED EPDM ROOF MEMBRANE TRANSITION. EXISTING ROOF PANELS WILL NEED TO BE DISMANTLED, TRIMMED, AND REINSTALLED. UTILIZATION OF EPDM MANUFACTURER'S DETAIL FOR THIS TRANSITION MAY SUPERSEDE THE DETAIL DRAWN, AS REQUIRED TO ACHIEVE THE EPDM MEMBRANE ROOF WARRANTY SPECIFIED.

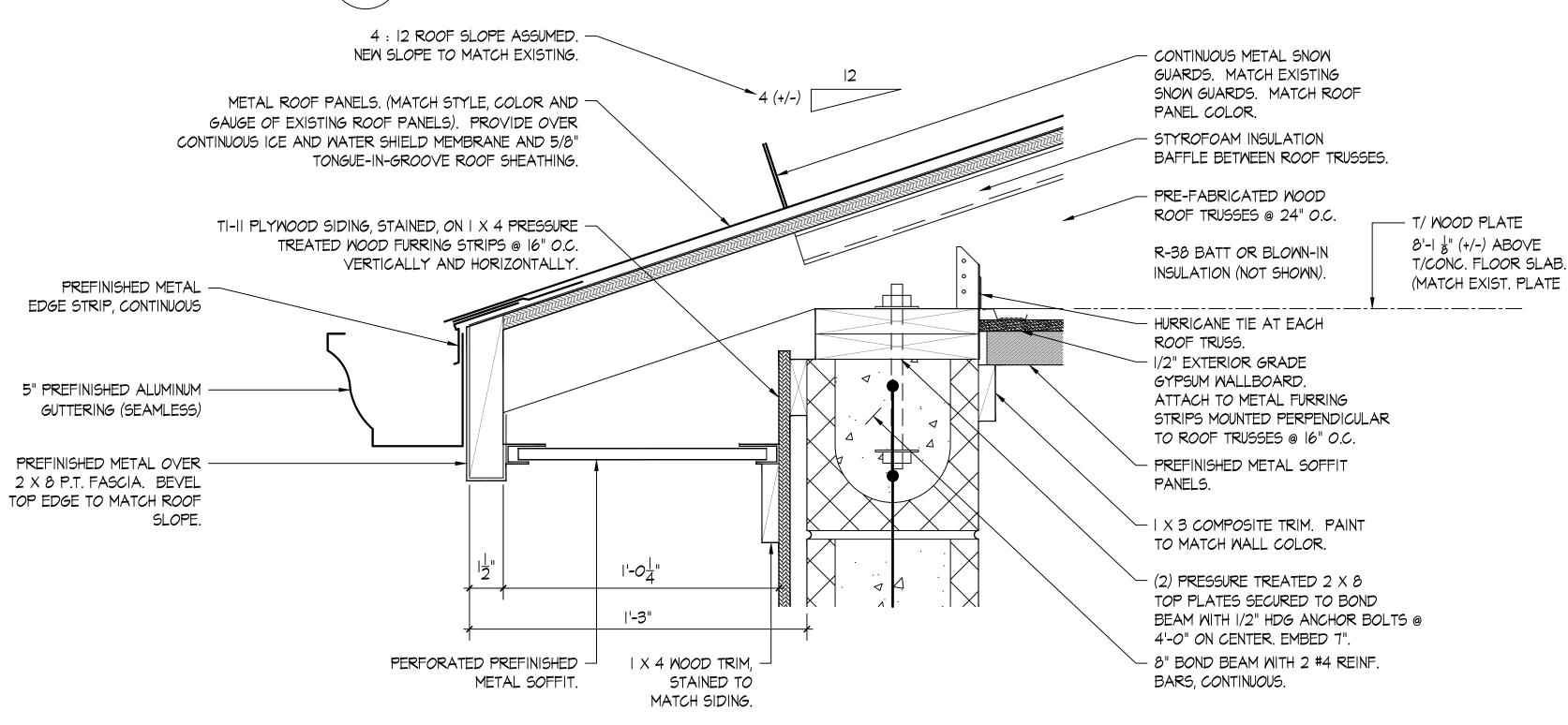
DETAIL I / A122 IS INTENDED TO CONVEY A NEW FULLY ADHERED EPDM MEMBRANE ROOF TO NEW METAL ROOF TRANSITION. UTILIZATION OF EPDM MEMBRANE MANUFACTURER'S DETAIL FOR THIS TRANSITION MAY

ROOF SLOPES ARE EXAGGERATED IN DETAILS I AND 2. THE

SUPERSEDE THE DETAIL DRAWN, AS REQUIRED TO ACHIEVE THE EPDM MEMBRANE ROOF WARRANTY SPECIFIED.
BONDING ADHESIVE IS REQUIRED BETWEEN EPDM MEMBRANE AND INSULATION FOR FULLY ADHERED SYSTEMS.





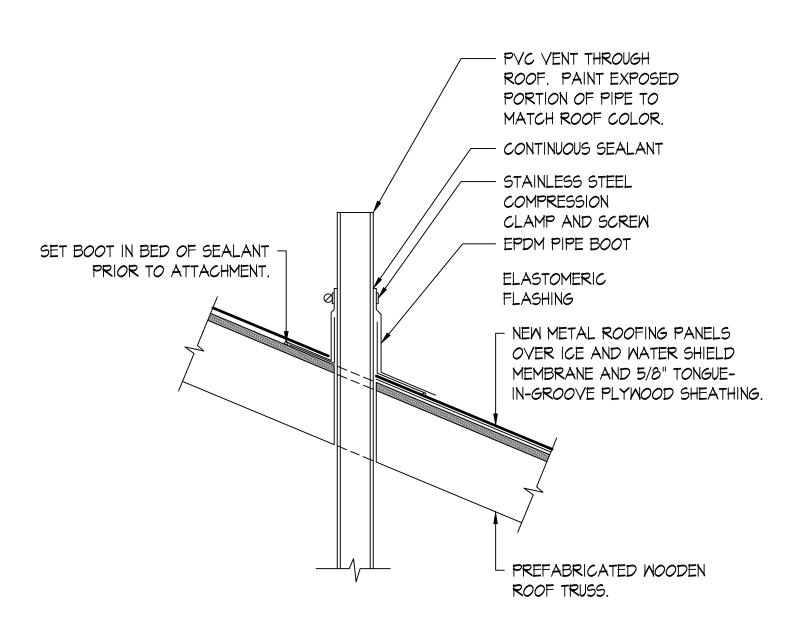


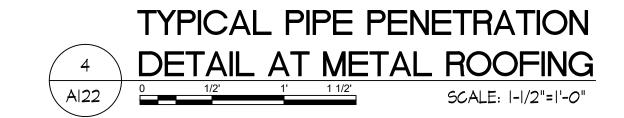
TYPICAL EAVE DETAIL



EXISTING METAL ROOFING TO NEW EPDM MEMBRANE

SCALE: 3"=1'-0"





BUILDING RENOVATION FOR WASHINGTON COUNTY, VIRGINIA ANIMAL SHELTER

24201

HIGHWAY

15050 | BRISTOL

ROOF DETAILS

D. MICHAEL WEAVER > LIC. NO. 9031
06-30-2023

06-30-2023

NO. REVISION DATE

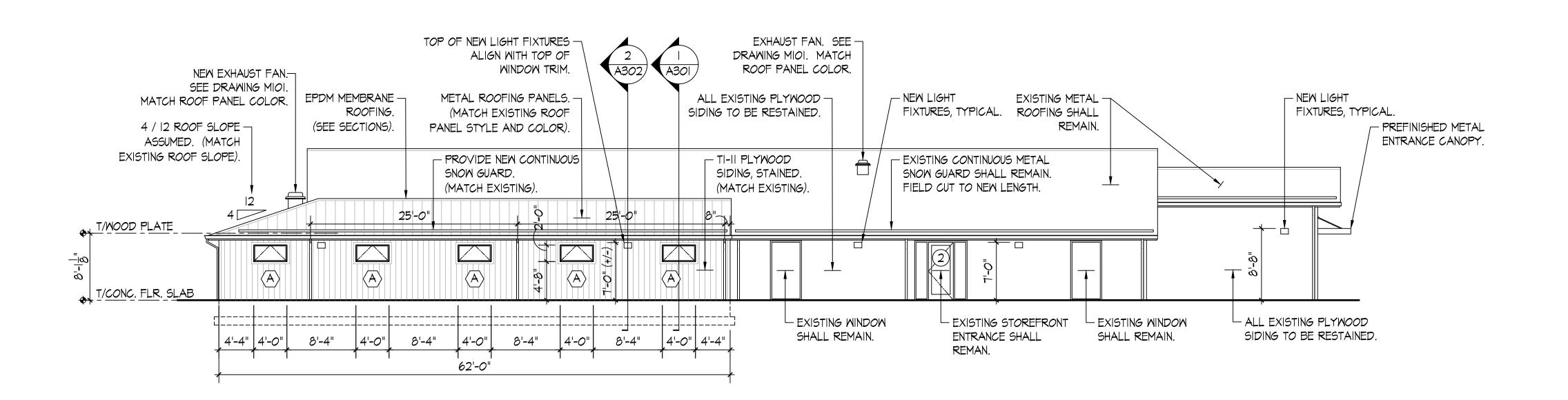
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TLG-22136
THE LANE GROUP INC.

SIDE ELEVATION - WEST



FRONT ELEVATION - NORTH (FACING LEE HIGHWAY)

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

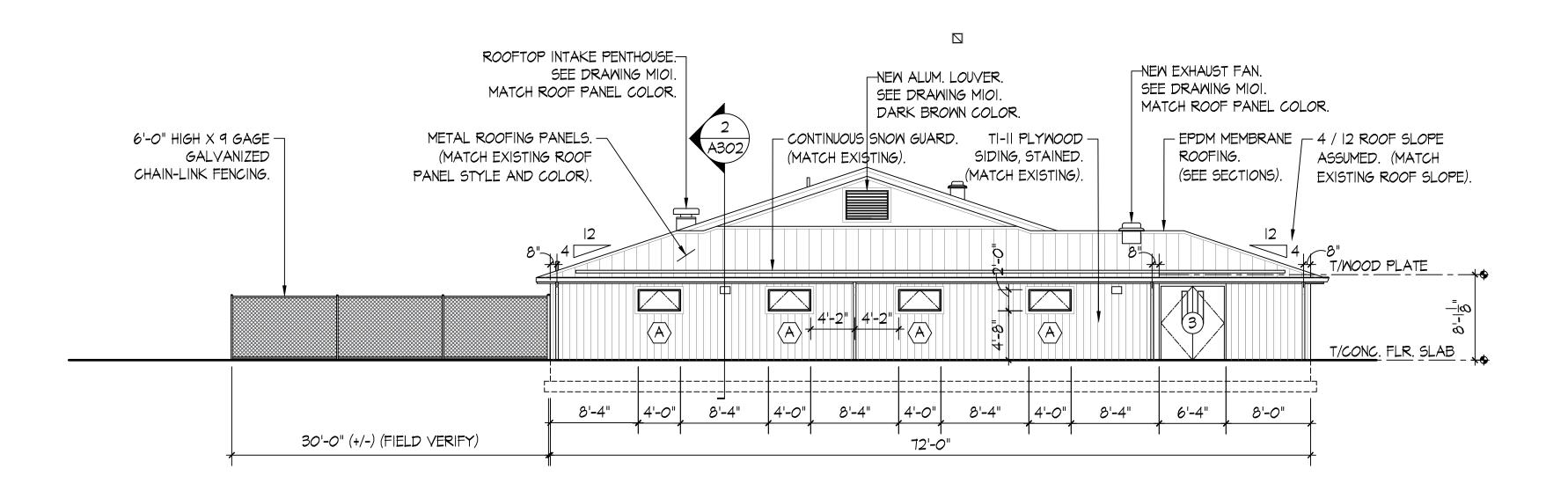
BUILDING RENOVATION FOR VASHINGTON COUNTY, VIRGINIA ANIMAL SHELTER 15050 LEE I BRISTOL, VIR

VIRGINIA 24201

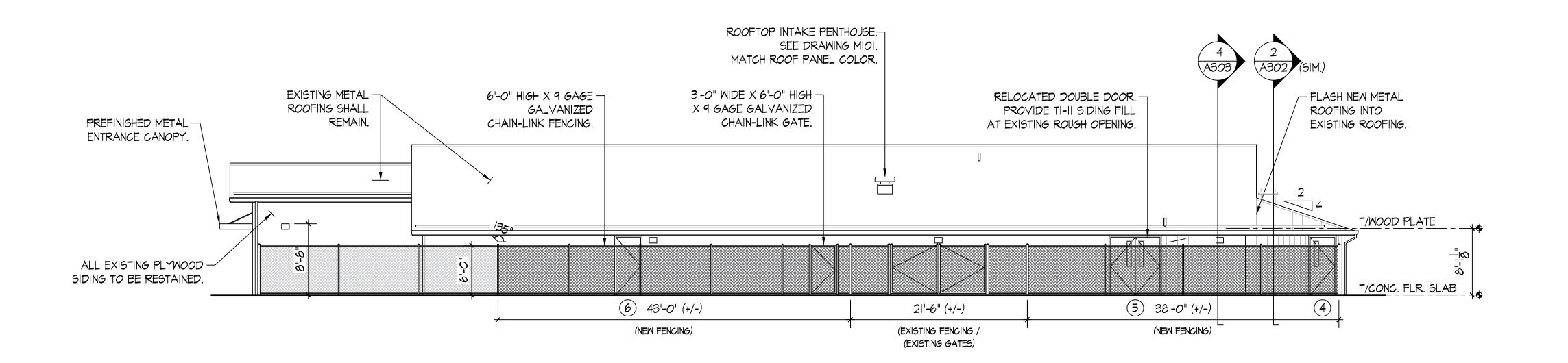


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PROJECT NO. TLG-22136



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



REAR ELEVATION - SOUTH

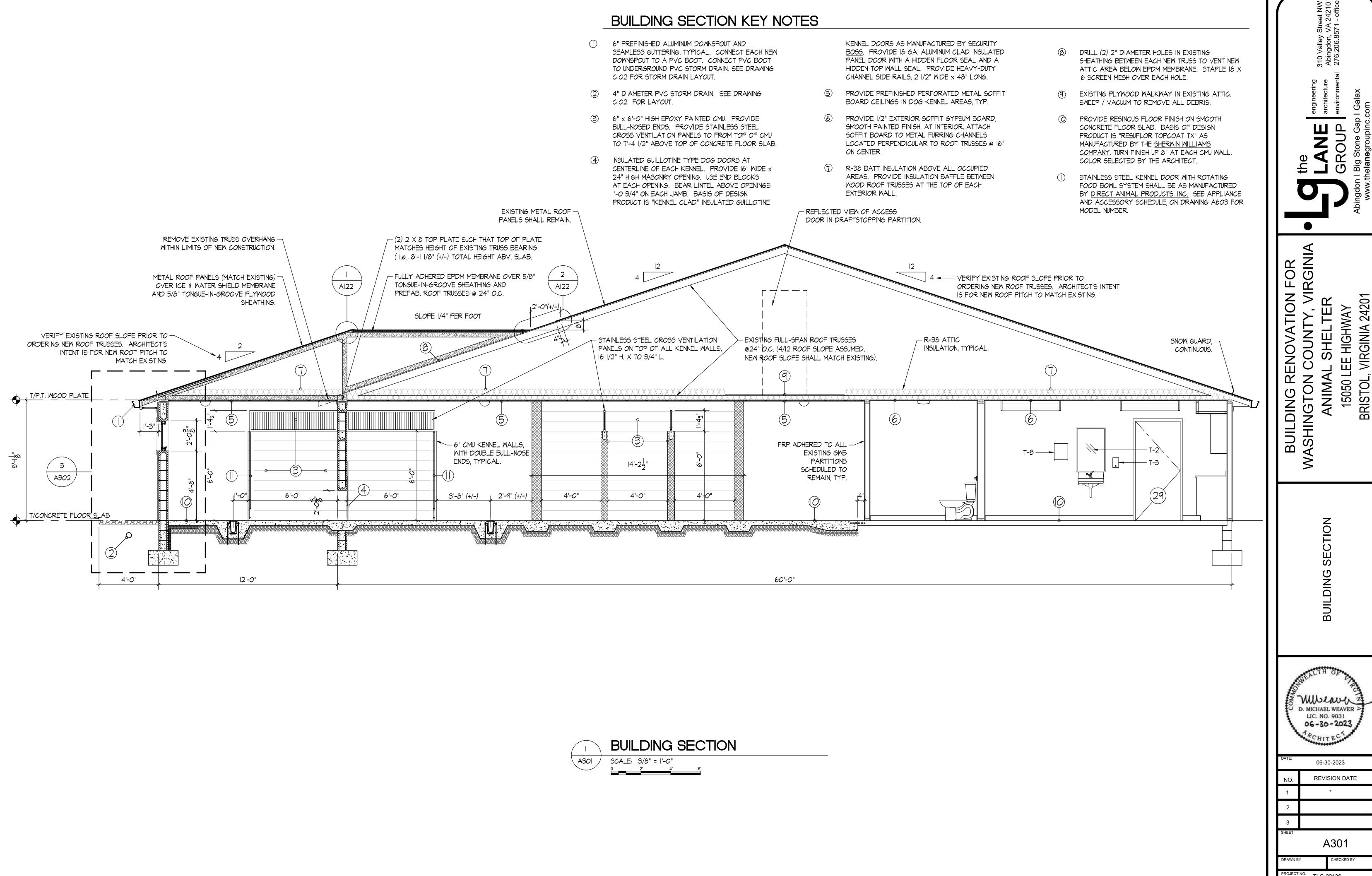
SCALE: |/8" = |'-0" 0 4' 8' 16' BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

ELEVATIONS



DATE:	06-30-2023
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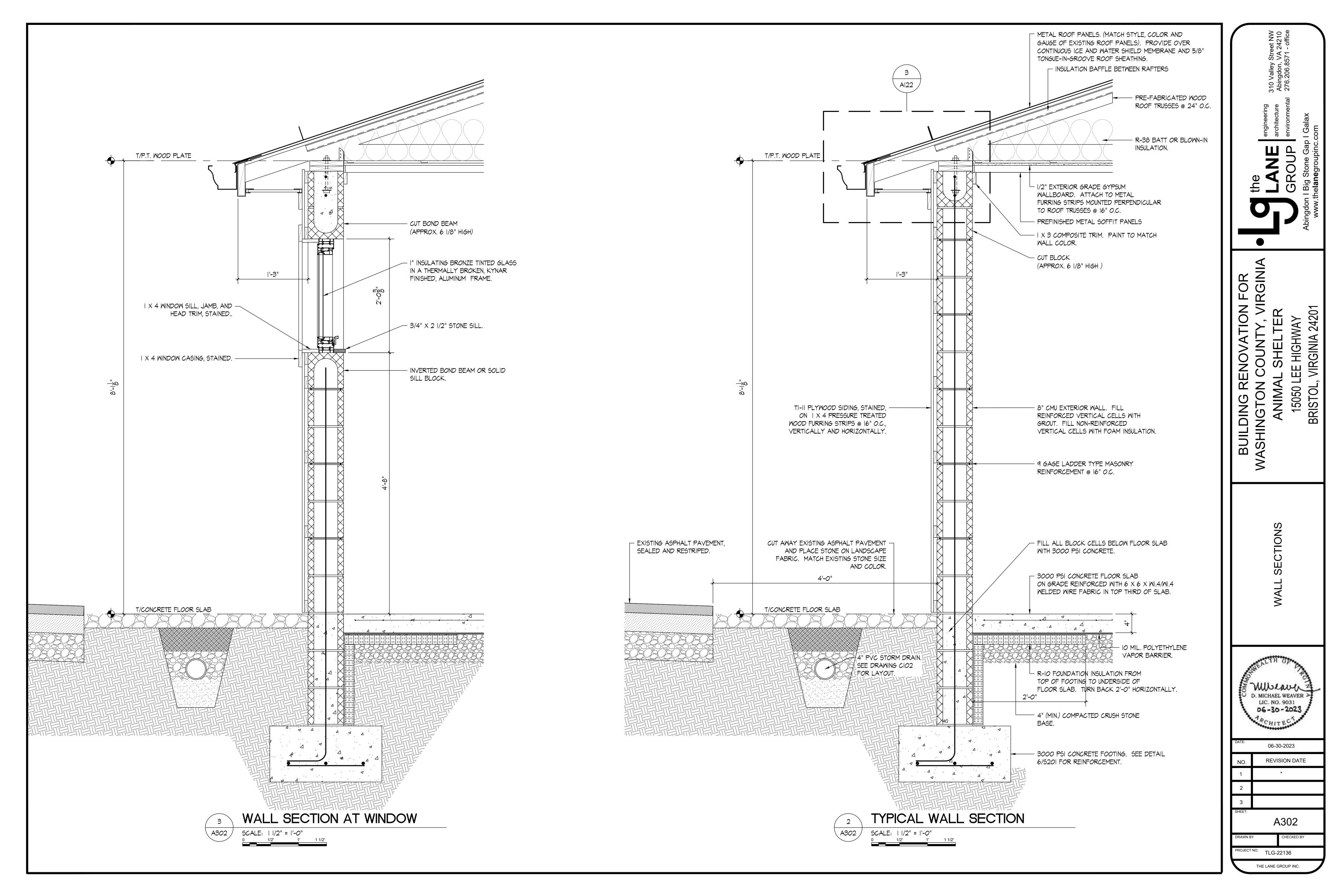
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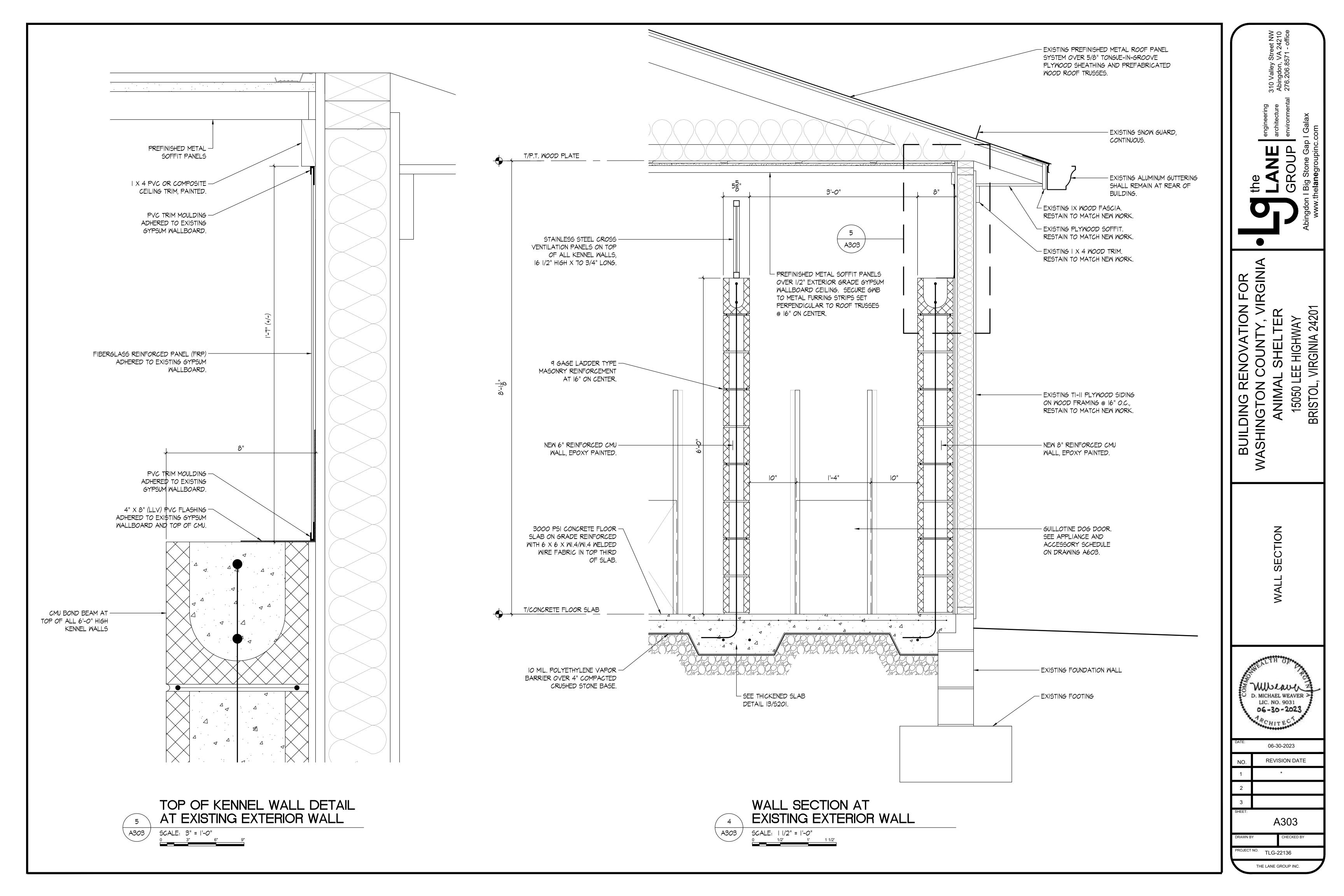
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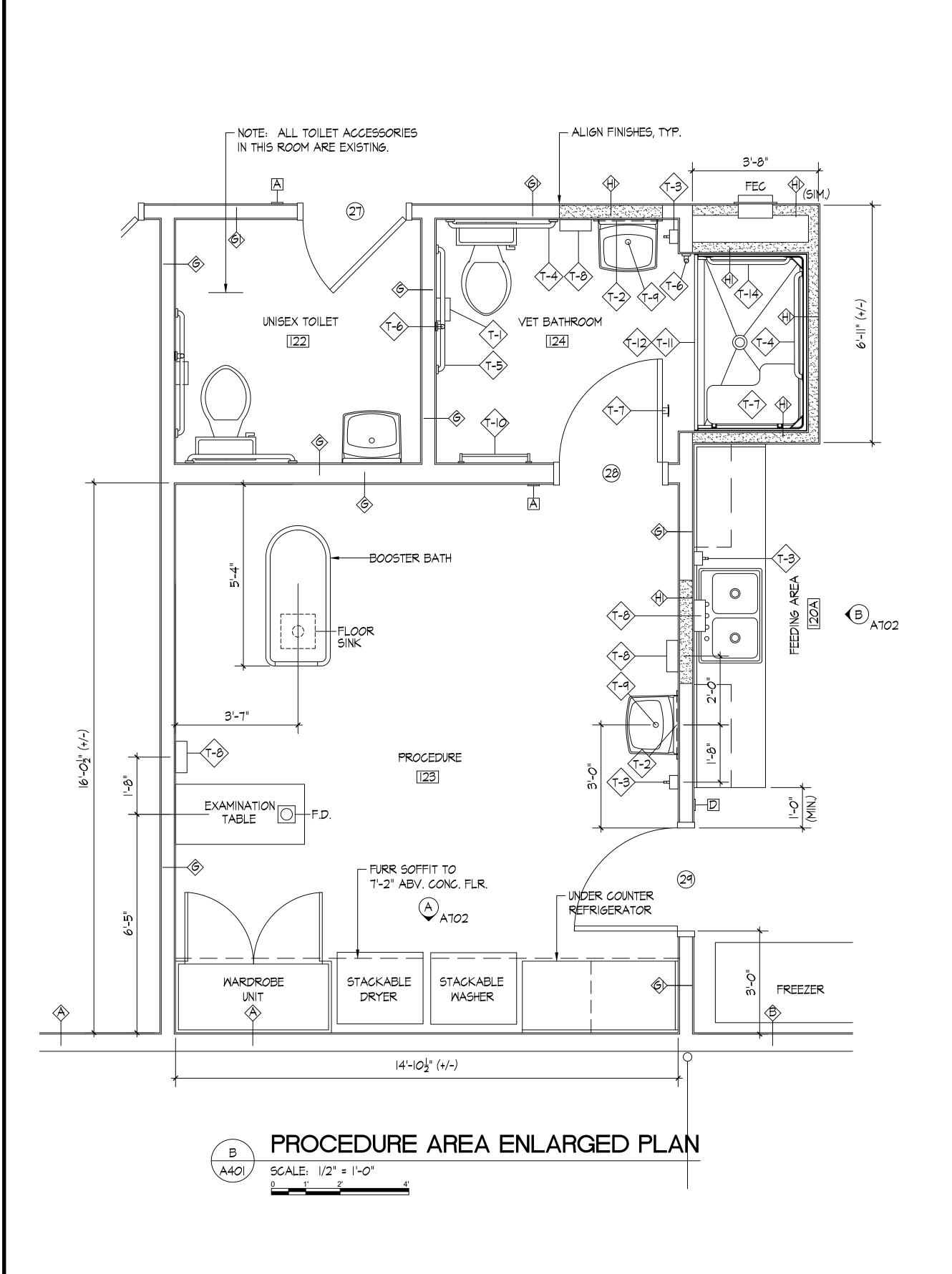
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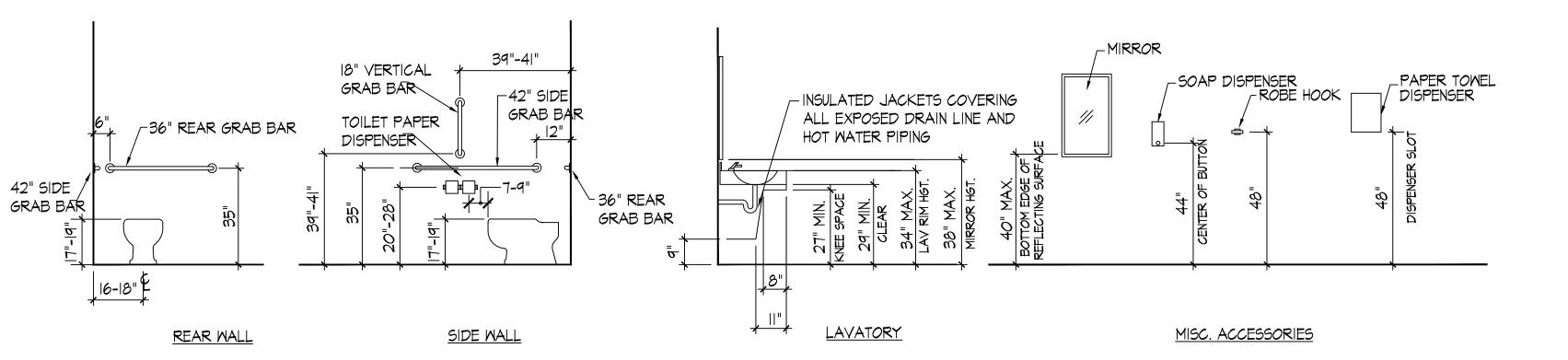
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TLG-22136





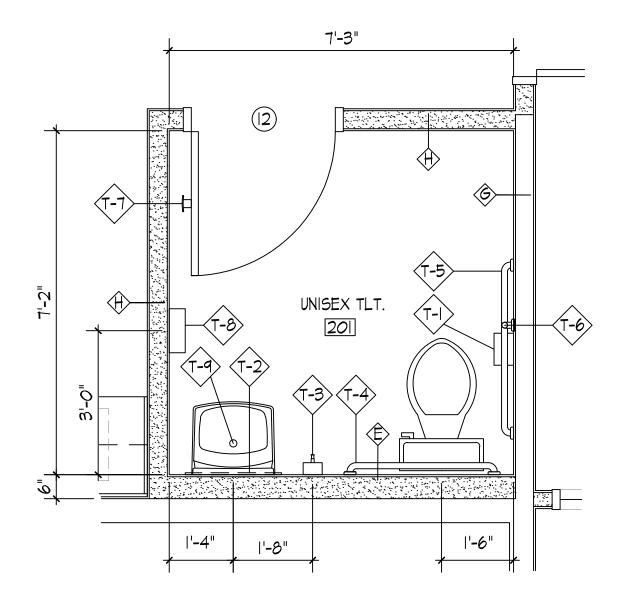




TYPICAL ACCESSIBLE MOUNTING HEIGHTS SCALE: 3/8"= 1'-0"

TOI	LET ACCESSORY SCI	HEDULE			
MARK	DESCRIPTION	MANUFACTURER	MODEL NO.	MOUNTING	REMARKS
T-l	TOILET PAPER DISPENSER	BOBRICK	B-2740	SURFACE	
T-2	MIRROR	BOBRICK	B-290 2430	SURFACE	
T-3	LIQUID SOAP DISPENSER	BOBRICK	B-6562	SURFACE	SEE A702 FOR MOUNT HT. AT CABINETRY
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	SEE A702 FOR MOUNT HT. AT CABINETRY
T-9	THERMAL PROTECTIVE DRAIN COVERS	TRUEBRO	IATB9	LAV PIPES AND VALVES	
T-10	TOWEL BAR	BOBRICK	B-6747X24	SURFACE	MOUNT ROD CENTERLINE AT 48" AFF.
T-II	SHOWER ROD	BOBRICK	B-201 X 60	SURFACE	MOUNT ROD CENTERLINE AT 74 1/2" AFF.
T-12	SHOWER HOOKS / SHOWER CURTAIN	BOBRICK	B-204-I / B-204-3	HUNG FROM CURTAIN ROD.	
T-13	FOLDING SHOWER SEAT	BOBRICK	B-5181	SURFACE	19" FROM SHOWER BASIN TO SEAT HT.
T-14	28" GRAB BAR	BOBRICK	B-5806 x 28	SURFACE	

NOTE: THE SCHEDULING OF ACCESSORIES BY BOBRICK WASHROOM EQUIPMENT, INC. SERVES TO ESTABLISH SIZE, FUNCTION AND QUALITY STANDARD. THIS IS NOT MEANT TO BE PROPRIETARY. ACCESSORIES MANUFACTURED BY <u>BRADLEY CORPORATION</u> OR <u>ASI</u> MAY BE SUBSTITUTED AS EQUAL PRODUCTS.









LIC. NO. 9031 06-30-2023 06-30-2023

15050 LEE I BRISTOL, VIR ANIMAL

REVISION DATE

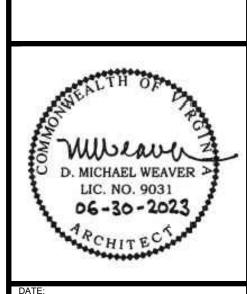
A401

TLG-22136 THE LANE GROUP INC.

DOOR SCHEDULE

*						DOORS						FRAMES				FIRE	HARDWARE	
Α ΜΑ Μ	FROM ROOM	TO ROOM	MIDTH	HEIGHT	THK.	MATERIAL	CORE	TYPE	FINISH	GLASS	MATERIAL	FINISH	JAMB	HEAD	ELEV.	RATING	SET NO.	REMARKS
ı	SHERIFF'S DEPT. 200	EXTERIOR	3'-0"	7'-0"	l 3/4"	ALUMINUM STOREFRONT			EXISTING	EXIST.	ALUMINUM STOREFRONT	EXISTING			SEE SHT. A201.		HM-I	EXISTING DOOR TO BE RELOCATED.
2	VESTIBULE 100	EXTERIOR	3'-0"	7'-0"	3/4"	ALUMINUM STOREFRONT			EXISTING	EXIST.	ALUMINUM STOREFRONT	EXISTING			SEE SHT. A201.		HM-I	EXISTING DOOR & FRAME IN PLACE.
3	DOG KENNELS 126	EXTERIOR	DBL. 3'-0"	7'-0"	3/4"	HOLLOW METAL	INSUL	C	PAINT	Gl	HOLLOW METAL	PAINT			4		HM-2	
4	DOG KENNELS 126	EXTERIOR	3'-0"	7'-0"	3/4"	HOLLOW METAL	INSUL	C	PAINT	GI	HOLLOW METAL	PAINT			2		HM-3	
5	FEEDING AREA 120A	EXTERIOR	DBL. 3'-0"	7'-0"	3/4"	HOLLOW METAL	INSUL	C	PAINT	GI	HOLLOW METAL	PAINT			3		HW-2	
6	CORRIDOR 109	EXTERIOR	3'-0"	6'-8"	3/4"	HOLLOW METAL		А	PAINT		HOLLOW METAL	PAINT			ı		HM-3	EXISTING DOOR & FRAME IN PLACE.
7	LOBBY IOI	VESTIBULE 100	3'-0"	7'-0"	3/4"	ALUMINUM STOREFRONT			EXISTING	EXIST.	ALUMINUM STOREFRONT	EXISTING						EXISTING DOOR & FRAME IN PLACE.
8	RECEPTION 102	OFFICE 103	3'-0"	6'-8"	3/8"	WOOD	SOLID	C	PAINT	62	HOLLOW METAL	PAINT			5		HW-4	
9	RECEPTION 102	FILES 104	3'-0"	6'-8"	1 3/8"	MOOD	SOLID	C	PAINT	62	HOLLOW METAL	PAINT			ı		HM-5	
10	CLOSET 105	LOBBY IOI	DBL. 3'-0"	6'-8"	3/8"	MOOD	SOLID	В	PAINT		HOLLOW METAL	PAINT			3		HM-6	
[]	SHERIFF'S DEPT. 200	LOBBY IOI	3'-0"	6'-8"	3/8"	WOOD	SOLID	В	PAINT		HOLLOW METAL	PAINT			ı		HW-4	
12	SHERIFF'S DEPT. 200	UNISEX TOILET 201	3'-0"	6'-8"	3/8"	MOOD	SOLID	В	PAINT		HOLLOW METAL	PAINT			ı		HM-7	
13	LOBBY 101	PLAYROOM 106	3'-0"	6'-8"	3/8"	MOOD	SOLID	D	PAINT	62	HOLLOW METAL	PAINT			6		HM-8	
14	LOBBY 101	PLAYROOM 107	3'-0"	6'-8"	3/8"	MOOD	SOLID	D	PAINT	62	HOLLOW METAL	PAINT			6		HM-8	
15	CORRIDOR 109	BREAK ROOM 108	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
16	CORRIDOR 109	SERVER ROOM 110	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		WOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
17	CORRIDOR 109	OFFICE III	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
18	CLOSET 113	CORRIDOR 112	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
19	CORRIDOR 112	MEN 114	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
20	CORRIDOR 112	MOMEN 115	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
21	CORRIDOR 112	STORAGE 116	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
22	LOBBY 101	STORAGE 117	3'-0"	6'-8"	3/8"	MOOD	SOLID	В	PAINT		HOLLOW METAL	PAINT			ı		HM-5	
23	CAT QUARTERS 119	CAT ISOLATION 118	3'-0"	6'-8"	3/8"	MOOD	SOLID	D	PAINT		HOLLOW METAL	PAINT			5		HM-8	
24	LOBBY IOI	CAT QUARTERS 119	3'-0"	6'-8"	3/8"	MOOD	SOLID	В	PAINT		HOLLOW METAL	PAINT			5		HM-8	
25	DOG KENNELS 120	LOBBY IOI	3'-0"	6'-8"	3/8"	MOOD	SOLID	C	PAINT	<i>G</i> 2	HOLLOW METAL	PAINT			ı		HM-8	REFRAME ROUGH OPENING.
26	DOG KENNELS 120	MECH ROOM 122	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
27	DOG KENNELS 120	UNISEX TOILET 123	3'-0"	6'-8"	3/8"	MOOD	SOLID	B, SIM.	PAINT		MOOD	PAINT			I , SIMILAR			EXISTING DOOR & FRAME IN PLACE.
28	PROCEDURE 124	VET BATHROOM 125	3'-0"	6'-8"	3/4"	HOLLOW METAL	INSUL	В	PAINT		HOLLOW METAL	PAINT					HW-7	
29	FEEDING AREA 120A	PROCEDURE 123	3'-0"	6'-8"	3/4"	HOLLOW METAL	INSUL	C	PAINT		HOLLOW METAL	PAINT					HW-4	
30	ISOLATION 121	DOG KENNELS 120	3'-0"	7'-0"	3/4"	HOLLOW METAL	INSUL	C	PAINT	62	HOLLOW METAL	PAINT			2		HM-9	
31	ISOLATION 121	DOG KENNELS 120	3'-0"	7'-0"	3/4"	HOLLOW METAL	INSUL	C	PAINT	62	HOLLOW METAL	PAINT			2		HW-9	
32	DOG KENNELS 120	DOG KENNELS 126	3'-0"	7'-0"	3/4"	HOLLOW METAL	INSUL	C	PAINT	62	HOLLOW METAL	PAINT			2		HW-9	
33	DOG KENNELS 120	DOG KENNELS 126	3'-0"	7'-0"	3/4"	HOLLOW METAL	INSUL	C	PAINT	<i>6</i> 2	HOLLOW METAL	PAINT			2		HM-a	
34	MAIN ATTIC AREA	ATTIC ABV. SHERIFF				MOOD					WOOD ROUGH OPNG.	PAINT						EXIST. ATTIC DOOR SHALL REMAIN.
35	MAIN ATTIC AREA A	MAIN ATTIC AREA B	3'-0"	6'-8"	3/4" (+/-)	MOOD		B, SIM.			WOOD ROUGH OPNG.	PAINT					HM-10	NEW ATTIC DRAFTSTOPPING DOOR.

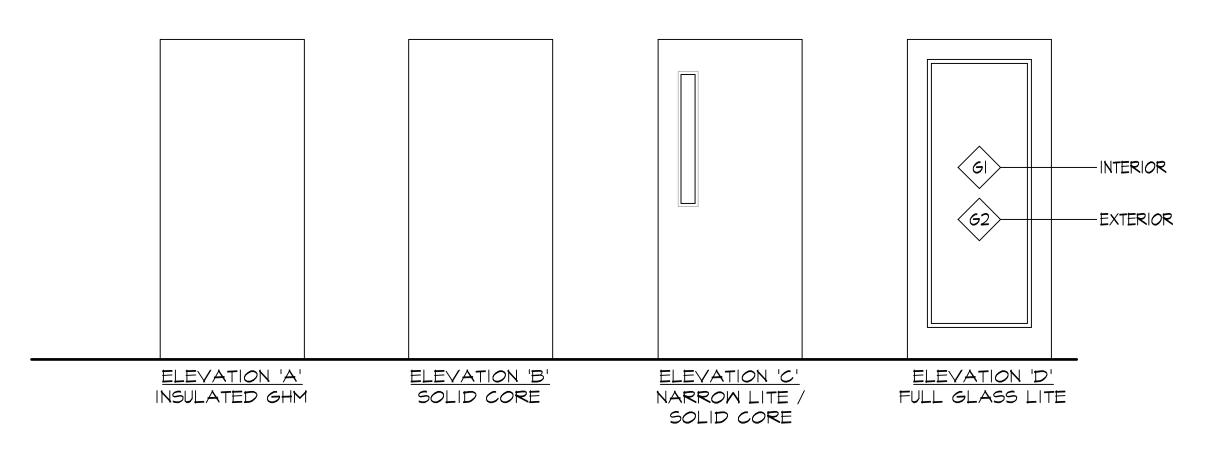
BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201



06-30-2023 **REVISION DATE**

A601

PROJECT NO. TLG-22136



MARK

DESCRIPTION

3/16" CLEAR TEMPERED GLASS

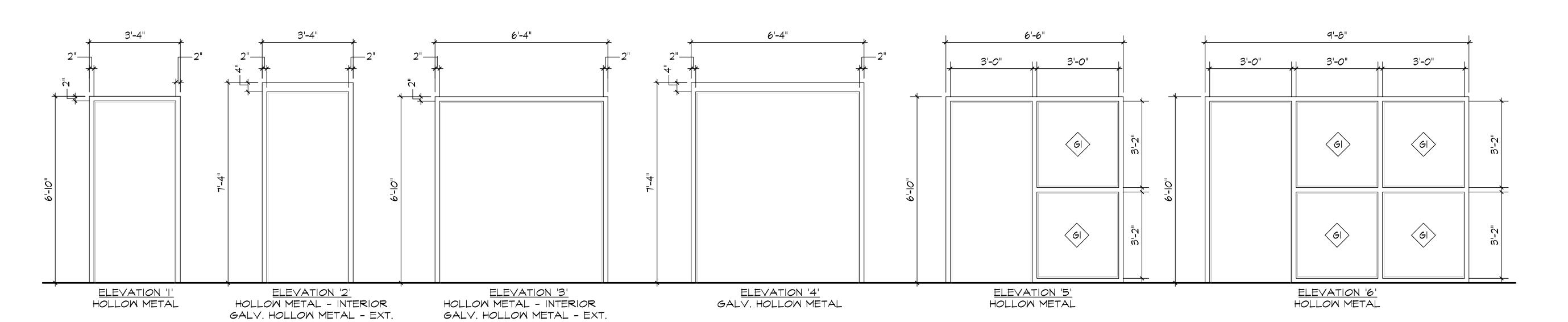
I" CLEAR TEMPERED INSULATING GLASS

I" INSULATING GLASS WITH DARK BRONZE
TINT ON #2 SURFACE

NOT USED.

DOOR TYPES

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



FRAME TYPES

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

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BUILDING RENOVATION FOR

WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER

15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

DOOR AND FRAME ELEVATIONS AND DETAIL GLAZING SCHEDULE



06-30-2023

REVISION DATE

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A602

CHECKED BY

NO. TLG-22136

SIGN SCHEDULE

1ARK	SIGN TEXT	NOTES
A	UNISEX	I, 2
Œ	DOG KENNELS	1, 2
O	MECHANICAL	1, 2
D	PROCEDURE	1, 2

SIGN SCHEDULE NOTES

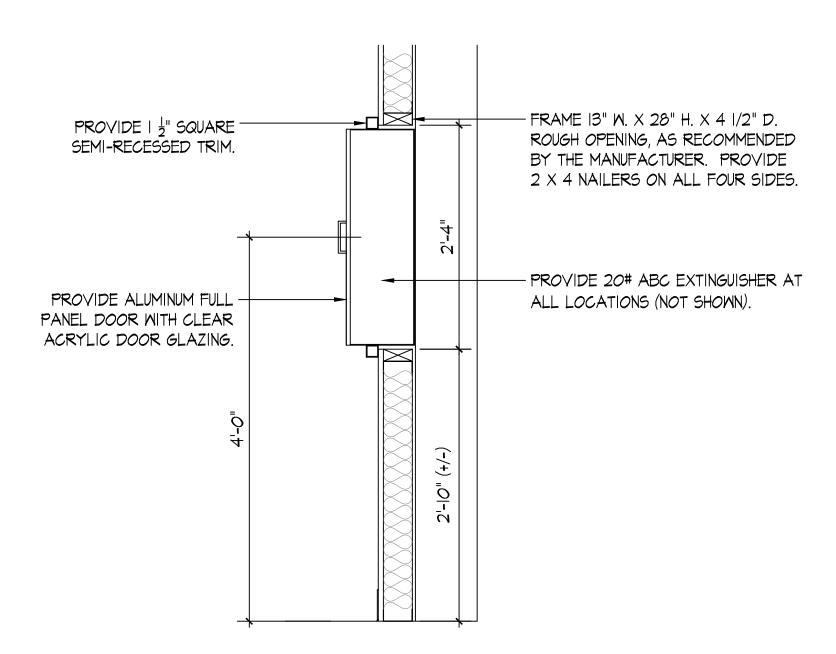
- I. INTERIOR SIGNAGE SYSTEM SHALL COMPLY WITH ALL CURRENT AND APPLICABLE ADA REQUIREMENTS INCLUDING THOSE REGARDING WHICH SIGN TYPES REQUIRE PICTOGRAMS AND/OR BRAILLE / TACTILE FEATURES. CHARACTER HEIGHTS, COLOR CONTRAST, INSTALLATION LOCATIONS, AND MOUNTING HEIGHTS SHALL BE ADA COMPLIANT.
- 2. BASIS OF DESIGN FOR SIGNAGE IS THE "FULL-VIEW" LOW-PROFILE MODULAR SIGN SYSTEM, AS MANUFACTURED BY APCO SIGNS. THIS IS NOT MEANT TO BE PROPRIETARY. MANUFACTURERS WHO REGULARLY ENGAGE IN THE FABRICATION OF SIMILAR SIGNAGE SYSTEMS WILL BE GIVEN CONSIDERATION AS AN EQUAL PRODUCT.

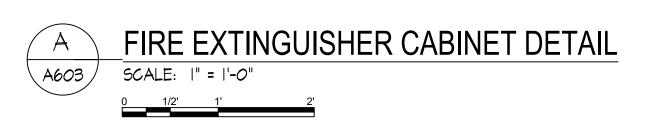
APPLIANCE AND ACCESSORY SCHEDULE

DESCRIPTION	MANUFACTURER	MODEL NO.	NOTES
REFRIGERATOR	GE "PROFILE"	GTS22JSNRSS	NOTES I, 2, AND 3.
UNDERCOUNTER REFRIGERATOR	<i>G</i> E	GCE06SHSB	NOTES I, 2, AND 4.
DISHMASHER	GE "PROFILE"	GDT650SYVFS	NOTES I, AND 2.
FREEZER.	GE "PROFILE"	FCM22DLWW	NOTES 1, 2, AND 5.
WASHER	GE COMMERCIAL	GFM550SSNWW	NOTES I, 2, AND 6.
DRYER	GE COMMERCIAL	GFD55ESSNWW	NOTES I, 2, AND 6.
EXAMINATION TABLE	VETLIFT / PETLIFT	VL-TEZ-9095E-BLK	ROOM # 124.
DOG BATHTUB	BOOSTER BATH	LARGE SIZE. RED COLOR.	ROOM # 124.
3'-0" WIDE DOG KENNEL DOOR	DIRECT ANIMAL PRODUCTS, INC.	D1036-KD	ROOMS # 120 \$ 126
4'-0" WIDE DOG KENNEL DOOR	DIRECT ANIMAL PRODUCTS, INC.	DIO48-KD WITH PARTITION.	ROOM # 121.
6'-0" WIDE DOG KENNEL DOOR	DIRECT ANIMAL PRODUCTS, INC.	DIOT2-KD WITH PARTITION.	ROOM # 126.
CAT CONDOS	DIRECT ANIMAL PRODUCTS, INC.	SEE NOTE 7, BELOW.	ROOMS # 118 & 119.
GUILLOTINE KENNEL DOOR.	SECURITY BOSS	LARGE - PREMIUM.	NOTE 9.

APPLIANCE AND ACCESSORY SCHEDULE NOTES

- I. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL APPLIANCES AND ACCESSORIES, UNLESS NOTED OTHERWISE.
- IN THE EVENT THAT THE MODEL NUMBER SCHEDULED FOR ANY DEVICE IS NO LONGER AVAILABLE, CONTACT THE ARCHITECT FOR A REPLACEMENT MODEL NUMBER.
- REFRIGERATORS, TOTAL OF 4, SHALL BE LOCATED IN SHERIFF'S DEPT. ROOM # 200, CAT QUARTERS ROOM # 119, BREAK ROOM # 108, AND FEEDING AREA # 120A. ALL REFRIGERATORS 21.9 CU. FT. / STAINLESS STEEL FINISH WITH ICE MAKER.
- 4. 5.6 CUBIC FOOT UNDERCOUNTER REFRIGERATOR, ADA COMPLIANT, ENERGY STAR RATED, STAINLESS STEEL FINISH.
- THE FREEZER SHALL BE LOCATED IN THE FEEDING AREA #120A. FREEZER SHALL BE 21.7 CU. FT. / WHITE FINISH.
- 6. THE STACKABLE WASHERS AND DRYERS SHALL BE LOCATED IN PROCEDURE ROOM # 124. SEE INTERIOR ELEVATION A/A702.
- 7. DOG KENNEL DOORS SHALL BE AS MANUFACTURED BY <u>DIRECT ANIMAL PRODUCTS</u>, INC. PROVIDE 5" X 7" STAINLESS STEEL CARD HOLDER AT EACH DOOR. CONTACT sales@directanimal.com.
- 8. CAT CONDOS SHALL BE AS MANUFACTURED BY <u>DIRECT ANIMAL PRODUCTS</u>, INC. PROVIDE A TRIPLE STACKED CUSTOM CONFIGURATION, AS PROPOSED BY THE MANUFACTURER, X 5 UNITS WIDE. UNITS SHALL BE COMPOSED OF CONDOS TYPE 1200-31S (LEFT END), 1200-34S (CENTER UNITS), AND 1200-37S (RIGHT END). CONTACT sales@directanimal.com.
- 9. THE GUILLOTINE KENNEL DOORS SHALL BE AS MANUFACTURED BY <u>SECURITY BOSS PET DOORS</u>, INC. GUILLOTINE DOORS SHALL BE "KENNEL CLAD PREMIUM INSULATED UNITS", LARGE SIZE (17"W. X 29"H). CONTACT SALES AT (608)-397-1562.
- IO. FIRE EXTINGUISHERS AND FIRE EXTINGUISHER CABINETS SHALL BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. BASIS OF DESIGN FOR FIRE EXTINGUISHER CABINETS SHALL BE MODEL # 2712-RA SEMI-RECESSED CABINET AS MANUFACTURED BY LARSEN'S MANUFACTURING COMPANY. INSTALL CABINETS AT AN ADA COMPLIANT HEIGHT.





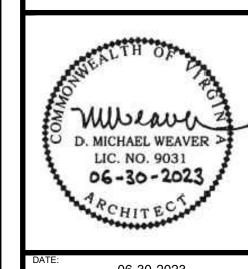
310 Valley Street NW Abingdon, VA 24210 al 276.206.8571 - office

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BUILDING RENOVATION FAMINGTON COUNTY, VIRANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

SCHEDULES AND NOTES MISCELLANEOUS DETAILS



	06-30-2023
NO.	REVISION DATE
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TLG-22136

THE LANE GROUP INC.

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ROOM NO.		6 YCT TO REMAIN	CH EXISTING VC	NEW VCT - PATTERNED	SHERWIN-WILLIAMS RESINOUS FLOORING W/"RESUFLOR TOPCOAT TX"	OOR				M 4" COVED RUBBER BASE (NOT VINYL)	SINOUS FLOORING M/ "RESUFLOR TOPCOAT TX"	4SE				SYSTING GANGED (NEW AND CONTRACT OF SYSTEMS)		EM 5/8" GYP. BOARD (PAINT)	5/8" GYP. B	NEW FRP PANEL OVER 5/8" GYP. BOARD - TYPE X	CMU - PAINT WITH S-W "PRO INDUSTRIAL ACRYLIC, B66-600 SERIES"		ALL				EXISTING GYP. BOARD TO REMAIN (PATCH AS NEEDED AND REPAINT)	CHARLES (INC.) (INC.) THE CHARLES (INC.) THE CHARLE	PREFINISHED METAL LINER PANELS		HLING			8'-0" ±, TYPICAL			IGHT	NOTES
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101 102	LOBBY RECEPTION		•			-+	\dashv	+		<u>•</u>	\dashv	-	+	+	+	+						+	+			+	+			+	+	+	1	•				SEE DRAWING A703 FOR RECEPTION DESK DETAILS.
	OFFICE															1																		•				SEE DIVINIO MOSTOR RESERVED DE IMIES.
104	FILES / OFFICE SUPPLIES								(
	CLOSET																																	•				
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	MECHANICAL ROOM						-	-	+				+	+	+	1		-				+	+-		+	+		+										
	UNISEX TOILET							_				_	\top	_	_							_	<u> </u>			_			_	_	_		<u> </u>			<u> </u>		
124	PROCEDURE																																	0				
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	SHERIFF'S OFFICE UNISEX TOILET	\square	\dashv							<u>•</u>	_		4		+	1						+		\square		\perp	•		\bot		\perp		1	•		<u> </u>		

BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

the

LANE

architecture

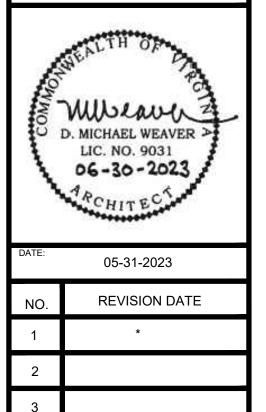
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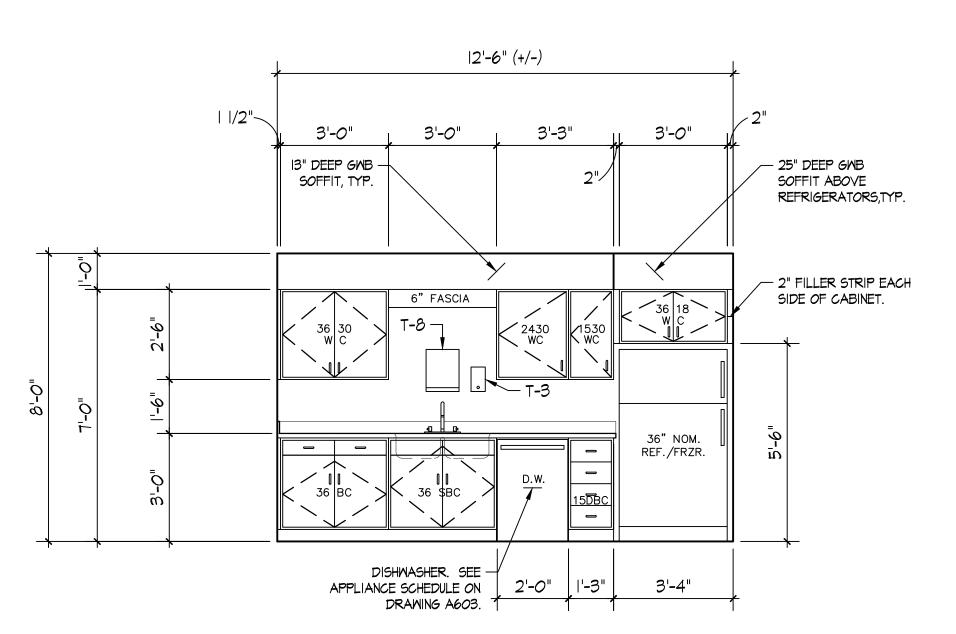


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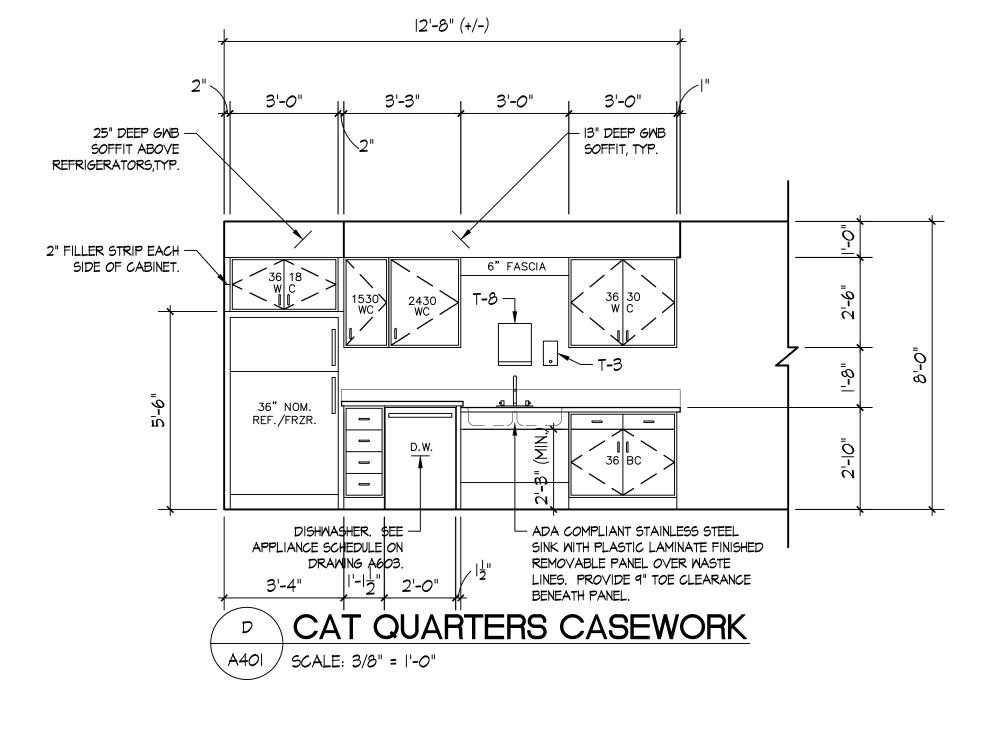
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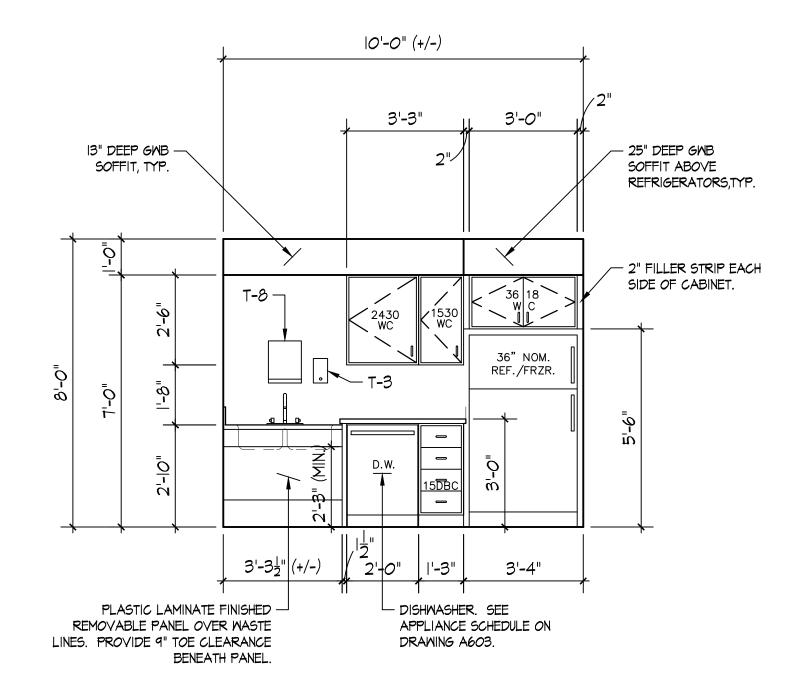
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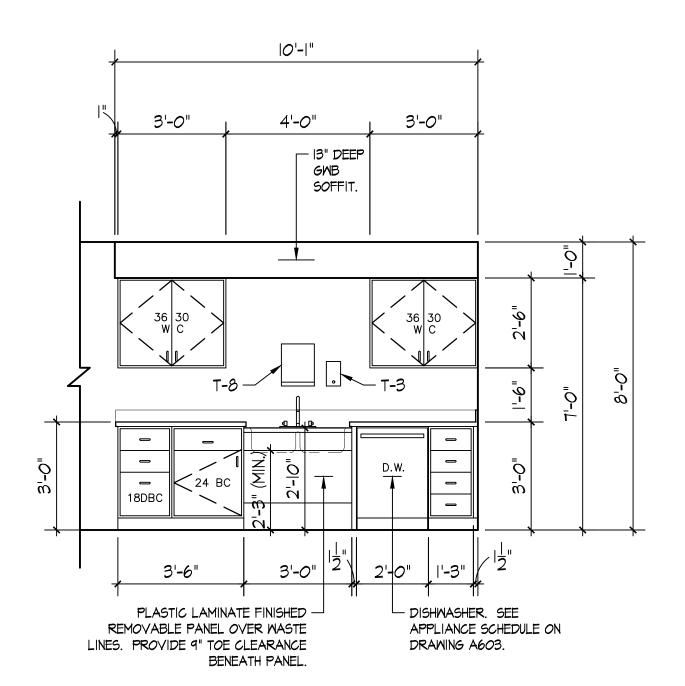


SHERIFF'S DEPARTMENT CASEWORK SCALE: 3/8" = 1'-0"

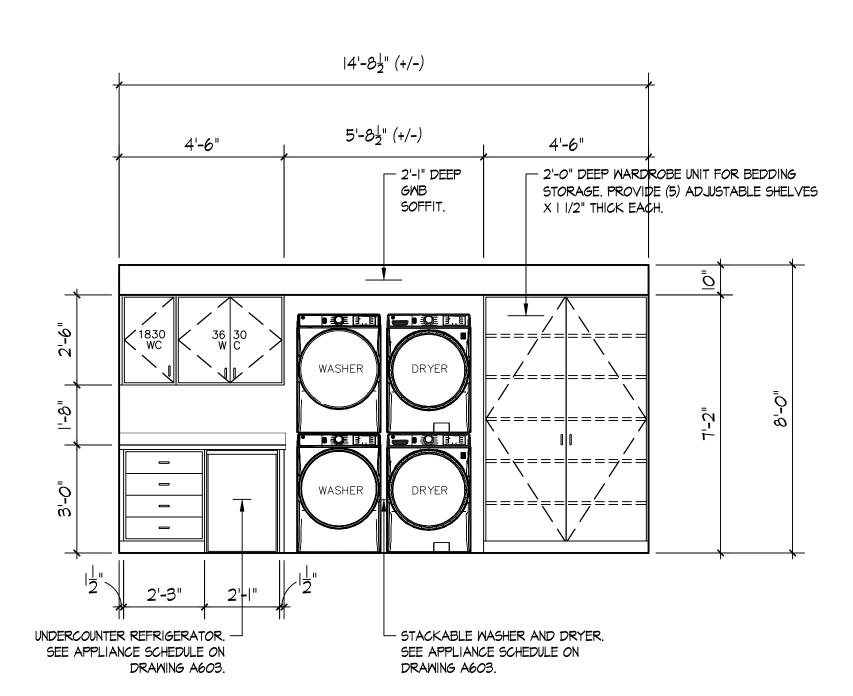














CABINET ABBREVIATION INDEX

BC BASE CABINET (32 I/2" HIGH x 24" DEEP CABINET, TYPICAL)
CBC COUNTER BASE CABINET (38 I/2" HIGH x 24" DEEP CABINET, TYPICAL)
CDBC COUNTER DRAWER BASE CABINET (38 I/2" HIGH x 24" DEEP CABINET, TYPICAL)

DRAWER BASE CABINET (32 I/2" HIGH x 24" DEEP CABINET, TYPICAL)
DESK KNEE DRAWER (KNEE SPACE WIDTH x 24" DEEP, TYPICAL)

OPEN-FRONT DESK BASE CABINET (30 1/2" HIGH x 24" DEEP CABINET TYPICAL)
OPEN-FRONT COUNTER BASE CABINET (38 1/2" " HIGH x 24" DEEP CABINET, TYPICAL)

BC SINK BASE CABINET (32 I/2" HIGH x 24" DEEP CABINET, TYPICAL)

C WALL CABINET (12" DEEP CABINET, TYPICAL)

BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY

VIRGINIA 24201

BRISTOL,

INTERIOR ELEVATIONS



NO. REVISION DATE

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3 SHEET: A702

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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

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 t ordering such equipment.

RELATED WORK SPECIFIED ELSEWHERE: Foundations and pads required for equipment furnished under this Division of the Specifications are specified elsewhere. Field painting, except such painting as is required to maintain shop coat painting and factory finish painting 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:

- International Building Code, Plumbing Code, Mechanical Code, Gas Code.
- NFPA: National Fire Protection Association. AGA: American Gas Association
- FM: Association of Factory Mutual Fire Insurance Company.
- ASME: American Society of Mechanical Engineers. ASTM: American Society of Testing Materials
- NSF: National Sanitary Foundation PDI: Plumbina Drainage Institute
- UL: Underwriters Laboratories. NEC: National Electrical Code.
- NEMA: National Electrical Manufacturer's Association. SMACNA: Sheet Metal and Air Conditioning Contractors National Association.
- ARI: American Refrigeration Institute.
- PFMA: Power Fan Manufacturer's Association MSS: Manufacturer's Standard Society of Valve and Fittings Ind.
- ANSI: American National Standard Institute. ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers. ADA: Americans with Disabilities Act.
- 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

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 requirec 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, performance and appearance.

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

- Capacities shown are absolute minimum and must be equaled.
- Physical size limitations for space allotted. Structural properties. Static and dynamic weight limitation.
- Interchange ability.
- Vibration generation.
- Accessibility for maintenance and replacement. Compatibility with other materials, assemblies and equipment.
- 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 visual 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

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 Enaineer for instructions. When encountered in work, whether or not indicated, cap or plug or otherwise discontinue existing inactive: sewer, water, gas, electric, other utility services, structures which interfere with work execution. 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 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.

as to the deficiencies and for leaving the piece of equipment involved in a locked "OFF"

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

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 \prime 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 set 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 corrosion, or termite attack and rock. It 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..... 2. Fill under floor slabs and surfaced areas such as walks, steps, concrete paving, parking
- bays, curbs, etc., and remainder of fill under 3. Fill under lawn and planted areas......

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 end 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 $3/4\degree$ 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 fielc 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, of 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 the Contractor, and with prior written permission of the Owner, th 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. ADC Test Code FD 72-R1, 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 I; Hardcast #P301; Tremco 440; or United Mcgill, Uni—Cast Tape.

For all ducts with lonaest 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 "tremco 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

Install reaisters and air diffusers in accordance with schedule and with opposed blade volume control and

sponge rubber gaskets for each unit. A certified Independent Balancing Contractor shall balance air flows according to drawings reporting on AABA forms — See equipment start up. Duct sizes given on drawings are Externally insulate supply, return, relief and outside air ductwork with 2" thick fiberglass 25/50 foil faced duct wrap per UL 723. All seams shall be stapled 6" on centers with outward clinching staples then sealed

vapor tight with foil tape in strict accordance with the manufacturer's recommendations. See legend. GAS FURNACE: Furnish a fixed capacity gas—fired furnace for use with natural gas. QUALITY ASSURANCE: Unit will be designed, tested and constructed to the current ANSI Z 21.47/CSA 2.3 design standard for gas-fired central furnaces. Unit will be 3rd party certified by CSA to the current ANSI Z

21.47/CSA 2.3 design standard for gas-fired central furnaces. Unit will carry the CSA Blue StarR label. Unit

will be certified for capacity and efficiency and listed in the latest AHRI Consumer's Directory of Certified Efficiency Ratings. Unit shall carry the current Federal Trade Commission Energy Guide efficiency label. DELIVERY, STORAGE AND HANDLING: Unit shall be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

WARRANTY: Warranty certificate available upon request.

EQUIPMENT: Components shall include: slow—opening gas valve to reduce ignition noise, regulate gas flow, with electric switch gas shut—off; flame proving sensor, hot surface igniter, pressure switch assembly, flame rollout switch, blower and inducer assembly, 40va transformer; low-voltage thermostat.

Blower Wheel and Blower Motor: Galvanized blower wheel shall be centrifugal type, statically and dynamically balanced. Blower motor of fixed-speeds, constant torque ECM type shall be permanently lubricated with sealed bearings, of scheduled hp, and shall be multiple-speed direct drive. Blower motor shall be soft mounted to the blower scroll to reduce vibration transmission.

Filters: Furnace may have reusable-type filters.

Casing: Casing shall be of .030 in. thickness minimum, pre-painted steel.

Inducer Motor: Inducer motor shall be soft mounted to reduce vibration transmission.

Draft Safeguard Switch: Draft Safeguard Switch (blocked vent safeguard) shall be factory installed to reduce the possibility of vent gas infiltration due to a blocked or restricted vent pipe.

Heat Exchangers: Heat exchangers shall be a 4—Pass 20 gage aluminized steel of fold—and—crimp sectional design when applied operating under negative pressure. Controls: Control shall include a micro-processor based integrated electronic control board with at least 11

service troubleshooting codes displayed via enhanced flashing LED diagnostic light on the control, a self—test feature that checks all major functions of the furnace within one minute, and a non-volatile memory replaceable automotive—type circuit protection fuse. Multiple operational settings available including, separate blower speeds for heating, cooling and continuous fan. Cooling airflow will be selectable between 350 or 400

COOLING COIL: This coil is available for use with R-410A Puron® Refrigerant only. It is a cased A-coil that is housed in a durable, 24-gauge, pre-painted taupe metallic cabinet. The fully insulated cabinet (foil faced with R-2.1 insulation properties) provides for quiet efficient operation of the evaporator coil. This multipoise coil offers the most in installation application flexibility; one coil for a variety of applications.

Thermostatic Expansion Valves (TXV): All coils have refrigerant—specific, factory—installed TXVs. Durable Condensate Pans (2): The corrosion—resistant drain pans, one for vertical applications and one for

Performance: The A-coil offers low pressure drops to enhance system performance and girflow characteristics.

horizontal, are designed in a "fiberglass reinforced thermoset polyester" material (FRTP) that offers unsurpassed pan strength. It is engineered with proper slope in both pans to help ensure water drainage, improved moisture Refrigerant Connections: Provided with industry proven sweat connections for leak-free operation to maintain

system reliability. The side mounting tubing to the coil slabs allows for easy leaning/servicing of the coils, as well as easy access to the TXV. Burst Pressure: Meets or exceeds burst pressure of 2100 psi, which is at least three to five times the pressure

it would see in actual application UV Knockouts: This cased coil comes with factory—installed UV knockouts for quick and easy installation of UV

Serviceability: Comes with a "split delta plate" for easy, quick access to the coil for service and cleaning. Also, after the door is removed, the coil is removable from the front of the unit without use of any tools OUTDOOR SECTION OF HVAC UNITS 1 AND 2: Outdoor-mounted, air-cooled, split-system air conditioner unit

condenser fan, and a control box. Unit will discharge supply air upward as shown on contract drawings. Unit

suitable for ground installation. Unit consists of a hermetic compressor, an air—cooled coil, propeller—type

will be used in a refrigeration circuit to match up to a packaged fan coil or coil unit.

Quality Assurance: Unit will be rated in accordance with the latest edition of AHRI Standard 210/240. Unit will be certified for capacity and efficiency, and listed in AHRI directory. Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC. Unit will be constructed in accordance with UL standards and will carry the UL label of approval. Unit will have c—UL—us approval. Unit cabinet will be capable of withstanding Standard No. 141 (Method 6061) 500-hr salt spray test. Air-cooled condenser coils will be leak tested at 150

psig and pressure tested at 470 psig. Unit constructed in ISO9001 approved facility. Delivery, Storage, and Handling: Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Equipment: Factory assembled, single piece, air—cooled air conditioner unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge Puron (R-410A), and special features

Unit Cabinet: Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat

Fans: Condenser fan will be direct-drive propeller type, discharging air upward. Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings. Shafts will be corrosion resistant. Fan blades will be statically and dynamically balanced. Condenser fan openings will be equipped with coated steel wire safety guards.

Compressor: Compressor will be hermetically sealed. Compressor will be mounted on rubber vibration isolators. Condenser Coil: Condenser coil will be air cooled. Coil will be constructed of aluminum fins mechanically bonded to copper or aluminum tubes which are then cleaned, dehydrated, and sealed

Refrigeration Components: Refrigeration circuit components will include liquid-line shutoff valve with sweat connections, vapor-line shutoff valve with sweat connections, system charge of Puron (R-410A) refrigerant, and compressor oil. Unit will be shipped with filter drier for Puron (R-410A) refrigerant.

used at the Contractor's option. Install in strict conformance with the manufacturer's recommendations.

Insulate suction piping with 1/2" cellular foam and paint all exterior insulation with tow coats cellular foam

Unit electrical power will be single point connection. Control circuit will be 24v. REFRIGERANT PIPING: Type K hard drawn copper with sweat wrought copper fittings except piping 3/8" O.D. and smaller may be soft drawn. Clean joint surfaces to bright finish and make up with non-acid flux and silver brazing compound. Run dry nitrogen through joint while brazing. Pre-charged refrigeration piping may be

Furnish all required accessories such as expansion valves, refrigerant specialties, high capacity dryers, refrigerant line adapters and connections, and any and all accessories for complete and operating systems, with the piping sized by the manufacturer. Unit to be provided with indoor/outdoor interlocking controls and all accessories for a complete and operating system. See H.V.A.C. schedule on drawings.

MAKE-UP AIR UNIT (MAU-1): This section includes units with integral Indirect Gas-Fired heating for indoor installation. Airflow arrangement shall be Outdoor Air only. 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 on an AMCA Certified Chamber. Sound

performance data for Supply Air, as tested on an AMCA Certified chamber. Motor ratinas, 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 unit with Integral Heating with all appurtenant components or

Product Options: Drawings must indicate size, profiles and dimensional requirements of unit and are to be based

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 MAU and associated ducting, plumbing and electrical systems. Coordinate sequencing of construction of associated plumbing,

Certifications: Entire unit shall be ETL Certified per ANSI Z83.4 or ANSI Z83.18 and bear an ETL mark. Indirect

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 MANUFACTURED UNITS: Unit with Integral Heating shall be fully assembled at the factory and consist of an insulated metal cabinet, with aluminum mesh filter, motorized intake damper, filter assembly for intake air, supply air blower assembly and an electrical control center. All specified components and internal accessories factory

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. Base rail is 12 gauge, galvanized (G90) steel.

installed and tested and prepared for single—point high voltage connection

Internal assemblies: 24 gauge, galvanized (G90) steel except for motor supports which shall be minimum14 gauge galvanized (G90) steel.

Cabinet Insulation: Comply with NFPA 90A and NFPA 90B and erosion requirements of UL 181. Note: Whenever cooling is included in the unit, full insulation of the cabinet and the girstream downstream of the first tempering option should be specified. Note that double wall construction does not include full insulation unless specified. Materials: Fiberalass insulation.

Access panels: Unit shall be equipped with hinged access panels to provide easy access to all major components. Access panels shall be fabricated of 18 gauge galvanized G90 steel.

Supply Air blower assembly: Blower assembly consists of an electric motor as specified by A/E and a belt driven, double width, and double inlet forward curve blower. Assembly shall be mounted on heavy gauge galvanized rails and further mounted on spring isolation devices.

Control panel / connections: unit shall have an electrical control center where all high and low voltage connection 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 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. Welded connections between heat exchanger tubes and the vest plate are known to be a source of failure due to expansion and contraction. 409 stainless steel is considered the most suitable material for high temperature gases, such as automotive exhausts. Manufacturer recommends the use of stainless steel heat exchangers for applications with a temperature rise of 60°F or more. Tubular heat exchangers are considered the industry standard, but some manufacturers are known to construct "clamshell" or other type exchangers. The same requirements for material types and assembly methods and supports should apply to all. Heat exchanger shall have a 10 year extended warranty. Furnace control shall be single furnace 4:1 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, ags train, burner assembly and

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 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.

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 drives for modulation of the blower motors. The VFDs 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: Room / Space Temperature Sensors

personnel to adjust, operate and maintain the entire unit.

Motors shall be 60 cycle, 3 phase 208 volts.

HVAC and electrical supply

FILTERS: Unit shall have 2" thick MERV 8 disposable pleated filters located in the outdoor air intake and shall be

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. Examine roughing—in of plumbing, electrical and HVAC services to verify actual location and compliance with unit requirements. 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

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. Measure and record electrical values for voltage and DEMONSTRATION AND TRAINING: Engage a factory authorized service representative to train owner's maintenance

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 fan's 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 o Final Inspection. After start—up a certified independent balancing contractor must ballance all H.V.A.C. systems

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.

Prior to balancing install clean air filters throughout and furnish owner with two (2) full sets of filters or

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 with 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 open motorized outside air damper during occupied times and close when unoccupied. Each unit controller to maintain space temperature and humidity set point control capabilities. Energizing first stage heating while in cooling mode.

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

Units require connection between thermostat and outdoor section. Provide all interlocking controls. 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: 6/30/2023

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06-30-2023 REVISION DATE

MPE101

DFC/JWR TRM

HE PROJECT #23-008

THE LANE GROUP INC.

TLG-22136

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

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
- 2. Domestic hot and cold water piping and and related items with hot and cold water connections as shown on the drawings.
- 3. Natural 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

VALVES, DRAINS AND SPECIALTIES - GENERAL PLUMBING: Approved equivalents by Walworth, Powell, Crane, Josam, 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 #1334solder. 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.
- 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
- 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 EPCO 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
- 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:

- Domestic Water: Type "L" ASTM B88 hard drawn copper with wrought solder fittings, except piping exterior of the building, under slabs—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. Natural 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 Internationa 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 Plumbina Code
- D. International Association of Plumbing Officials (IAPMO) Uniform Plumbing Code Uniform Mechanical Code
- E. Plastic Pipe Institute (PPI)
- Technical Report TR—3 Pólicies 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; 200 degrees F at 80 psi 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
- 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 inch4. 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
 - Comply with NSF Standard 61 Show compliance with ASTM F877

- 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
- 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
- Do not expose PEX tubing to direct sunlight for more than six months. If construction delays are

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

encountered, cover the tubing that is exposed to direct sunlight.

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

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. Tubina 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
- b. Tubing shall have a minimum of 6 months UV protection Manufactured in accordance with ASTM F876 and ASTM F877 and tested for compliance by an independent third-party agency
- Must have Pex 5006 chlorine designation Plenum tested in accordance with ASTM E84
- 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
- Qickclamp: Listed to ASTM F877, identified as a Zurn PEX Inc, Qickclamp by the "Qickclamp" and "Q"
- 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."
- Qickclamp tools shall be supplied by the PEX tubing manufacturer, identified by the name "Zurn" on
 - Copper Crimp Ring tools shall be supplied by the PEX tubing manufacturer or approved by the PEX
- OickPort Preassembled Manifold

Copper Manifold System

- CR Manifold 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

liaht fixtures

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

water or air and not greater than 225 PSI water, 125 PSI air

- 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
- 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
- FIELD QUALITY CONTROL
 - 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, Elier 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 per foot grade on gravity systems. Install hangers on maximum centers of 5' for cast iron pipe, 6' for othe 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 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

- 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
- 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:

- 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.
- 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

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 on 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 Pipina

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 3 phase 4 wire 208Y/120 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. "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 luminaries shall meet or exceed IES LM—79, IES LM—80, and

PHONE/CABLE/DATA 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 END OF SECTION

END OF ELECTRICAL & MECHANICAL PROVISIONS





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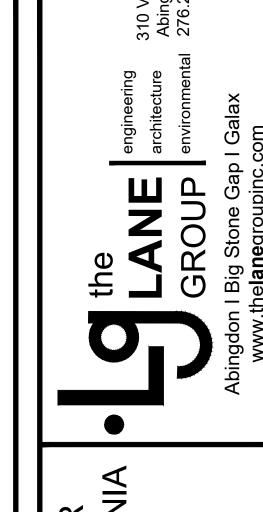
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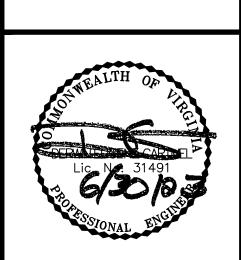
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ASHINGTON COUNTY, VIRGINANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

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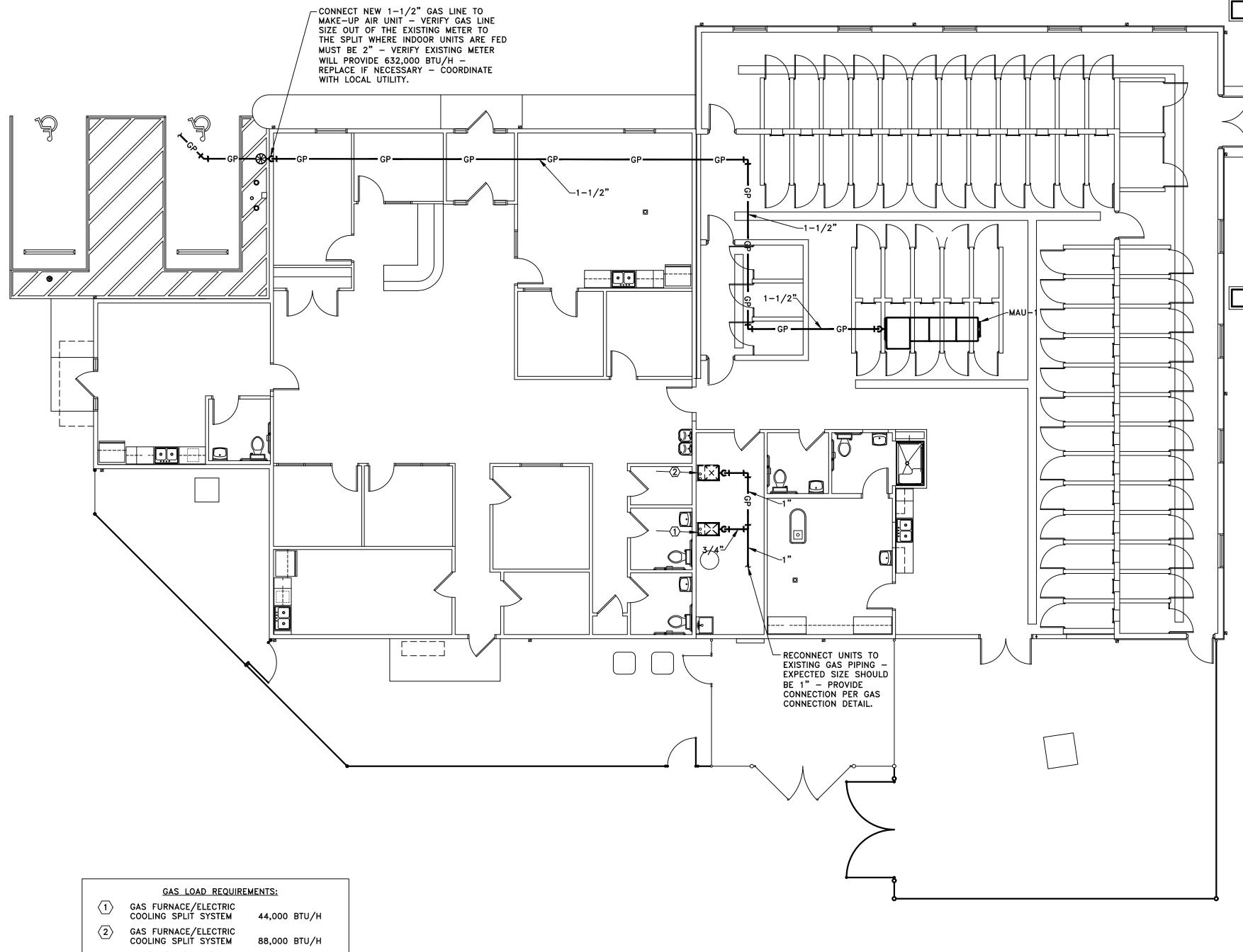
PROJECT NO. TLG-22136

THE LANE GROUP INC.

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

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PLOT DATE: 06/30/2023 HE PROJECT #23-008



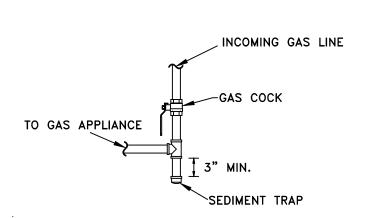
NOTES:

1. ALL GAS PIPING MUST BE INSTALLED AND TESTED IN STRICT ACCORDANCE WITH NFPA 54.

2. PROVIDE GAS COCK AND DRIP LEG AT EACH USER CONNECTION.

3. SEE SPECIFICATIONS FOR PIPING REQUIREMENTS.

4. CONNECT ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.



TYPICAL GAS CONNECTION DETAIL

NO SCALE

GAS LOAD REQUIREMENTS:

(1) GAS FURNACE/ELECTRIC COOLING SPLIT SYSTEM 44,000 BTU/H

(2) GAS FURNACE/ELECTRIC COOLING SPLIT SYSTEM 88,000 BTU/H

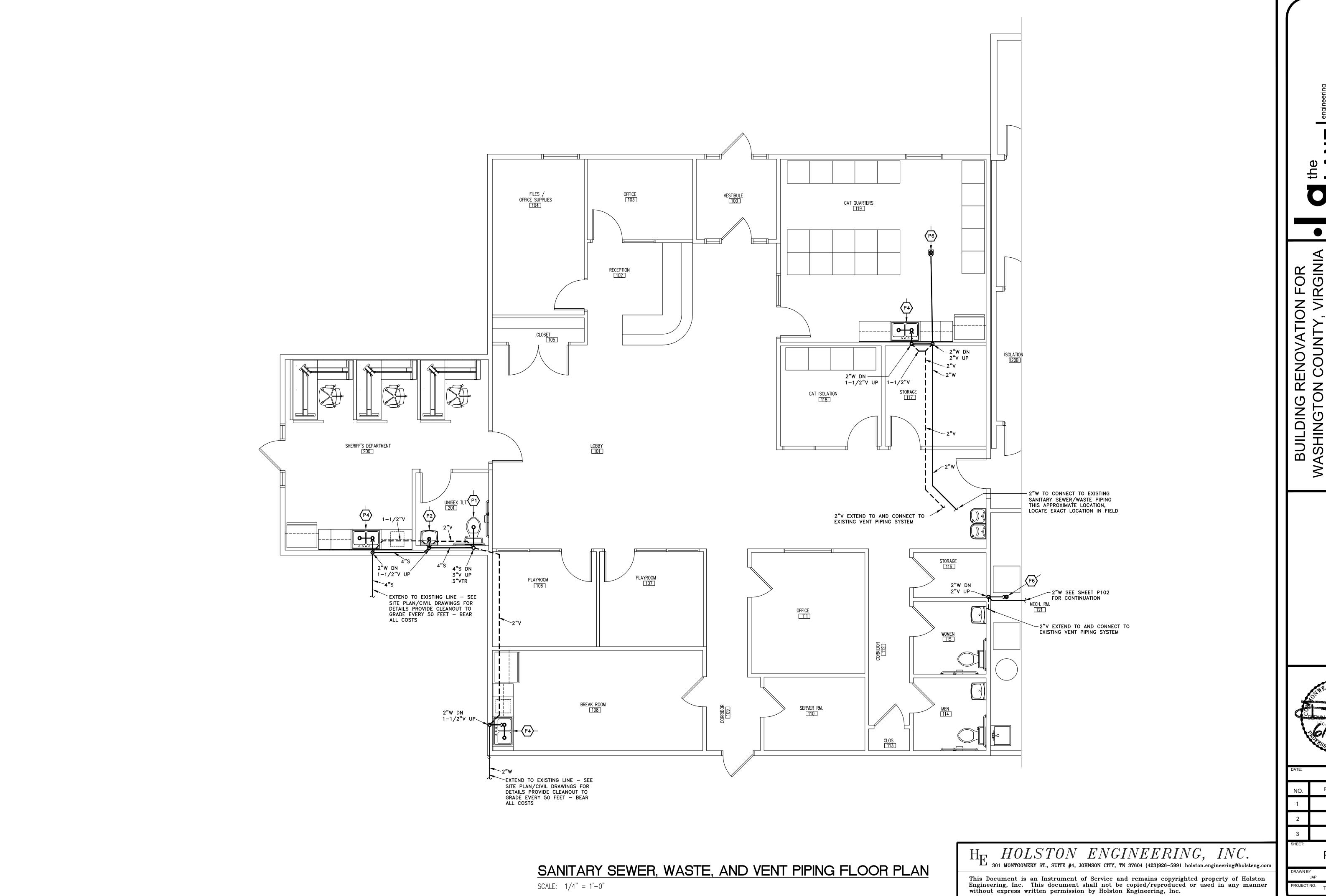
MAU-1 MAKE-UP AIR UNIT HEATING AND VENTILATION ONLY 500,000 BTU/H

TOTAL BTU/H 632,000 BTU/H

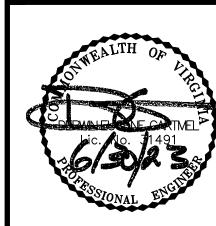
ESTIMATED LINEAR FOOTAGE 125 FT.

GAS PIPING FLOOR PLAN

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



BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201



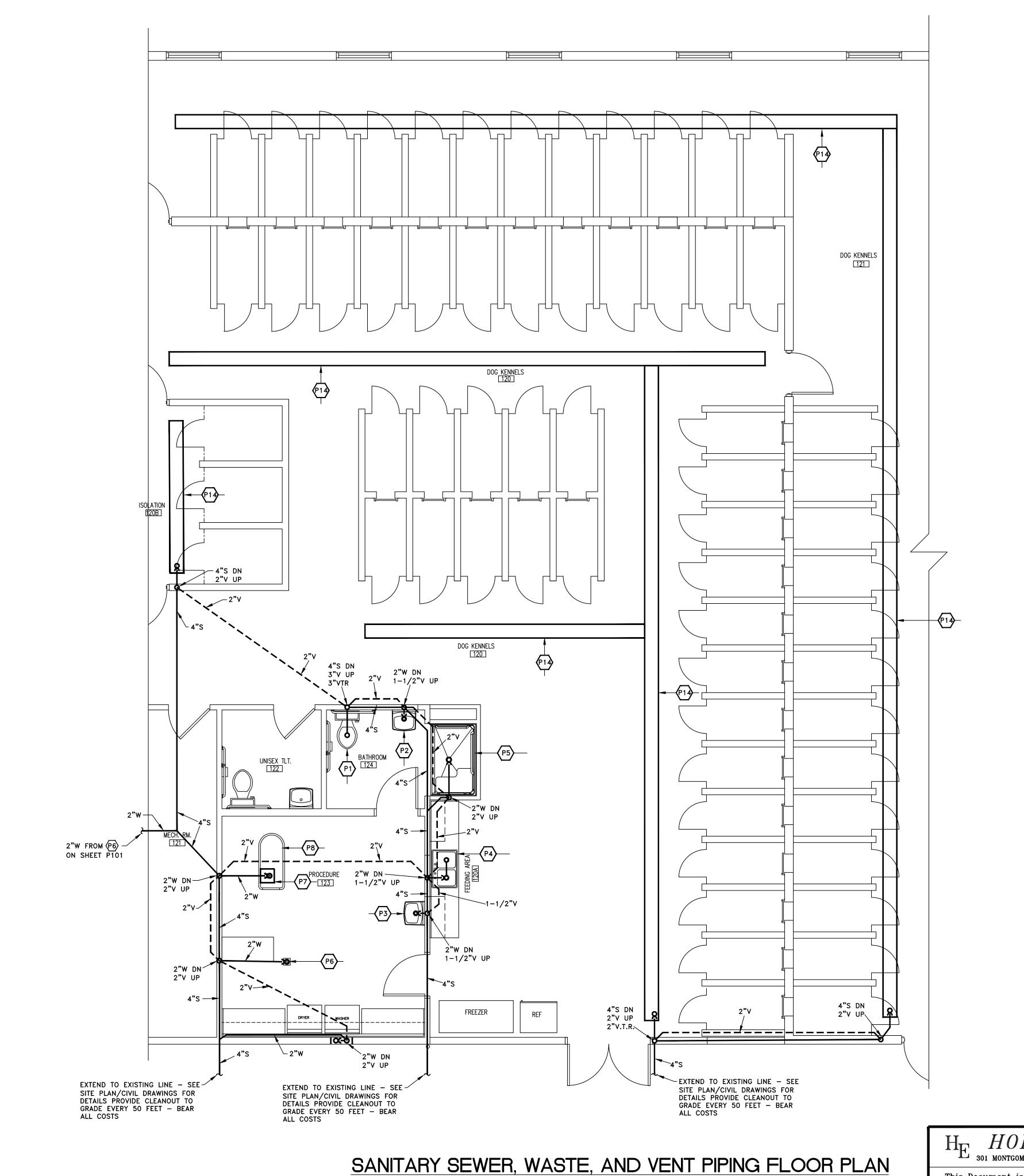
06-30-2023 **REVISION DATE**

P101

DEC PROJECT NO. TLG-22136

THE LANE GROUP INC.

PLOT DATE: 06/30/2023 HE PROJECT #23-008



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

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BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

SANITARY SEWER, WASTE & VENT PIPING FLOOR PLAN



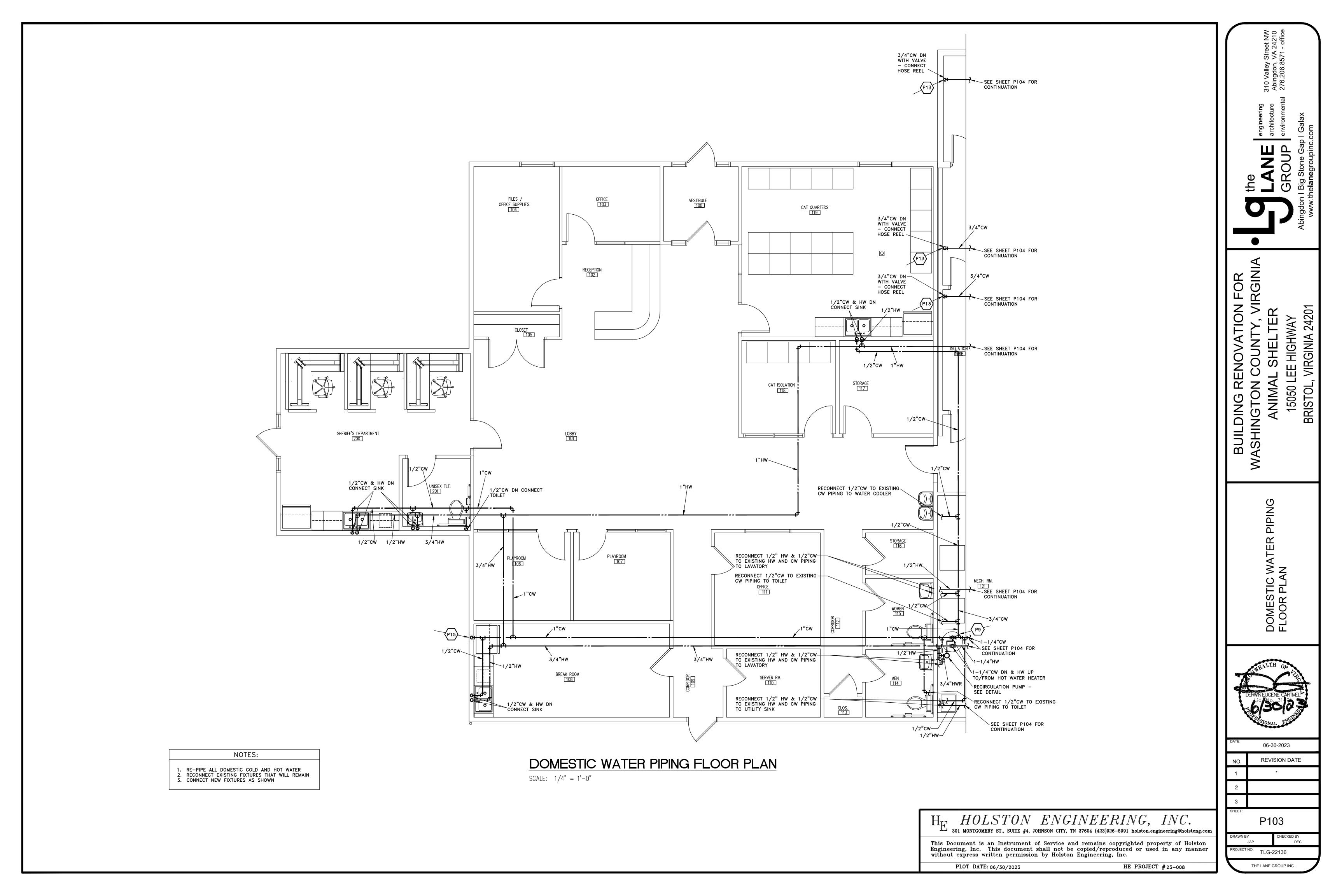
DATE:	06-30-2023
NO.	REVISION DATE
1	*
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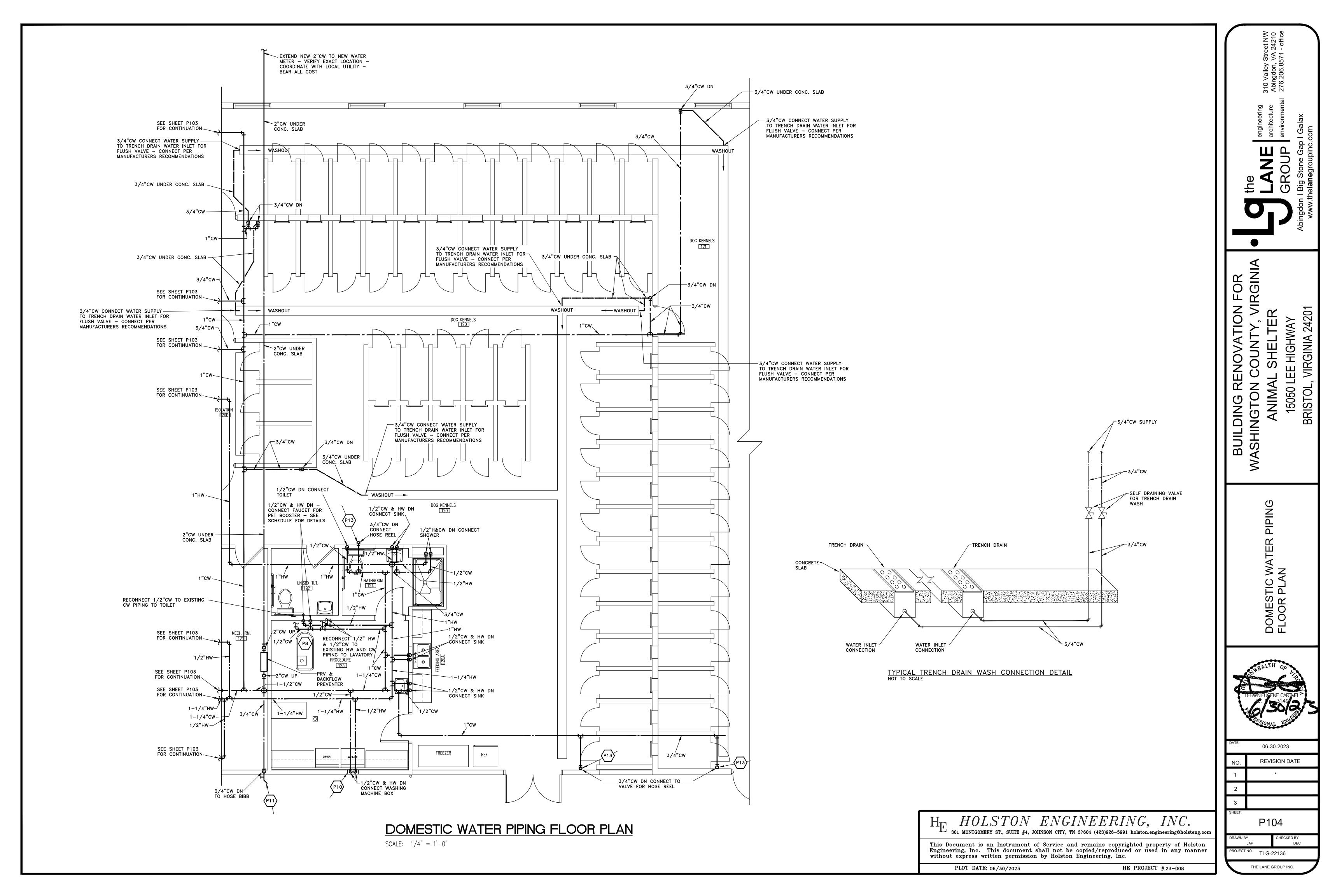
P102

TLG-22136 THE LANE GROUP INC.

PLOT DATE: 06/30/2023

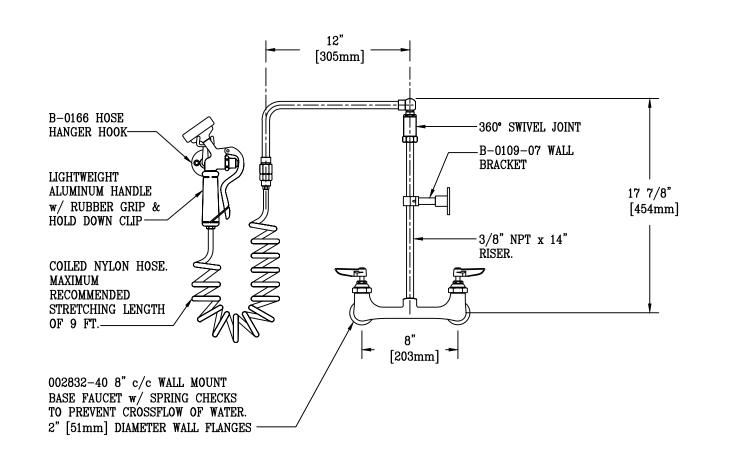
HE PROJECT #23-008



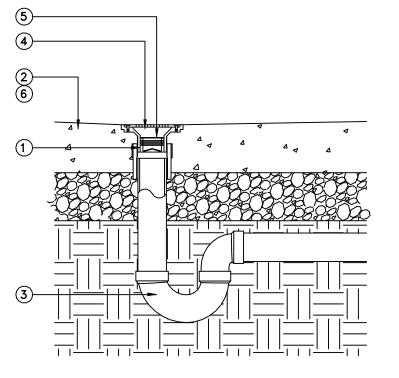


PLUMBING FIXTURE SCHEDULE

NO.	TYPE	SIZE	REMARKS	MAKE	MODEL
P1	WATER CLOSET HANDICAPPED	16 <i>-</i> 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 PROVIDE AND INSTALL WATTS LFMMV THERMOSTATIC MIXING VALVE FOR EACH LAVATORY, INSTALL PER MANUFACTURER'S RECOMMENDATIONS	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	DOUBLE COMPARTMENT SINK	33"X19-1/2"	18 GAUGE STAINLESS STEEL, BUILT-IN SELF RIMMING WITH TWO #LK-35 STRAINERS AND ONE #LK-1000 SINGLE LEVER FAUCET WITH AERATOR FOR 3-HOLE INSTALLATION. CONNECT 1/2" HOT AND COLD WATER, 1-1/2" WASTE.	ELKAY	LR3722
P5	SHOWER UNIT AN SHOWER TRIM (A.D.A.)	ID	60"X36" ADA ROLL-IN SHOWER, 7/8" BARRIER FREE THRESHOLD, SELF-SUPPORTING AND PRE-LEVELED SHOWER BASE, FULLY REINFORCED WALLS, TILE PATTERN EASY TO CLEAN APPLIED ACRYLIC, TEXTURED SLIP-RESISTANT FLOOR, CENTER DRAIN, 30 YEAR WARRANTY SYMMONS ALLURA SHOWER/HAND SHOWER TRIM UNIT, LEVER HANDLE FOR INTEGRAL VOLUME CONTROL, INTEGRAL STOPS, EXTERNAL ADJUSTABLE VOLUME CONTROL HEAD, 2 GPM FLOW RESTRICTOR, SAFETY-MIX PRESSURE BALANCING VALVE, AND TEMPERATURE LIMITING STOPS SET AT 115°F. CONNECT 1/2" HOT AND COLD WATER. SQUARE FLOOR DRAIN TO BE ZURN MODEL ZN415S. CONNECT 2"W, SHOWER HEAD HEIGHT AS DIRECTED.	FREEDOM SH BASE SYMMONS SH SYSTEM TRIM	HOWER 4705TRMTC
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 3 PHASE, 208 VOLTS, 36 KW	STATE	CSB 82 36 IFE
P10	WASHING MACHII	NE 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	-		NOT USED	-	-
P13	HOSE REEL		SPRING RETRACTABLE COMPOSITE HOSE REEL, 50' 5/8"WATER HOSE, LIGHTWEIGHT COMPOSITE MEDIUM MATERIAL — WALL, CEILING OR FLOOR MOUNT — MOUNT AS DIRECTED BY OWNER/ARCHITECT	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 - PROVIDE STAINLESS STEEL COVER	ZURN	Z886
P15	ICE MAKER CONNECTION BO	×	ICE MAKER CONNECTION BOX WITH COVER, HIGH IMPACT PLASTIC. BOTTOM SUPPLY. FURNISHED WITH 1/2" FIP INLET ANGLE VALVE.	IPS	87967



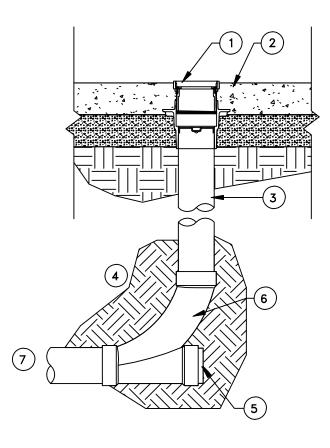
PET GROOMING STATION WALL MOUNT BASE FAUCET DETAIL NO SCALE



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

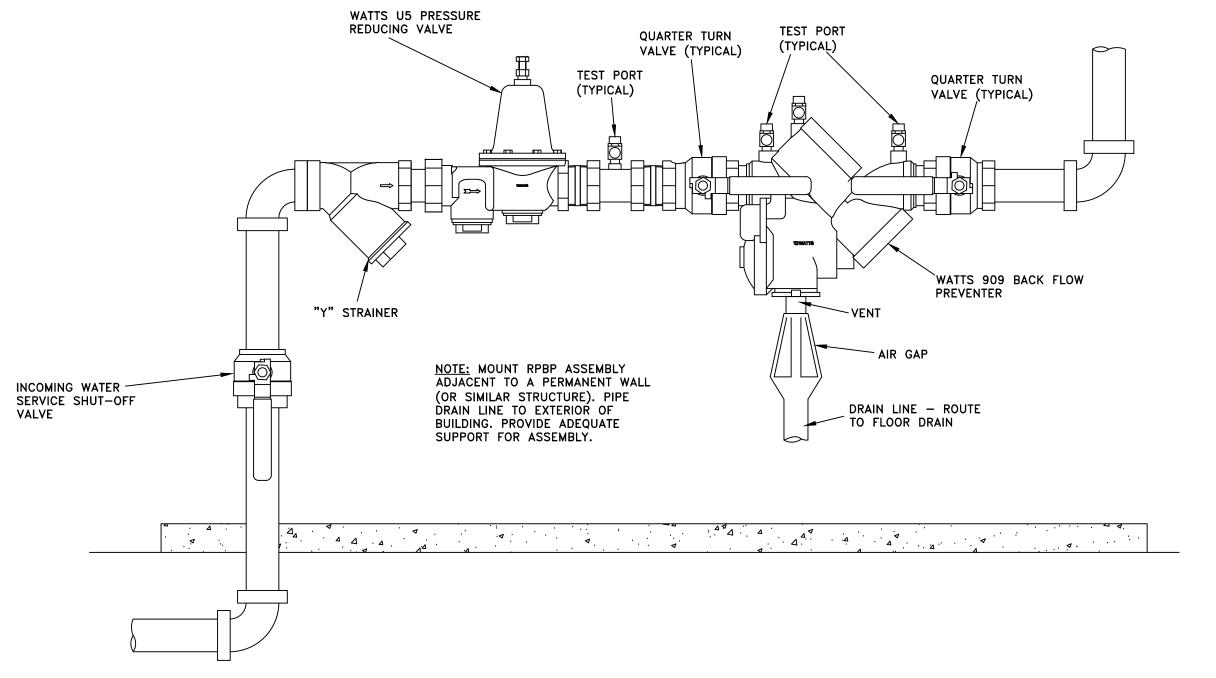




NUMBERED NOTES

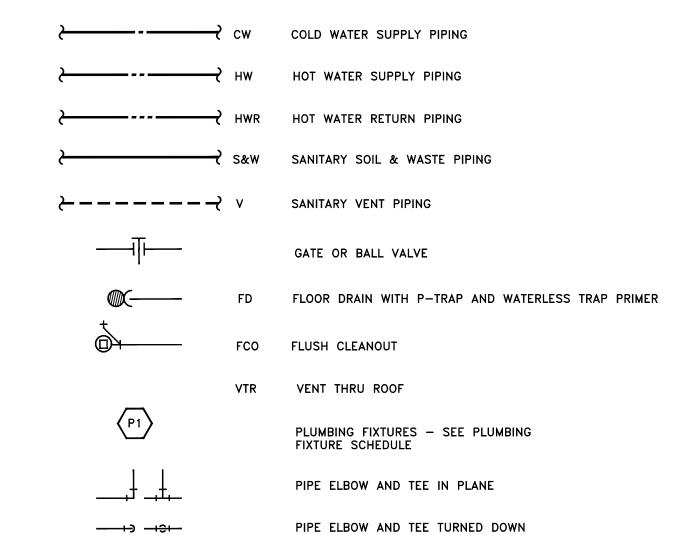
- 1 ADJUSTABLE FLOOR CLEAN OUT w/ ANCHOR FLANGE. MATCH PIPE SIZE SERVED. INSTALL FLUSH w/ FINISH FLOOR. COORDINATE
- 2 FLOOR SYSTEM COORDINATE W/ STRUCTURAL AND ARCHITECTURAL
- 3 RISER
- 4 COMPACTED BACKFILL
- 5 IF LINE DEAD ENDS, INSTALL WATERTIGHT PLUG
- 6 COMFINATION WYE 1/8 BEND, ONE PIECE
- 7 SEWER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

FLOOR CLEANOUT DETAIL
NO SCALE



PRESSURE REDUCER AND BACKFLOW PREVENTER DETAIL
NO SCALE

PLUMBING LEGEND



H_E HOLSTON ENGINEERING, INC.

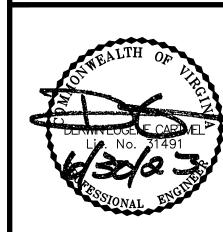
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PIPE ELBOW AND TEE TURNED UP

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PLOT DATE: 06/30/2023

PLUMBING DETAILS

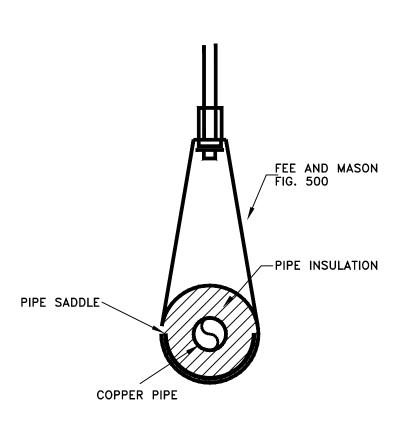


06-30-2023 **REVISION DATE**

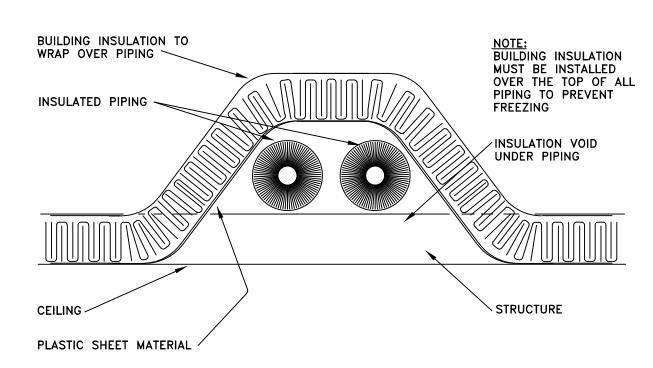
CHECKED BY DEC TLG-22136

THE LANE GROUP INC.

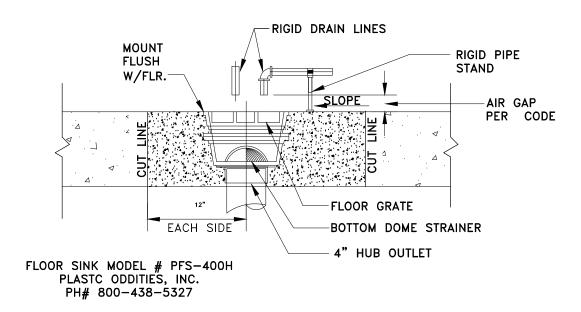
HE PROJECT #23-008



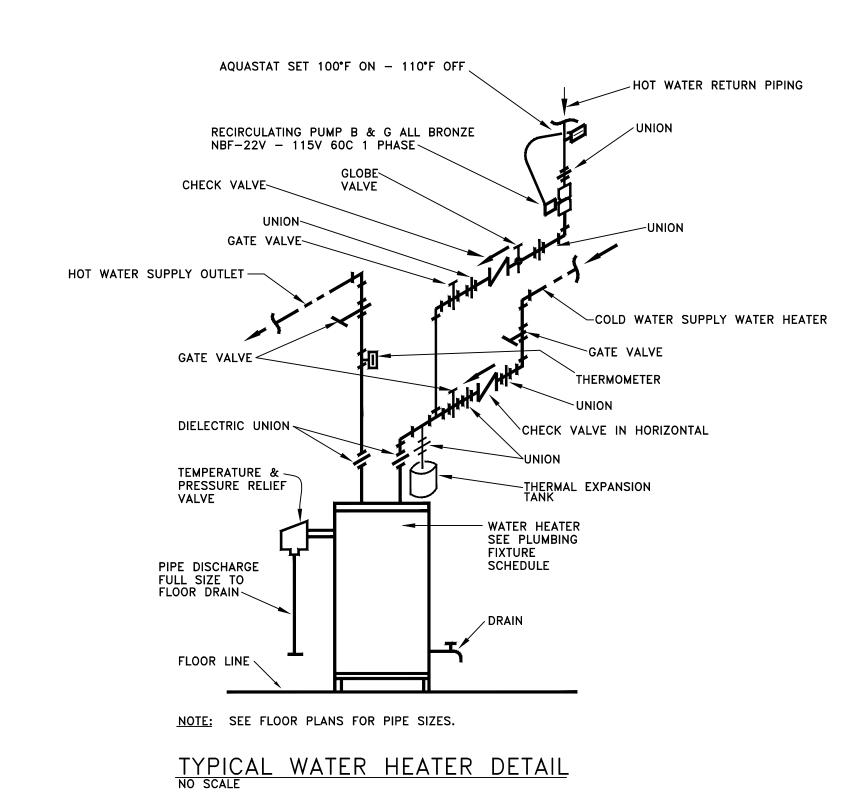
PIPE SUPPORT DETAIL NO SCALE



DOMESTIC HOT & COLD WATER
LINES IN ATTIC DETAIL
NO SCALE



FLUSH MOUNTED FLOOR SINK DETAIL
NO SCALE

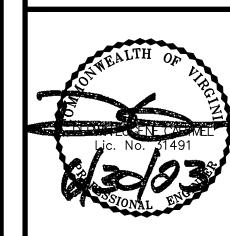


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HE PROJECT #23-008 PLOT DATE: 06/30/2023

DETAILS PLUMBING



06-30-2023 **REVISION DATE**

CHECKED BY DEC ROJECT NO. TLG-22136

H.V.A.C. LEGEND

SUPPLY DUCTWORK WITH 2" EXTERNAL

RETURN DUCTWORK WITH 2" EXTERNAL INSULATION

FLEXIBLE DUCTWORK EQUAL TO GENFLEX 1L-1

ROUND DUCTWORK WITH 2" EXTERNAL INSULATION

OUTSIDE AIR DUCTWORK WITH 2" EXTERNAL INSULATION

ROOM THERMOSTAT - SEE CONTROL SPECIFICATION

H.V.A.C. UNIT — SEE SCHEDULE AND DETAILS

AIR DISTRIBUTION OUTLET - SEE SCHEDULE

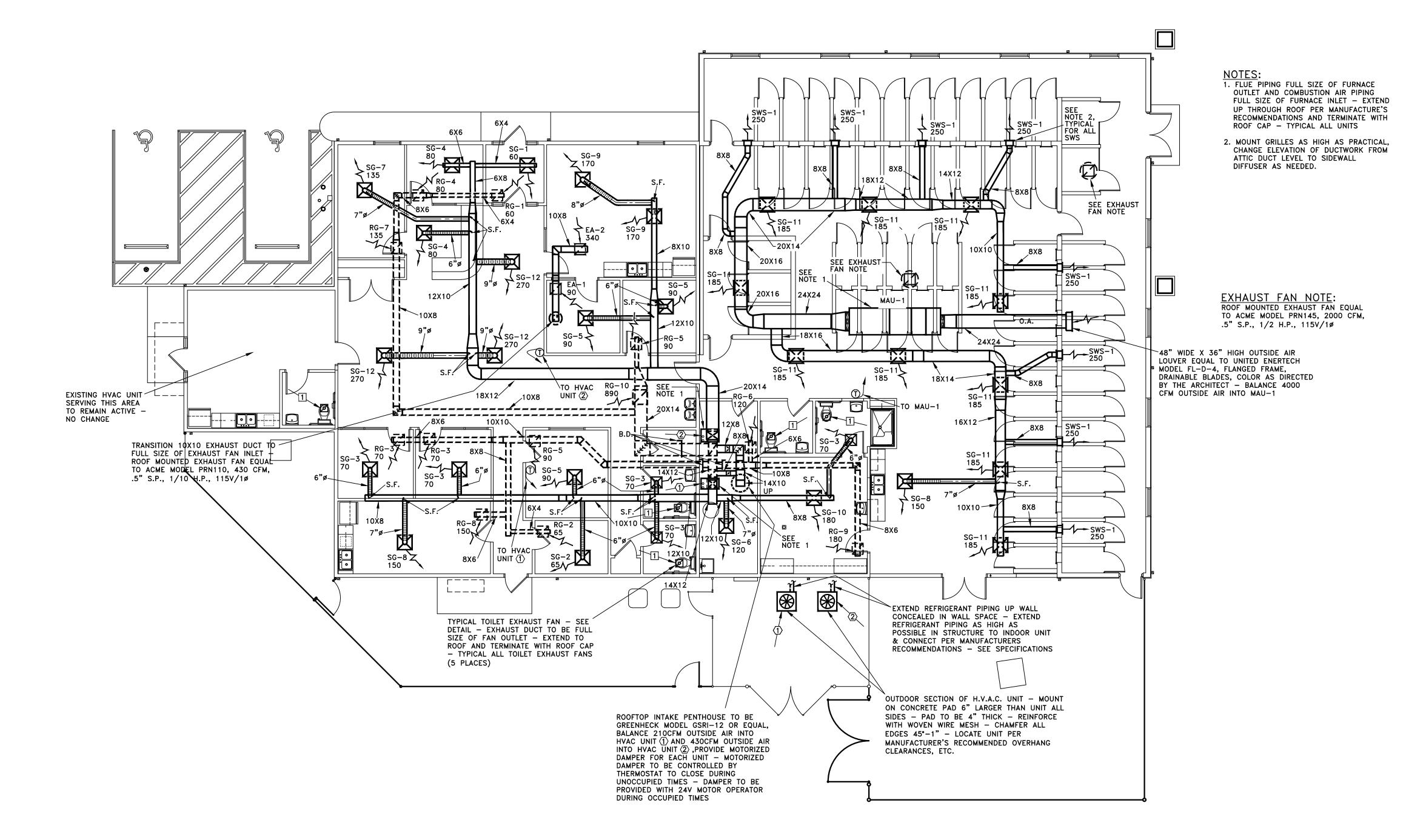
EXHAUST FAN - SEE SCHEDULE AND DETAIL

SPIN-IN FITTING WITH AIR SCOOP

BALANCING DAMPER — SEE DETAIL

UIPMENT S	CHEDULE
1	2
GAS FURNACE/ ELECTRIC COOLING SPLIT SYSTEM	GAS FURNACE/ ELECTRIC COOLING SPLIT SYSTEM
CARRIER	CARRIER
58SC0A045E171*12	58SC0A090E21*20
955	1685
.50"	.50"
44,000	88,000
35,000	72,000
15 A	20 A
1/2	1
115 V/1ø	115 V/1ø
CAPMP3717AL	CAMPMP6121AL
24SCA536W003	24SCA560W003
34,200	57,430
23,630	46,740
2.92	5.17
14.3	14.3
208/230V/1ø	208/230V/1ø
16.7 A	33.4 A
25 A	50 A
210 CFM	430 CFM
	GAS FURNACE/ ELECTRIC COOLING SPLIT SYSTEM CARRIER 58SC0A045E171*12 955 .50" 44,000 35,000 15 A 1/2 115 V/1ø CAPMP3717AL 24SCA536W003 34,200 23,630 2.92 14.3 208/230V/1ø 16.7 A 25 A

MAKE-U	P AIR UNIT			
EQUIPMEN	IT SCHEDULE			
UNIT DESIGNATION	MAU-1			
TYPE INDOOR UNIT	MAKE-UP AIR UNIT - HEATING & VENTILATION ONLY			
MAUNUFACTURER	GREENHECK			
MODEL #	IGX-P116-H22-MF-N			
SUPPLY CFM	4000			
EXTERNAL STATIC PRESSURE IN H20 AFTER WET COIL	.75"			
MOTOR HP	2			
FUEL TYPE	NATURAL GAS			
BTUH INPUT	500,000			
BTUH OUTPUT	400,000			
TEMP RISE MIN *F	3.5			
TEMP RISE MAX °F	92.6			
ELEC. CHARACTER	208V/60/3ø			
MCA	11.8 A			
MOCP	15 A			
OUTDOOR AIR	4000 CFM			



MECHANICAL FLOOR PLAN

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

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PLOT DATE: 6/30/2023

06-30-2023

LEE HIGHWAY , VIRGINIA 24201

15050 LEE BRISTOL, VI

ANIMAL

REVISION DATE

M101

TRM DEC PROJECT NO. TLG-22136

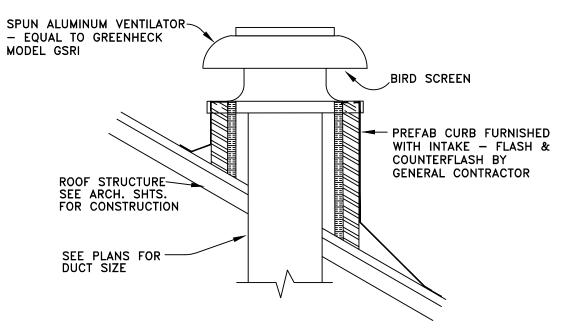
THE LANE GROUP INC.

HE PROJECT #23-008

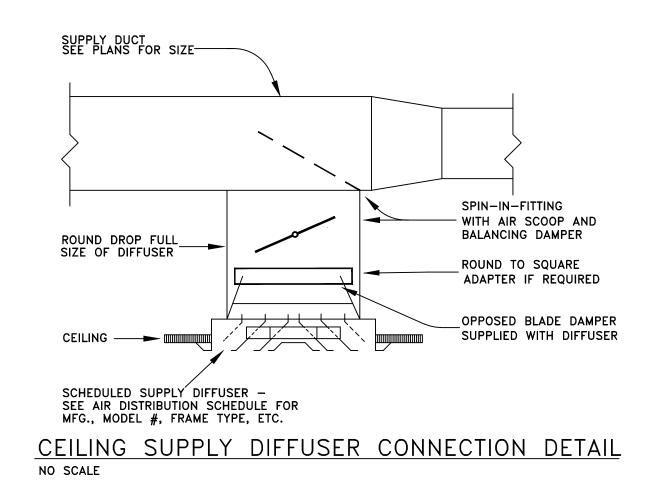
KENNEL CONTROL SCHEME

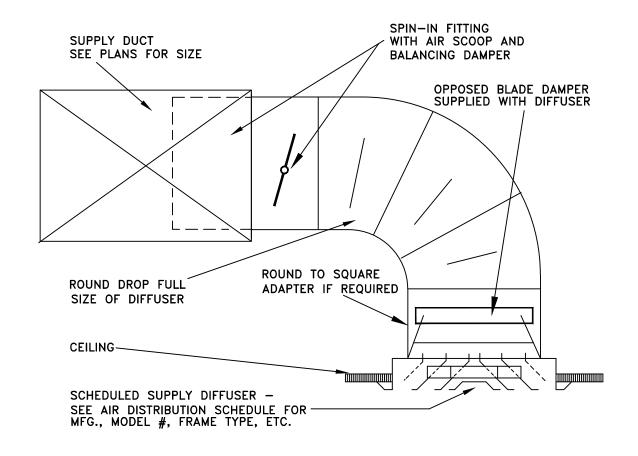
- CONTROL
- CONTROL
 SUMMER 100% OUTSIDE AIR VENTILATION WITH EXHAUST FAN RUNNING
 TO GET SPACE AT PRESSURE NEUTRAL
- WINTER 100% OUTSIDE AIR HAVE DISCHARGE AIR TEMP SET POINT MAINTAINING BY MODULATING GAS VALVE. EXHAUST FAN RUNNING TO PROVIDE SPACE @ SLIGHTLY NEGATIVE PRESSURE
- FIELD SET VFD FOR EXHAUST FAN FOR SLIGHTLY NEGATIVE SPACE CONDITIONS AT 100% OUTSIDE AIR.
- PROVIDE DISCHARGE AIR TEMPERATURE WITH CONTROLLER FOR DISCHARGE AIR TEMPERATURE CONTROL IN KENNEL.

MARK	MANUFACTURER & MODEL NO.	SERVICE	SIZE	C.F.M. F.F	F.P.M.	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES & FEATURES		
	WODEL NO.								& TEATORES		
SG-1	KRUEGER SHPC-04	SUPPLY	6X6	60	240	FOUR WAY THROW DIFFUSER	STEEL	WHITE	FULLY ADJUSTABLE WITH A		
SG-2	KINGEGER GING GI	001121	6X6	65	260	WITH FLANGED FRAME	JIELE	******	PATTERN CONTROLLERS AND		
SG-3			6X6	70	280				OPPOSED BLADE DAMPER		
SG-4			6X6	80	320				WITH FLANGED FRAME		
SG-5			6X6	90	360						
SG-6			9X9	120	215						
SG-7			9X9	135	240						
SG-8			9X9	150	270						
SG-9			9X9	170	305						
SG-10			9X9	180	320						
SG-11			9X9	185	330						
SG-12	*	1	12X12	270	270	V	1	1	V		
SG-13	NOT USED	,				,	·		,		
SWS-1	KRUEGER 880	SUPPLY	12X8	250	375	SIDEWALL SUPPLY GRILLE	STEEL	COLOR BY	OPPOSED BLADE DAMPER		
SWS-2	NOT USED							ARCHITECT	DOUBLE DEFLECTION		
RG-1	KRUEGER S580	RETURN	6X6	60	240	RETURN GRILLE WITH	ALUMINUM	WHITE	HORIZONTAL BLADES ANGLE		
RG-2			6X6	65	260	FLANGED FRAME			TO PREVENT SEE THROUGH		
RG-3			6X6	70	280				AND OPPOSED BLADE DAMPE		
RG-4			6X6	80	320						
RG-5			6X6	90	360						
RG-6			10X6	120	285						
RG-7			10X6	135	320						
RG-8			10X6	150	360						
RG-9			10X6	180	430						
RG-10	<u> </u>	V	18X18	890	395		V	V	V		
RG-11	NOT USED					'					
EA-1	KRUEGER S580	EXHAUST	6X6	90	360	EXHAUST GRILLE WITH	ALUMINUM	WHITE	HORIZONTAL BLADES ANGLE		
EA-1 EA-2		EXHAUST	12X12	340	340	FLANGED FRAME	ALUMINUM	WHILE	TO PREVENT SEE THROUGH		
EA-2 EA-3	NOT USED	EVHAUSI	IZXIZ	340	340	FLANGED FRAME			TO EKEVENT SEE THROUGH		

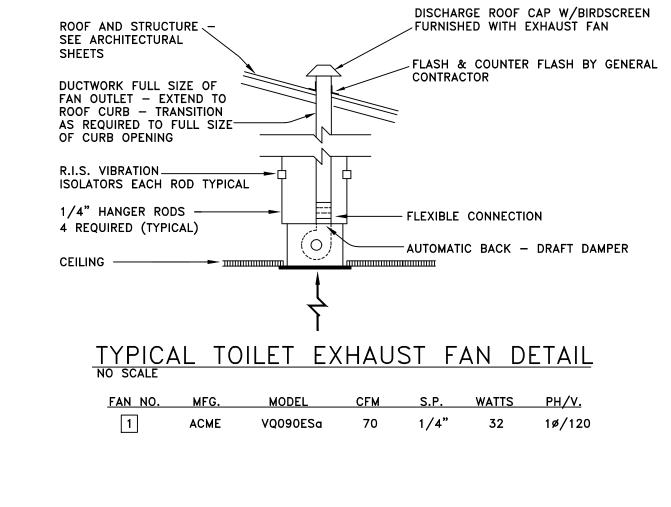


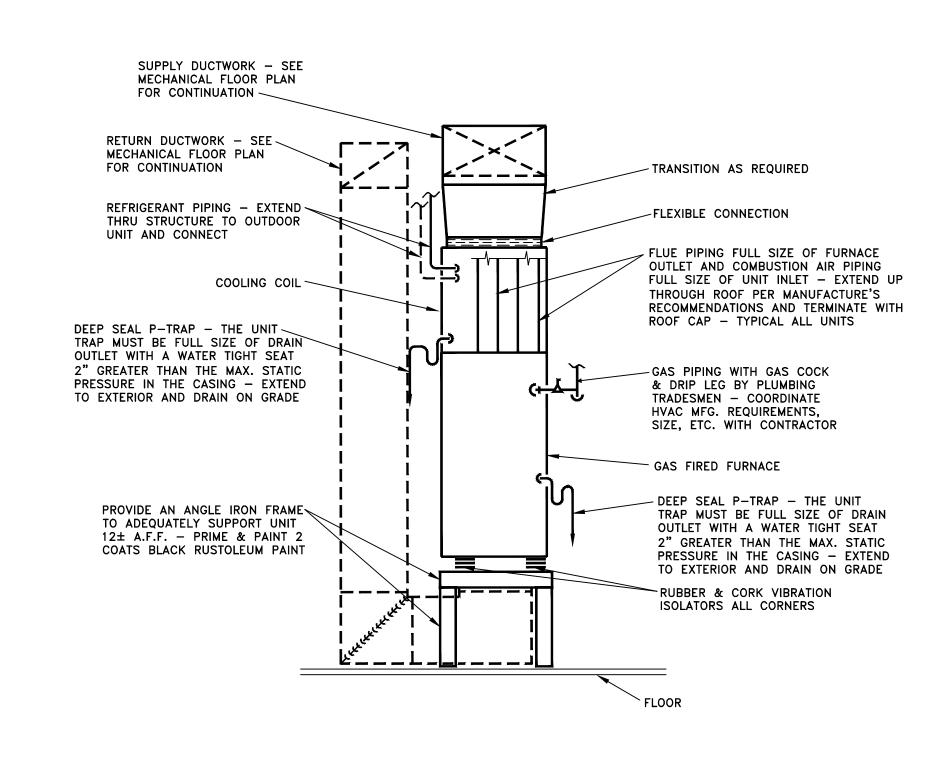
GRAVITY VENTILATOR PENTHOUSE DETAIL
NO SCALE



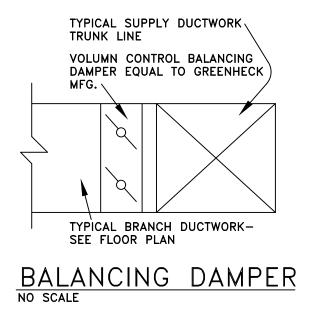


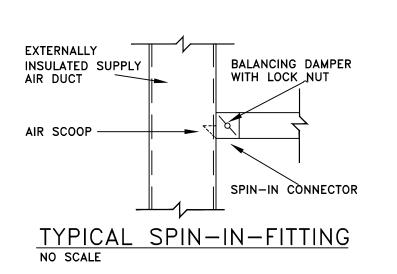
CEILING SUPPLY DIFFUSER CONNECTION DETAIL NO SCALE





TYPICAL INDOOR H.V.A.C. UNIT DETAIL





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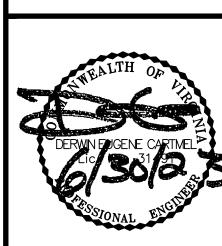
ENOVATION FOR COUNTY, VIRGINIA LANE
LE HIGHWAY
VIRGINIA 24201

LE SHELTER
CHOUNTY, VIRGINIA 24201

Abingdon I Big Stone Grouping

BUILDING RENOVATION
WASHINGTON COUNTY, VI
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

MECHANICAL DETAIL



DATE:	06-3	0-2023
NO.	REVI	SION DATE
1		*
2		
3		
SHEET:	M1	02
DRAWN B	Y TRM	CHECKED BY DEC
PROJECT	NO. TLG-2	22136

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

LIGHTING FIXTURE SCHEDULE

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

- 4' SURFACE-MOUNTED LED LUMINAIRE WITH 4,600 LUMENS , 4000K COLOR TEMPERATURE, AND 120 VOLT INPUT [41 WATTS] CONTRACTOR-SELECT LITHONIA-LBL4-LP840
- 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
- 6" ROUND LED DOWNLIGHT WITH 1,500 LUMENS, 4000K COLOR TEMPERATURE, AND 120 VOLT INPUT [18 WATTS] LITHONIA-LDN6-40/15-MVOLT-GZ10-HSG
- LED WALL PACK LUMINAIRE WITH 2,912 LUMENS, 4000K COLOR TEMP, DARK BRONZE FINISH & 120 VOLTS [24.4 WATTS] LITHONIA-WPX1-LED-P2-40K-MVOLT-DDBXD-M4
- 4' SURFACE-MOUNTED LED STRIP LIGHT WITH 4,500 LUMENS, 4000K COLOR TEMP, 80 CRI, & 120 VOLTS. [35 WATTS] LITHONIA-MNSL-L48-2LL-MVOLT-40K-80CRI-M6

ELECTRIC LEGEND

LIGHTING OUTLET LED. INSERT IS TYPE.

EXIT LIGHTS, WITH ARROW AND REMOTE EMERGENCY HEAD WHERE NOTED. SEE LIGHTING FIXTURE SCHEDULE.

DUPLEX 20 AMPERE WEATHERPROOF GROUND-FAULT CONVENIENCE OUTLET. BRYANT #GFR53FT WITH #GFRWPV WEATHERPROOF COVER.

DUPLEX 15 AMPERE CONVENIENCE OUTLET WITH GROUND. BRYANT #5262-I. SUBSCRIPT "A" INDICATES 20 AMPERE SIZE.

DUPLEX 15 AMPERE GROUND-FAULT CONVENIENCE OUTLET. BRYANT #GFR52FT-I.

FLOOR OUTLET WITH GROUND - STEEL CITY #601 WITH P-60-DR FLOOR PLATE, DUPLEX 20 AMP GROUNDED SPEC GRADE RECEPTACLE. INSTALL CARPET FLANGE WHERE REQUIRED. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.

JUNCTION BOX OUTLET. CONNECT POWER. VERIFY LOCATION AND SERVICE PRIOR TO ROUGH-IN.

FAN OUTLET. CONNECT POWER. VERIFY LOCATION AND SERVICE PRIOR TO

WALL MOUNTED DATA OUTLET WITH STAINLESS STEEL PLATE WITH OPENING AS REQUIRED BY OWNER/VENDOR. EXTEND 3/4" CONDUIT TO ABOVE CEILING

FUSIBLE SAFETY DISCONNECT SWITCH.

BRANCH CIRCUIT PANELBOARD.

SINGLE POLE, QUIET ACTION, 20 AMPERE TOGGLE SWITCH - BRYANT #4901-I. SUBSCRIPT "W" INDICATES A WEATHERPROOF COVER FOR THE SWITCH EQUAL TO CARLON #E98TSCN

S 3 S4 AND #4904-1. 3 AND 4 WAY QUIET ACTION 20 AMPERE TOGGLE SWITCHES. BRYANT #4903-I

WALL MOUNTED MOTION DETECTOR SWITCH WITH TIME DELAY OFF SETTING, MANUAL ON/OFF SWITCH AND DIMMING. nLIGHT nWSX LV

OCCUPANCY SENSOR - SENSOR SWITCH-CM-9

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.

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. ALL SWITCH AND DEVICE PLATES SATIN FINISH STAINLESS STEEL.

EQUAL SPEC GRADE DEVICES OF BRYANT, HUBBELL, P & S, LEVITON, AND GENERAL ELECTRIC MAKE ACCEPTABLE. NONE OTHER ACCEPTABLE, EXCEPT WITH WRITTEN

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

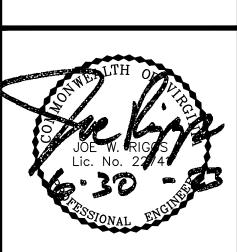
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PLOT DATE: 06/30/2023

HE PROJECT #23-008

HIGHWAY RGINIA 24201 NIMAL 15050 L BRISTOL,

BUILDING



06-30-2023 **REVISION DATE** PWM

TLG-22136

ATTIC ELECTRICAL PLAN

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

NOTE: ALL FIXTURES THIS SHEET ARE TYPE "E" UNLESS OTHERWISE NOTED.

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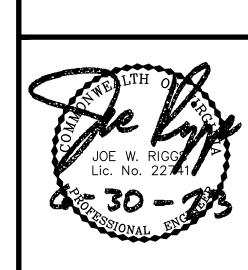
PLOT DATE: 06/30/2023 HE PROJECT #23-008

neering 310 Valley Street N tecture Abingdon, VA 242 onmental 276.206.8571 - off

LANE engineering architecture GROUP environmental

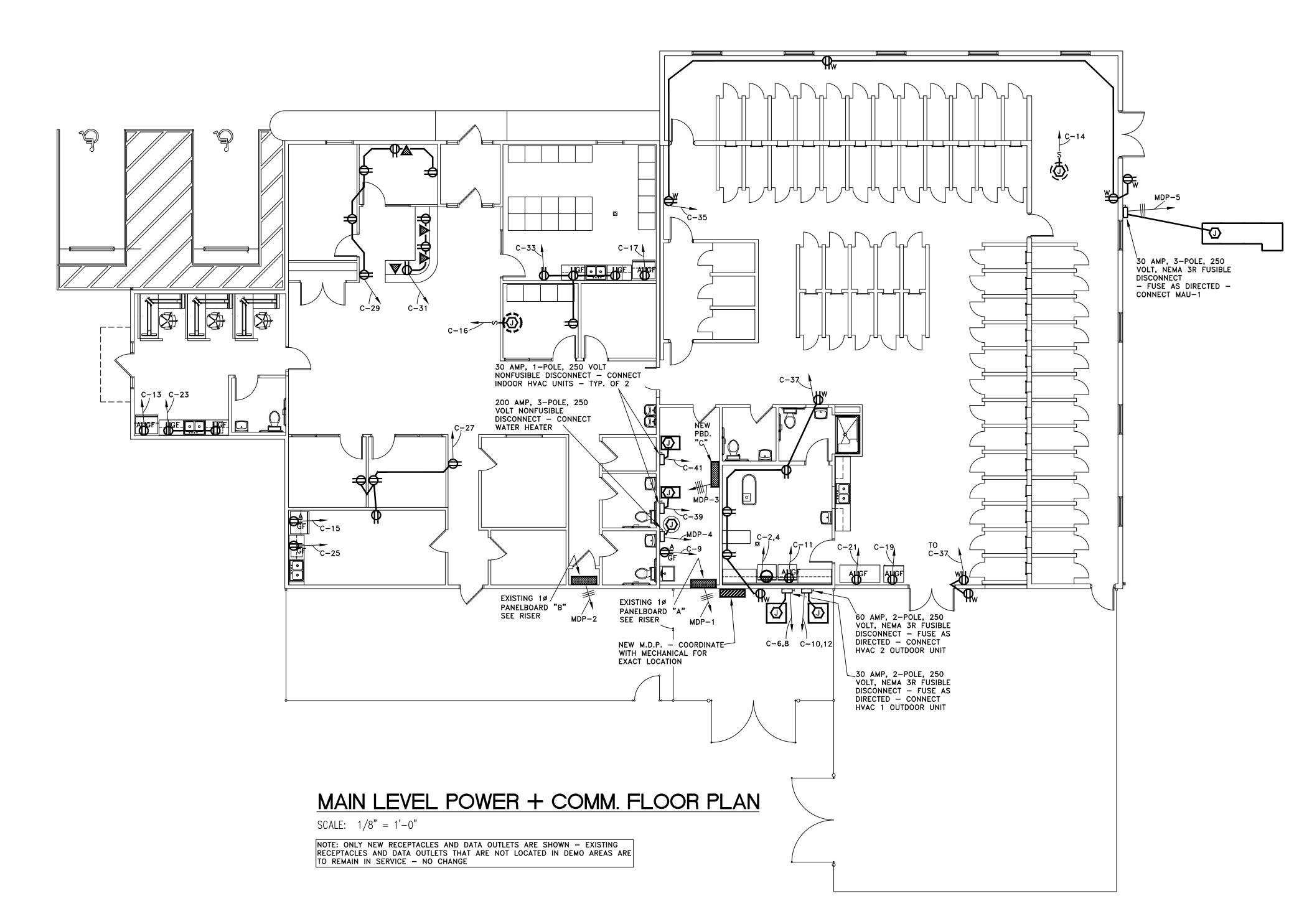
BUILDING RENOVATION FOR
WASHINGTON COUNTY, VIRGINIA
ANIMAL SHELTER
15050 LEE HIGHWAY
BRISTOL, VIRGINIA 24201

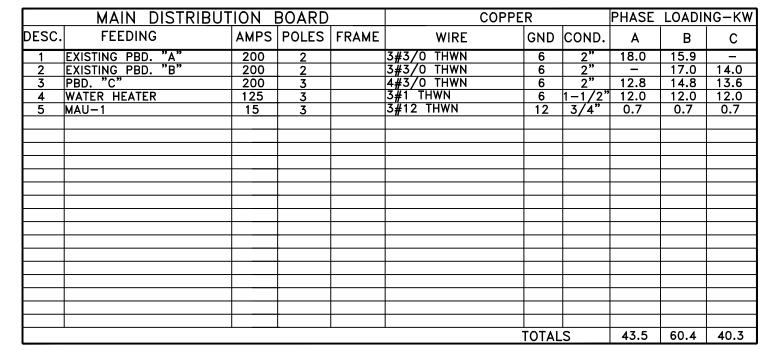
TTIC ELECTRICAL PLAI



DATE:	06-30-2023
NO.	REVISION DATE
1	
2	
3	
SHEET:	E102
DRAWN B	Y CHECKED BY

PROJECT NO. TLG-22136





FURNISH AND INSTALL A DISTRIBUTION SWITCHBOARD EQUAL TO SQUARE D I-LINE WITH 600 AMP RATING WITH M.L.O. BOARD SHALL BE FOR 3Ø4W 208Y/120 VOLTS. THE PANEL SHALL BE UL LISTED AND MEET ALL APPLICABLE NEMA STANDARDS AND FEDERAL SPECIFICATIONS. PANEL SHALL BE LABELED FOR SERVICE DUTY AND FURNISHED WITH SOLID NEUTRAL.

BUSS BARS SHALL BE PLATED AND OF SUFFICIENT CROSS SECTIONAL AREA TO CONTINUOUSLY CARRY RATED FULL LOAD CURRENT AT A MAXIMUM TEMPERATURE RISE OF 65°C ABOVE AMBIENT OF 40°C. BUSS BARS SHALL BE BRACED FOR A MINIMUM OF 100,000 RMS SYMMETRICAL AMPERES AT 208 VOLTS.

CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE OF THE FRAME SIZE AS SCHEDULED AND BE TRIP FREE. CIRCUIT BREAKERS SHALL HAVE AN INTERRUPTING RATE OF NOT LESS THAN ____ AMPERES AT RATED VOLTAGE.

BRANCH CIRCUIT PANELBOARD

FEEDING	WIRE	CIRCUIT		PBD.	CIRCUIT		WIRE	FEEDING	PHASE	LOADII	NG-KW
	1711112	AMPS	NO.	, , ,	NO.	NO. AMPS			Α	В	С
LIGHTS	12	20	1	<u> </u>	2	§ 30	10	DRYER	3.5		
			3	<u>^ </u>	4	ζ				4.0	
			5	<u>^-++</u> ••	6	25	10	HVAC 1 OUTDOOR			3.1
EXT. LIGHTS			7	<u>^ </u>	8	ζ			2.0		
RECIRC. PUMP			9	<u>^-+++-</u> T	10	5 0	8	HVAC 2 OUTDOOR		4.5	
WASHER			11	<u>^</u> + •	12	<u> </u>					4.7
REFRIGERATOR			13	<u>^ + </u>	14	20	12	EXHAUST FAN	2.7		
			15	<u>^</u> ++-^	16		12	EXHAUST FAN		2.2	
			1/	<u>^</u>	18			SPARE	<u> </u>		1.2
L			19	<u> </u>	20				1.2		
FREEZER			21	<u>^ </u>	22					1.2	4.0
RECEPTACLES			23 25	<u>^</u>	24		_	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1		1.0
			25	<u> </u>	26	_		SPACE	1.0	0.0	
			27	<u>^ </u>	28	_				0.8	4.0
			29	<u>^++</u>	30 32				1		1.0
			31	<u>^ </u>	32	_			1.0	4.0	
			33	<u>^ </u>	34	_				1.0	0.0
•			35		<u>36</u>	_		 	4.4		0.8
UVAC 1 INDOOD			37 39	<u>^+++</u> _^	38	_			1.4	1 1	
HVAC 1 INDOOR HVAC 2 INDOOR	 	┵	41	<u>^</u> +•+-^	40 42			+		1.1	1 0
HVAC Z INDOUR	1	1 7	41	CCC.	42	-	DANE	LBOARD LOADING	12.8	14.8	1.8 13.6
		_									
LOCATION SEE	PLANS				MA	INS	200	AMPS WITH 200 A	MP MAIN	N BREAK	KER
MOUNTING SURF	ACF				TYF	F	NQ				

DESIGN DATA SERVICE CHARACTERISTICS 3Ø 4W 208Y/120 VOLTS CONNECTED LOADS: 5.2 KW 16.9 KW WATER HEATER 36.0 KW 21.2 KW MISC. POWER EXISTING PBD. "A" 33.9 KW EXISTING PBD. "B" 31.0 KW TOTAL ESTIMATED CONNECTED LOAD 144.2 KW ESTIMATED DEMAND 100.0 KW ESTIMATED FUTURE LOAD NONE SERVICE CAPACITY 600 AMPS

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PLOT DATE: 06/30/2023 HE PROJECT # 23-008

ANIMAL

15050 LEE HIGHWAY BRISTOL, VIRGINIA 24201

E103 PWM PROJECT NO. TLG-22136

THE LANE GROUP INC.

06-30-2023

REVISION DATE

4#3/0 THWN COPPER, / 1#6 COPPER GROUND IN 2" CONDUIT ELECTRIC SERVICE RISER DIAGRAM

EXISTING PBD. "A"

1ø3W

VOLTS

200A M.B.

EXISTING

PBD. "B"

120/208

VOLTS

200A M.B.

L----

PBD. "C"

3ø4W

208Y/120

200A M.B.

3#3/0 THWN COPPER, 1#6 COPPER GROUND

M.D.P.

3ø4W

208Y/120 VOĹTS

600A M.L.O.

^{'''}BOND & GROUND´

PER NEC WITH #2/0 COPPER

IN 2" CONDUIT

TRANSFORMER

CONCRETE PAD

NOT TO SCALE

PARALLEL RUNS 4#350 KCMIL THWN COPPER

IN 3" CONDUIT

BY LOCAL

BY LOCAL UTILITY

UTILITY